APPENDICES

Southern Windsor County and the 2010 Census

SWCRPC
SOUTHERN WINDSOR COUNTY REGIONAL PLANNING COMMISSION

While a picture is worth a thousand words,

we often rely on numbers to describe where we live. Numbers are particularly useful as we compare one community to another and highlight the strengths of our towns. Prior to 2010, the Census had a "short form" and a "long form" (which had most of the more interesting information). In 2010 the decennial census only counted people and housing units, and collected limited demographic information (race, age, sex). With the elimination of the "long form" part of the Census survey, data in the upcoming years will be coming from some slightly different sources. This technical bulletin is intended as a quick overview of the data which has currently been released from the 2010 US Census.

A snapshot of our region according to the 2010 Census

United States Census 2010

On February 11, 2011 the first data from the 2010 Census became available for individual communities in Vermont. As reported in SWCRPC's Spring 2011 newsletter, overall our population has decreased slightly from 25,105 to 24,711. This occurred despite notable increases in population in Springfield and Chester (and small increases in Weathersfield and West Windsor). Springfield moved up in the ranking from 11th to 10th largest town in the state.

Since SWCRPC's Spring Newsletter additional information about age, sex, race, and household types has been released. Overall the region's population is aging, rising an average of 5.07 years over the past decade. However, this was not always due to a higher percentage of people over 65 since both Springfield and Windsor experienced a reduction in the percentage of over 65s in their communities. The average household size has decreased in all the region's communities, now ranging from a low of 2.06 people in Ludlow to 2.71 in Baltimore. The region has a roughly even mix of men and women, with 50.7% of the population being female (almost exactly matching the state proportion).

For housing the region saw a 7.4% increase in the total number of housing units, with small increases

in total housing units in nearly all towns. The majority of the housing units in the region were occupied – 70% of the total number of units. For most towns occupancy rates were above 60% with some town occupancy rates as high as 87% or above (Springfield, Windsor, Weathersfield and Baltimore). Ludlow had the lowest occupancy rate at 28.3%, down from 35.3% in 2000.

Population data

Place	Total Population			Population Change		VT Town Ranking		Sex		Average Household Size	
	1990	2000	**2010**	1990-2000	2000-2010	2000	2010	Male	Female	2000	2010
ANDOVER	373	496	**467**	33.0%	-5.8%	211	218	49.7%	50.3%	2.31	2.14
BALTIMORE	190	250	**244**	31.6%	-2.4%	234	234	54.5%	45.4%	2.72	2.71
CAVENDISH	1,323	1,470	**1,367**	11.1%	-7.0%	108	115	49.8%	50.2%	2.37	2.26
CHESTER	2,832	3,044	**3,154**	7.5%	3.6%	56	53	48.1%	51.9%	2.35	2.25
LUDLOW	2,302	2,449	**1,963**	6.4%	-19.8%	73	87	48.6%	51.4%	2.26	2.06
READING	614	707	**666**	15.1%	-5.8%	191	202	48.6%	51.4%	2.47	2.30
SPRINGFIELD	9,579	9,078	**9,373**	-5.2%	3.2%	11	10	49.8%	50.2%	2.31	2.28
WEATHERSFIELD	2,674	2,788	**2,825**	4.3%	1.3%	63	60	51.0%	49.0%	2.39	2.25
WEST WINDSOR	923	1,067	**1,099**	15.6%	3.0%	152	153	48.1%	51.9%	2.34	2.20
WINDSOR	3,714	3,756	**3,553**	1.1%	-5.4%	41	44	48.0%	52.0%	2.29	2.25
Southern Windsor County Region	***24,524***	***25,105***	**24,711**	***2.4%***	***-1.6%***			***49.3%***	***50.7%***		
Town Average	*2,207*	*2,388*	**2,454**	*17.6%*	*4.5%*						
Town Median	*1,107*	*1,222*	**1,271**	*11.8%*	*2.8%*						
VERMONT	***562,758***	***608,827***	**625,741**	***8.2%***	***2.8%***			***49.3%***	***50.7%***	***2.44***	***2.34***

Source: 2010 Decennial U.S. Census.

Housing data

Place	Total Housing Units			Occupied Housing Units		Vacant Housing Units		Percentage of Housing Units Occupied	
	2000	**2010**	Difference	2000	2010	2000	2010	2000	2010
ANDOVER	347	**408**	61	215	218	132	190	62.0	53.4
BALTIMORE	105	**100**	-5	92	90	13	10	87.6	90.0
CAVENDISH	860	**965**	105	617	598	243	367	71.7	62.0
CHESTER	1,611	**1,793**	182	1,296	1,402	315	391	80.4	78.2
LUDLOW	3,001	**3,285**	284	1,060	930	1941	2,355	35.3	28.3
READING	407	**448**	41	286	290	121	158	70.3	64.7
SPRINGFIELD	4,232	**4,324**	92	3,886	3,903	346	421	91.8	90.3
WEATHERSFIELD	1,315	**1,427**	112	1,167	1,253	148	174	88.7	87.8
WEST WINDSOR	716	**799**	83	456	499	260	300	63.7	62.5
WINDSOR	1,611	**1,712**	101	1,520	1,492	91	220	94.4	87.1
Southern Windsor County Region	***14,205***	***15,261***	***1,056***	***10,595***	***10,675***	***3,610***	***4,586***		***69.9***
Windsor County as a whole	31,621	34,118	2,497	24,162	24,753	7,459	9,365	76.4	72.6
VERMONT	*294,382*	**322,539**	*28,157*	*240,634*	*256,442*	*53,748*	*66,097*	*81.7*	*79.5*

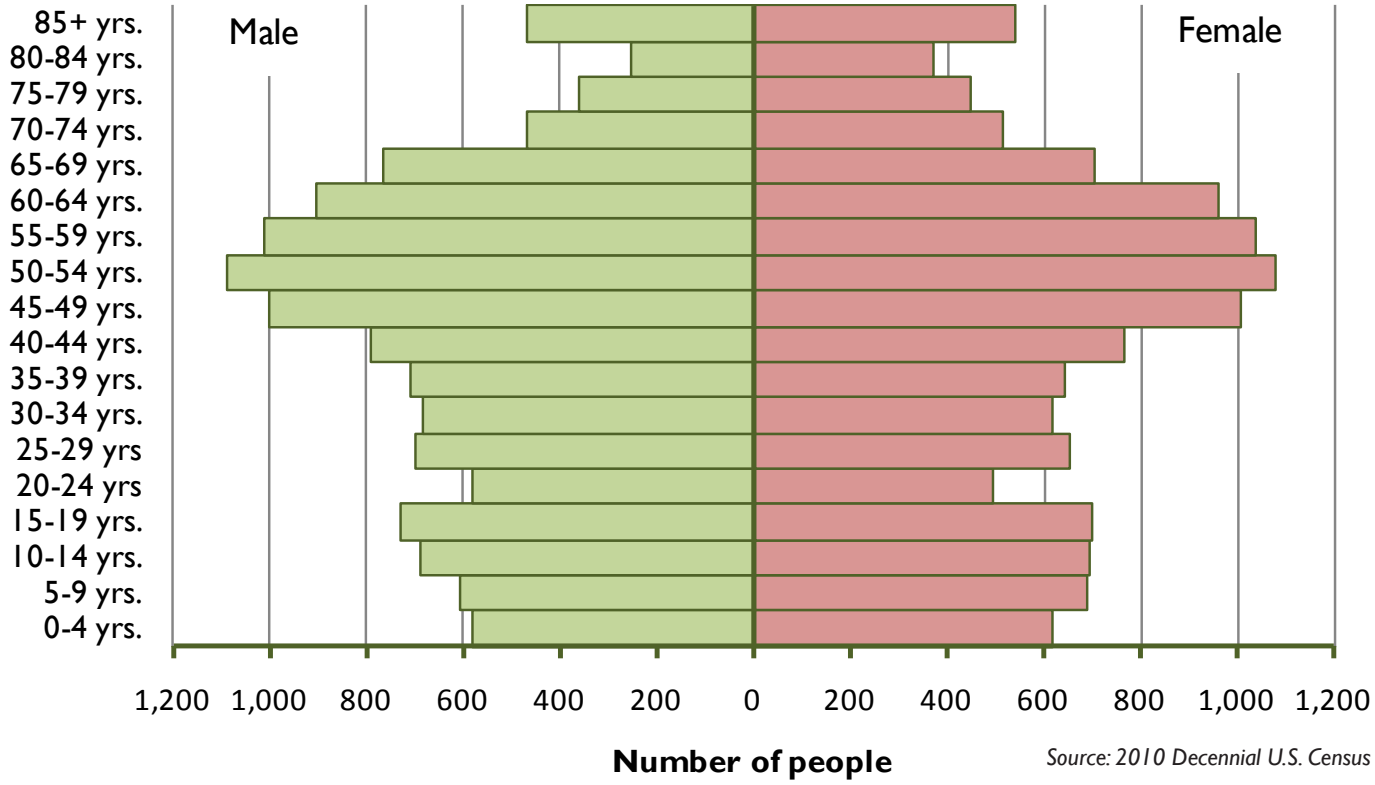
Source: 2010 Decennial U.S. Census

Population Age data

Place	Median Age		Under 18		Under 20	20-34	36-49	50-64	Over 65	
	2000	2010	Number	%					Number	%
ANDOVER	44.6	51.8	70	15.0	77	48	94	132	116	24.8
BALTIMORE	37.0	42.6	54	22.1	61	33	69	51	30	12.3
CAVENDISH	42.3	47.5	268	19.6	294	173	279	362	259	18.9
CHESTER	41.9	47.3	632	20.0	715	422	571	877	569	18.0
LUDLOW	43.2	49.5	329	16.8	358	299	344	511	451	23.0
READING	41.2	47.9	125	18.8	138	80	143	175	130	19.5
SPRINGFIELD	41.6	43.8	1,937	20.7	2,119	1,590	1,915	2,083	1,666	17.8
WEATHERSFIELD	43.5	49.0	484	17.1	541	339	583	774	588	20.8
WEST WINDSOR	45.3	49.8	200	18.2	216	92	245	325	221	20.1
WINDSOR	40.8	42.9	714	20.1	784	659	677	793	640	18.0
Southern Windsor County Region			***4,813***	***19.5***	***5,303***	***3,735***	***4,920***	***6,083***	***4,670***	***18.9***
VERMONT	*37.7*	*41.5*	*129,233*	*20.7*	*150,255*	*113,473*	*128,469*	*142,466*	*91,078*	*14.6*
UNITED STATES	*35.3*	*37.2*		*24*						*13*

Source: 2010 Decennial U.S. Census

Age-sex pyramid for the Southern Windsor County Region



Source: 2010 Decennial U.S. Census

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Southern Windsor County Technical Bulletin
Ski Corridor Management Plan

May 2014

SWCRPC
SOUTHERN WINDSOR COUNTY REGIONAL PLANNING COMMISSION

Skiing is a critically important economic sector for Vermont. The SWCRPC encourages the success of the ski resorts in southern Windsor County and beyond. Seasonally heavy traffic flows are a necessary part of having a successful ski industry. However, the resulting traffic conditions can lead to congestion and safety impacts along a broad network of highway corridors during certain periods of time. The SWCRPC wishes to balance supporting these important businesses while also seeking the proper mitigation strategies in order to minimize undue impacts on the community and the transportation system. Ski resort-related traffic conditions can be complex to manage, which results in the need for our long-term ski corridor management planning efforts. The purpose of this document is to summarize these efforts.

Background

In 1997 Killington, Okemo Mountain, Inc., the Vermont Agency of Transportation (VAOT), and the regional planning commissions (RPCs) began a collaborative planning and public involvement process (outside of the Act 250 process) to address potential traffic congestion, safety, and infrastructure problems related to resort expansion. (See the sidebar for a chronology of this process.) This process - called the Ski Country Traffic Management Study - included public participation, and was intended to measure and mitigate, if necessary, the effects of resort-related traffic throughout the Route 4/Route 7/Route 100/Route 103 corridor. It represented an acknowledgement by all parties that impacts of traffic generated at any given point may have traffic impacts that extend beyond municipal, regional, and District Commission boundaries; and a willingness by all parties to work cooperatively to avoid, minimize, and mitigate those impacts where their effects would be detrimental. A Memorandum of Agreement (MOA) was established between Killington and the three RPCs in 1998 in connection with Act 250 application #1R0835.

Existing Regional Planning Documents and Tools

The so-called Ski Corridor planning efforts are referred to throughout the *Regional Plan* and other planning documents produced by the Southern Windsor County Regional Planning Commission. That or similar terms reference the following documents or planning tools and the coordinated effort that was used to develop them. All were developed for the Southern

Chronology

June 4, 1997 – Kick-off meeting at Okemo Mountain Resort

June 25, 1997 – Killington & Okemo sign cooperative agreement

December 21, 1998 – MOA between Killington, SWCRPC, RRPC & TRORC for application #1R0835

November 8, 1999 – Engineering research & analysis RFP; Wilbur Smith Associates (WSA) hired

June 14, 2000 – Public presentation of traffic management plan in Ludlow

July-August 2000 – Meetings to discuss traffic modeling options

August 30, 2000 – WSA Task 4 Report: traditional LOS measures not acceptable for quantifying congestion (i.e. travel times & "crush capacities"); travel time along the corridor is the best measure

April 26, 2001 – WSA finalizes Phase 1: *Ski Corridor Traffic Management Study*

July 23, 2002 – Technical Committee has concerns that the model needs more testing/calibration

August 27, 2002 – WSA hired to complete Phase 2A

March 31, 2003 – WSA finalizes Phase 2A: Model Testing & Calibration

April 1, 2004 – RSG completes Phase 2B to test the travel time model using Jackson Gore Phase 2 as a case study

June 1, 2004 – RSG summarizes results to date & recommends next steps

2005-2012 – Large projects on hold, Ski Corridor efforts on hold

March 2012 – Stantec's Traffic Impact Study for Timber Creek 2 indicates that travel time is not an accurate measure due to influence of parking maneuvers, weather conditions & police traffic control

October 7, 2013 – An Act 250 permit is issued for application #1R0980 including conditions requiring a corridor traffic study to be performed prior to applying for subsequent phases.

November 2013 – SP Lands filed an appeal on permit #1R0980.

Windsor County Regional Planning Commission, Rutland Regional Planning Commission, and Two Rivers-Ottauquechee Regional Commission.

- **Phase I**: *Ski Corridor Traffic Management Study* (Wilbur Smith Associates, April 26, 2001)
- **Phase II-A**: *Ski Corridor Traffic Management Study: Model Testing & Calibration* (Wilbur Smith Associates, March 31, 2003)
- **Phase II-B**:
  - *Ski Corridor Traffic Management Study: Travel Time Model Traffic Impact Test* (RSG Inc., April 1, 2004)
  - *Ski Corridor Traffic Management Study: Phase II-B Final Memorandum* (RSG Inc., January 31, 2005)

Resulting from the above planning process is an Excel-based travel time model that was developed as an analytic tool for assessing the impact of development-related traffic growth on regionally significant travel corridors. The *Phase II-B Final Memorandum* is the singular best summary of the technical aspects of this model, including recommended next steps.

Okemo Jackson Gore

Development of the Jackson Gore base area in the late 1990s and early 2000s was a significant expansion of the Okemo Mountain Resort in Ludlow. Act 250 permits were issued for the Okemo Mountain Resort Master Plan, Jackson Gore Phase 1, and Jackson Gore Phase 2 (see Permit #2S0351-30 et al). Traffic impacts of this phased project are significant, but Act 250 permit conditions for traffic mitigation are generally working at this time. However, ancillary developments, such as Cavendish Point Hotel and Timber Creek, add to the traffic flow. Traffic generated by other ski resorts that pass through Ludlow further adds to congestion during the peak ski traffic periods. Adequately analyzing and managing cumulative traffic from all generators is a challenge for RPCs, Act 250 District Commissions and VTrans.

Timber Creek II

In 2013, an Act 250 permit was issued for Timber Creek II, a 208 unit gated development community located off Trailside Road in Ludlow. This development includes new ski lifts and ski trails connecting to Okemo Mountain Resort, a base lodge and a mix of residential buildings, including single-family houses, duplexes, and townhouse condominiums. The applicant has agreed to participate in and help to pay for a traffic management plan for the ski corridor as one component of their transportation demand management strategies for this project.

Killington Village Master Plan

In 2013 a new village master plan for the Killington base area was permitted as part of application #1R0980. This Act 250 permit also authorized the construction of Phase 1 of the master plan.

Phase 1 involves the following components per the above Master Plan: reaffirmation of 10 previously subdivided lots, 193 housing units, 32 new residential lots, 31,622 square feet of retail, and a 77,000 square foot skier services building.	The **full build-out** of the new Killington Master Plan (#1R0980) will involve subdivision of 15 lots, reaffirmation of 10 previously subdivided lots, a new village plan of 2,300 residential units, a 77,000 square foot skier services building, 32 new residential lots, and 200,000 square feet of retail space.

While the approved Phase 1 project adequately mitigates additional traffic, the cumulative trip generation of the entire master plan (i.e. of all the phases of this project) is expected to have traffic impacts on the ski

corridor. A permit condition requires the applicant coordinate with VTrans and the three RPCs "*to design, fund and perform a corridor traffic study ("the corridor study") which includes traffic impacts from the Phase I development upon the Killington Road/US4/ VT103 corridors from Killington to I-91 and I-89. The corridor study shall include the impact of traffic generated in each phase as well as the total (i.e. cumulative) traffic impact for all phases of the SP Lands development and shall include conclusions in the form of a transportation system improvement plan for areas in the corridor shown to require improvement to maintain safe conditions and avoid unreasonable congestion.*" The applicant has appealed this decision, which is currently under review by the Environmental Court in 2014.

Such an effort as described in the permit condition will ensure an efficient and comprehensive approach to measure and mitigate any future traffic conditions that warrant mitigation in a fair and equitable manner. It is the intent of the three RPCs to involve all interested parties in such a process, which is consistent with our statutory responsibilities as well as building upon the previous ski corridor planning framework that was endorsed and used by previous applicants, i.e., Killington LTD and Okemo Mountain Resort.

New Corridor Management Plan

In order to better address the cumulative traffic issues, a new ski corridor management planning effort is needed. This effort should involve the three RPCs, VTrans, Okemo, Killington, SP Lands, Timber Creek II, affected municipalities and other large traffic generators along the corridor. All parties shall serve on a joint committee overseeing the plan's development.

The scope of this effort will include the following elements:

a) Documentation of existing conditions to develop a baseline from which all future traffic can be measured;
b) Identification of the roadway, pedestrian, bicycle and transit projects (i.e. mitigation measures) necessary to accommodate development and meet safety, mobility and access needs in the corridor; and,
c) Specification of thresholds for when mitigation measures will be required by the applicant for all future phases of this project.

Act 250 applicant for large projects along this corridor that meet either VTrans or SWCRPC's requirements for a traffic impact study shall be asked to participate in this effort.

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Freight Travel in Southern Windsor County

May 2014

SWCRPC
SOUTHERN WINDSOR COUNTY
REGIONAL PLANNING COMMISSION

The following graphics and summaries are extracted from the 2013 Vermont Freight Plan, and give a useful summary of freight traffic in Vermont and the Southern Windsor County Region.

"In 2007, Vermont handled over 52 million tons of freight worth approximately $56 billion across all mosdes. By 2035, this volume is expected to grow to 70 million tons, a compound annual growth rate of 1.28 percent [..]. This lower growth rate reflects a continued shift in economic activity away from freight-intensive industries such as lumber and agriculture toward services." (Page ES-2)

Freight carried by road

"Truck traffic is expected to increase by more than 40% [from 2007 – 2035] on many of the state's highway links, including portions of Interstate 91, US Routes 2, 4 and 7; and Vermont Routes 9, 11, 15, 30, 100, 103, 105 and others. While this growth may apperar alarming, present truck volumes on many of these routes are modest and the impact to the overall volume-to-capacity ratio on most of these routes will generally be minor. Apart from some of the main arteries within the immediate vicinity of Burlington, including I-89, US-7 and US-2, the State;s highway network has the capacity to accommodate truck freight now and in the future." (Page ES-5)

A series of maps within the Plan show that within the SWC Region:

- Highest Traffic is found along I-91, on VT-11 through downtown Springfield and on VT-106 (River St) in Springfield – all with an AADT of over 10,000 in 2007[1]. Other high traffic areas in the Region include sections of VT-103, US-4 and roadways directly adjacent to the areas taking over 10,000 vehicles.
- Highest Annual Truck Traffic is found on I-91 with over 500,000 trucks per year in 2007[2]. Other high traffic areas include VT-103 (100,000 – 250,000 trucks annually) and VT-11 (50,000 – 100,000 trucks annually.
- Projections for 2035 show truck traffic increase on all major routes[3]. Percentage of truck traffic growth on some roadways, such as VT-11 and VT-100, is projected at 40-60%, while other routes are expected to experience less significant increases in truck traffic, such VT-103 with 20-40%[4]. The baseline traffic in 2007 contributes significantly to this very different percentage increase (VT-103 already experiences higher baseline truck traffic).

Industry split of truck traffic

"[…] The high value of retail goods and merchandise means that extra attention should be paid to ensure that freight transportation costs are kept down. This is important because the cost of goods and merchandise affect the cost of living and doing business in Vermont. If the cost of living and doing business go up, so do labor costs and the costs of producing Vermotn goods and services for export. If Vermont industry is to be productive and compete cost-effectively in the US and international markets, freight costs must be manageable for both industries and households." (Page 2-21)

Maps by industry show the following trends for truck traffic in 2007[5]:

- Manufacturing – under 5,000 trucks on VT-103 and VT-10; and 5-15,000 trucks on VT-11 and VT-100S
- Agriculture and Food, Construction, Energy, Forest Products – under 5,000 trucks on VT-103, VT-11, VT-10 and VT-100S
- Mining – under 5,000 trucks on VT-11, VT-10 and VT-100S; and 5-15,000 trucks on VT-103

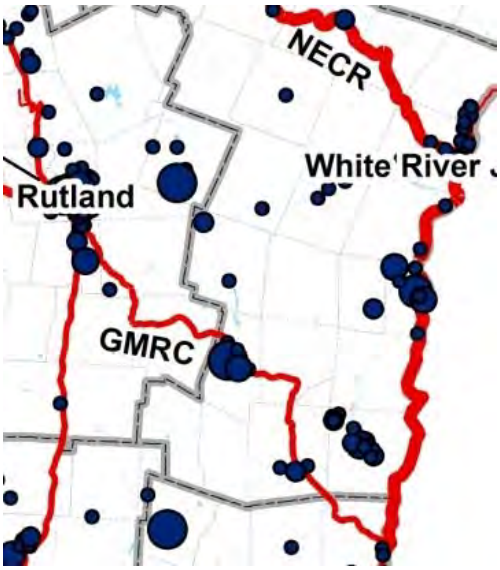
[1] Vermont Average Annual Daily Traffic (AADT). Page 3-9. Figure 3.2
[2] Vermont Truck Volume. Annual Domestic Truck Traffic Flow Map (All Commodities). Page 3-10. Figure 3.3
[3] 2035 Truck Flows on Vermont Highway Network. Page 4-35. Figure 4.28
[4] 2007-2035 Truck Traffic Growth on Vermont Highway Network. All Commodities. Page 4-36. Figure 4.29
[5] Manufacturing (Page 4-23), Agriculture and Food (Page 4-24), Construction (Page 4-25), Energy (Page 4-28), Forest Products (Page 4-26), Mining (Page 4-27), Wholesale and Retail Trade (Page 4-29)

- Wholesale and Retail Trade – under 5,000 trucks on VT-103 and VT-10; and 5-15,000 trucks on VT-11 and VT-100S

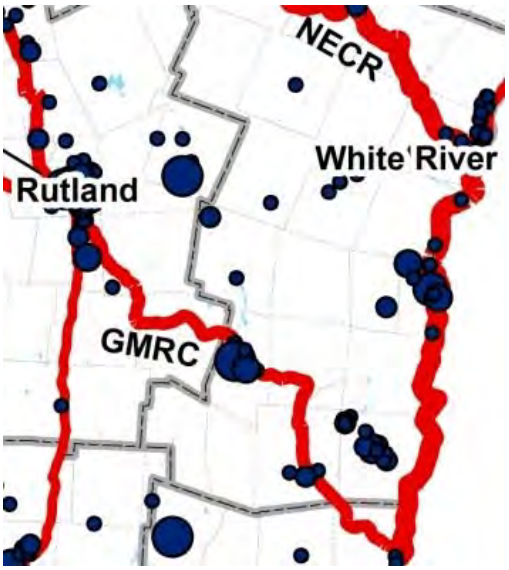
Goals and recommendations relevant for the Region.

- Goal – "Improve access to major regional suppliers and markets for Vermont shippers and receivers by enacting a series of infrastructure, operational and regulatory programs.".
- Recommendation - "Improve efficiency on major state highways, including US Routes 2, 4 and 7 and Vermont Routes 9, 22A and 103." (Page ES-12)

Freight carried by Rail



2007 Rail Flows on Vermont's Network. All Commodities. Page 4-31. Figure 4.24

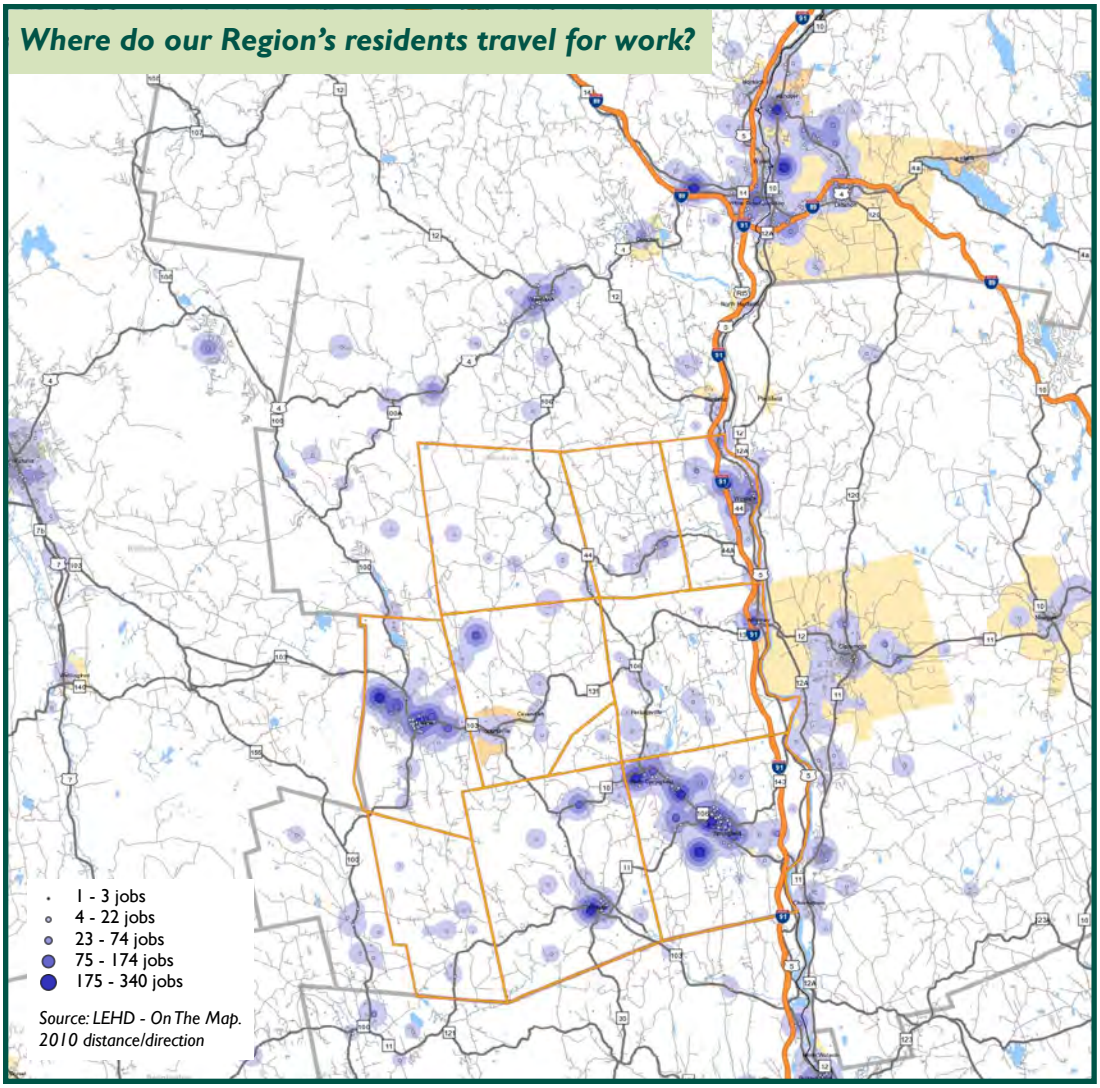


2035 Rail Carloads on Vermont's Network. All Commodities. Page 4-37. Figure 4.30.

Road Travel Patterns in Southern Windsor County

SWCRPC
SOUTHERN WINDSOR COUNTY REGIONAL PLANNING COMMISSION

Where do our Region's residents travel for work?



