



CCRPC Long Range Planning Committee

AGENDA

WIFI Info: Network = CCRPC-Guest; Password = ccrpc\$guest

DATE: Thursday, July 13, 2017

TIME: **8:30am to 10:00am**

PLACE: CCRPC Office, 110 West Canal Street, Suite 202, Winooski, VT.

1. **Welcome** – 5 minutes
2. **Approval of May 11, 2017 Minutes*** (Action) – 5 minutes
3. **Energy Planning Update** (Information) – 40 minutes
Staff will provide an update on the energy planning process, including an overview of the CCRPC Board discussion, municipal constraints*, and Department of Public Service feedback.
4. **Comprehensive Economic Development Strategy** (Information) – 20 minutes
Staff will provide an update on the CEDS.
5. **Transportation Plan Update** (Information) – 10 minutes
Staff will review the existing conditions map derived from the model. The draft Current Conditions section is also included in the packet for your information. There is still quite a bit of work to be done on this section.
6. **Other Business as Needed** (Discussion) – 5 minutes
7. **Next Meeting**
Thursday, **August 17, 2017** from 8:30am to 10:00am
8. **Adjourn**

*=attached to agenda in the meeting packet

CHITTENDEN COUNTY REGIONAL PLANNING COMMISSION
LONG RANGE PLANNING COMMITTEE - MINUTES

DATE: Thursday, May 11, 2017
TIME: 8:30 a.m. to 10:00 a.m.
PLACE: CCRPC Offices, 110 West Canal Street, Suite 202, Winooski, VT

Members Present

Ken Belliveau, Williston – PAC Rep
Alex Weinhausen, Hinesburg – PAC Rep
Chris Shaw, South Burlington – Board Rep
Heather Danis – ECOS Steering Committee Rep
Andrea Morgante, Hinesburg - Board Rep
Justin Rabidoux, South Burlington – TAC Rep
Edmund Booth - ECOS Steering Committee Rep

Staff

Regina Mahony, Planning Program Manager
Melanie Needle, Senior Planner
Eleni Churchill, Transportation Program Manager
Emily Nosse-Leirer, Planner
Charlie Baker, Executive Director

1. Welcome and Introductions

Chris Shaw called the meeting to order at 8:34 a.m.

2. Approve Minutes

Justin Rabidoux made a motion, seconded by Edmund Booth, to approve the minutes of April 13, 2017. No further discussion. MOTION PASSED.

3. Energy Planning

Melanie Needle explained that we'll be sending this first preliminary draft energy plan to the Department of Public Service by the end of the month. We will go over the discussion questions from the agenda. Also, so you are aware, we've provided each municipality with data and maps for their use in meeting the Act 174 requirements. We can also go out and meet with any of the communities that wish for us to do so.

The questions related to the Plan are:

- a. Have we best described the natural gas issue in the 90x2050 LEAP scenario? Melanie Needle explained that we asked VEIC to run another LEAP model with natural gas levels consistent into the future, and the results only get to about 55% renewable energy use. Melanie Needle reviewed the draft text. Chris Shaw stated that we are essentially saying we can't meet the 90x2050 goal, which I think is true. Alex Weinhausen is fine with this as we've discussed previously. However, every region has this same issue but with different fuel types. So why is it different for us – is it largely the infrastructure and the level of population. Cost alone is not a good reason because costs of all fuel types are subject to change. Andrea Morgante added that places without natural gas can convert to a renewable resource directly and easily without centralized infrastructure in place; and I wouldn't want to see natural gas expanded to areas where it doesn't exist now. Andrea Morgante also questioned the text that identifies natural gas as a win from a greenhouse gas emission perspective. Staff will research this. The LRPC asked that Staff include a source of the information for whatever it is. There was a discussion about the dichotomy between the Department of Public Service approval of natural gas expansion projects and the 90x2050 renewable energy use goal. Staff stated that regardless of the natural gas issue we will work toward meeting the energy goals by more dense development, encouraging more localized systems (i.e. McNeil Generating Plant) and other things within CCRPC's control. Charlie Baker suggested that we close the loop on this part of the Plan with a statement like: "In order to meet the 90x2050 goal it means customers will be switching to heat pumps, which will require market incentives (and regulatory changes) to make this happen."
- b. Have we adequately covered the opportunity our region has to lay the ground work for making a positive impact on transportation energy? There was a suggestion for funding and incentives to add charging stations in existing homes rather than just new construction to help with the costs of adding a circuit breaker, electricity to the garage, etc. Justin Rabidoux suggested that we expand beyond modal choices, and how we power them. We should describe the energy savings we can capture from improvements to the system more generally such as: moving traffic more efficiently and quickly, better light bulbs,