We're on the road again...

As a region we spend alot of time travelling from A to B, and back again. This technical bulletin looks at regional travel patterns using data from three major sources of transportation data - the National Household Travel Survey (NHTS), the American Community Survey (ACS) and the Longitudinal Employment Household Dynamics (LEHD) data.

Travel in our region according to Local Employment Housing Dynamics data

Longitudinal Employment Housing Dynamics (LEHD) data is collated by the US Census Bureau from a range of administrative records, including information about all workers who have unemployment insurance coverage. Approximately 90% of employed persons are included - a far higher percentage than all other sources of transportation data. LEHD On The Map is an easy portal for accessing some of the LEHD data – including tables and maps. In 2012 the LEHD data became more useful for SWCRPC since data for New Hampshire residents and workers was added, going back to 2003.

What kind of travel information is available?

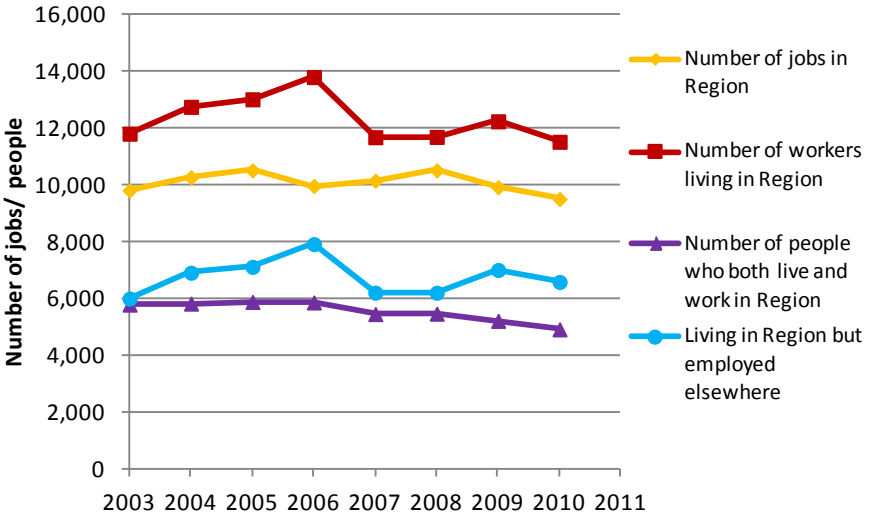
This data focuses on commuting data, and includes information about the distance travelled, origins and destinations of commuting trips, and the type of industries.

What does the data show?

Over the last 7 years there has been a shift in where people live and work. Overall there has been a slight decrease in the number and percentage of people who both live and work in the Region, from 49% to 43% of those who live in the region. Just over half of the Region's residents work within Windsor County (53%), 11% of residents crossing the Connecticut River to Grafton County (NH), 7.5% to Windham County (VT), 5.4% to Sullivan County (NH), 4.5% to Rutland County (VT), and the remainder across many other counties in the wider area.

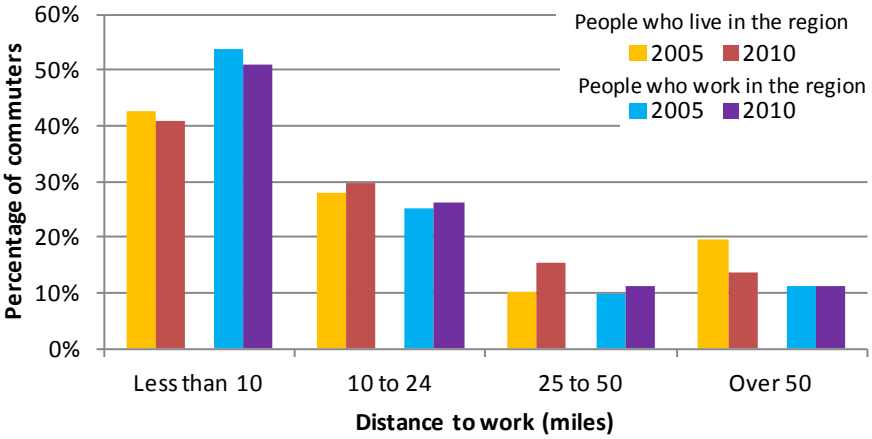
As shown in the map on the previous page, there are clusters where our resident's work - mostly in downtowns and village centers, although there are several outside those key areas. The top 10 destinations for the Region's residents for work are Springfield (19% of jobs), Ludlow (9%), Lebanon (7%), Windsor (5%), Hartford (5%), Chester, Hanover, Claremont, Rockingham and Rutland. Combined, the top 10 destinations hosted jobs for just over 60% of the Region's residents. Brattleboro, Woodstock, Weathersfield, Charlestown, Cavendish and Keene combined hosted jobs for another 10% of the Region's residents.

Living and/or working within the Region



Overall, the majority of people in the region commute less than 10 miles (41% of those who live in the Region, 51% of those who work in the Region but may live elsewhere). Over the last 5 years there has been a slight drop in the percentage of people who commute less than 10 miles to work, as more people travel between 10 and 50 miles. The percentage of the people who live in the region who travel over 50 miles to work has decreased in the last 5 years from 19% to 14% for the Region's residents.

Distance to work



Travel in our region according to the 2006-2010 American Community Survey

The American Community Survey is collected by the US Census Bureau every year to fill in some gaps for information not collected in the Decennial Censuses. Data is released yearly as a 5-year estimate for places with under 20,000 people. This bulletin utilizes the 2006-2010 estimates which were released in 2012.

What kind of travel information is available?

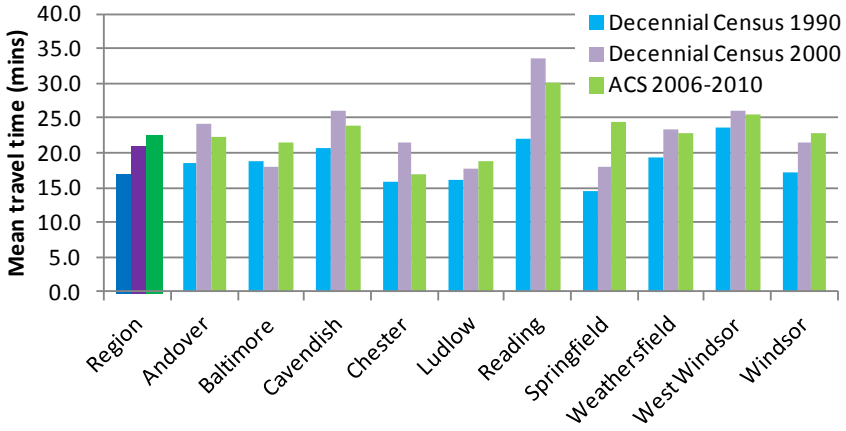
The ACS collects a variety of information collected in the Decennial Census' "Long Form" until 2010, including mean travel time to work, number of vehicles per household and mode of travel to work.

What does the data show?

Travel time to work for the Region has in general increased slightly since 1990 from 17 to 23 minutes, although there is considerable variation between the individual towns.

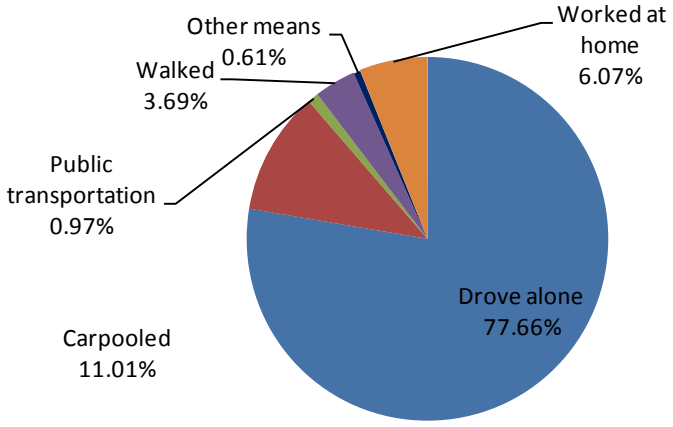
The majority (78%) of workers in the region travelled alone. Carpooling accounted for 11% of workers, followed by working at home (6%) and walking to work (4%). There was little variation between the towns - all towns had between 76% and 83%, of workers driving alone except Andover who had just 68% driving alone (and a noticeably higher proportion of people working from home). These proportions have changed little since 2000.

Travel Time to Work

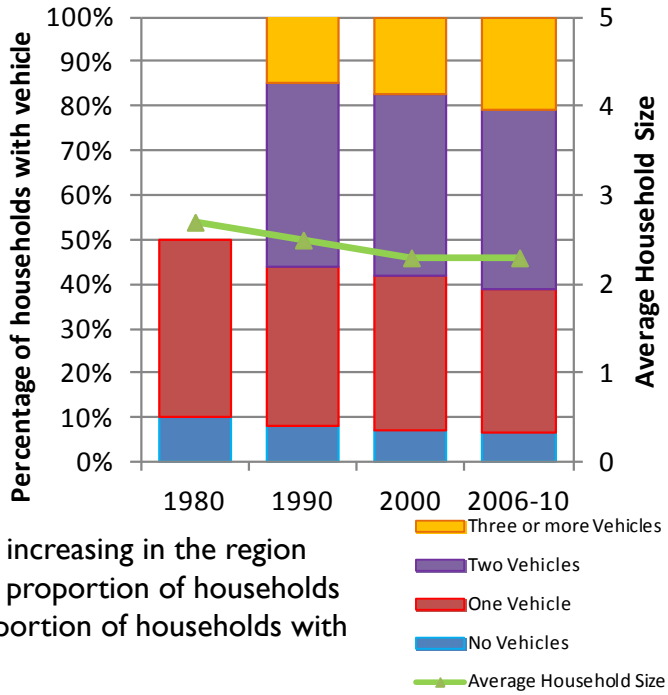


Note: ACS data is not directly comparible to Decennial Census data collected in the "Long Form" - ACS has a smaller sample and is an average for a 5-year period - but the information is the most comparable information available.

Mode of Travel to Work



Number of Vehicles per Household



Over time the number of vehicles per household has been increasing in the region despite an overall decrease in average household size. The proportion of households with two vehicles remained constant at 41% while the proportion of households with no cars or one car has decreased.

Travel in our region according to the 2009 National Household Travel Survey

In 2009, the Federal Highway Administration completed the newest National Household Travel Survey (NHTS). Vermont requested additional surveys to be carried out within the state. In an effort to better capture information about places with smaller populations, these areas were "oversampled" - a higher percentage of the population were given the survey than in more metropolitan areas.

What kind of travel information is available?

Unlike most surveys which focus on commuter travel, the NHTS captures information about all trips carried out by individuals and households over an assigned 24-hour period. Information collected also covers all modes of transportation, all trip lenths and has information about the town of origin and destination for every trip.

What does the data show?

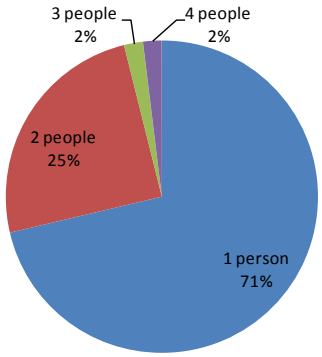
As shown in the table below Chester, Ludlow and Springfield were the primary towns for starting and ending trips. Most travel captured in the survey was within these three towns and the majority of travel was within the town of origin for those towns. For those travelling to or from areas outside the region, there was no clear major direction of travel - travel was roughly similar to and from places north, south, east and west.

Origin and destination of trips that started or ended in the Region

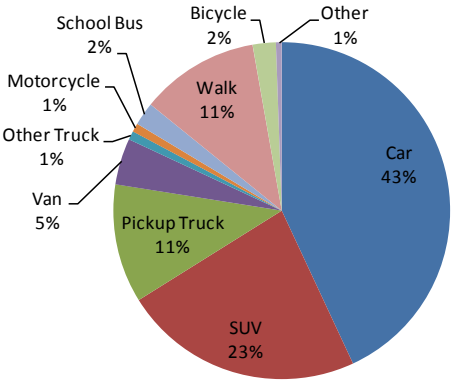
Destination \ Origin	Andover	Cavendish	Chester	Ludlow	Reading	Springfield	Weathersfield	West Windsor	Windsor	Outside region	Total
Andover			3			1				3	7
Cavendish		5	1	4			1		1	3	15
Chester	2		46	2		5				10	65
Ludlow		4	1	29						8	42
Reading										2	2
Springfield	1	1	6			96	4			20	128
Weathersfield		1				3	6			7	17
West Windsor								9	2	2	13
Windsor					2	1	1	2	7	2	15
Outside region	3	3	9	7	0	19	7	1	7	N/A	56
Total	6	14	66	42	2	125	19	12	17	57	360

Note: Data collected for all trips, not just commuting related trip.s

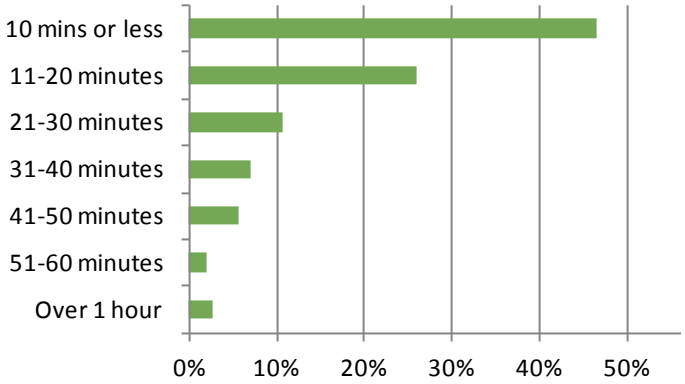
Number of people on a single trip



Vehicle type used in trip



Length of trip (minutes)



The survey showed that the the vast majority of travel was carried out in a personal vehicle, with cars and Sports Utility Vehicles (SUVs) performing two thirds of all trips and an additional 11% of trips being carried out by a pick up truck. Only 11% of trips were completed by walking. The second chart above shows a clear majority of trips were carried out by a person on their own - 71% of the total trips that started and/or ended in southern Windsor County. A quarter of trips were carried out with two people.

The survey showed that travel time for trips ranged widely from a minute to over an hour. Nearly half of the trips took ten minutes or less and 83% of trips took half an hour or less.

On a statewide level, the NHTS data was also used to calculated that on average a vehicle travels 14,058 miles per year in rural Vermont.

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Technical Bulletin - October 2012. Adopted as part of Regional Transportation Plan on November 23, 2014. Effective December 23, 2014

East Central Vermont Housing and Transportation Affordability

The morning bus through Ascutney

Housing is not the only major cost for households;

transportation costs can also be very significant. Less expensive housing is often found in rural areas which requires more time spent travelling to work, buying groceries or getting to medical appointments. In 2006, the Center for Neighborhood Technology (CNT) released the first version of its Housing and Transportation (H+T®) Affordability Index. In late 2013, the US Department of Housing and Urban Development (HUD) released their own Location Affordability Index which analyzes housing and transportation costs. The purpose of this report is to summarize an affordability analysis for East Central Vermont of our home and transportation costs. This analysis will help us determine how sustainable our regional land use development pattern is now, and how that may change over time.

The relatively high cost of housing in east central Vermont has been documented for the past couple of decades. As a predominantly rural area, it is also commonly understood that we drive long distances for our daily needs in this area. However, the costs related to our daily transportation needs have not been quantified until recently.

The information on the next few pages shows the affordability of housing and transportation in East Central Vermont based upon a moderate income household[1] with typical transportation costs[2] based on geographic location. This household income level scenario was chosen because it best represents the definition of affordable housing under State planning law (see the sidebar on the following page). The analysis results are helpful as a snap shot of the region's affordability over the 2006 -2010 period, and the results can be used as a performance benchmark to measure efforts to make the region more affordable over time.

However, determining how affordable housing and transportation costs are, is best done for each individual household or family because so many things differ, such as income levels, size of house, location of job(s),

[1] Moderate household income is 80% of the median income in the HUD-defined Lebanon, NH-VT Core Based Statistical Area, and using the 2006-2010 American Community Survey (ACS) data from the U.S. Census Bureau.

[2] See following page for a quick summary of what data was used. For more detailed information, see the full HUD methodology at http://locationaffordability.info/About_Data.aspx

and other factors that affect routine household expenses. See My Transportation Cost Calculator on HUD's Location Affordability Portal to explore your household costs.

How affordable are our homes?

A housing affordability analysis was conducted for east central Vermont in 2010 using HUD's Index as described above. The results are shown on the map on the opposite page. Housing costs in most Census block group areas in this area are above the 30% affordability target. Only a few sections meet the affordability target, including portions of Rochester, Bethel, Wilder (Hartford), Windsor, Weathersfield, Springfield and Chester. For example, this means that Windsor's downtown area (and areas south) is

What went into the model?

The Location Affordability Index was developed by the U.S. Departments of Transportation and Housing and Urban Development in order to quantify housing and transportation affordability. Their website was launched in late 2013. The main components of the model are:

Unit	• Household
Income	• 80% of CBSA[4] median household income
Area covered	• Census "Block Groups" - so some towns are combined together, while others are in smaller pieces • Areas in Addison County have not yet been included in the HUD model
Housing data	• 2006-2010 American Community Survey (ACS)
Transportation data sources	• 2006-2010 ACS • 2010 Longitudinal Employer-Household Dynamics (LEHD) Origin-Destination Employment Statistics (LODES) from the US Census Bureau • Consumer Expenditure Survey from the US Bureau of Labor Statistics

What is "affordable"?

Housing is generally considered affordable, regardless of income, when a household pays no more than 30% of its household income on housing [1]. Transportation costs are considered affordable when at or below 15% of the household income[2]. When combined, with housing, this means that a home is considered affordable when transportation and housing costs consume no more than 45% of household income.

In Vermont, "affordable housing" for regulatory and some grant purposes is "housing that is owned or rented by its inhabitants whose gross annual household income does not exceed 80% of the county median income [...] and the total annual cost of the housing [...] is not more than 30% of the household's gross annual income"[3].

For the HUD analysis, the moderate income household in Windsor and Orange Counties[4] is characterized by:

- household size is 2.34 people
- household income is $41,696
- each household has 1.1 commuters

[1] The US Department of Housing and Urban Development (HUD) considers housing to be affordable when a household pays no more than 30% of its annual income on housing. As explained by HUD, "families who pay more than 30 percent of their income for housing are considered cost burdened and may have difficulty affording necessities such as food, clothing, transportation and medical care" *Source: US Dept of Housing and Urban Development. "Affordable Housing". www.hud.gov/offices/cpd/affordablehousing/ Last updated February 16, 2012.*

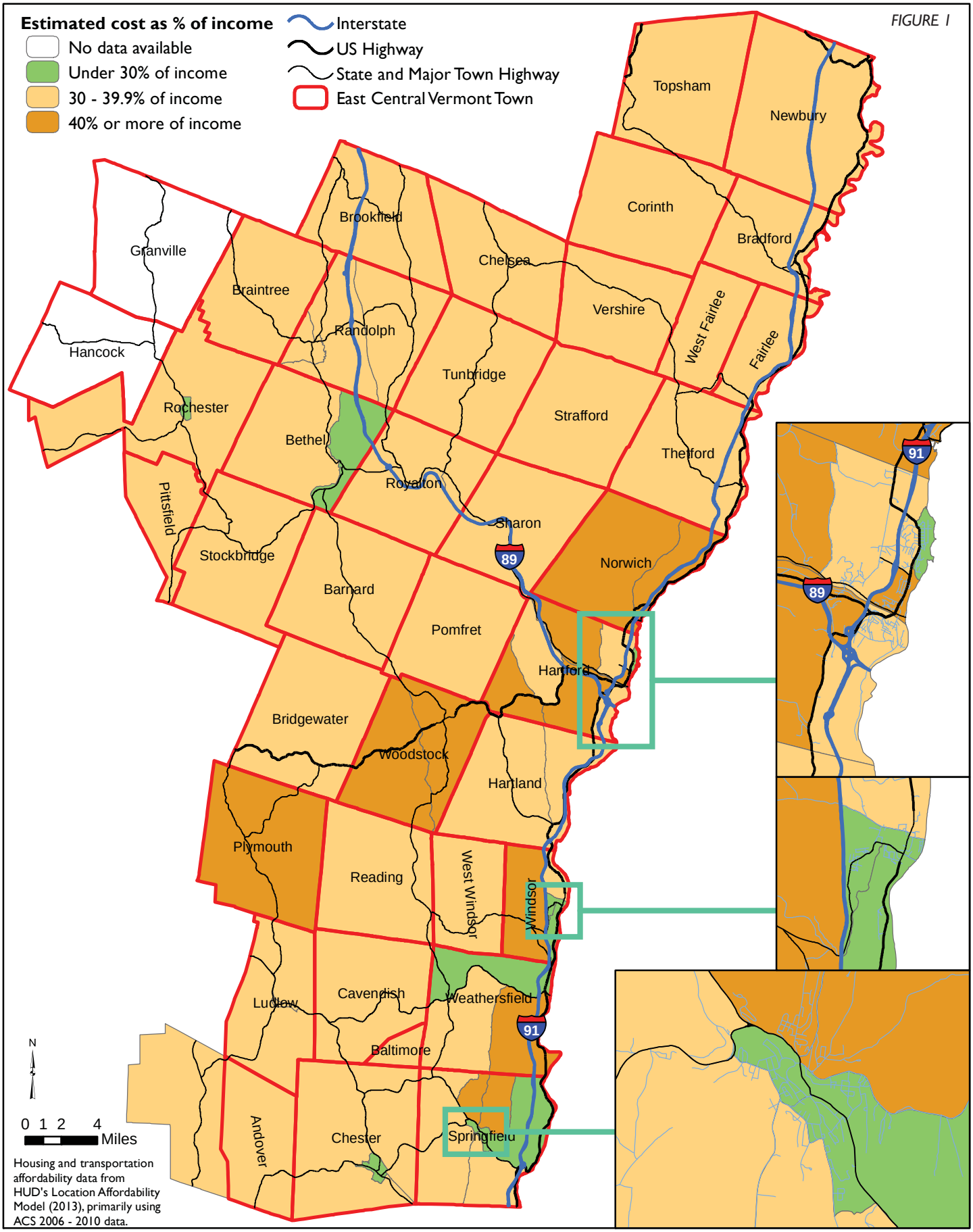
[2] Research by the Center for Neighborhood Technology (CNT) found that getting transportation costs down to 15% of household income is a reasonable goal for affordability. *Sources: Center for Neighborhood Technology (CNT). "FAQs". http://htaindex.cnt.org/faq.php. Accessed February 28, 2012.*

[3] Vermont defines "Affordable Housing" in 24 VSA § 4303

[4] Windsor and Orange Counties are part of the Lebanon, NH-VT Core Based Statistical Area (CBSA) which includes Orange and Windsor Counties in Vermont, and Grafton County in New Hampshire. Sullivan County (which includes Claremont) is not included in this particular definition of the micropolitan area.

Did you know... you can look at more housing affordability information? As part of the East Central Vermont HUD Sustainable Communities project, Vermont Housing Finance Agency completed a Housing Needs Report - both for homeownership and renting. For more information, visit www.vhfa.org/documents/HousingNeedsinEastCentralVermont2013.pdf

Housing - Estimated household housing costs as a percentage of income for a moderate income household



considered affordable because housing costs (at approximately $11,814) accounts for 28% of the moderate household income level (at $41,696). According to this index rate, housing costs vary significantly, from the highest level of 56% in Hartford's Quechee area to the lowest level of 27% in Bethel.

How much money do we spend on transportation?

When looking at buying a house, many people seek the most house they can afford, with less focus on the house location. This generally results in buying a larger house in a more rural area, where housing costs tend to be lower than in larger villages or job centers (i.e. Lebanon, NH). However, this resulting rural location may be inefficient for transportation, largely relying on a car to get to many, if not all, destinations.

The results of a transportation cost analysis are shown on the map on the opposite page. According to this analysis, the entire east central Vermont area exceeds the 15% affordable transportation cost target for a moderate income household. In fact, eastern sections of Hartford are the only areas that spend less than 25%. Most towns have over double the 15% target, with the highest percentages of household income spent on transportation 33% in Pittsfield, Plymouth, Vershire, and Newbury (west of I-91).

Combined affordability of housing and transportation

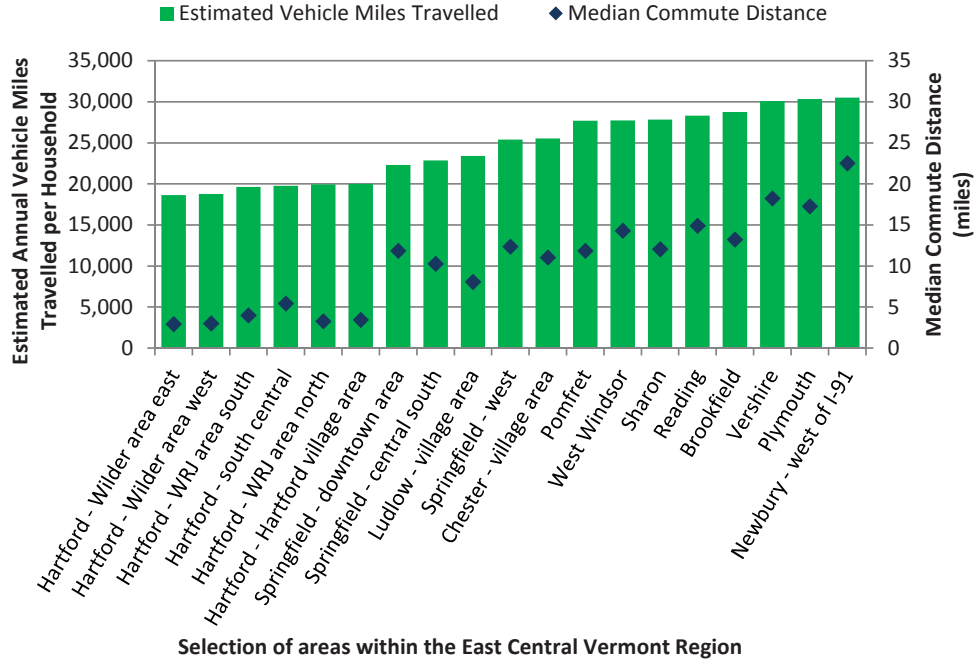
For housing and transportation, the impact of the high percentages of income spent on transportation is seen clearly. For the few areas that were considered affordable when just considering housing costs (i.e. below 30% of income spent on housing) (eg portions of Rochester, Windsor, Springfield and Chester), their transportation costs were sufficiently high to bring them above the guideline for affordability when housing and transportation is considered (i.e. 45% of income).

How far is too far?

The Region's residents are driving considerable distances. HUD's model estimates that moderate income households in the Region can be travelling18,623 to 30,517 miles in their vehicles per year. That translates to approximately $9,900 to $13,600 spent on transportation per year.

The table shows estimated vehicle miles travelled for selected towns in the Region. The lowest vehicle miles travelled are in Hartford, with several areas estimating less than 20,000 miles per year. Several other downtowns and village centers have the next lowest estimated mileages, mostly below 25,000 miles. At the high end, three areas had estimated mileages above 30,000 miles - Newbury west of I-91, Plymouth and Vershire.

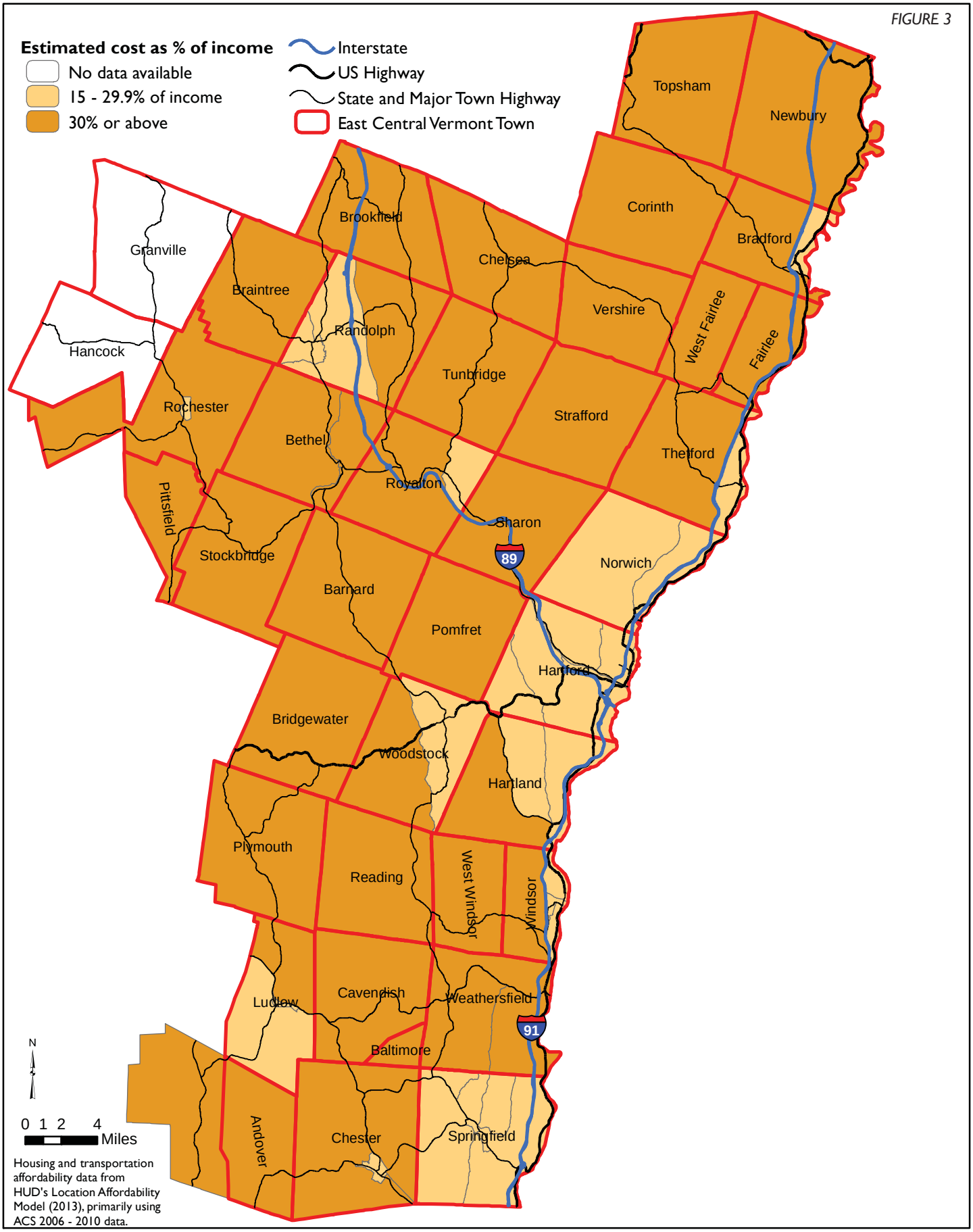
FIGURE 2



Did you know... you can explore your own transportation costs with HUD's "My Transportation Cost Calculator"? Type in information about where you live, your household and some of your typical costs, and the calculator will show what you spend compared to similar households nearby. Find out more at www.locationaffordability.info/tcc.aspx

Transportation - Estimated household transportation costs as a percentage of income for a moderate income household

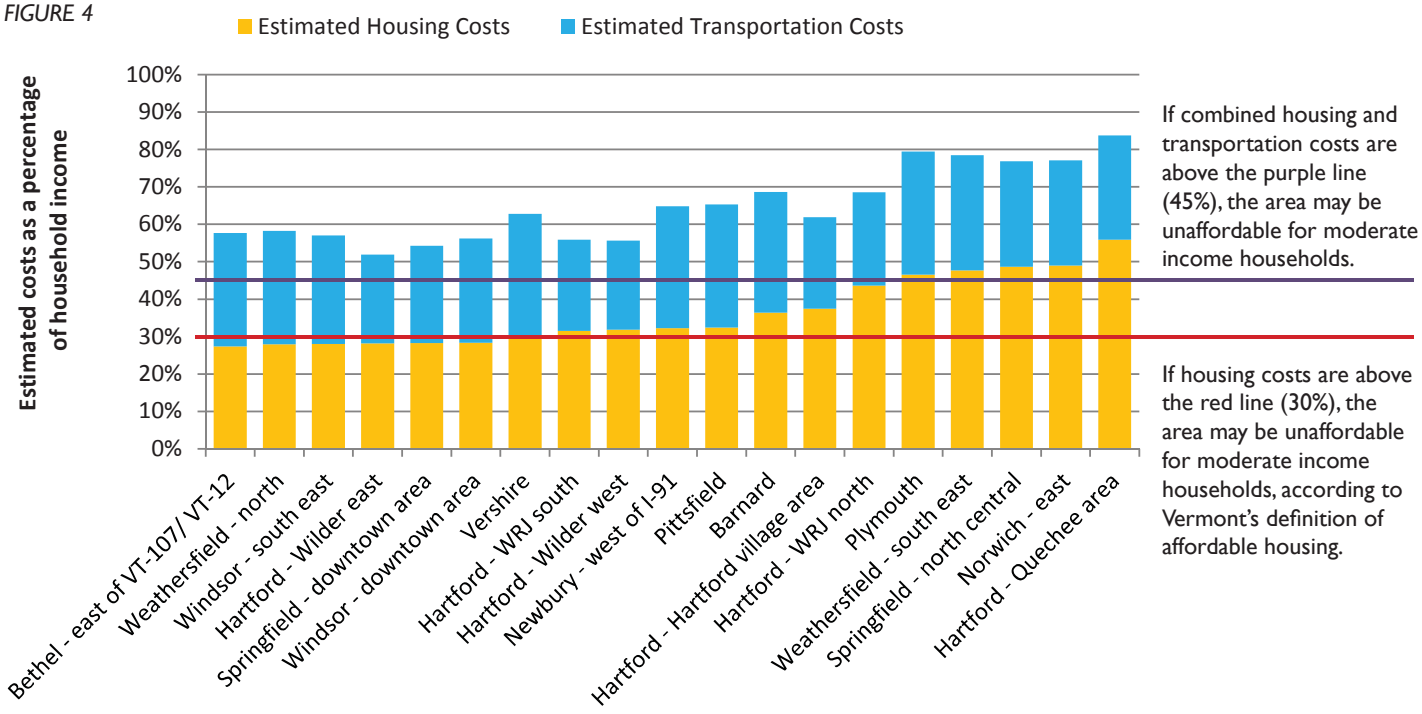
FIGURE 3



Did you know... there are several other types of households for which this information is available - including different income levels, household size and for retirees? You can also explore some of the information which was used for the model. For more information, see page 8 or visit www.locationaffordability.info/lai.aspx

The table below shows the separate and combined estimated housing and transportation cost for a selection of areas within East Central Vermont. The most affordable areas are in the Region's main hubs - Hartford's Wilder east, Springfield downtown area, Hartford's Wilder west, Hartford's White River Junction south, and Windsor downtown area. However, all are above the combined affordability guideline of 45%. The least affordable areas are Hartford's Quechee area, Plymouth, Weathersfield south east, Norwich east, and Springfield north central.

FIGURE 4



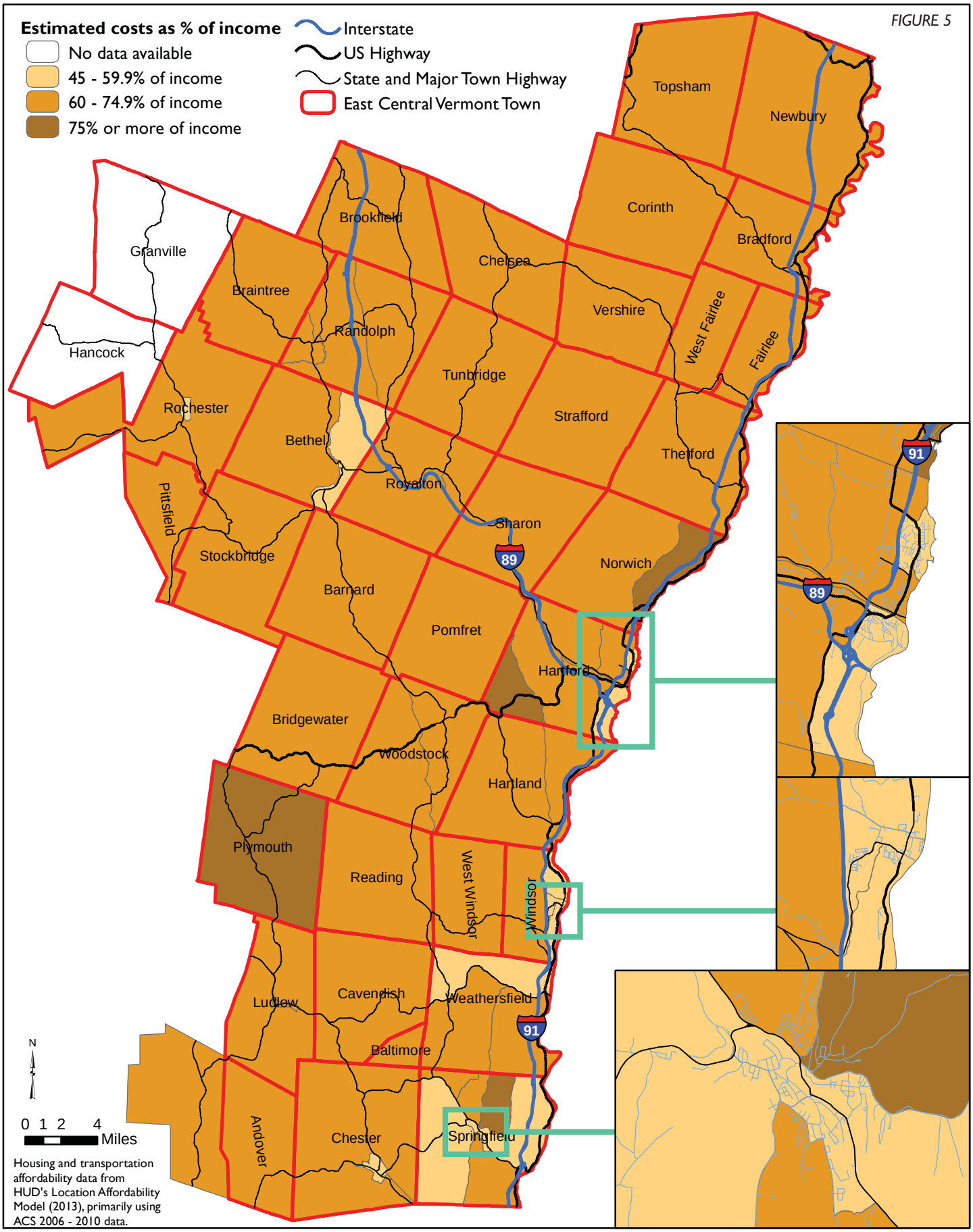
Strategies

There are a number of possible strategies or options to improve the housing and transportation affordability in the East Central Vermont area. However, the HUD Location Affordability Index does not provide the ability to test possible future scenarios. Therefore, the following strategies offered below are simply a range of options that should be considered in more detail:

1. Educate potential home buyers, real estate professionals and builders about HUD's Location Affordability Index and its implications for east central Vermont.
2. Encourage potential home buyers to consider both housing *and* transportation costs before selecting a new home or home site.
3. People should consider buying the most fuel-efficient vehicles practicable for their needs.
4. Take the bus or carpool when feasible.
5. Seek a more equitable jobs-to-housing balance in order to reduce daily travel needs and related personal transportation costs (i.e. build more workforce housing in job centers, i.e. Hartford/Lebanon; and create new jobs in larger towns that have lower-priced housing, i.e. Springfield, Windsor, Randolph).

Did you know... you can also explore housing and transportation affordability through the Housing and Transportation (H+T®) Affordability Index? This index is maintained by the Center for Neighborhood Technologies (CNT). The East Central Region is part of the "Lebanon, NH/VT" Region at http://htaindex.cnt.org/map/

Housing and transportation - Estimated household housing and transportation costs as a percentage of income for a moderate income household



Housing and transportation affordability for other types of households - including retirees and dual income families

While the majority of this report focuses on moderate income households (which shows that no area is affordable), the HUD Housing Affordability Index also considers other types of households - including different income levels, household size and for retirees. The table below considers 3 different household types for different areas of Hartford and Springfield. These few examples clearly show the impact that housing and transportation costs have on people with different situations:

- a dual-income is needed for a four-person household for housing and transportation costs to be below 45% (the guideline for where costs are considered affordable)
- living in the more dense downtown areas or residential neighborhoods adjacent to the downtowns decreases transportation costs signficantly
- while being retired reduces the number of miles travelled by 8,000 - 10,000 miles per year, retirees still have to do a considerable amount of driving, particularly if they live outside of downtown areas

To explore additional categories and for more locations, visit www.locationaffordability.info/lai.aspx

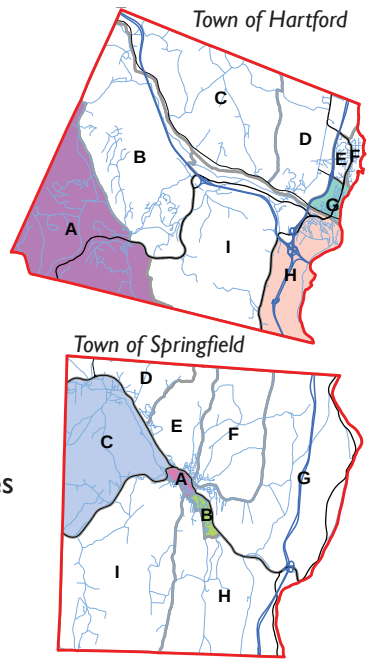


FIGURE 6

Town	Quick description	Map ID	Percentage of income used for housing and transportation costs: Regional Moderate Income Household	Dual-Income Family	Retiree Household	Vehicle Miles Travelled per year: Regional Moderate Household	Dual-Income Family	Retiree Household
Hartford	Quechee area	A	84%	57%	82%	24,275	37,038	14,356
Hartford	White River Junction area - north of US-4	G	69%	48%	64%	19,939	31,378	10,848
Hartford	White River Junction area - south of US-4	H	56%	40%	51%	19,639	30,969	10,793
Springfield	Downtown area	A	54%	37%	48%	22,302	33,278	14,511
Springfield	Central area - south of downtown between Clinton St and South St	B	57%	40%	52%	22,858	34,221	14,631
Springfield	West - between VT-106 and VT-11	C	59%	41%	53%	25,383	38,338	15,097
Background info	**Household size**		2.34	4	2			
	Number of commuters		1.11	2	0			
	Household income		$41,696	$78,180	$41,696			
	Income category		80% of Household Median	150% of Household Median	80% of Household Median			

Color code
- Under 45% of income
- 45 - 60% of income
- 60 - 80% of income
- Over 80% of income

For more information either visit **http://locationaffordability.info/** or contact Katharine Otto, AICP
Southern Windsor County Regional Planning Commission
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Final - March 31, 2014

Photos credits: All photos and maps by Southern Windsor County Regional Planning Commission staff unless otherwise noted.
Appendix E of Southern Windsor County Regional Transportation Plan. Adopted November 18, 2014. Effective December 23, 2014

Transportation and Land Use in Southern Windsor County

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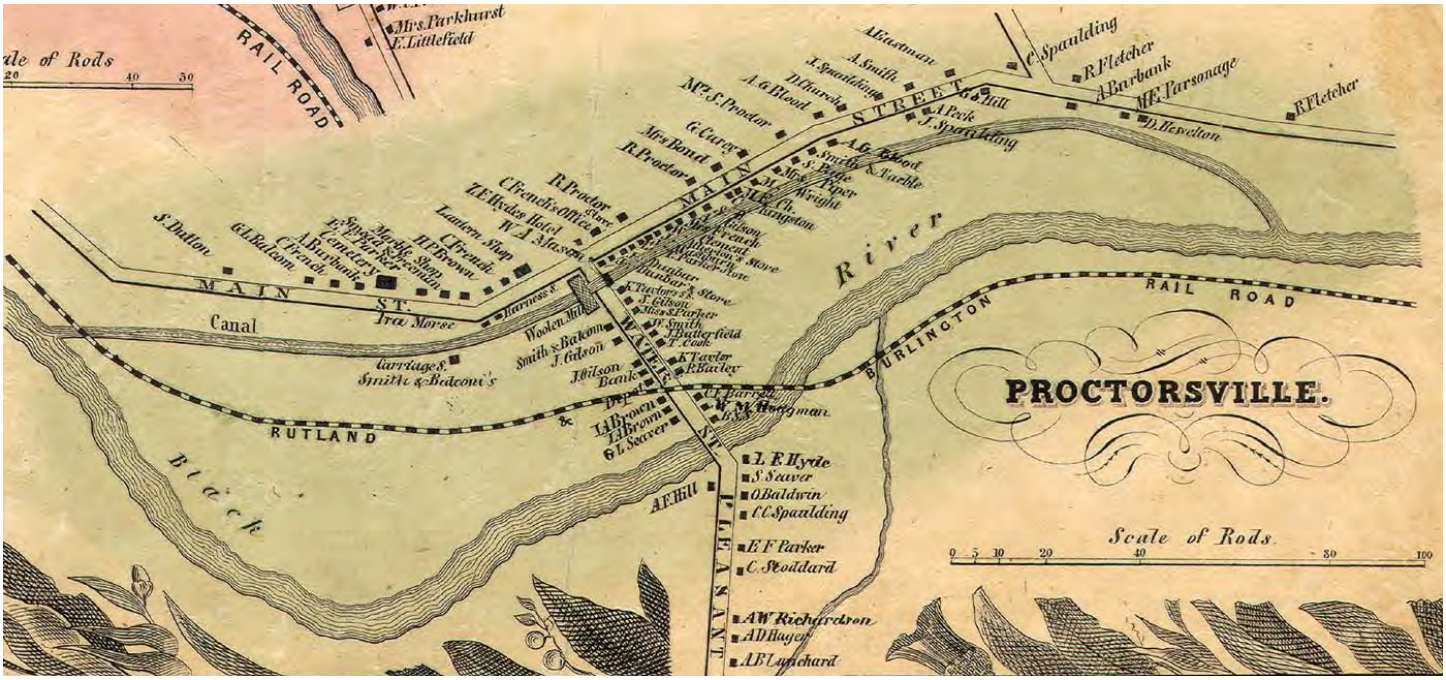
REGIONAL PLANNING COMMISSION



Interplay of roads, canals and rail roads in Proctorsville, VT. Extract from the 1856 Map of Windsor County, Vermont by Hosea Doton (www.Old-Maps.com)

Transportation and land use are inextricably linked,

each effecting how the other functions. Homes, businesses, utilities, community services, transportation, recreational opportunities, farms, and other features are all woven together with the natural environment to make up the unique fabric of southern Windsor County. This technical bulletin will focus on the interrelationships between land use and transportation, and the role transportation has played in facilitating and responding to land use changes in the region.

A region with a history of small centers surrounded by rural working landscapes

The old Stoughton Homestead in Weathersfield. Source: Town of Weathersfield History http://www.weathersfield.org/pages/history.htm

The predominant pattern of village centers and small towns surrounded by rural working landscapes reflects the history of the region and contributes to the quality of life that residents cherish. The transportation system that has developed over time is an essential link to the quality of life of the Region. In general, the municipal plans in the Region seek to preserve these historic land use patterns and maintain the existing transportation network. However, much of the recent residential development has not been focused within historic village areas and, together with the changing commuting patterns, is changing the demands on the regional transportation system.

Historic Overview of Transportation and Land Use in the United States

The linkage of land use to transportation is related to early settlement patterns, to the continuous investment in roads and highways, and to state and federal policies. Past investment in roads and highways had a significant impact on land use by allowing the efficient movement of people, goods, and services. The construction of the interstate system in Vermont and across the United States had a profound effect on land use patterns particularly in areas previously not served by major roadways. This expanded highway system, while allowing for greater mobility, made people increasingly reliant on the automobile.

Historically, towns and cities across the country developed along rivers and lakes due to the ease of transporting raw products such as timber, grain, and other agricultural products by water in addition to using water as a source of power. During the nineteenth century, the railroad provided an alternative to water-related forms of transportation. The major advantage of the railroad was the ability to inexpensively ship bulky natural resources such as minerals, timber, and manufactured goods over great distances. As the railroads developed, depot towns flourished into centers where people lived, recreated, and worked.

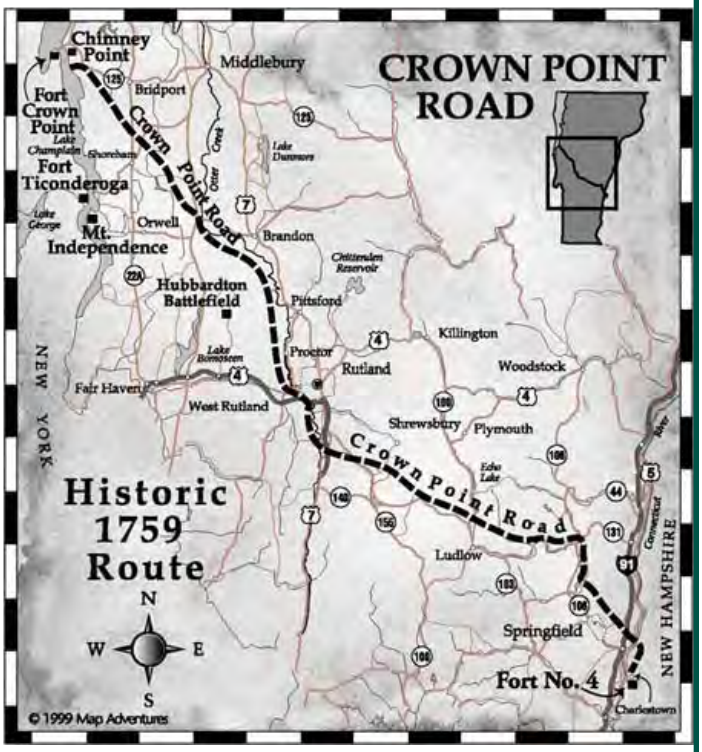
During the twentieth century, federal and state policies focused transportation investment in roads and highways and encouraged home-ownership, which facilitated residential, commercial, and industrial development away from city and village centers nationally. Federal and state policies subsidized the highway system through taxation at the expense of railroads and other modes of transportation. The consequence of these policies enabled the development of suburban land use patterns and the inevitable decline of many cities and villages nationally.

Early Settlement Patterns in Southern Windsor County

Towns in southern Windsor County were first established in the mid 1700s. Settlers came primarily from southern New England attracted by the availability of land and an abundance of natural resources. The earliest forms of transportation included footpaths, horse and carriage trails, the Connecticut River, and railroads in the mid to late 1800s. The steep slopes and extensive water courses in the area required the early settlers to address transportation issues immediately. Acceptances of surveyed roads and the height of the Mill Brook Bridge were issues at a meeting in Windsor in 1770. In 1796 the first bridge across the Connecticut River linked Windsor, VT and Cornish, NH.

The beginning of Routes 5, 103, and 131 can be traced back to early Indian trails and military routes. The Crown Point Military Road, which ran northwest from Charlestown, NH to Crown Point, NY, was constructed in the 1760s and played a significant role in the early settlement of Cavendish, Ludlow, and Springfield. For many years it was the only road across the Green Mountains.

As the history of the Region progressed, transportation continued to play a significant role in both determining and responding to development patterns. Early transportation routes



"Crown Point Road. Historic 1759 Route". From Crown Point Road Association http://www.crown-point-road.org/history.htm

were improved to accommodate the movement of people and goods into and out of the Region. The seeds of economic development including agriculture, forestry, and tourism took root and began to flourish. The increased need to transport goods required roads to be of sufficient size and quality to allow large wagons access to and from the Region. In the early 1800s, canals were built along the southern Connecticut River allowing large flatboats access to southern New England markets.

Some of the first products from the Region were provided through agricultural activities. By the mid 1800s, Windsor County was one of five Vermont counties with the highest density of sheep in the state. As a result, factories and mills were spawned along the Black River between Springfield and Ludlow to process the wool of the prevalent Merino sheep. In the late 1800s, dairy farming and the production of milk, cheese, and butter surpassed sheep farming. Events and economic forces outside the Region, including major wars and the growing demand for industrial goods to accommodate national needs, stimulated additional manufacturing activities in Ludlow, Springfield, and Windsor. Notably, the Towns of Springfield and Windsor became nationally recognized for the production of machine tools.

As early access routes into the Region improved, and as additional routes were established to reach local economic resources, a transportation network began to form. Local roads were constructed or upgraded to improve accessibility. These improvements made it easier for residents living outside the concentrated village areas to travel for commerce and employment. Better roads also led to dispersed development along these routes.

Rail service, established by 1869, increased the shipment of goods to distant markets and boosted the tourism industry. Early Vermont tourist attractions of the 1800s included mountain tops, mineral springs, and spas which became the trendy vacation retreats from hot summer weather. These attractions were forerunners of the resorts, bed-and-breakfast hotels, and other vacation and recreation activities available today. Additional growth was stimulated as major state highways were paved to accommodate traffic flowing through the Region.

In 1920 Vermont's first airport arrived in Springfield. Today Hartness State Airport has the second longest runway in the state and is used for a variety of purposes including business, recreation and medical transport.

The construction of Interstate highways 91 and 89 in the late 1950s and early 1960s had an enormous impact on land use patterns. The relationship between construction of the two Interstate highways and the placement of the access ramps had a particularly profound effect on development in the Upper Valley area. The development pattern near this hub provides tangible evidence of the effect of high speed, limited access transportation routes.

Southern Windsor County has direct access to I-91 at three points: Hartland/Windsor, Weathersfield, and Springfield. The proximity of the I-91 and I-89 interchanges also affected the Region by providing rapid access to distant markets along the Interstate system. Not only were the Region's abundant tourism and recreational resources made readily available to visitors, but residents were provided easy and timely access to the larger shopping and employment centers in the Brattleboro, VT/Keene, NH area and the Upper Valley area (White River Jct. and Hanover/Lebanon, NH).

Growth in the Region was expansive during the 1960s and early 1970s, primarily resulting from the effects of Interstate access. However, the decline in the Region's economic base and in its population during the 1980's provides evidence that improving access to outside markets does not necessarily guarantee stability or sustained growth. Maintaining sustainable growth relies upon achieving a balance between the provision of infrastructure including transportation, the economic and social conditions, and the natural resources that exist within the Region. It is necessary to understand the interconnection of these different systems, their influence, and their limitations to achieve sustainable communities.

Current Transportation and Land Use Patterns in Southern Windsor County

Okemo Mountain in Ludlow, Photo by Tom Johnson

The historic settlement pattern of traditional village centers surrounded by working rural landscapes predominates today's landscape. Village centers generally consist of relatively dense development and a mix of uses that form the backbone of each community. The mixed uses in most villages, including civic buildings, stores, restaurants and other commercial establishments, provide for some of the daily needs of residents within walking distance of homes, but many residents rely on roads to access jobs and more specialized or diverse services in other parts of the Region or beyond.