- 1 Intelligent Transportation Systems, etc. A lot of those transportation projects are relatively easy fixes and
2 just need money, and we can influence that. Again, Staff will research natural gas and methane burning
3 ghg – if it is cleaner at all, how much cleaner is it? Add to page 77, single yellow highlight page: Also
4 incentivize TDM strategies with carrots and sticks through legislative changes like excise taxes, etc.
- 5 c. Do you agree with the statement saying that Strategy 3.2.2 does not include energy generation
6 development? (see intro to Section 3.2.2) – change “energy generation facilities” to “solar and wind
7 generation facilities”. Otherwise stick with this sentence for now.
- 8 d. Should the ECOS Plan language use the term “shall” to prohibit renewable energy generation development
9 on known constraints? Is the sentence about mitigation necessary? Charlie Baker explained that use of
10 shall is a policy shift for CCRPC because our Plan doesn’t include any “shalls” currently. Alex
11 Weinhausen added that use of shall makes sense in this circumstance since you need to be clear in order to
12 get substantial deference, which is the whole purpose of going through this effort. There was discussion
13 about the difference between known constraints and possible constraints. It was suggested that you still
14 use “shall” for possible constraints to require site assessments to ensure your resources are protected or
15 minimized (see page 101). Also need to reference the maps and lists of constraints here; and maybe define
16 “possible” and “known” in footnote or something. Also, potentially pull out “preferred sites” from page
17 101 – and/or add a sentence or two about what those sites are, if we get any local preferred sites. There
18 was a suggestion to add an action about public investments for rooftop solar on schools. There was some
19 discussion about whether we would or wouldn’t want to see public dollar investment in private buildings.
20 Lastly, does encouraging solar generation on previously developed sites not consider our rural areas? The
21 LRPC decided the language is good as is (last highlight on page 101).
- 22 e. If we use the word “shall” to prohibit generation on known constraint areas then do we have a
23 contradiction with using the State’s definition of known constraints? The guidance from the Department
24 of Public Service defines a known constraint as “signals likely, though not absolute, unsuitability for
25 development based on statewide or local regulations or designated critical resources”, however we are
26 intending them to be absolute. Alex Weinhausen suggested that on page 128 we explain the state “known
27 constraint” definition, and add that Chittenden County’s definition is more absolute. Also explain within
28 the definitions that the resources are defined by site investigation, the maps are just a starting point.
29 Discussion evolved to how we map this. Can we combine both state and local known constraints and
30 symbolize it in the same way? Or make a final conclusion map? Also, do we still need to map the
31 generation resource areas at all, because the siting decisions will be made based on the constraint maps
32 rather than the generation areas? Staff will think about this more.
- 33 f. Does the Plan language on substantial regional impact for energy development seem appropriate? (See
34 page 24). Discussion about just referring to the maps and whether the maps should be the constraints
35 rather than the generation maps, and/or the shall policy statement. The draft Plan states that the local
36 constraints may change over time as the municipalities do their local planning, and therefore it may not be
37 likely that a conflict will arise between the Regional Plan and a local Plan. Staff will think about whether
38 we have to address this within the SRI at all. If we do include something here about energy, we should
39 simply refer to the constraints not the map. Also had a discussion about “Future Land Use Plan” – it
40 should just be the map and potentially the Section 3.2.2 policy.

4. Next Meeting

June 8, 2017 from 8:30am to 10:00am.

10. Adjourn

The meeting adjourned at 10:05 a.m.