Access to metropolitan areas, recreational opportunities, water, good soils, and other social and environmental factors continue to determine where growth is likely to occur. There are several notable land uses within the region, all which present their own opportunities and challenges:

- Large areas of the Region are forested. Those lands that are forested for timber usage contribute to the local economy, and those that are not provide wildlife habitat and recreational opportunities, and maintain the air and water quality that are important for the quality of life of the Region's residents.
- Since the 2000 US Census there has been a clear trend of residential growth in outlying rural areas and slower growth in areas of concentrated development. Growth in town population centers would maximize the existing road systems and capacity in those areas. These areas offer a larger, more diverse local road network, and better access to jobs, services and public transit. However, the predominant growth trend in recent years has been growth in rural areas with limited transportation options. If this trend continues, the burden to maintain existing roads and add capacity will become more costly.
- Most commercial and industrial development has occurred along the major highways connecting the villages, and along the state and interstate highway systems. Because of this trend, sprawl and strip development are emerging problems in the Region. Towns should remain aware of this potential issue, and include prevention strategies and tools such as overlay access management districts, cluster development, mixed use zones, and the official map in their town plans and zoning regulations.
- The region's two ski resorts, Okemo Mountain Resort and Mt Ascutney Resort, have encouraged vacation-related developments on and around their mountain resorts. While the influence of tourism is now felt throughout the Region, most increased developed related to skiing and tourism has been in the Towns of Andover, Chester, Ludlow, Reading, and West Windsor. Seasonal traffic congestion connected to Okemo Mountain Resort is an emerging problem in the region, particularly as sprawl and strip development becomes more common.
- Residential development in towns with easy access to I-91 has increased in recent years due to expanded employment opportunities in the Upper Valley.
- Some towns, such as Windsor and Springfield, have extended water and sewer service to industrial parks outside the downtown. These towns should consider carefully the area between the industrial park and the downtown which could easily experience future strip development and sprawl. The trend toward revitalization of downtowns and redevelopment of brownfield sites can help to counteract this development pressure outside downtowns and encourage more efficient travel.

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Southern Windsor County Park and Ride Annual Report

December 2013

SWCRPC
SOUTHERN WINDSOR COUNTY REGIONAL PLANNING COMMISSION

On the first Tuesday of every month (where possible) Southern Windsor County Regional Planning Commission counts the number of vehicles parked in the Park and Ride lots along I-91. The counts are done in the morning between 9am and 11am at exits 7 (Springfield), 8 (Weathersfield/ Ascutney) and 9 (Hartland/Windsor). These parking lots are part of Connecticut River Transit's (CRT) Upper Valley Commuter Routes which travel up I-91 to the White River Junction VT/ Hanover NH area.

Every year the Vermont Agency of Transportation (VTrans) requests that all regional planning commissions across the state do counts for two days in one week in October. VTrans requests a total count of vehicles for mid-morning between 9:30 and 10 and mid-afternoon between 2:30 and 3 on a Tuesday and Thursday.

In October 2013, SWCRPC carried out a traffic count at the entrance to the Ascutney Park and Ride lot. The purpose was to find out when would be best for collecting park and ride parking lot occupancy information. The data showed that the parking lots had nearly reached their peaks around 8am and this peak remained until 3pm. The data also showed that this parking lot has considerable usage by carpoolers and ridesharers.

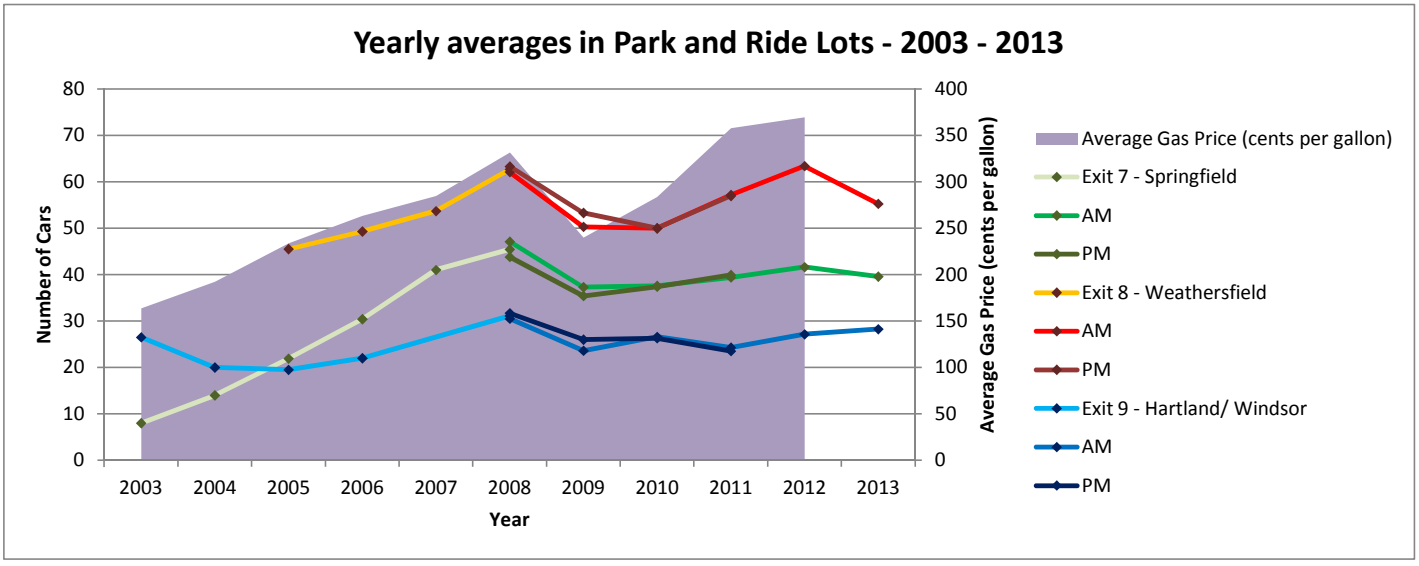
Yearly Activity in Park and Ride Lots

	Exit 7 - Springfield				Exit 8 - Weathersfield				Exit 9 - Hartland/ Windsor				Average Gas Price
	AM&PM	AM	PM		AM&PM	AM	PM		AM&PM	AM	PM		(cents per gallon)
2003	8			[1]				[2]	27			[1]	163.8
2004	14			[1]				[2]	20			[1]	192.3
2005	22			[1]	46			[1]	20				233.8
2006	30				49				22				263.5
2007	41				54							[2]	284.9
2008		47	44			62	63			31	32		331.7
2009		37	35			50	53			24	26		240.1
2010		38	37			50	50			27	26		283.6
2011		39	40			57	57			24	24		357.7
2012		42				63				27			369.5
2013		39.6				55.3				28.3			Not yet available

[1] Only one or two counts used for the average

[2] No counts

Average Yearly Gas Price from the Energy Information Administration ("Motor Gasoline Retail Prices, US City Average"). Released November 2011. http://www.eia.gov/totalenergy/data/monthly/pdf/sec9_6.pdf

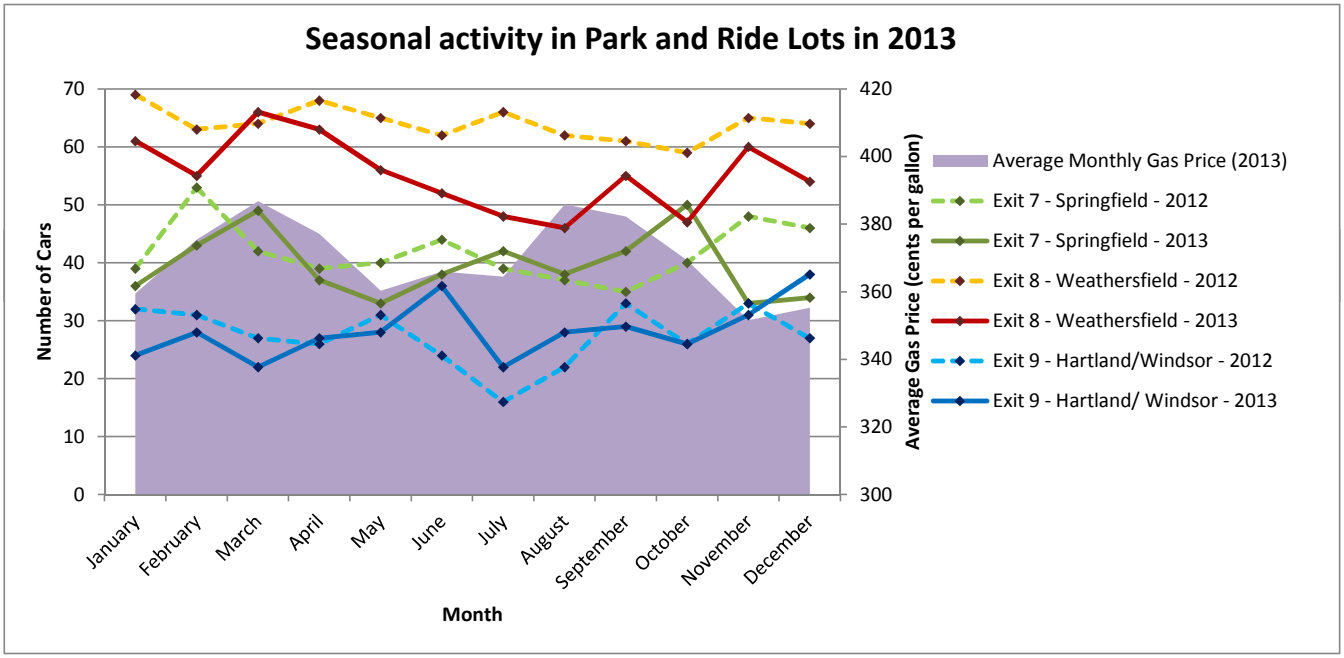


Monthly Activity in Park and Ride Lots

	Exit 7 - Springfield			Exit 8 - Weathersfield			Exit 9 - Hartland/ Windsor			Average Gas Price
	2012	2013	% capacity[3]	2012	2013	% capacity[3]	2012	2013	% capacity[3]	(cents per gallon)
January	39	36	80%	69	61	94%	32	24	133%	359.5
February	53	43	96%	63	55	85%	31	28	156%	375.5
March	42	49	109%	64	66	102%	27	22	122%	386.8
April	39	37	82%	68	63	97%	26	27	150%	377.2
May	40	33	73%	65	56	86%	31	28	156%	360.3
June	44	38	84%	62	52	80%	24	36	200%	366
July	39	42	93%	66	48	74%	16	22	122%	364.5
August	37	38	84%	62	46	71%	22	28	156%	385.9
September	35	42	93%	61	55	85%	33	29	161%	382.3
October	40	50	111%	59	47	72%	26	26	144%	369.3
November	48	33	73%	65	60	92%	33	31	172%	351.6
December	46	34	76%	64	54	83%	27	38	211%	355.3
Average	42	39.6	88%	63	55.3	85%	27	28.3	157%	Not yet available
Ave. percentage of Vermont Plates	73%	71%		47%	44%		90%	83%		

New England Weekly Gas Price from the Energy Information Administration ("All Grades All Formulations Retail Gasoline Prices") Released 12/03/2013. http://www.eia.gov/petroleum/gasdiesel/xls/pswrgvwall.xls "Data 12" tab

[3] *Percentage of lot capacity is calculated using the official capacity of the lot. In Springfield and Hartland there is additional unpaved area for parking.*



Daily usage patterns at Ascutney Park and Ride Lot

In October 2013, SWCRPC carried out a traffic count at the entrance to the Ascutney Park and Ride lot[4]. For weekdays, the data showed that the parking lots had nearly reached their peaks around 7am and this peak remained until 3pm where there was a sharp fall in car park occupancy. The peak flow into the parking lot was between 5am and 7am, with a secondary peak from 4pm to 6pm. The peak flow out of the parking lots was between 4pm and 6pm, with a secondary peak from 6am to 8am. There was considerable in and out flow throughout the day (up to 20 vehicles flow in or out each hour). The parking lot has considerable usage by carpoolers and ridesharers - as shown by secondary peak inflow/ outflow at times opposite to expected for bus users and the times of peak arrival and departure not coinciding with the bus schedule.

Overall, the data suggests that best days for park and ride lot occupancy counts are Monday through Thursday, between 8am and 3pm. These conclusions are in broad agreement with those made in 2011 and 2012, although slightly earlier morning peak.

[4] *This count was affected by traffic construction on VT-131 - particularly with queued traffic to leave the parking lot and the potential effect of people avoiding using the roadway during the construction season delays. Despite these issues there still appeared to be clear travel trends similar to the previous year.*

Southern Windsor County, Vermont

Regional Park-and-Ride Needs Assessment

July 2010

Acknowledgment: This material is based upon work supported by the Vermont Clean Energy Development Fund and the U.S. Department of Energy under Award Numbers DE-EE0000859 and DE-RW0000263.

1.0 Introduction

Park and ride facilities are an integral component of the transportation system in southern Windsor County, as they support both ridesharing as an alternative to single-occupant vehicle travel and public transportation service by providing convenient park-and-ride options. This report is an update of the *Regional Park and Ride Site Assessment* developed by the Southern Windsor County Regional Planning Commission (SWCRPC) in April 1998. The *2010 Regional Park-and-Ride Needs Assessment* is funded by Energy Efficient and Conservation Block Grants (EECBG) as noted on page two.

1.1 Purpose

The purpose of this needs assessment as part of our regional energy program is to:

- Create planning polices and recommendations for future transportation investments that promote the reduction of green house gas emissions and vehicle miles traveled;
- Promote and support ridesharing, transit and other more energy-efficient modes of transportation; and,
- Identify which existing park-and-ride facilities need expansion, and where new facilities might be located.

1.2 State & Regional Plans

The Vermont Agency of Transportation's (VTrans) Long Range Transportation Business Plan, adopted in March 2009, supports park and ride facilities. Specific benefits the agency recognizes regarding park and ride facilities include:

> "reducing traffic congestion and decreasing the use of fossil fuels while minimizing air pollution emissions, providing connectivity between Park-and-Ride Facilities and inter-regional public transit routes and saving valuable urban land for more aesthetically appealing and productive uses."[1]

According to a statewide survey conducted by VTrans, 22% of those surveyed used park and ride lots in 2006 as opposed to just 16% in 2000, suggesting that these facilities are increasingly in demand. Park-and-ride lot occupancy surveys conducted by the SWCRPC also show significant demand for lots along I-91 in the area.

[1] *Vermont Long Range Transportation Business Plan* (VTrans, March 2009)
http://www.aot.state.vt.us/planning/Documents/Planning/LRTBPfinalMarch2009.pdf

In addition, park and ride lots are promoted in the *2009 Southern Windsor County Regional Plan*, including the following key goals, policies and recommendations:

- To reduce demand for fossil fuels by promoting public transportation, ride-share programs and other programs that lessens the dependence on single occupancy vehicles (SOV). (Energy Goal #2, Volume 1)

- Promote alternative transportation practices that promote energy efficiency such as: expanding existing park-n-ride commuter parking lots, bicycle paths to lessen the dependency on single occupancy travel. (Energy Policy #4, Volume 1)

- Promote the expansion of park-and-ride facilities and public transit to lessen the number of single occupant vehicles. (Alternative Modes of Transportation Goal #7, Volume 2)

- Encourage improvements to the Exit 7 park-and-ride facility to increase capacity. (Alternative Modes of Transportation Policy #16, Volume 2)

- Continue to support the upgrading of park-and-ride facilities at Exits 8 and 9. (Alternative Modes of Transportation Policy #17, Volume 2)

- Provide linkages between the various travel modes such as bicycles, automobiles and buses. (Alternative Modes of Transportation Recommendation #12, Volume 2)

2.0 Existing Park-and-Ride Facilities

This section includes a profile of existing facilities (see Table 1) as well as a capacity and needs assessment for each park-and-ride lot (see Table 2).

Table 1 - Facility Profile

Town	Location	Jurisdiction	Existing # of Spaces	Lighting	Shelter	Bike Rack	Telephone	Served by Public Transit
Weathersfield	VT 131, west of I-91 Exit 8	State	65	Y	Y	N	N	Y - CRT
Springfield	VT 11/US 5, east of I-91 Exit 7	State	45	N	N	N	N	Y - CRT
Hartland	US 5, southeast of I-91 Exit 9	State	38	Y	N	N	N	Y - CRT
Ludlow	VT 103/100, at Fire Station	Municipal	18	Y	Y	N	N	Y - CRT

Three park-and-ride lots currently exist in the southern Windsor County region: Weathersfield (I-91 Exit 8), Springfield (I-91 Exit 7), and Ludlow (VT 100/103 next to the Ludlow Fire Department). An additional forth facility, located outside of the region in Hartland, serves Windsor near the I-91 Exit 9 exit/entrance ramp. The three facilities along I-91 are owned by VTrans and the Ludlow facility is municipally owned.

Table 2 - Facility Assessment

Town	Location	Existing # of Spaces	Adequate Bus Circulation	1st Quarter 2010	VT Residents	Assessment
Weathersfield	VT 131, west of I-91 Exit 8	65	No	59	51%	Needs modest improvement
Springfield	VT 11/US 5, east of I-91 Exit 7	45	No	36	67%	Needs improvement
Hartland	US 5, southeast of I-91 Exit 9	38	No	29	86%	Needs improvement
Ludlow	VT 103/100, at Fire Station	18	No	N/A	N/A	Satisfactory

The SWCRPC conducted monthly occupancy surveys for all State-owned facilities. Average usage is summarized above for the first quarter of 2010 (January 2010 through March 2010). Usage was significantly higher a couple years ago, suggesting that demand will increase again as gas prices increase in the future.

2.1 Weathersfield, Exit 8

Exit 8 park-and-ride facility, 2005

This park and ride facility, located on State-owned land near the I-91 Exit 8 interchange, was reconstructed by the Vermont Agency of Transportation in 2009 (Project #CMG PARK(17)S). The lot now contains 65 paved parking spaces, including several handicapped spaces. Two sidewalks exist for the function of pedestrian circulation within the lot, a bus shelter is located at this facility, and the lot is well-lighted for security purposes. While this lot was recently expanded, it is often near capacity, as it not only serves Vermont commuters, but those from nearby Claremont, NH, as well. This lot is served by the Connecticut River Transit Upper Valley commuter service to Lebanon/Hanover.

Exit 8 park-and-ride facility, 2010

VTrans owns additional land that could be used for future expansion or bus circulation improvements. Portions of this State-owned land are currently used by the Ascutney Volunteer Fire Station and as an easement for an adjacent private landowner.

Observations for this facility include:

- It is a heavily used facility that supports both public transportation

services and ridesharing;
- Contributes to reducing energy/SOV use;
- The lot is often more than 90% full. The average usage was 63 vehicles in 2008.
- Nearly half of the users live in NH;
- There is no NH park-and-ride facility in adjacent towns: Charlestown, Claremont, Cornish, Plainfield;
- There is no bicycle parking/bike rack; and,
- Buses must turn around (multi-point turn) in a wider area at the lot entrance.

2.2 Springfield, Exit 7

The Springfield park-and-ride facility is located near the Exit 7 interchange, accessible by US Route 5 South. The original Exit 7 park-and-ride lot was located at the VTrans maintenance garage. It was relocated in 2009 across US Route 5 on VTrans right-of-way on the former Texaco gas station lot. The lot is unimproved, unpaved, and provides space for approximately 45 vehicles. This lot currently has no amenities and has minimal lighting consisting of one streetlight.

Exit 7 park-and-ride facility, 2010

It is served by the Connecticut River Transit Upper Valley commuter service to Lebanon/Hanover as well as Route #57, the Bellows Falls - Rutland Commuter service. The lot is located adjacent to the Toonerville Bike Trail, thereby providing a convenient multi-modal location for bicyclists coming from Springfield. An access to the Black River also exists on the lot.

The VTrans FY 2011 budget includes funding for improvements to this park & ride facility, with right-of-way acquisition in FY 2011 and construction in FY 2014 (Project #CMG PARK(32)).

Observations for this facility include:

- This lot could be used as a highly-visible pilot project for low impact development techniques, such as permeable pavement or stormwater bio-retention areas;
- Bus circulation in this lot is very difficult;
- Lighting is minimal, which discourages usage by lessening visibility and safety;
- There is no bicycle parking/bike rack and direct access to the Toonerville Trail could be improved; and,
- There is no bus shelter.

2.3 Windsor-Hartland, Exit 9

This park and ride facility is located along US Route 5 just south of the I-91 Interchange. This lot provides parking for approximately 38 vehicles with three distinct surface types, ranging from asphalt (of varying conditions) to dirt. The portion of the lot adjacent to US Route 5 is paved and in good condition, containing 18 marked parking spaces, two of which are for handicapped access. In 2005, VTrans purchased land and expanded the lot in order to provide additional parking for vehicles that were parking along the shoulder of US Route 5. The formal, paved lot transitions to a temporary expansion area of unmarked asphalt-shavings surface that needs repair, as it contains large potholes. The back portion of the lot consists of an uneven dirt surface for approximately 6 vehicles and is used on a regular basis despite often being muddy.

Exit 9 park-and-ride facility, 2010

This lot is served by the Connecticut River Transit Upper Valley Commuter north to Lebanon/Hanover and south to Springfield.

The Vermont Agency of Transportation (VTrans) FY 2011 budget includes funding to reconstruct and expand this facility, including land acquisition and providing amenities (Project #CMG PARK(25)).

Observations for this facility include:

- This lot is often close to its designed capacity and would be nearly full if the temporary unpaved portion did not exist.
- The lot surface is generally in poor condition, with a portion of the paved area containing large potholes, and the unpaved, temporary area uneven and muddy at times.
- There is no suitable turn-around area for buses
- There is a lack of amenities, such as sidewalks, bike rack, additional lighting, and a bus shelter.

2.4 Ludlow

The municipal Ludlow park & ride facility was originally an informal lot that was converted into an official park and ride lot. It is situated on the north end of the Ludlow firehouse along Route 103. The lot contains 17 parking spaces and one handicapped space, for a total of 18 spaces.

Additionally, a bus shelter with seating is located on the north end of the site, and a single overhead light is the sole source of illumination. This facility is served by the Connecticut River Transit (CRT) Route # 57, the Bellows Falls-Rutland Commuter service. While this lot is small in comparison to the other existing facilities, it is also greatly underutilized.

Observations for this facility include:

- This facility is currently underutilized; and,
- Marketing and/or use of the lot for the CRT/Marble Valley Regional Transit District could greatly increase visibility/usage of the facility.

3.0 Implementation of the *1998 Regional Park and Ride Site Assessment*

3.1 Priority Improvements in 1998 Assessment

The 1998 assessment identified the following list of new park-and-ride lot locations:

1. Springfield, I-91 Exit 7
2. Ludlow, VT Route 103
3. Weathersfield, VT Routes 106/131
4. Reading, VT Routes 44/106
5. Springfield, Downtown
6. Cavendish, VT Route 131
7. Chester, VT Routes 11/103
8. Chester, VT Route 11/Weston-Andover Road

It also included the following recommendations:

1. Weathersfield Exit 8 park-and-ride lot improvements;
2. Begin development of highest priority new sites; and,
3. Develop a capital improvement program for Hartland Exit 9 park-and-ride lot.

3.2 Summary of Implementation

All recommendations have been addressed since 1998.

The Weathersfield/Ascutney Park & Ride Lot, located near the I-91 Exit 8 interchange, which existed at the time of the 1998 Assessment, had become heavily utilized – at times beyond its designed capacity – and expansion and improvements were needed. The lot was enlarged to approximately 65 spaces during the spring and summer of 2009, and a shelter, sidewalks and lighting were incorporated into the improved facility.

The Springfield I-91 Exit 7 Park & Ride Lot: This lot was initially developed by VTrans on the site of the state highway garage at the intersection of U.S. Route 5 and VT Route 11. The

facility proved inadequate due to insufficient parking capacity and interference with maintenance operations, and was relocated to property across the street in January 2009.

The Ludlow VT Route 103 Park-and-Ride Lot was initially an informal lot which was officially redeveloped through the Municipal Park-and-Ride Grant program administered by VTrans. It is the only municipally owned and operated facility in southern Windsor County.

Improvements to the Hartland Exit 9 park-and-ride lot are programmed into VTrans FY 2011 Capital Budget (see Section 2.3).

4.0 Potential New Park-and-Ride Facilities

Potential new park-and-ride lot locations were identified based on high volume roadways, proximity to settlement areas, public transportation services, available undeveloped land and other factors. Locations were further evaluated based on input from the southern Windsor County Transportation Advisory Committee. This section describes the process used to identify general locations for potential new facilities.

4.1 Evaluation Criteria

The initial identification of potential new park and ride lots was based on 10 criteria (see Table 3). These criteria are similar to those utilized in the 1998 assessment except for a few modifications. The *Potential Use* criterion was eliminated for being too ambiguous. It was replaced with *Traffic Volume*. Several other criteria were added: *Transit Proximity* and *Settlement Proximity.*

Table 3 - Evaluation Criteria

Present Ownership: Public 2pts, Private 1pt.	**Visibility:** Good: 3pts, Fair: 2pts, Poor: 1pt.
Vehicle Capacity: >10: 3pts, 5-10: 2pts, <5: 1pt.	**Topography:** Flat: 2pts, Sloped: 1pt.
Existing Surface Type: Paved: 2pts, Unpaved: 1pt.	**Safety:** Good: 3pts, Fair: 2pts, Poor: 1pt.
Existing Use: Used informally now: 2pts, potential: 1pt.	**Transit Proximity:** on fixed route: 3pts, within 1/4mi fixed route: 2pts, not on transit route: 1pt
Traffic Volume (AADT): 1000-3000: 1pt, 3001-6000: 2pts, >6000: 3pts.	**Settlement Proximity:** within village center: 3pts, walk/bike distance: 2pts, rural area: 1pt

4.2 New Evaluation Criteria

Traffic volume was evaluated based the most current Annual Average Daily Traffic (AADT) figures for the generalized areas from VTrans Traffic Research Section[2]. Data were selected for traffic count locations to be representative and as close as possible to the generalized location for the potential new facilities.

Existing public transportation routes in these areas include the Connecticut River Transit (CRT) Route #57 Bellows Falls – Rutland Commuter, which passes through North Springfield and Gassetts; the CRT #1 Springfield in-town bus service which serves North Springfield and could potentially be expanded to serve a new park and ride lot in that area; and the CRT #60 seasonal Bellows Falls – Okemo route, which passes through Gassetts. While no CRT service is currently available in Proctorsville, Ludlow Municipal Transit and Okemo Mountain Shuttle provide service. Furthermore, a park and ride lot in the vicinity of the Route 103/131 intersection would render carpooling more viable. CRT staff provided input during the development of this needs assessment.

Potential new park-and-ride lot locations were also identified based on convenience to settlement areas or along major commuting corridors.

4.3 New Potential Facilities

An initial list of potential locations was developed based on the 1998 site assessment, Regional Plan, input from CRT and other initial efforts. These locations included:

- Downer's Corners (Town of Weathersfield), VT Routes 106/131;
- Gassetts (Town of Chester), VT Routes 10/103;
- North Springfield (Town of Springfield), VT Routes 10/106;
- Proctorsville (Town of Cavendish), VT Routes 103/131; and,
- Reading, VT Routes 44/106.

A field survey was conducted to locate feasible sites in the proximity of the above general locations. No currently used, informal park-and-ride sites were identified. Four undeveloped, potential sites were identified in North Springfield, one in Gassetts, two in Proctorsville, three in Reading, and one in Weathersfield. These sites were identified for general evaluation purposes only. There is no funding to acquire any new sites at this time. These properties would need to be acquired and developed if determined to be viable, therefore the specific locations were not included in this report.

The Southern Windsor County Transportation Advisory Committee met on April 28, 2010 to evaluate and prioritize potential sites based on the above criteria and local knowledge. Table 4 presents the prioritized locations.

[2] http://www.aot.state.vt.us/Planning/Documents/TrafResearch/Publications/pub.htm

Table 4 - Potential New Sites

Town	Location	Potential Sites	Evaluation	Rank
Proctorsville	Intersection of VT 103 & VT 131	Undeveloped land in the vicinity	22	1
North Springfield	Intersection of VT 106 & VT 10	Undeveloped lots in the vicinity; two for sale	21	2
Gassetts	Intersection of VT 106 & VT 103	Some open land; Limited options	20	3
Weathersfield	Intersection of VT 106 & VT 131	One identified potential site	15	4
Reading	Intersection of VT 106 & VT 44	Couple potential small sites	14	5

5.0 Benefits of Park-and-Ride Facilities

Park-and-ride facilities promote energy efficiency and conservation by providing an alternative to single-occupant vehicle travel, reduction in VMT and encouraging carpooling and public transportation. Benefits can include the following:

- Reduction in single-occupant vehicle travel;
- Congestion mitigation;
- Increase in ridesharing/carpooling;
- Increase in public transportation ridership;
- Lower demand for parking in destinations/employment areas;
- Reduced energy consumption; and,
- Reduced motor vehicle emissions.

Quantifying the environmental benefits of park-and-ride facilities is difficult as there are many variables and data limitations. However, the following summary was compiled to estimate the significant benefit of these facilities for the average user. The typical user of the three park-and-ride lots along I-91lives along the Connecticut River valley and commutes to the Upper Valley (i.e. Dartmouth Hitchcock Medical Center (DHMC), VA Hospital, Dartmouth College or other employers in the Lebanon, NH area).

Table 5 summarizes lot usage, based upon monthly facility occupancy surveys and an interview with Connecticut River Transit staff. It appears that most users of the park-and-ride facilities do so in order to ride Connecticut River Transit's commuter service to the Upper Valley. The lot users not taking the bus are likely to be sharing a ride with one or more persons.

Table 5 – Facility Usage

Facility	Average Daily Vehicles Parked	Average Daily Bus Riders
Springfield Exit 7	36	30
Weathersfield Exit 8	59	41
Hartland Exit 9	29	22

Estimated savings for each bus rider boarding at each facility is summarized in Table 6 below. These calculations are based on assumptions including miles from each facility to DHMC, 22[3] mile per gallon vehicles and $2.74[4] per gallon fuel cost. A few online calculators were used for this analysis as indicated in the footnotes. Savings for ridesharing would be similar.

Table 6 – Estimated Savings for Each Bus Rider					
Facility	**Fewer miles driven per week**	**Gallons of fuel saved each week**	**Fuel cost saved each week**	**Pounds of CO2 saved each year[3]**	**Annual commuting costs saved[4]**
Springfield Exit 7	370	16.8	$46	17,100	$1,395
Weathersfield Exit 8	270	12.3	$34	12,500	$1,018
Hartland Exit 9	180	8.2	$22	8,300	$678

6.0 Recommendations

The following recommendations are based on the above analysis and public input, including comments from Connecticut River Transit and the southern Windsor County Transportation Advisory Committee.

6.1 General Recommendations

1. Prioritize improvements to existing lots over the construction of new lots.

2. Make improvements to the existing park-and-ride lots in the following priority order:

    (1) Hartland Exit 9;
    (2) Springfield Exit 7;
    (3) Weathersfield Exit 8;
    (4) Ludlow VT 103.

3. Coordinate with CRT, town officials and VTrans regarding identifying sites for potential new lots.

6.2 Hartland Exit 9

1. Improve by expanding, paving & providing amenities (lighting, shelter).

2. Provide adequate bus circulation.

3. Provide bicycle parking.

[3] Source: http://www.10percentchallenge.org/
[4] Source: http://www.connectingcommuters.org/about/commute-calculator

6.3 Springfield Exit 7

1. Make improvements by acquiring land, paving the lot & providing amenities (lighting, shelter).

2. Provide adequate bus circulation.

3. Provide bicycle parking.

4. Provide connection to Toonerville Trail.

6.4 Weathersfield Exit 8

1. Modestly expand lot capacity; the lot is about 80% full after the recent expansion, and it was over capacity during peak oil prices.

2. Provide adequate bus circulation.

6.5 Ludlow VT 103

1. Improve visibility of the lot.

2. Improve marketing of new transit services & use of this lot.

Southern Windsor County
Park & Ride Needs Assessment Addendum

February 2012

SWCRPC
SOUTHERN WINDSOR COUNTY
REGIONAL PLANNING COMMISSION

Park and ride facilities are an integral component of the transportation system in southern Windsor County, as they support both ridesharing as an alternative to single-occupant vehicle travel and public transportation service by providing convenient park-and-ride options. This report is an addendum to the *2010 Regional Park and Ride Site Assessment* developed by the Southern Windsor County Regional Planning Commission (SWCRPC).

Existing Park and Ride Facilities

Town	Location	Jurisdiction	Total spaces	Lighting	Shelter	Bike Rack	Public Transit Service
Springfield	I-91 Exit 7, on VT-11/ US-5	State	Approx 50 (poor condition paving and dirt)	Yes	No	No	CRT
Weathersfield (Ascutney)	I-91 Exit 8, on VT-131	State	65	Yes	Yes	No	CRT
Hartland (near Windsor)	I-91 Exit 9, on US-5	State	32 paved, approx 6 unpaved	Yes	No	No	CRT
Ludlow	VT103 at Fire Station	Municipal	18	Yes	Yes	No*	CRT

** Will have a bike rack soon*

2011 Park and Ride Usage

Below is a summary of needs for existing park and ride lots. Lot usage information is from the 2011 SWC Park and Ride Annual Report.

Location	Total spaces	Disabled Spaces	Average lot usage 2011	Peak lot usage 2011	Percentage of users VT residents	Adequate Bus Circulation	Other comments
I-91 Exit 7 Springfield	Approx 50	None marked	40	47 (94%)	69%	No	Needs improvement
I-91 Exit 8 Ascutney	65	3	57	69 (109%)[1]	49%	No	Needs improvement
I-91 Exit 9 Hartland/ Windsor	32 paved	2	24	34 (106%)[2]	88%	No	Needs improvement
VT-103 Ludlow	18	Unknown	Unknown	Unknown	Unknown	No	Satisfactory

Needs and Recommendations for existing lots

The following recommendations are based on the above analysis and public input, including comments from Connecticut River Transit and the southern Windsor County Transportation Advisory Committee.

General Recommendations

1. Prioritize improvements to existing lots over the construction of new lots.
2. Make improvements to the existing park-and-ride lots in the following priority order:
    (1) Hartland Exit 9;
    (2) Springfield Exit 7;

[1] 2 of 3 disabled spaces always remain unused. No easy additional space for overflow.
[2] Overflow can use unpaved portion at the back of the lot which can serve about 10 vehicles

(3) Weathersfield Exit 8;
(4) Ludlow VT 103.

3. Coordinate with CRT, town officials and VTrans regarding identifying sites for potential new lots.

Hartland Exit 9

1. Improve by expanding, paving & providing amenities (lighting, shelter).
2. Provide adequate bus circulation.
3. Provide bicycle parking.

Springfield Exit 7

1. Make improvements by acquiring land, paving the lot & providing amenities (lighting, shelter).
2. Provide adequate bus circulation.
3. Provide bicycle parking.
4. Provide connection to Toonerville Trail.

Weathersfield Exit 8

1. Modestly expand lot capacity; the lot is very full, and it was over capacity during peak oil prices.
2. Provide adequate bus circulation.

Ludlow VT 103

1. Improve visibility of the lot.
2. Improve marketing of new transit services & use of this lot.

Needs and locations for potential new facilities

The methodology for selection of new potential facility sites is outlined in the main report.

Town	Location	2010 Evaluation Score	2010Rank	Proposed 2012 Rank	Other notes
Weathersfield	Intersection of VT 106 & VT 131	15	4	1	Move up in rank given occupancy of Exit 8 lot
Proctorsville	Intersection of VT 103 & VT 131	22	1	2	
North Springfield	Intersection of VT 106 & VT 10	21	2	3	
Gassetts	Intersection of VT 10 & VT 103	20	3	4	

Note: Already informal use of church and town parking lots for carpooling in Andover – and that is meeting needs well. There are already several informal carpools to the Rutland area from Cavendish.

Input

This addendum was compiled by SWCRPC. Input was sought from Connecticut River Transit (Mary Habig and Brian Waterman (2/1/2012), the SWC Transportation Advisory Committee (2/15/2012), as well as representatives from the region's towns, including Linda Bargfred (Andover, 2/6/2012), Rich Svec (Cavendish, 2/7/2012), Julie Hance (Chester, 2/2/2012), Harry Henderson (Springfield, 2/3/2012), Bob Allen (Reading, 2/15/2012), deForest Bearse (Weathersfield, 12/13/2012), Glenn Seward (West Windsor, 2/10/2012), and Tom Marsh (Windsor, 2/6/2012).

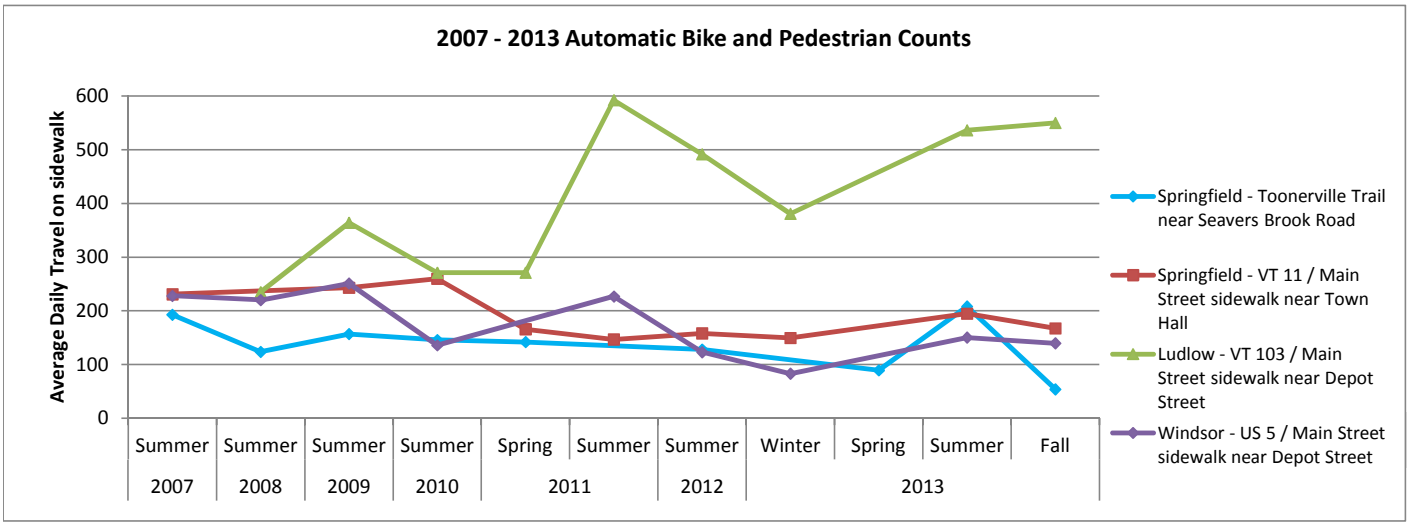
Southern Windsor County Bicycling and Pedestrian Count Annual Report

December 2013

SWCRPC
SOUTHERN WINDSOR COUNTY REGIONAL PLANNING COMMISSION

Since 2007 SWCRPC has been conducting annual bicycling and pedestrian counts in the region as part of a task from the Vermont Agency of Transportation (VTrans). A minimum of three counts of a minimum duration of three hours are conducted every year in the same location. Counts are carried out in Springfield, Ludlow and Windsor. All counts by SWCRPC were carried out using an automatic counter (EcoCounter) which was attached to nearby sign post or other objects if posts were unavailable. Since 2012, VTrans has carried out manual counts in locations that complimented the existing automatic counter locations.

It should be noted that the pedestrian counts are subject to a wide variety of factors which can inflate and deflate hourly counts, particularly weather conditions like rain and local events. Counts tried to avoid major local events wherever possible. The average daily travel and count duration were adjusted where possible for local events.



		Springfield - Toonerville Trail near Seavers Brook Road			*Springfield - VT 11 / Main Street sidewalk near Town Hall*			*Ludlow - VT 103 / Main Street sidewalk near Depot Street*			*Windsor - US 5 / Main Street sidewalk near Depot Street*		
		Average Daily Travel	**Count Duration** *(2)*	**Month**	**Average Daily Travel**	**Count Duration** *(2)*	**Month**	**Average Daily Travel**	**Count Duration** *(2)*	**Month**	**Average Daily Travel**	**Count Duration** *(2)*	**Month**
2007	Summer	193	6 days & 23 hours *(1)*	June	231	10 hours	June		No Count		228	2 days & 21 hours	June
2008	Summer	124	12 days	June		No Count due to construction		235	3 days *(3)*	June	220	3 days	June
2009	Summer	157	12 days	June - July	243	19 hours	July	364	22 hours	July	251	6 hours	July
2010	Summer	146	5 days	June	260	2 days	June	271	2	June	136	3 days & 22 hours	June *(4)*
2011	Spring	142	18 days	April - May *(4)*	166	13 days	May	271	20 days	March - April		No Count	
	Summer		No count		147	14 days	July	592	12 days	July-August *(4)*	227	9 days	June
2012	Summer	128	22 days	May - June	158	11 days	July (4)	492	12 days	June	123	30 days	July - Aug (4)
2013	Winter		No count		150	12 days	Feb - March	381	11 days	March	83	18 days	Feb
	Spring	90	18 days	March - April		No count			No count			No count	
	Summer	208	8 days	August	195	7 days	August	536	10 days	August - Sept	150	7 days	August
	Fall	54	13 days	Oct	168	20 days	Oct - Nov	550	11 days	Sept - Oct	140	14 days	Sept

See notes on following page

Note: While Totals and Average Daily Travel are calculated by Vermont Agency of Transportation, the Totals and Average Daily Travel shown are those adjusted manually by SWCRPC.

(1) Springfield data was missing an hour in the middle of the day from the beginning/ end of the count. The 2007 average pedestrian count from that hour (based on the other 6 days) was substituted for the hour that was missing. This allowed the Average Daily Travel to be estimated using a full day of hourly counts.

(2) To extrapolate figures for Average Daily Travel where count was carried out for less than 24 hours or did not start and end at the same hour, the average pedestrian count in 2010 for that hour(s) was substituted for the missing hour(s).

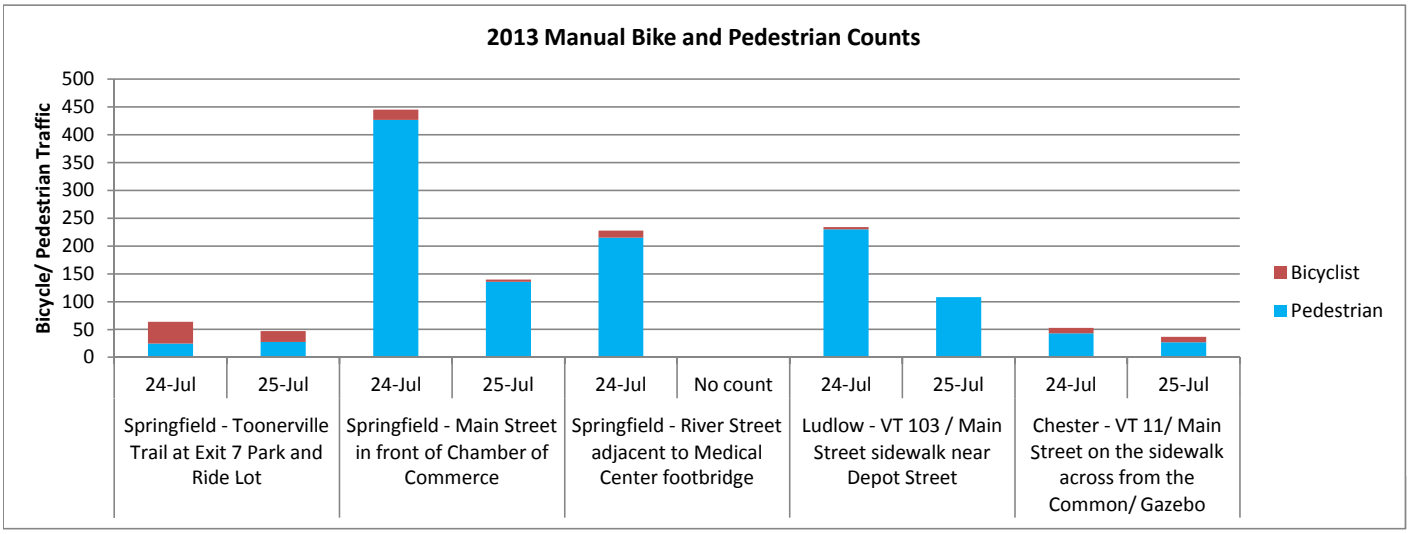
(3) Unusual numbers for Ludlow in 2008 with daily counts of 156, 438 and 111. All totals used to calculate ADT and assumed to be counted for three full days.

(4) Major event day in the middle of the count. Pedestrian count from the following days were excluded from the Totals and Average Daily Travel:

- Saturday June 19, 2010 was the Windsor High School Murphy-Morse Track 5K Run/ Walk.
- Saturday May 7, 2011 was the 3rd Annual Walk for Hope & Rememberance on Toonerville Trail in Springfield.
- Saturday August 6, 2011 was the Hops in the Hills Beer festival at Jackson Gore (Ludlow)
- Saturday June 16, 2012 was the Annual Alumni Parade in Springfield
- July 29 and August 11, 2012 events at Harpoon Brewery (Windsor)

2013 Manual Counts

These manual counts were performed by the Vermont Agency of Transportation for either a 5 or 6 hour period. These counts primarily give an indication of the split between bicyclists and pedestrians since they were carried out for less than 24 hours.



		Springfield - Toonerville Trail near Seavers Brook Road				*Springfield - Toonerville Trail at Exit 7 Park and Ride Lot*				*Springfield - Main Street in front of Chamber of Commerce*			
		Ped	**Bike**	**Total**	**Time**	**Ped**	**Bike**	**Total**	**Time**	**Ped**	**Bike**	**Total**	**Time**
Wed	7/18/2012	19	16	35	11-5	6	16	22	10-4	No count			
Thur	7/19/2012	38	11	49	7-Noon	14	6	20	5:45-10:45	No count			
Wed	7/24/2013	No count				25	39	64	11-5	727	18	745	10:30-4:30
Thur	7/25/2013	No count				28	19	47	7-Noon	136	4	140	6:15-11:15

		Springfield - River Street adjacent to Medical Center footbridge				*Ludlow - VT 103 / Main Street sidewalk near Depot Street*				*Chester - VT 11/ Main Street on the sidewalk across from the Common/ Gazebo*			
		Ped	**Bike**	**Total**	**Time**	**Ped**	**Bike**	**Total**	**Time**	**Ped**	**Bike**	**Total**	**Time**
Wed	7/18/2012	No count				285	16	301	10:30-4:30	64	0	64	10-4
Thur	7/19/2013	No count				194	9	203	6-11	70	0	70	6-11
Wed	7/24/2013	215	13	228	10:45-4:45	230	4	234	11-5	43	10	53	11-5
Thur	7/25/2013	No count				108	0	108	7-Noon	27	10	37	6:30-11:30

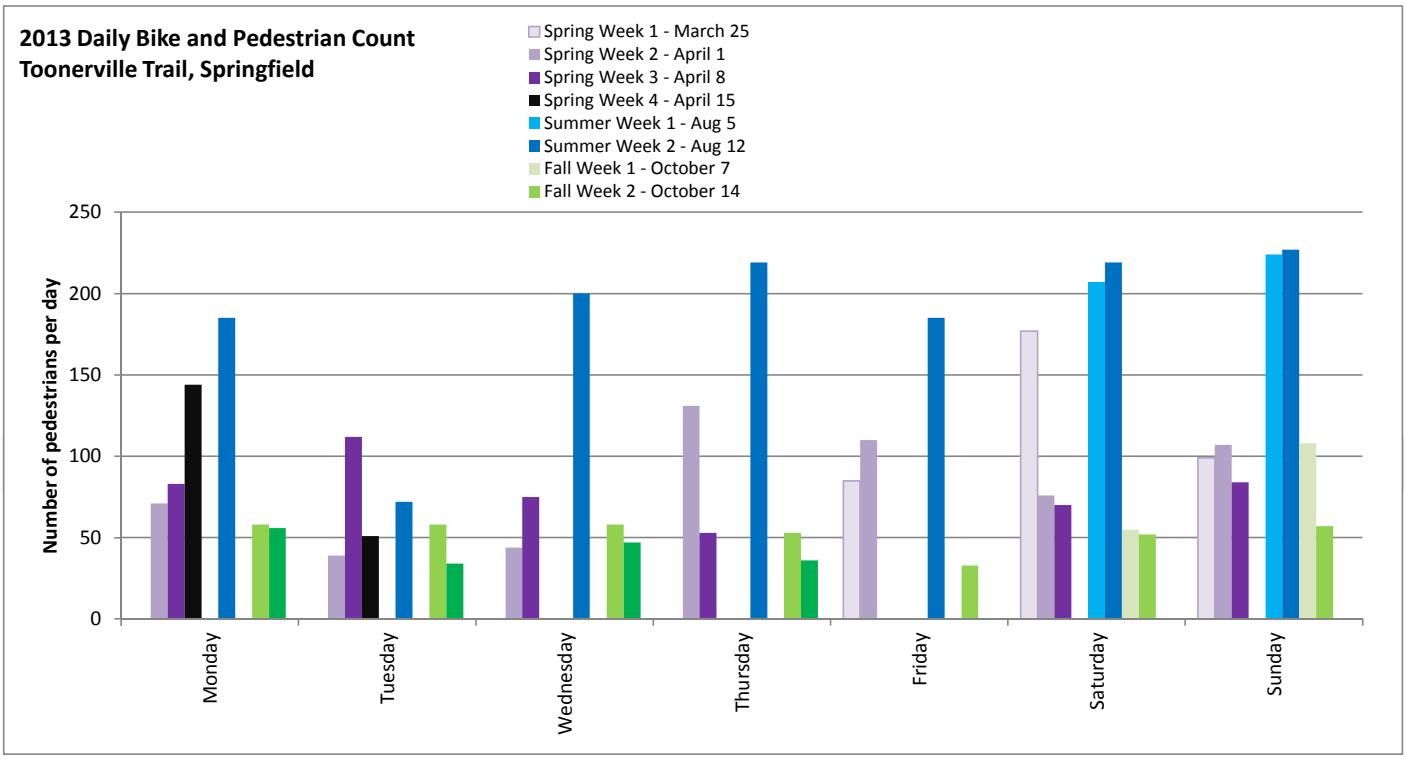
2013 Automatic Counter Daily Summaries

Toonerville Trail in Springfield

	Winter	Spring	Summer	Fall
Average Daily Travel:	No count	90	208	54
Total Travelers:		1,611	1,666	705
Total number of days in count:		18	8	13

Daily Totals:	Mon	Tue	Wed	Thur	Fri	Sat	Sun
Spring Week 1 - March 25					85	177	99
Spring Week 2 - April 1	71	39	44	131	110	76	107
Spring Week 3 - April 8	83	112	75	53	~~0~~	70	84
Spring Week 4 - April 15	144	51					
Summer Week 1 - Aug 5						207	224
Summer Week 2 - Aug 12	185	~~72~~	200	219	185	219	227
Fall Week 1 - October 7						55	108
Fall Week 2 - October 14	58	58	58	53	33	52	57
Fall Week 3 - October 21	56	34	47	36			

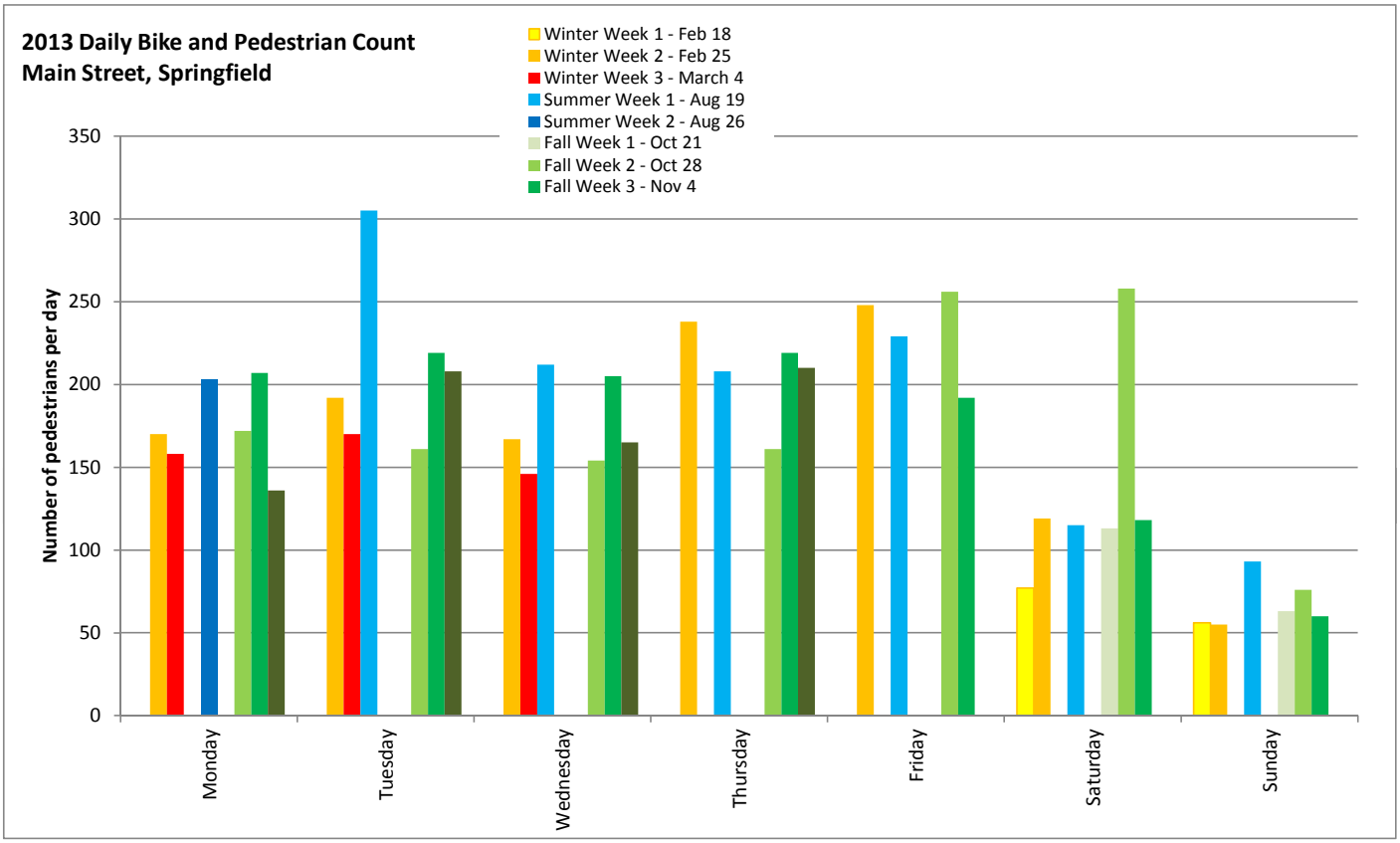
Note: 4/12 and 8/13 poor weather so excluded from count summaries



Main Street in Springfield

	Winter	Spring	Summer	Fall
Average Daily Travel	150	No count	195	168
Weekday Average Daily Travel	186		231	190
Total Travelers	1,796		1,365	3,353
Total number of days in count	12		7	20

Daily Totals:	Mon	Tue	Wed	Thur	Fri	Sat	Sun
Winter Week 1 - Feb 18						77	56
Winter Week 2 - Feb 25	170	192	167	238	248	119	55
Winter Week 3 - March 4	158	170	146				
Summer Week 1 - Aug 19		305	212	208	229	115	93
Summer Week 2 - Aug 26	203						
Fall Week 1 - Oct 21						113	63
Fall Week 2 - Oct 28	172	161	154	161	256	258	76
Fall Week 3 - Nov 4	207	219	205	219	192	118	60
Fall Week 4 - Nov 11	136	208	165	210			



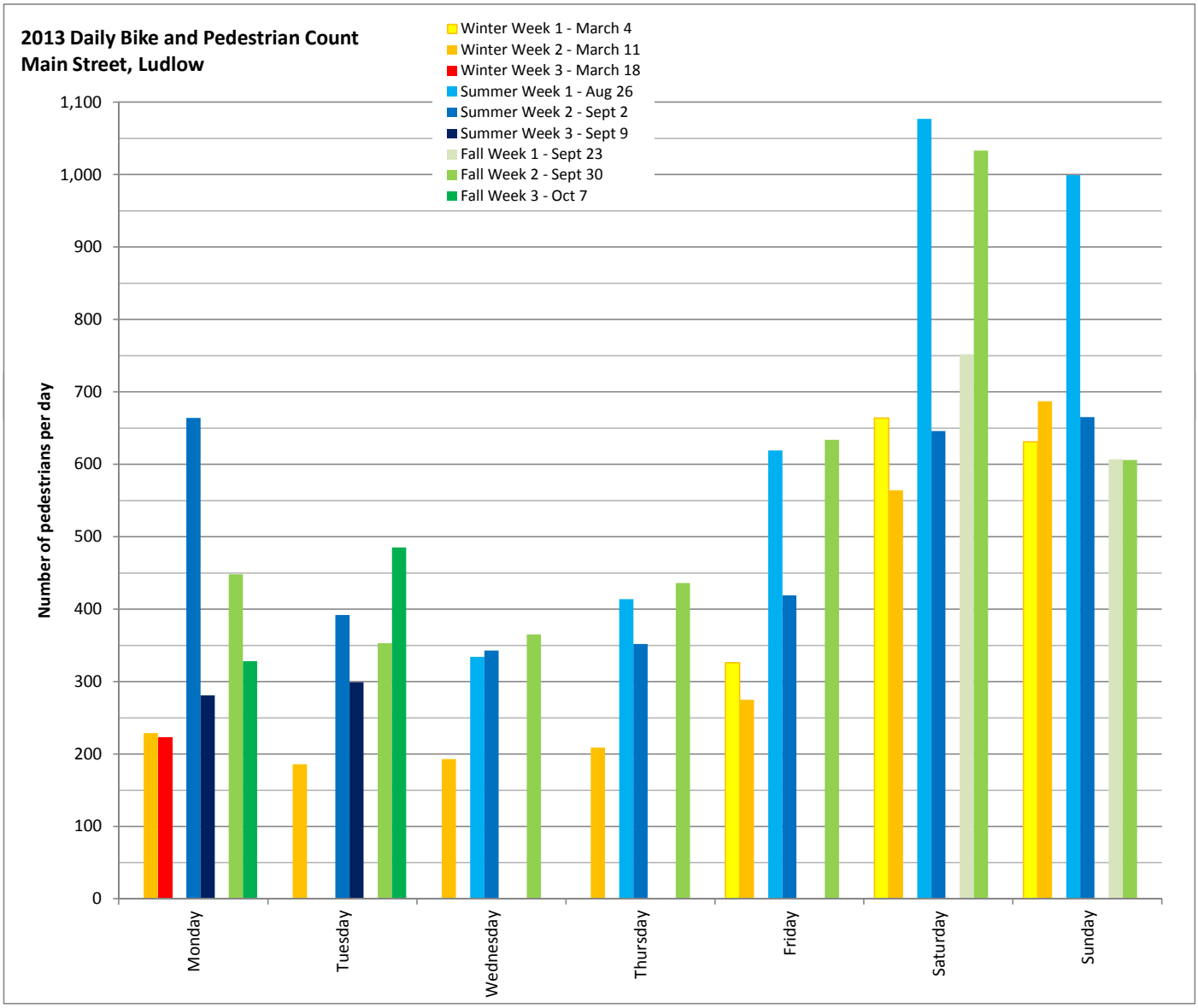
Main Street in Ludlow

	Winter	Spring	Summer*	Summer~	Fall
Average Daily Travel	381	No count	415	536	550
Average Weekday Travel	234		354	412	436
Average Weekend Travel	637		656	847	750
Total Travelers	4,187		4,145	7,504	6,047
Total number of days in count	11		10	14	11

* Four counts on Labor Day weekend (8/30, 8/31, 9/1, 9/2) not included in averages. Valid counts, but holiday weekend with very high numbers.

~ Four counts on Labor Day weekend included in averages. (Not unusual for Ludlow to have special events over weekends of summer)

Daily Totals:	Mon	Tue	Wed	Thur	Fri	Sat	Sun
Winter Week 1 - March 4					326	664	631
Winter Week 2 - March 11	229	186	193	209	275	564	687
Winter Week 3 - March 18	223						
Summer Week 1 - Aug 26			334	414	619	1,077	999
Summer Week 2 - Sept 2	664	392	343	352	419	646	665
Summer Week 3 - Sept 9	281	299					
Fall Week 1 - Sept 23						752	607
Fall Week 2 - Sept 30	448	353	365	436	634	1,033	606
Fall Week 3 - Oct 7	328	485					

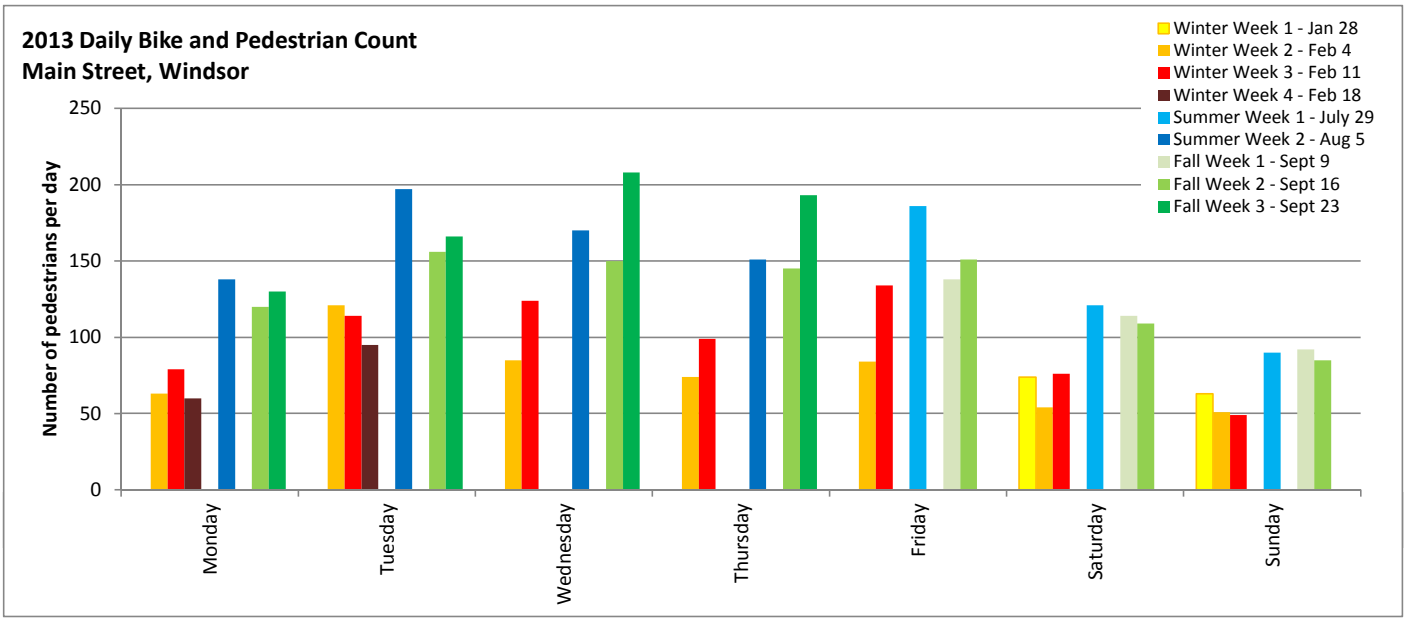


Main Street in Windsor

	Winter	Spring	Summer	Fall
Average Daily Travel	83	No count	150	140
Total Travelers	1,499		1,053	1,957
Total number of days in count	18		7	14

Daily Totals:	Mon	Tue	Wed	Thur	Fri	Sat	Sun
Winter Week 1 - Jan 28						74	63
Winter Week 2 - Feb 4	63	121	85	74	84	54	51
Winter Week 3 - Feb 11	79	114	124	99	134	76	49
Winter Week 4 - Feb 18	60	95					
Summer Week 1 - July 29					186	121	90
Summer Week 2 - Aug 5	138	197	170	151			
Fall Week 1 - Sept 9					138	114	92
Fall Week 2 - Sept 16	120	156	150	145	151	109	85
Fall Week 3 - Sept 23	130	166	208	193			

Count for Tuesday 8/6 excludes 1 hour of the count between 10am and 11am where count abnormally high



Road Classifications in Southern Windsor County

SWCRPC
SOUTHERN WINDSOR COUNTY
REGIONAL PLANNING COMMISSION


Main Street in Springfield


VT-131 in Cavendish


South Reading Road in Cavendish


Pleasant Street in Ludlow

Prioritizing transportation projects is a key part of transportation planning.

To do this, it becomes necessary to describe the importance of a given road segment or corridor. Variables such as a road's geometry, capacity, traffic volume, or what it connects to might be used to judge the importance of a road. It is more useful in transportation planning, however, to integrate these variables and consider the overall context of the road in order to understand how it functions within the entire roadway network. Different road classification systems are essentially different approaches to describing and summarizing a road's functional importance. This technical bulletin outlines some of the major classification systems used for the roads of southern Windsor County.

How are roads classified in Vermont?

The two main methods currently used in Vermont for classifying roads are:

- Functional Classification - a concept that originated in the U.S. Department of Transportation which evaluates roads based on a hierarchy of uses.
- Town Highway Classification - the method used to determine allocation of funding from the state to towns.

Other classification methods and designations for Vermont's roads include:

- National Highway System
- National Scenic Byway or Vermont Byway
- Scenic highway or road

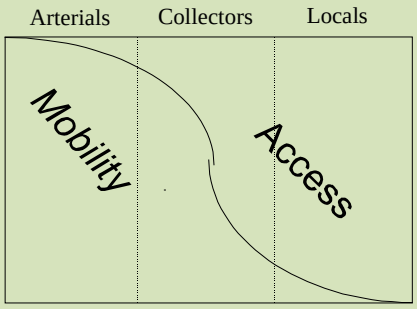
What is a "federal-aid system" highway?

The "federal-aid system" are the major roads - roads with a functional classification between Principal Arterial and Rural Major Collector.

Photos credits: All photos by SWCRPC staff, except Pleasant Street by Tom Johnson

FUNCTIONAL CLASSIFICATION

What is functional classification?



The functional classification system is a concept which originated in the US Department of Transportation and evaluates roads based on the character of service they are intended to provide. It recognizes that individual roads do not serve travel independently; rather, most travel involves movement through a network of roads. Functional classification describes the role that any particular road plays in serving the flow of trips through the network. It considers such characteristics as average speed, convenience, access, and the type of travel a road carries.

Functional classification is based on the principle that roads fit along a spectrum between access, at one end, and mobility (vis a vis ease and speed of travel) and convenience at the other. The diagram above shows where mobility and convenience are maximized, access between the highway and surrounding land is minimized. Moving toward the other end of the spectrum, access to individual land parcels increases, but speed and convenience are appropriately reduced. The critical point here is that where a road is forced to serve opposing functions -- such as carry both local and inter-regional travel -- there exists an inherent functional conflict. As a result, mobility, convenience, and safety all suffer.

Highway Functional Classification in Southern Windsor County

The map on the following page shows how road network in the region has been described by the Vermont Agency of Transportation in terms of the USDOT's Functional Classification for Rural Areas.

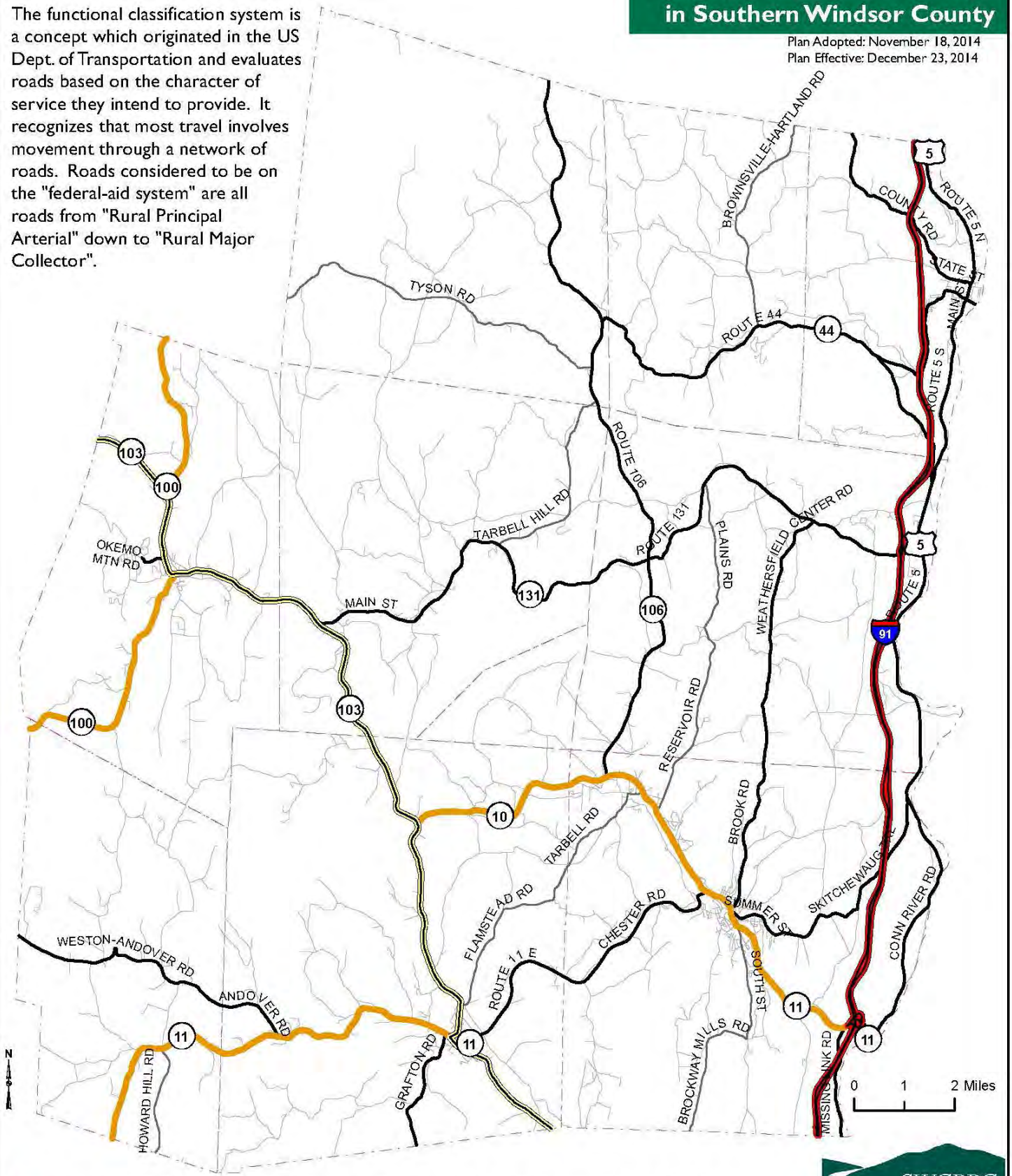
Functional Class	Class Description	Regional Examples
Rural Principal Arterial	Trip length and travel density indicative of substantial statewide and interstate travel. Serve virtually all urban areas with more than 50,000 people and a large majority of those with more than 25,000. Provide an integrated network. Included in the "federal-aid system".	I-91 VT 103
Rural Minor Arterial	Link larger towns and other traffic generators that attract travelers over long distances. Form an integrated network that provides interstate and regional service. Spaced at intervals consistent with population density so all developed areas of a state are within a reasonable distance of a principal arterial highway. Trip length and travel density are greater than those served by rural collectors or local roads. Included in the "federal-aid system".	VT 10 VT 11 (west of Chester) VT 100
Rural Major Collector	Provide service to large towns and other traffic generators, like schools, shipping points and employment centers, not already served by a higher system road. Also link these places with larger towns, cities and routes with higher classification. Serve more important intra-regional travel corridors. Included in the "federal-aid system".	VT 44 VT 131 Weston Andover Road
Rural Minor Collector	Spaced at intervals consistent with population density to collect traffic from local roads and bring all developed areas within reasonable distance of a major collector road. Provide service to smaller communities and link the locally important traffic generators with their rural surroundings. Not included in the "federal-aid system".	Tyson Road Weathersfield-Center Road
Rural Local	Serve primarily to provide access to adjacent lands. Provide travel over relatively short distances. Not included in the "federal-aid system".	Residential streets

Source: US Department of Transportation 1989 (www.fhwa.dot.gov/planning/fcsec2_1.htm), VTrans, SWCRPC

Functional Road Classification in Southern Windsor County

Plan Adopted: November 18, 2014
Plan Effective: December 23, 2014

The functional classification system is a concept which originated in the US Dept. of Transportation and evaluates roads based on the character of service they intend to provide. It recognizes that most travel involves movement through a network of roads. Roads considered to be on the "federal-aid system" are all roads from "Rural Principal Arterial" down to "Rural Major Collector".



Rural Principal Arterial (Interstate)*
Rural Principal Arterial*
Rural Minor Arterial*
Rural Major Collector*
Rural Minor Collector
Local
Town Boundary

* denotes that the road class is part of the "federal-aid system"

Data sources: Road centerline (VTrans 2012), Town boundary (VCGI 2012)

Map for planning purposes only. Not for regulatory interpretation.

SWCRPC
SOUTHERN WINDSOR COUNTY REGIONAL PLANNING COMMISSION
PO Box 320, Ascutney, VT 05030
www.swcrpc.org

Map drawn September 4, 2013

TOWN HIGHWAY CLASSIFICATION

What is town highway classification?

Town highway classification is based on the significance of each roadway for mobility and access, and who is responsible for maintenance. This method is used to used determine the allocation of funding from the state to towns.

Town Highway Classification in Southern Windsor County

The map on the following page shows how road network in the region has been described by the Vermont Agency of Transportation in terms of the Town Highway Classification. More detailed maps for each town can be found in the Town Highway Maps produced by VTrans.

Class	Criteria
Interstate Highway	Signed with an interstate highway number, limited access.
U.S. or State Highway	Signed with a U.S. or State highway number and maintained by the state.
Class 1 Town Highway	Form the extension of a state highway route and carry a state highway route number, but are town maintained.* VTrans shall determine which highways are to be class 1 highways.
Class 2 Town Highway	The most important highways in each town based on their through connection between towns. The selectmen, with the approval of VTrans, shall determine which highways are to be class 2 highways. (Usually paved)
Class 3 Town Highway	All traveled town highways other than class 1 or 2 highways, and are negotiable under normal conditions all seasons of the year by a standard manufactured pleasure car. The selectmen, after conference with a representative of the agency shall determine which highways are class 3 town highways. (Typically unpaved)
Class 4 Town Highway	Class 4 town highways are all other town highways that are not class 1, 2, or 3 town highways or unidentified corridors. The selectmen shall determine which highways are class 4 town highways.
Legal Town Trail	Public right-of-way. Trails shall not be considered highways and the town shall not be responsible for any maintenance including culverts and bridges.
Private Road	Privately maintained, not a public responsibility.
U.S. or State Forest Highway	Responsibility of the U.S. Forest Service or State Department of Forests, Parks and Recreation.

* Note: Two roads in the region - Grafton Road (VT-35) and Skitchewaug Trail (VT-143) - have a state highway numbers, are maintained by the town but are class 2 town highways.

Source: Vermont Statutes Annotated T.19 Sec. 302

What are unidentified corridors and ancient roads?

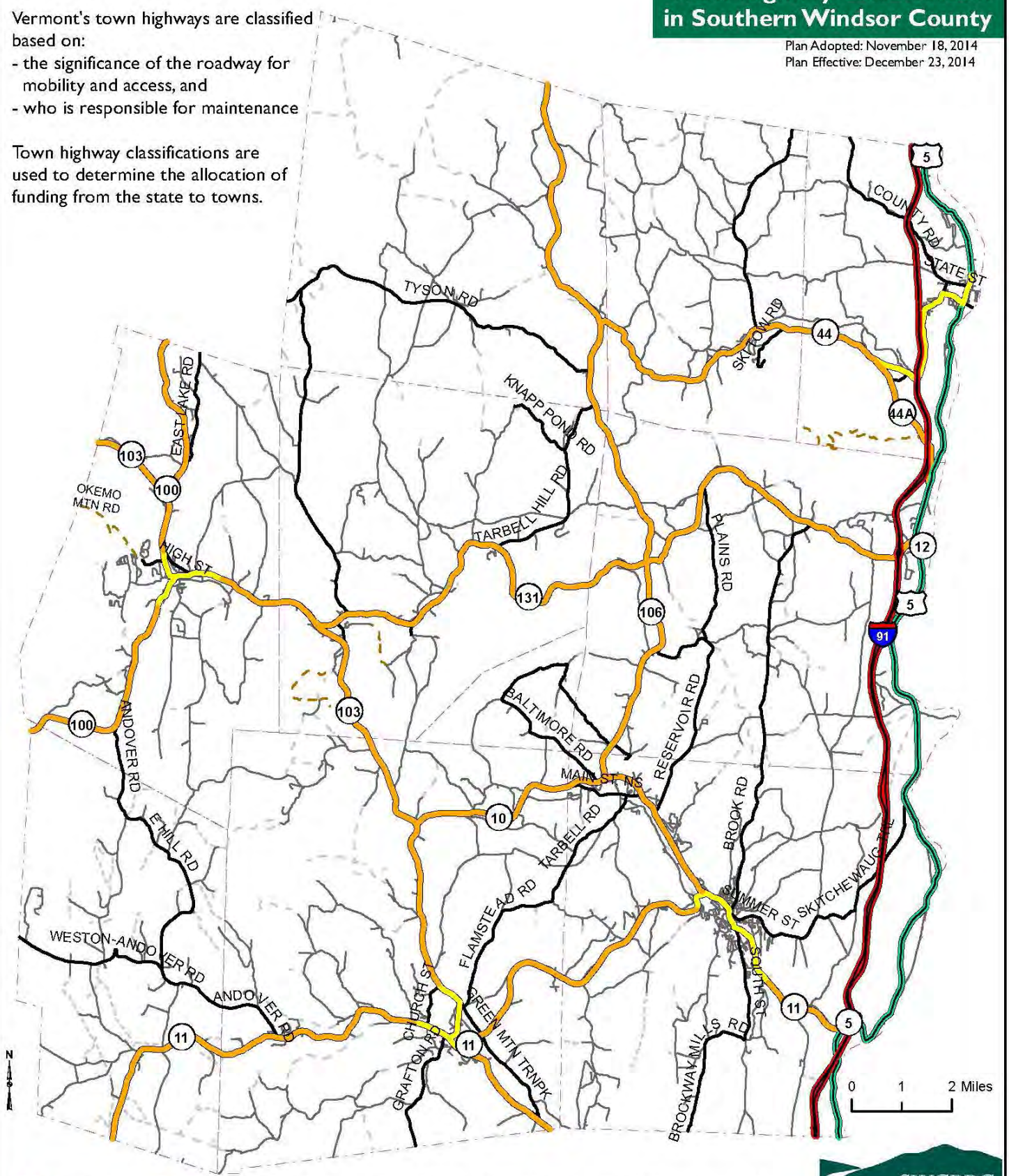
Act 178, enacted in May 2006, established a new town highway classification for "unidentified corridors," and encouraged towns to conduct research to inventory all ancient town roads. Prior to adoption of this legislation, there was never a reason to include Class 4 town highways on the Town Highway Maps developed by the Agency of Transportation, as they were an inventory of those local roads eligible for state aid Town Highway Grants. As a result of this law, legal town roads became classified as Unidentified Corridors after July 1, 2010 if they were not "clearly observable" on the ground, are not Legal Town Trails, and were not on the VTrans Town Highway Map. After July 12, 2015 all unidentified corridors shall discontinued.

Town Highway Classification in Southern Windsor County

Plan Adopted: November 18, 2014
Plan Effective: December 23, 2014

Vermont's town highways are classified based on:
- the significance of the roadway for mobility and access, and
- who is responsible for maintenance

Town highway classifications are used to determine the allocation of funding from the state to towns.



Interstate
US Highway
VT Highway
Class 1 Town Highway
Class 2 Town Highway
Class 3 Town Highway
Class 4 Town Highway
State Forest Road
Legal Trail
Private Road
Town Boundary

Data sources: Road centerline (VTrans 2012), Town boundary (VCGI 2012)

Map for planning purposes only. Not for regulatory interpretation.

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SOUTHERN WINDSOR COUNTY REGIONAL PLANNING COMMISSION
PO Box 320, Ascutney, VT 05030
www.swcrpc.org

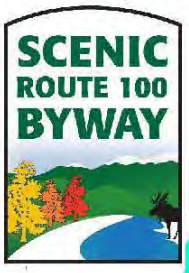
Map drawn September 4, 2013

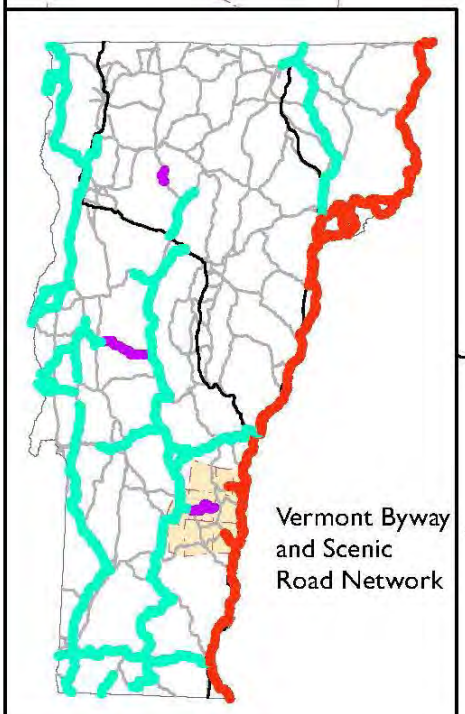
Byways and Scenic Roads in Southern Windsor County

Plan Adopted: November 18, 2014
Plan Effective: December 23, 2014

The National Scenic Byways Program was established in 1991 in order to identify, designate and promote scenic byways and to protect and enhance the qualities of the areas through which these byways pass. Vermont also has a Byways Program with the same goal. Vermont Byways and State scenic roads are designated by the Vermont Byway Council.

Data sources: Road centerline (VTrans 2012), Byways and Scenic Roads (VTrans 2012 and RPC 2013), Town boundary (VCGI 2012)





Vermont Byway and Scenic Road Network

National Scenic Byway
State Scenic Road
State Scenic Byway
Major Roads
Town Boundary

Map for planning purposes only. Not for regulatory interpretation.

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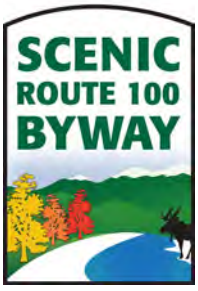
Map drawn September 12, 2013

OTHER ROAD CLASSIFICATIONS AND DESIGNATIONS

Byways and Scenic Roads

The National Scenic Byways program was established in 1991 in order to "identify, designate and promote scenic byways and to protect and enhance the recreational, scenic, historic and cultural qualities of the areas through which these byways pass." Byways are eligible for federal funding for tourism or resource conservation activities along designated corridors (Vermont's Highway System Policy Plan, 2004). More information about National Byways can be found at www.fhwa.dot.gov/byways/

The Connecticut River Scenic Byway runs on the Vermont and New Hampshire side of the Connecticut River from South Hadley, MA to the Canadian border. The byway was first designated in 1998 and became a National Scenic Byway in 2005. In southern Windsor County it follows US Route 5, running through Springfield, Weathersfield and Windsor, with spurs on VT Routes 44 and 44A to Brownsville and VT Route 11 to downtown Springfield. More information about the Byway can be found at www.ctriverbyway.org/



The Scenic Route 100 Byway runs along VT Route 100 between Stamford and Granville, with spurs on VT103 in Ludlow and Cavendish, and VT100A in Plymouth. The byway was designated a Vermont Byway in 2011. More information about the Byway can be found at http://scenicroute100byway.com and www.swcrpc.org

The region also has a state scenic road – Route 131 in Cavendish – which means that any construction or maintenance work on that section of road must be consistent with the standards established by VTrans pursuant to 19 VSA §2501. State scenic roads are designated by the Vermont Byways Advisory Council.

Towns in Vermont are also enabled to designate municipally-maintained roads as "scenic roads" which would be subject to 19 VSA §2501 standards. There are no scenic roads in this Region at this time.

National Highway System

The National Highway System (NHS) includes roadways that are important to the nation's economy, defense and mobility. In southern Windsor County, Vermont Routes 103 and 12/131 from the New Hampshire state line to the I-91 interchange are the only roads designated for the NHS. The emphasis on National Highway System roads is placed on improving the function of the existing transportation facilities rather than on capacity improvements. The network of NHS highways receives special consideration for federal funding. NHS roads are also required to meet certain federally specified standards associated with their design, improvement and performance. The application of these standards may not be entirely appropriate to Vermont given these roads' local context. The federal government, therefore, provides waivers, available through the planning process that would exempt a given road from certain standards.

More information about the NHS can be found at http://www.fhwa.dot.gov/planning/nhs/

For more information please contact:
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Southern Windsor County RPC www.swcrpc.org

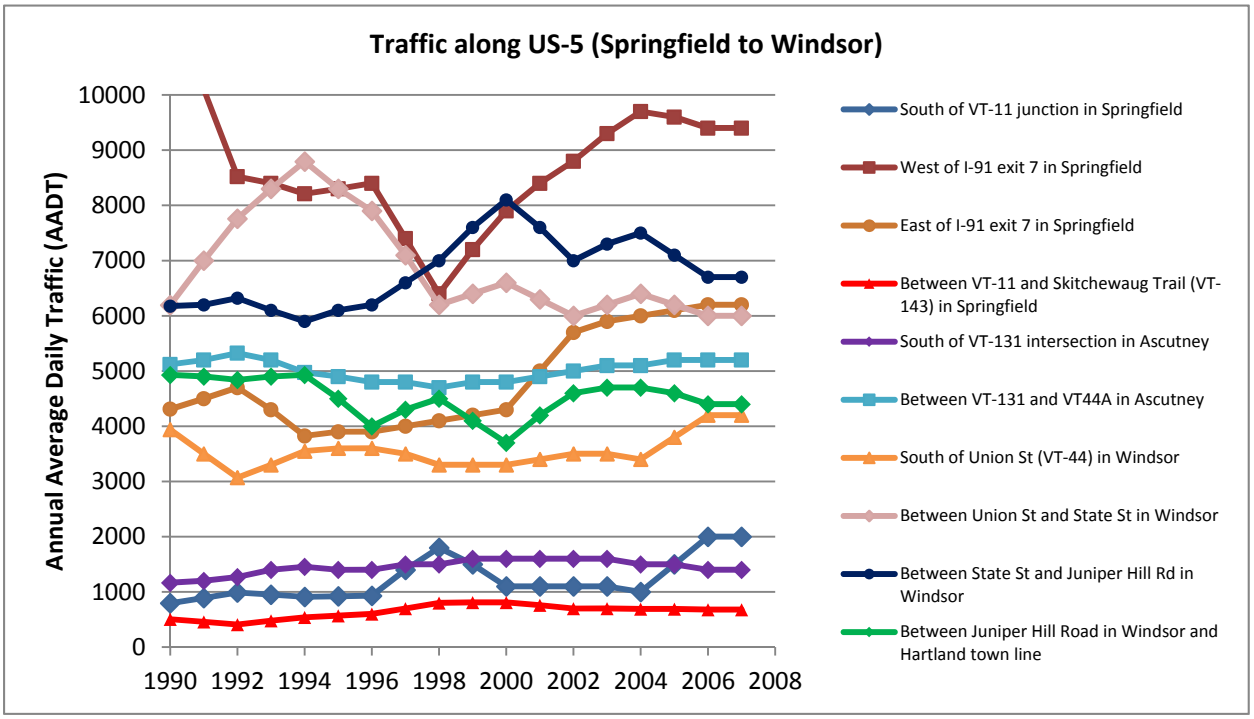
Technical Bulletin - May 2014. Adopted as part of Regional Transportation Plan on November 23, 2014. Effective December 23, 2014

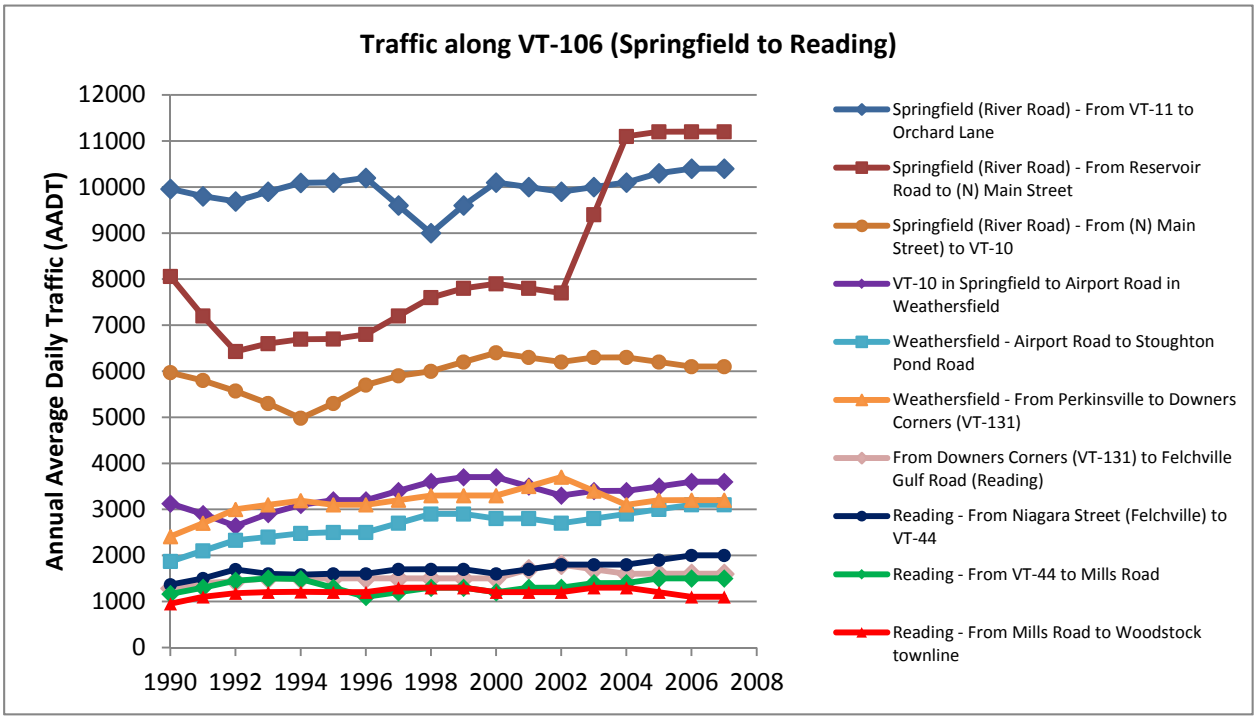
Traffic Volumes Over Major Roadways
Southern Windsor County

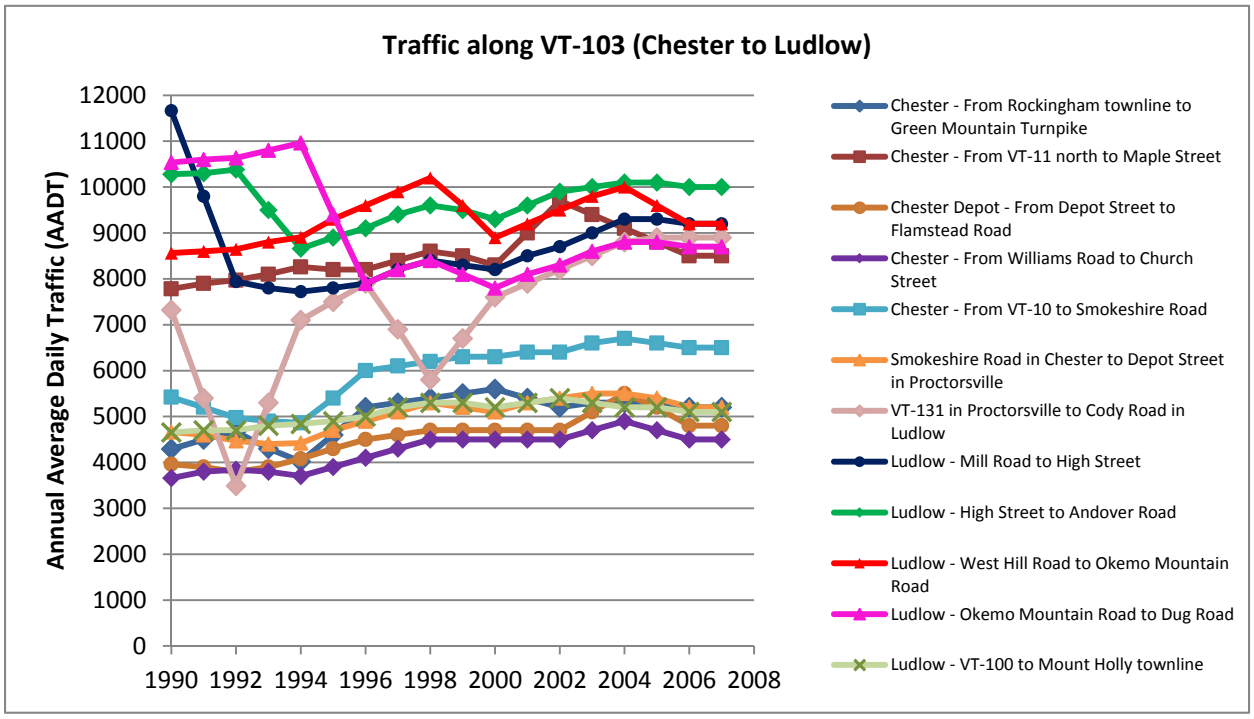
May 2014

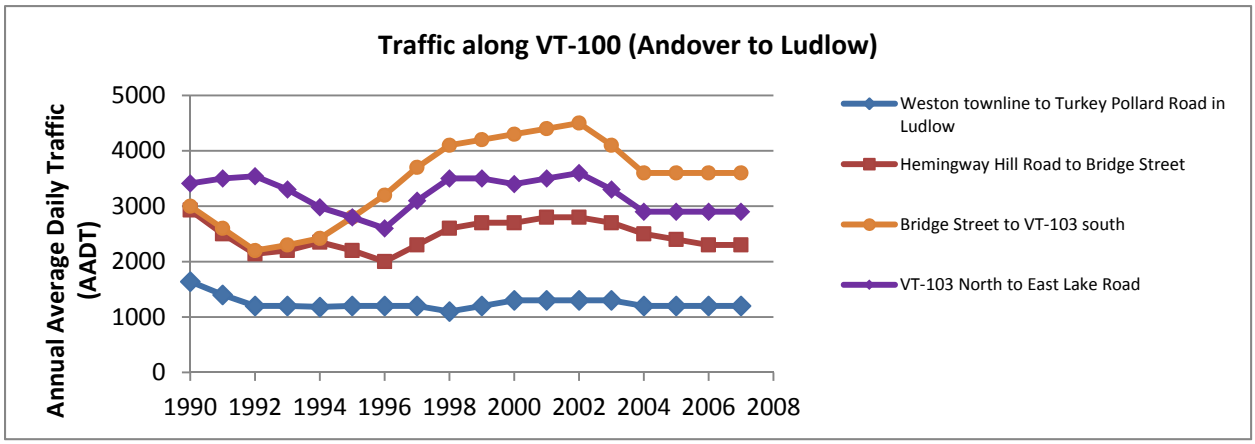
SWCRPC
SOUTHERN WINDSOR COUNTY
REGIONAL PLANNING COMMISSION

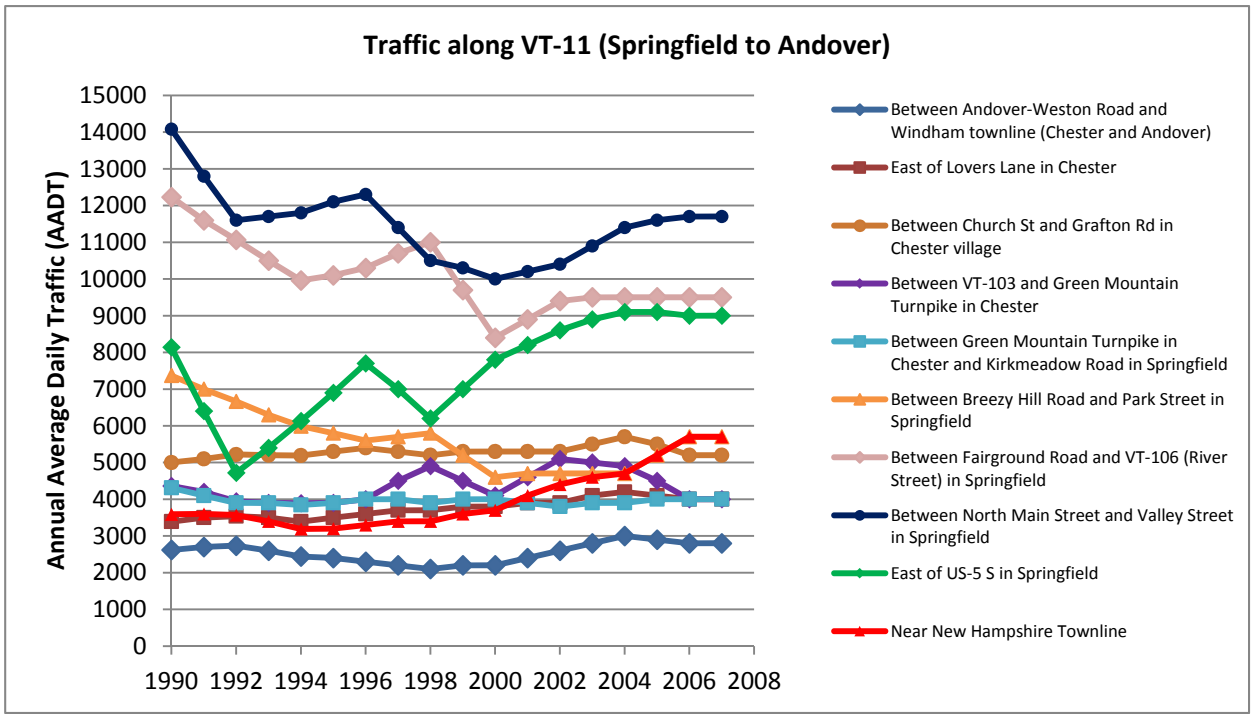
The following is a summary of traffic volumes over major roadways in the Southern Windsor County Region as calculated by VTrans in 2010.

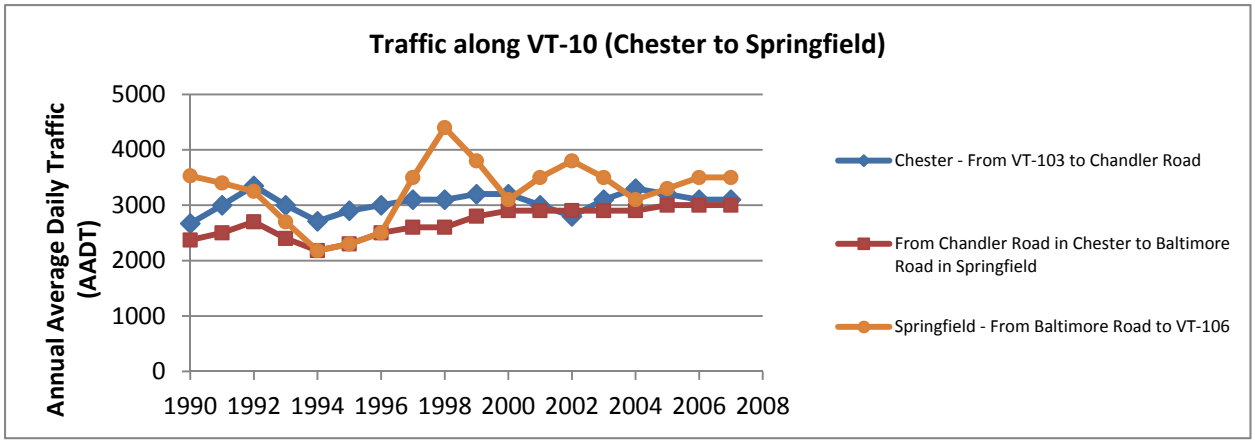


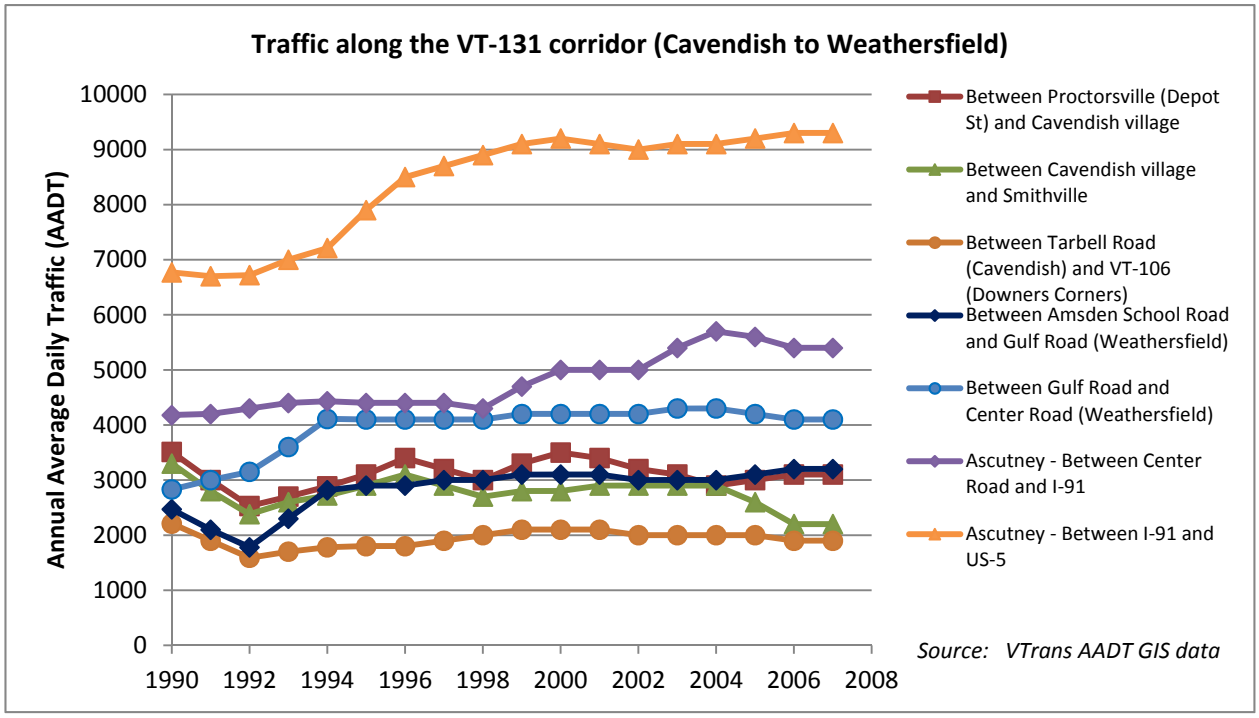


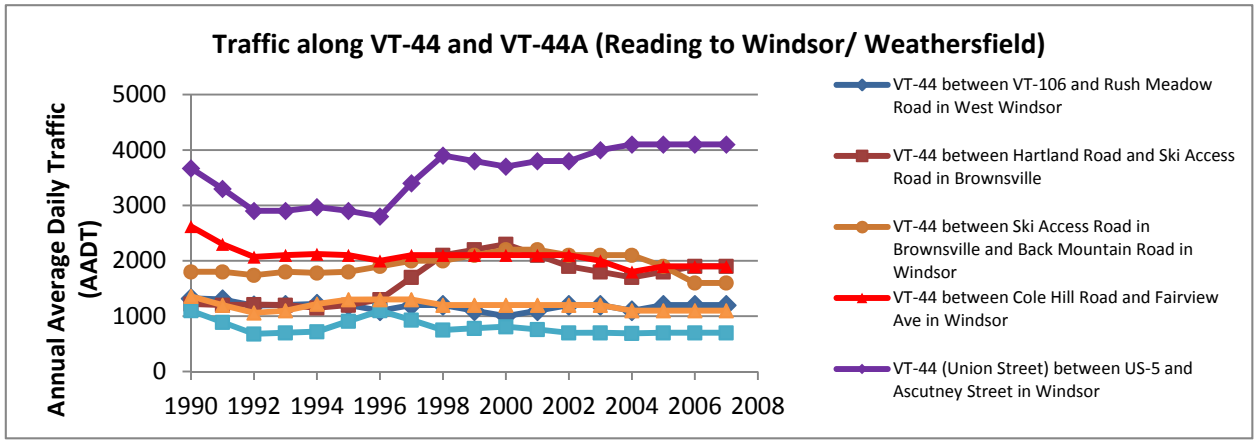

Traffic along VT-103 (Chester to Ludlow)
Annual Average Daily Traffic (AADT)
12000
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
1990 1992 1994 1996 1998 2000 2002 2004 2006 2008
Chester - From Rockingham townline to Green Mountain Turnpike
Chester - From VT-11 north to Maple Street
Chester Depot - From Depot Street to Flamstead Road
Chester - From Williams Road to Church Street
Chester - From VT-10 to Smokeshire Road
Smokeshire Road in Chester to Depot Street in Proctorsville
VT-131 in Proctorsville to Cody Road in Ludlow
Ludlow - Mill Road to High Street
Ludlow - High Street to Andover Road
Ludlow - West Hill Road to Okemo Mountain Road
Ludlow - Okemo Mountain Road to Dug Road
Ludlow - VT-100 to Mount Holly townline


Traffic along VT-100 (Andover to Ludlow)
Annual Average Daily Traffic (AADT)
5000
4000
3000
2000
1000
0
1990 1992 1994 1996 1998 2000 2002 2004 2006 2008
Weston townline to Turkey Pollard Road in Ludlow
Hemingway Hill Road to Bridge Street
Bridge Street to VT-103 south
VT-103 North to East Lake Road


Traffic along VT-11 (Springfield to Andover)
Annual Average Daily Traffic (AADT)
15000
14000
13000
12000
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
1990 1992 1994 1996 1998 2000 2002 2004 2006 2008
Between Andover-Weston Road and Windham townline (Chester and Andover)
East of Lovers Lane in Chester
Between Church St and Grafton Rd in Chester village
Between VT-103 and Green Mountain Turnpike in Chester
Between Green Mountain Turnpike in Chester and Kirkmeadow Road in Springfield
Between Breezy Hill Road and Park Street in Springfield
Between Fairground Road and VT-106 (River Street) in Springfield
Between North Main Street and Valley Street in Springfield
East of US-5 S in Springfield
Near New Hampshire Townline


Traffic along VT-10 (Chester to Springfield)
Annual Average Daily Traffic (AADT)
5000
4000
3000
2000
1000
0
1990 1992 1994 1996 1998 2000 2002 2004 2006 2008
Chester - From VT-103 to Chandler Road
From Chandler Road in Chester to Baltimore Road in Springfield
Springfield - From Baltimore Road to VT-106


Traffic along the VT-131 corridor (Cavendish to Weathersfield)
Annual Average Daily Traffic (AADT)
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
1990 1992 1994 1996 1998 2000 2002 2004 2006 2008
Between Proctorsville (Depot St) and Cavendish village
Between Cavendish village and Smithville
Between Tarbell Road (Cavendish) and VT-106 (Downers Corners)
Between Amsden School Road and Gulf Road (Weathersfield)
Between Gulf Road and Center Road (Weathersfield)
Ascutney - Between Center Road and I-91
Ascutney - Between I-91 and US-5
Source: VTrans AADT GIS data


Traffic along VT-44 and VT-44A (Reading to Windsor/ Weathersfield)
Annual Average Daily Traffic (AADT)
5000
4000
3000
2000
1000
0
1990 1992 1994 1996 1998 2000 2002 2004 2006 2008
VT-44 between VT-106 and Rush Meadow Road in West Windsor
VT-44 between Hartland Road and Ski Access Road in Brownsville
VT-44 between Ski Access Road in Brownsville and Back Mountain Road in Windsor
VT-44 between Cole Hill Road and Fairview Ave in Windsor
VT-44 (Union Street) between US-5 and Ascutney Street in Windsor

Vermont's Complete Streets Law

SWCRPC
SOUTHERN WINDSOR COUNTY
REGIONAL PLANNING COMMISSION

A new sidewalk in Windsor along US-5 provides connections from downtown to Paradise Park and local shops.

Vermont's Complete Streets bill (H.198, Act 34) became effective on July 1, 2011 and reporting on Complete Streets compliance has been occurring since 2013. This technical bulletin is intended to give a brief overview of what Complete Streets are, what the bill said and what it means for transportation projects across Vermont.

What is a Complete Street?

The principle underlying the Complete Streets concept is that streets should safely accommodate all transportation system users, regardless of age, ability, or what mode of transportation they prefer – walking, biking, driving, or use of transit.

What is the purpose of the Complete Streets bill?

The purpose is "to ensure that the needs of all transportation system users are considered in all state and municipally managed transportation projects and project phases, including planning, development, construction, and maintenance, except in the case of projects or project components involving unpaved highways. These 'complete streets' principles shall be integral to the transportation policy of Vermont." (H.198, Act 34)

When does the policy apply?

This act took effect on July 1, 2011. The policy applies when new paved roads are being constructed, and when paved roads are being reconstructed, rehabilitated, or otherwise maintained.

Note that the bill is not a mandate to retrofit existing roads. The bill identifies three circumstances in which these principles would not be incorporated:

1. Use of the transportation facility by pedestrians, bicyclists, or other users is prohibited by law.
2. The cost of incorporating complete streets principles is disproportionate to the need or probable use as determined by factors such as land use, current and projected user volumes, population density, crash data, historic and natural resource constraints, and maintenance requirements. The municipality shall consult local and regional plans in assessing these and any other relevant factors.
3. Incorporating "complete streets" principles is outside the scope of a project because of its very nature.

If the project does not include complete streets after consideration of the factors above, the managing municipality must make a written determination accompanied by supporting documentation that is available for public inspection at the office of the municipal clerk and the Agency of Transportation. Written determinations will be final and not subject to appeal or further review.

Why do we need complete streets?

- Complete streets are safer for everyone.
- Active travel can improve health
- A significant proportion of Vermont's population does not drive including those under age 16, the elderly, and the disabled.
- Maintaining a car can be a financial burden on low-income households.
- Complete streets enable more energy efficient travel and reduces greenhouse gas emissions.

Where can I find out more?

- The bill as enacted. Act 34 (H.198) An act relating to a transportation policy that considers all users
- State of Vermont Press Release - Governor Shumlin Signs Complete Streets Bill
- National Complete Streets Coalition
- Vermont Dept of Health and AARP Vermont - Complete Streets Guidebook. September 2012

MUNCIPAL COMPLETE STREETS COMPLIANCE FORM

TO: Project File
FROM:
DATE:
SUBJECT: Complete Streets Compliance Form

Act 34 became effective July 1, 2011 and requires that the needs of all transportation users, regardless of their age, ability, or preferred mode of transportation be considered in state and municipal transportation projects and project phases. This project compliance form serves to document that Complete Streets practices and principles were considered and implemented where applicable for the project listed below. This project compliance form should be completed and retained in the Town's files and a copy provided to VTrans via the Regional Planning Commission.

Road:

Project Description:

Compliance – If applicable, select all Complete Streets principles and practices that have been incorporated into the project.

- ☐ Sidewalks: installation, repair, ramps, railing, etc.
- ☐ Crosswalks: installation, repair, markings, etc.
- ☐ Lighting: street or pedestrian scale.
- ☐ Signals: pedestrian features.
- ☐ Streetscaping: benches, bulbouts, landscaping.
- ☐ Pavement Improvements: replacement, repair, etc.
- ☐ Shoulder Improvements: widen with new pavement.
- ☐ Bike/Shared Use: paths, lanes, etc.
- ☐ Public Transit: bus stops, bus pullouts, kiosks, etc.
- ☐ Other (please describe):

Exemption – If applicable, select one.

- ☐ The use of the transportation facility by pedestrians, bicyclists or other users is prohibited by law.
- ☐ The cost of incorporating complete streets principles is disproportionate to the need or probably use.
- ☐ Incorporating complete streets principles is outside the scope of the subject project due to its very nature.

If any of the boxes under "Exemption" are checked please provide a short justification below:

Non-Compliance – If none of the boxes under "Compliance" and "Exemption" are checked please draft and attach justification for not incorporating Complete Streets principles and practices into the project.

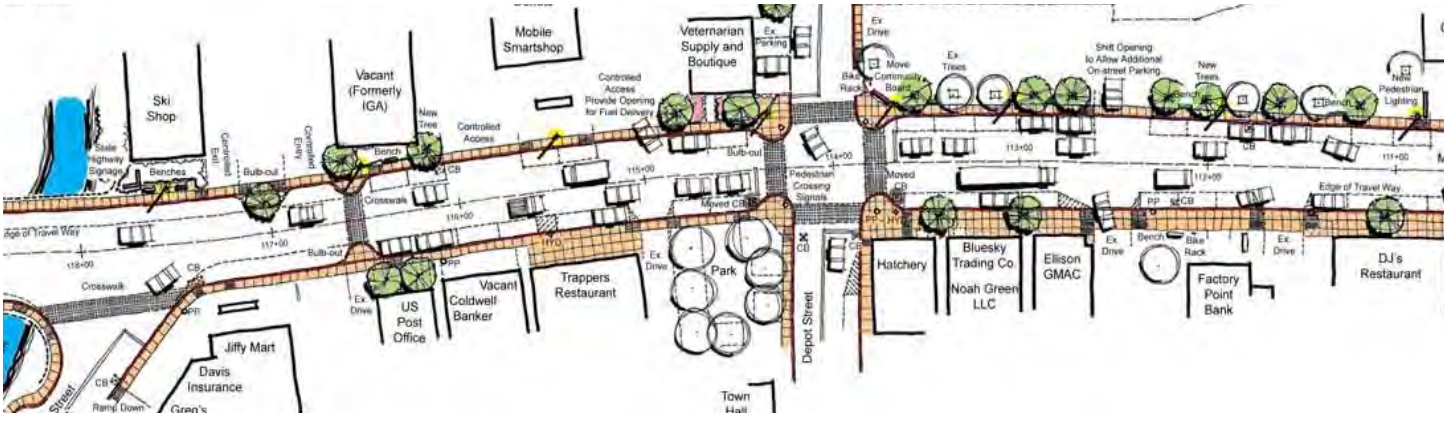
Completed:

Name Position Date

Reporting Complete Streets Compliance

All applicable municipal projects that does not incorporate Complete Street principles must document why. The report must be available for public inspection in the Town Clerk's office.

In addition, the Vermont Agency of Transportation (VTrans) is required to complile an annual report on Complete Streets compliance for the House and Senate Transportation Transportation Committees. VTrans reports on the activities of both for the Agency as well as all Vermont Towns. Towns are asked to report using a specified form. The Regional Planning Commission (RPC) willl reach out to Towns each winter to compile completed forms for the previous calendar year, and then forward them to VTrans. Contact Jason Rasmussen or Katharine Otto for help with the forms or with questions.



Extract from the Ludlow Downtown Village Streetscape Scoping and Feasibility Study 2006

For more information please contact:
Jason Rasmussen jrasmussen@swcrpc.org
or Katharine Otto kotto@swcrpc.org
(802) 674-9201

Southern Windsor County RPC www.swcrpc.org

Technical Bulletin - April 2014. Adopted as part of Regional Transportation Plan on November 23, 2014. Effective December 23, 2014

REGIONAL TRANSPORTATION PLAN
TRANSPORTATION IMPACT STUDY GUIDELINES

Introduction

A transportation impact study evaluates how a particular development affects the adjacent transportation infrastructure in terms of capacity, safety and mobility as it relates to sound engineering practices and stated policies in the Regional Plan. Traditional traffic impact studies evaluate if vehicular traffic generated by the proposed project adversely impacts the supporting road network and how those impacts can be mitigated. The intent of these guidelines is to clearly articulate that, in addition to the above, transportation impact studies will evaluate all modes of travel and describe how to maximize travel by walking, bicycling and transit, based on existing or planned facilities and services. Furthermore, transportation impact studies shall also specify how the project conforms to the Regional Plan and if it is consistent with state planning goals (24 V.S.A. §4302).

Relevant Vermont Planning Goals (24 V.S.A. §4302)

(1) To plan development so as to maintain the historic settlement pattern of compact village and urban centers separated by rural countryside.

(A) Intensive residential development should be encouraged primarily in areas related to community centers, and strip development along highways should be discouraged.

(B) Economic growth should be encouraged in locally designated growth areas, or employed to revitalize existing village and urban centers, or both.

(C) Public investments, including the construction or expansion of infrastructure, should reinforce the general character and planned growth patterns of the area.

(4) To provide for safe, convenient, economic and energy efficient transportation systems that respect the integrity of the natural environment, including public transit options and paths for pedestrians and bicyclers.

(A) Highways, air, rail, and other means of transportation should be mutually supportive, balanced, and integrated.

(11) To ensure the availability of safe and affordable housing for all Vermonters.

(B) New and rehabilitated housing should be safe, sanitary, located conveniently to employment and commercial centers, and coordinated with the provision of necessary public facilities and utilities.

Requirements & References

This document articulates the desired minimum requirements for transportation impacts studies, but it does not preclude requesting additional information. Transportation impact studies shall be prepared by qualified professionals that will exercise good engineering judgment in evaluating impacts and recommending appropriate mitigation in order to preserve the safety of the traveling public and capacity of the public highway system. Transportation impact studies are subject to all applicable local and state design standards, Act 34 – Vermont's Complete Streets Law, and professional traffic engineering practices and methodologies, including but not limited to the Institute of Traffic Engineers' (ITE) *Transportation Impact Analyses for Site Development*, Vermont State Design Standards (VSDS), AASHTO's *A Policy on Geometric Design of Highways and Streets* (latest edition) and

Highway Capacity Manual 2010 (or as most recently amended). VTrans publishes guidelines for traffic impact studies, which should also be considered for any projects that will involve VTrans review in the Act 250 process or a VTrans access permit.

When is a Transportation Impact Study Required?

For all development review procedures that the Regional Planning Commission is a party to (e.g. Act 250, Section 248), a transportation impact study will be requested if one or more of the following criteria applies to the proposed development:

1. Generates 50 or more peak hour trips; or
2. Increases truck traffic on the adjacent street(s) by 20% or more, or more than 20 truck trips per day; or
3. Generates peak hour traffic 5% or greater of the peak hour capacity of the transportation facility serving the development; or
4. Contributes to a reduction in signalized intersection Level of Service (LOS) in the peak hour to D or worse; or
5. When the development will unduly impact a sensitive area[1]; or
6. In accordance with Regional Plan policies or existing local or regional planning studies for certain corridors.

The costs of such studies shall be borne by the applicant.

Cumulative Impacts

Development or a series of developments – when located within a limited geographic area or affecting a major highway corridor, and planned incrementally over a period of time – can produce transportation impacts that are contrary to sound and coordinated comprehensive planning[2]. Incremental development review methods have the potential of failing to adequately evaluate the cumulative impacts of growth within an area, or produce an inefficient pattern of improvements and lose opportunities for a more holistic plan for areas with incremental growth patterns. (Examples of this kind of development could include a large multi-phased subdivision or recreational area such as a ski resort.)

Transportation impact studies should seek to address the impacts resulting from cumulative growth by estimating a likely future "build-out" traffic scenario, and determining their share of the traffic, possibly in terms of their portion of the utilization of remaining capacity. Another option is the Town or RPC preparing corridor or area-wide study that identify a set of transportation improvements based on cumulative traffic projections, as well as costs. These

[1] "Sensitive area" refers to safety, traffic congestion, the environment, historical areas or cumulative development pressures are resulting in adverse congestion or safety impacts as identified in the Regional Plan, high crash location database, or other local or regional planning document.

[2] Sound and coordinated comprehensive planning is the primary intent of both the Regional Plan and Vermont planning law.

studies can inform the application of traffic impact fees on a "per trip" basis, such that all developments, both large and small, will contribute their "fair share"[3] to an improvement plan. The above criteria shall apply to both individual development proposals as well as the cumulative impacts of multi-phased projects.

Required Elements of a Transportation Impact Study

Transportation impact studies shall be performed in a manner consistent with generally accepted traffic engineering practices as noted above and shall adequately address the following elements. The degree of emphasis placed on each may vary from project to project depending on its scope and type of transportation infrastructure in the project vicinity.

I. Existing Conditions Inventory and Surveys

The study area should be defined to include all intersections which will have more than 30 peak hour trips, features with critical safety considerations for any mode of travel, High Crash Locations, or intersections with chronic congestion issues. The study area should be confirmed with staff from the RPC before proceeding with the study preparation. The following should be included to establish baseline conditions:

A. Bicycle and pedestrian facilities in the surrounding area (i.e. sidewalks, multi-use paths, bicycle routes, roadway shoulders, walking/hiking trails that connect to destinations, or other similar facilities).
B. Public transportation services and designated bus stops in the surrounding area.
C. Land uses in and adjacent to the project area should be reviewed, and an assessment of how likely pedestrian and bicycle travel is to access these destinations based on the concepts of density, diversity and design[4].
D. Geometric configuration for each approach, intersection and access drives affected by the project, including roadways, sidewalks, bike paths, traffic control devices, and bus stops/shelters. Details should include number of travel lanes, lane widths, lane usage, gradients, dimensions of parking spaces and isles, turning radii and other related information.
E. Speed Limit and related information of study area.
F. Sight distances (may include stopping, passing and corner sight distances as appropriate).
G. Vehicular traffic data (traffic counts by direction of travel and vehicle class, and intersection turning movement counts).
H. Field measurements that could include actual intersection delay, queue lengths, or travel times along a corridor segment of concern in sensitive areas where poor traffic operations are a local concern.
I. Crash data in the surrounding area (recent crash history from state and local

[3] See Act 145, the Transportation Fair Share Bill, for more information.
[4] Index 3D, The Built Environment and Travel: Evidence from the United States. Robert Cervero, College of Environmental Design, University of California-Berkeley, EJTIR, 3, no. 2, (2003), pp. 119-137.

sources, including bicycle and pedestrian related crashes).

J. Transportation projects budgeted or planned by VTrans or the local government.

K. Other planned developments

II. Project Parameters

A. General description of the project.

B. Site plan or layout, preferably to scale, showing the project relationship to the adjacent transportation network and other physical features, including bicycle and pedestrian facilities and public transit services/facilities. The plan shall also show circulation patterns for motor vehicles, bicycles and pedestrians. The plans and circulation patterns shall clearly show how the project relates to stated goals and policies of the Regional Plan as it pertains to the desired multi-modal transportation network, access management, land use development patterns, building orientation, location of parking in relation to building(s) and street(s), natural and cultural resources, and all other applicable policies.[5]

C. Data regarding proposed land use type and density. Use of the urban-to-rural transect can be a used to objectively describe the character and urban form of the project area.

D. Transportation impacts of the project:

1) Vehicular traffic analysis (i.e. trip generation, ITE land use codes, size of the proposed use that is adequate to determine trip generation, distribution and related parameters). This may include factoring in mixed use trip reductions to account for internal trips with in a mixed use development.

2) Multimodal analysis of public transit, bicycle and pedestrian travel that includes a realistic estimate of the percent of trips that could potentially be diverted to other modes of travel based on existing or planned facilities and services; and an assessment of improvement required to maximize the use of these modes within the project area.

3) Evaluate how the proposed project relates to the character of the area as described in the Regional Plan future land use categories and desired transportation strategies

E. Parking requirements (i.e. typical parking requirements by land use code, number of on-street and off-street spaces to be provided, potential for shared parking among land uses with different peak demand times, long term lease for adjacent parking spaces, accessible parking spaces, bus circulation/stop in lieu of parking, and transportation demand management strategies to reduce parking requirements).

F. Identification of planned phasing of project.

[5] Promoting Sustainable Transportation through Site Design-An ITE Recommended Practice, Institute of Transportation Engineers, 2010.

III. Traffic Projections

The following scenarios shall be developed with consideration to the above for travel demand management and modal shares of travel to the site.

A. Construction year no-build

B. Project generated traffic

C. Construction year build (combined year of construction background plus project generated traffic).

D. Planning year no-build (generally five (5) years after the construction year).

E. Planning year build (combined planning year background plus project generated traffic).

IV. Capacity and Warrant Analyses

A. Level of Service (LOS) Analyses[6] for the following scenarios: construction year, planning year, and their build scenario projections for existing and proposed geometric conditions.

B. In sensitive areas where poor traffic operations are a concern, compare calculated LOS and delay with field measurements to determine if LOS is a valid measure. Alternative measures such as corridor travel times or volume-to-capacity ratios may be more appropriate than intersection LOS in locations with overcapacity conditions.

C. Geometric features (immediate access design, left / right turn lanes(s), exiting acceleration lane, associated signing, sight distance improvement, etc.).

D. Traffic signal warrants and demonstrated need or modification to existing system(s).

V. Summary of Findings and Recommendations for Mitigation of Impacts -

A. Geometric improvements. Improvements should consider the traffic analyses, appropriate mitigation, and also appropriate design for the context of the project area. For example, a right-turn lane might be a desirable improvement on a higher speed roadway in an area with few pedestrians, but undesirable in a village setting where the lane might displace on-street parking, increase travel speeds, and create a

[6] LOS analysis shall follow the Highway Capacity Manual 2010 (or as most recently amended) methodology. Traditional isolated intersection LOS analysis is not sufficient for projects affecting highway corridors where long upstream queues exist, such as the so-called Killington/Okemo ski corridor. In those cases, the analysis shall include "demand volume" that would include cars waiting to get through the intersection, as opposed to "discharge volume" using traffic counts of vehicles leaving the intersection. The intent of this is to evaluate the project's impacts on the traffic along the highway corridor.

less hospitable environment for pedestrians.

B. Signal installation or re-timing. Roundabouts or mini-roundabouts should be considered as an alternative for new traffic signals in appropriate settings, given their superior safety performance for all users.

C. Access management. While access management that involves consolidating curb cuts of multiple adjacent properties, all projects should be subject to future access management requirements that are identified in the study, to be implemented at such time that an agreement with all parties is reached.

D. Other appropriate mitigation – strong consideration shall be given to promote travel by other means, such as public transit, bicycles, walking, particularly in areas where the environment supports these modes and high levels of activity result in traffic congestion. Other encouraged traffic mitigation considerations include vanpools, ridesharing, flextime, telecommuting, compressed work schedules, etc.

E. Findings and Recommendations for Mitigation of Impacts.

Southern Windsor County RPC
Transportation Project Priorities

February 2014

SWCRPC
SOUTHERN WINDSOR COUNTY
REGIONAL PLANNING COMMISSION

The Southern Windsor County Regional Planning Commission (the RPC) has been evaluating and prioritizing transportation projects in the Region for more than 15 years based on an established evaluation process. This evaluation process was developed by staff with the assistance of the regional Transportation Advisory Committee (TAC). The intent of the evaluation process is to determine how well projects correspond with the priorities established in the Regional Transportation Plan.

In 2005, the state Transportation Bill (H.523) was passed requiring the Agency of Transportation (VTrans) to develop a project prioritization system to serve as a basis for the annual transportation capital programming process. This legislation included a requirement for VTrans to use RPC priorities as a criterion in the state prioritization system. The RPC modified the previously established regional project evaluation process based on VTrans guidance, and established regional priorities in the summer of 2005 for the FY 2007 capital programming process. The RPC has continued to prioritize projects annually in response to both Legislation and VTrans guidance ever since.

Criteria for Prioritizing Programmed Transportation Projects

The process used by the RPC includes the following criteria in evaluating programmed transportation projects:

- **Impact on Congestion & Mobility** – The impact on congestion and mobility are indicated by a LOW or HIGH. This determination is based on consideration of the identified problem and if the proposed solution will likely reduce congestion or improve mobility.
- **Alternative Routes** – Alternative routes are indicated by a YES or NO. A YES indicates that an alternative route is available to maintain a flow of traffic in the event the bridge or roadway section is closed or restricted.
- **Importance for Economy** – Importance for the economy is indicated by a LOW or HIGH. HIGH indicates that the bridge or highway segment serves a vital importance in the linkage of the local, regional or state economy. LOW would indicate a lesser importance. Factors considered for this criterion include location relative to the state truck network, National Highway System, regional economic development plans, local zoning bylaws, town plan objectives, etc.
- **Social / Cultural Importance** – The functional importance the highway segment or bridge in the social and cultural life of the surrounding communities is indicated by a YES or NO. YES indicates significant social or cultural importance, which might be based on historical resources, recreational opportunities, access to civic facilities, environmental considerations, etc.
- **Conformance with Local & Regional Plans** – The conformance with local and regional plans is indicated with a YES or NO.
- **Local Support** – Local support was determined through consultation with town managers, selectboards, TAC representatives and the general public.

The following additional criteria are only used to determine priorities if two projects are tied:

- **Sufficiency Ratings** – Roadway and bridge sufficiency ratings have been used by the RPC for years to understand the relative condition of each roadway section or bridge, with particular attention to the worst conditions. The most recent available ratings information from VTrans may be used as needed. For bridges, additional information including condition assessments of the decking, superstructure and substructure were also noted.

- **AADT** – Annual Average Daily Traffic (AADT) figures may be used as needed to estimate the traffic levels at each location, with particular emphasis on the most heavily traveled areas. The most recent data from VTrans or the RPC are used.
- **High Crash Location** – High Crash Locations (HCL) are indicated by a YES or NO. Particular emphasis is given to areas of significant safety concern. Recent and historic crash data from VTrans were used.

Criteria for Prioritizing Town Highway Bridge Pre-Candidate Needs

In autumn of 2009, the RPC was asked by VTrans to help to identify and prioritize "pre-candidate" projects for the Town Highway Bridge Program. Following VTrans guidance, the RPC worked with the TAC, town highway departments and other town officials to develop a list of the top 8 pre-candidate town bridge projects. Criteria used to evaluate Town Highway Bridge "pre-candidate" needs are similar to the above criteria, with a few modifications:

- **Structure Condition** – Based on VTrans' most recently provided bridge inspection data, including the following sub-criteria:
  - **Deck Rating**
  - **Superstructure Rating**
  - **Substructure Rating**
  - **Culvert Rating**
- **AADT** – See above
- **High Crash Location** – See above
- **Impact on Congestion & Mobility** – See above
- **Alternative Routes** – Based on two sub-criteria:
  - **Alternative Routes** are indicated by a YES or NO. A YES indicates that an alternative route is available to maintain a flow of traffic in the event the bridge or roadway section is closed or restricted.
  - **Detour Length** is indicated in miles, based on data from VTrans.
- **Importance for Economy** – See above
- **Social / Cultural Importance** – See above
- **Conformance with Local & Regional Plans** – See above
- **Local Support** – See above

Town Highway Bridge "pre-candidate" needs are then added to the overall project prioritization list as a separate category.

Local and Regional Comments

Comments are also listed with each project on the attached spreadsheet. They consist of additional information gathered to help evaluate projects and/or documenting input collected during the consultative process. RPC staff contacted all town managers or other town representatives to get input into the regional evaluation process, to determine local support and to re-evaluate last years' priorities.

Determining priorities – TAC and RPC Board

The TAC then meets to determine priorities based on the above criteria, goals and policies of the Regional Transportation Plan, and local knowledge. Then, the RPC Board of Commissioners accepts the TAC priorities based on the TAC's recommendations.

Southern Windsor County Regional Planning Commission
Project Prioritization for FY 2016

Prioritized by TAC 2/19/2014. Approved by SWCRPC Board 3/18/2014

Project prioritization follows guidance from the Legislature and VTrans.
Starting 2014, no longer rank Bike & Pedestrian Facilities, Park & Ride Lots
Project timeline - Candidate > D&E > Front of Book

FOB = Front of Book
D&E =Development and Evaluation
N/R= Not Ranked

RPC RANK	PROJECT TIMELINE	TOWN	PROJECT NUMBER	PROJECT DESCRIPTION	RPC/ TOWN COMMENTS
PAVING					
1	FRONT OF BOOK	CHESTER-SPRINGFIELD	STP 2942()	RESURFACE VT10 IN CHESTER AND SPRINGFIELD, BEGINNING AT THE VT103 INTERSECTION AND EXTENDING EASTRLY 4.373 MILES TO THE VT106 INTERSECTION.	Currently scheduled for construction in 2015.
2	New project (requested in 2012)	WEST WINDSOR		RESURFACE VT-44.	2012 Request from Tom Kenyon. Try to coordinate project with sewer work by West Windsor along VT-44 and I-91 bridge work if possible.
	Note: Class 1 Town Highway paving projects due in FY2015 for Chester, Windsor and Springfield				
ROADWAY PROJECTS					
1	FRONT OF BOOK	CAVENDISH-LUDLOW	NH F 025-1(30)	RECONSTRUCTION OF VT 103 IN CAVENDISH AND LUDLOW, BEGINNING 0.896 MILE NORTH 0F THE VT131 INTERSECTION AND EXTENDING NORTHERLY 1.131 MILES, INCLUDING THE REPLACEMENT OF BRIDGE NOS. 23 AND 24.	"Smithville Reconstruction". Was slated for deletion in 2011, but VTrans kept the project. Project scope to be reconsidered with VTrans & towns.
SAFETY & TRAFFIC OPERATIONS					
None					
STATE HIGHWAY BRIDGES					
1	FRONT OF BOOK	WEST WINDSOR	BHF 0148(9)	REPLACEMENT OF EXISTING BRIDGE DECK AND RAIL, FOR BR7 ON VT44 IN WEST WINDSOR, OVER MILL BROOK.	Due to be done summer 2014
2	FRONT OF BOOK	WEST WINDSOR	BHF 0148(8)	REPLACEMENT OF EXISTING BRIDGE DECK AND RAIL, FOR BR4 ON VT44 IN WEST WINDSOR, OVER MILL BROOK.	Due to be done summer 2014
3	FRONT OF BOOK	ANDOVER	BHF 016-1(29)	REHABILITATION OF BRIDGE NO. 41 ON VT11 IN ANDOVER, OVER THE MIDDLE BRANCH OF THE WILLIAMS RIVER.	Town Regional Concerns meeting in March 2013. Town has heard much since then.
4	CANDIDATE	CHESTER	BF 025-1( )	SCOPING TO EVALUATE ALTERNATIVES FOR BR14 ON VT103 IN CHESTER (north of Gassetts), OVER THE WILLIAMS RIVER AND THE GREEN MOUNTAIN RAILROAD.	No local comments.
TOWN HIGHWAY BRIDGES	(FOB & D&E projects only)				
1	FRONT OF BOOK	LUDLOW	BRF 025-1(42)	REPLACEMENT OR REHABILTATION OF BR25 (Walker Bridge) ON VT103 (Main St) IN LUDLOW, OVER THE BLACK RIVER.	Regional Concerns meeting in Spring 2012.
2	D&E	CAVENDISH	BO 1442 ( )	SCOPING TO EVALUATE ALTERNATIVES FOR BR58 ON DEPOT ST (TH1) IN CAVENDISH, OVER THE BLACK RIVER.	2014 comments - Scoping due to start very soon - VTrans reached out to town for initial questionnaire in Feb 2014. Road Foreman says weight limit is now down to 5 tons (was 10 tons last year) and just added steel plate, but maybe not be able to add more in future. Weight limit been applied for 3.5 years - so service trucks (including oil) using different route.

Southern Windsor County Regional Planning Commission
Prioritization of Pre-Candidate Town Highway Bridge Projects in 2014
Prioritized by TAC 2/19/2014. Approved by SWCRPC Board 3/18/2014

RPC Rank	Town	Bridge Number	Road Name	Features Intersected	Location	VTrans Project Description	2014 RPC/ Town Comments
1	Springfield	Br. 62 (McD's)	Chester Rd (VT-11)	Black River	0.1 MI W JCT. VT.106	BF 2500( ) - Scoping to evaluate alternatives	2/6/2014 (Town Manager). Cannot do small fixes anymore. Needs new decking. Top town priority. Very high traffic volume and vital connection for traffic through town.
2	Windsor	Br. 55	Main St (US-5)	Mill Brook	0.1 MI S JCT. VT.44		2/10/2014 (Town Manager and Road Foreman). The bridge was given a cursory inspection after Irene. While it was not determined that repairs were required as a result of the storm the retaining wall, apparently owned by the American Precision Museum just upstream (and attached to the bridge) suffered considerable damage. The end result is that the bridge is in marginally worse condition, the retaining wall is in poor condition.
3	Springfield	Br. 79	Park Street	Black River	Near Main Street		2/6/2014 (Town Manager). Deck issue. Important connection within town.
4	North Springfield	Br. 56 (Willard)	Main St (N)	Great Brook	0.25 mi to Jct with VT10	BO 1442( ) - Scoping to evaluate alternatives	2/6/2014 (Town Manager). Industrial Park access. Need for this bridge replacement depends on whether the Biomass Plant will be coming to the Industrial Park or not. A new road access may be built that means trucks do not need to use this bridge. 2/7/2015 (Road Foreman) - just been weight posted for 5 tons.
5	Ludlow	Br.17	Pleasant St Extension	Black River	0.1 mi Jct VT103		2/5/2014 (Town Manager and Road Foreman). Town Priority 1. Process access to 75 jobs and west side of town.
6	Andover	Br. 9 (High)	Weston-Andover Rd	Trout Brook	3.8 mi N Jct VT 11. (west of campground)		2/6/2014 (Town Clerk and Road Foreman) Added to list by town in 2012. High town priority. Approaches fixed a few years ago but problem recurring (big bumps on both approaches to bridge). Will need replacement in about 4 years according to John Alexander (District). At the moment they are just doing patches to keep it going. Town may also try to apply for funds through Structures program.
7	Ludlow	Br. 26 (Vail)	Main St (VT-103)	Jewell Brook	0.1 mi N Jct VT100 South		2/5/2014 (Town Manager and Road Foreman). Town Priority 2 - Needs work, but not as important as Walker Bridge. Critical for getting through town.
8	Weathersfield	Br.63	Ascutney Basin Road	N Br Black River	0.02 mi to Jct with VT106		2/4 Road foreman and 2/6 Town Manager. Needs work. Bridge approach (apron) moved during Irene. Bridge now sealed concrete rather than asphalt on top of concrete. If do work, would also need to upgrade to current hydraulic standards.
9	Chester	Br. 62	Thompson Road	Williams River	0.01 mi to Jct VT103	BO 1442 ( ) - Scoping to evaluate alternatives	2/10/2014 (Town Manager and Road Foreman). Beyond the Town's ability to fix.
10	Windsor	Br. 24	Brook Road	Mill Brook	0.3 mi to Jct with TH16		2/10/2014 (Town Manager and Road Foreman) - Added by town road foreman. Also on Brook road. Bad alignment. Bridge deck needs a lot of work. Spaulded down to the rebare. Rusting out. Problems getting worse

Not ranked

Not in top 10	Ludlow	Br. 57	Mill Street	Black River	At Jct with CL3 TH324	BO 1443 ( ) - Scoping to evaluate alternatives	2/5/2014 (Town Manager and Road Foreman). Town Priority 3. Town wants to keep the bridge on the list, but low priority. Currently closed to traffic. Served as pedestrian bridge until damaged by Irene so now no one can use the bridge. Historic metal truss. Want to replace bridge with a pedestrian bridge, but since historic, need to restore.

RPC Rank	Town	Bridge Number	Road Name	Features Intersected	Location	VTrans Project Description	2014 RPC/ Town Comments
Please remove	Chester	Br. 13	Missing Link Road	Williams River	0.3 MI TO JCT W VT103		2/6/2014 (Town Manager). Please remove. Construction due to finish Spring 2014 funded through FEMA.
Please remove	Reading	Br. 28	Town Farm Road	N Br Black River	0.05 mi to Jct with CL2 TH1	BO 1444 ( ) - Scoping to evaluate alternatives	2/10/2014 - Selectboard request removal from list. Letter sent to Rich Tetreault at VTrans to confirm (2/24/2014)
Please remove	Windsor	Br. 22	Brook Road	Mill Brook	1.0 mi to Jct with TH7		2/10/2014 (Town Manager and Road Foreman) - Road and bridge washed out in Irene. Still working with FEMA.