Respectfully submitted, Regina Mahony

Updated: June 30th 2017				
Municipality	Resource Areas with Development Prohibition (aka known constraints)	Supporting Regulation	Possible Constraints	Supporting Regulation
Burlington			1. Historic Districts 2. Mixed Use, Institutional Core Campus and Enterprise Zoning Districts 3. Historic Neighborhoods (Eligible for Listing) 4. Designated Downtown and Neighborhood Development Area 5. Official Map Features 6. View Corridors	1 and 3. Burlington's Standards for Historic Buildings and Sites state that new additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale, and proportion, and massing to protect the integrity of the property and its environment. (5.4.8) 2. Development Ordinance Section 4.4.1 and 4.5.2: Development [in the Downtown Mixed Use Districts and institutional Core Campus Overlay] is intended to be intense with high lot coverage and large tall buildings placed close together. Development in the Enterprise District is intended to ensure that sufficient land area is appropriately designated within the city to provide an adequate and diversified economic base that will facilitate high-density job creation and retention (4.4.3) 5. Designated Downtown and Neighborhood Development Area are intended to be the center of Burlington's economic and commercial development 6. City Council Authority 7. Development Ord. section 4.4.1 states that building heights and forms shall respect the principal view corridors, defined as the rights-of-way of Pearl, Cherry, College, and Main Streets, and preserve or enhance views to the lake and mountains.
Bolton	1. Conservation District 2. Very Steep Slopes (25% or more) 3. Wetland Buffers 4. Surface Water Buffers 5. Town-Owned Land 6. Flood Hazard Overlay II	1. BLUDR Table 2.7(A): The Conservation District includes all land above 2,500 feet in elevation, the town’s permanently conserved lands, including town and state owned parks, forests and conservation land, and existing private in-holdings on Honey Hollow Road. Conditional Uses: Alpine Ski Facility, Primitive Campground, Nordic Ski Facility, Public Facility, Recreation/Outdoor, Telecommunications Tower. 2. BLUDR Section 3.16(B): All development is specifically prohibited on very steep slopes in excess of 25% except for the following which may be allowed by the Development Review Board subject to conditional use review and the requirements of Subsection (A): ski lifts and ski trails associated with an approved alpine or Nordic ski facility, hiking and rock climbing trails, development on pre-existing lots legally in existence as of the effective date of these regulations for which the Board determines that there is no portion of the lot on which the slope does not exceed 25% and, as such, that the total prohibition of development on slopes in excess of 25% would unduly preclude reasonable use of the lot. 3. BLUDR Section 3.17(C)(3) All structures and other impervious surfaces shall be set back at least 50 feet from... wetlands identified on Vermont Significant Wetland Inventory (VSWI) maps or through field investigation, as measured from a delineated boundary. 4. BLUDR Section 3.17(B)(3) and (C)(1): All structures and impervious surfaces, except for allowed encroachments under Subsection (D) below, shall be set back at least...200 feet from Goose Pond, Preston Pond and Upper Preston Pond, as measured from the annual mean high water mark.In addition, all structures and other impervious surfaces shall be set back at least 50 feet from... the shorelines of all other naturally occurring lakes and ponds with a surface area greater than one (1) acre, as measured from the mean water line. 5. Selectboard Authority 6. BLUDR Table 2.8 states that the only new construction allowed in the FHO II district is an accessory structure to an existing use	1. Forest District 2. Steep Slopes (15-25%)	1. BLUDR Table 2.6(A): The purpose of this district is to protect Bolton’s more remote and inaccessible forested upland areas from fragmentation, development, and undue environmental disturbance, while allowing for the continuation of traditional uses such as forestry, outdoor recreation and compatible low density residential development 2. BLUDR Section 3.16(A): Development on steep slopes equal to or in excess of 15%, or which results in such slopes, shall be subject to conditional use review under Section 5.4 and [provisions including stormwater management, erosion control and design intended to minimize visual impacts from public vantage points].
Charlotte	1. Shoreland Setback and Buffer Area Surface Waters, Wetlands, and Buffer areas 2. Flood Hazard Areas 3. Special Natural Areas 4. Wildlife habitat	Zoning Regulation page 65 states Land development in Charlotte is evaluated and sited so as to avoid and / or minimize impacts to the following AHPV as identified in Charlotte's Town Plan and Land Use Regulations: flood hazard areas, Surface waters, wetlands and associated setback and buffer areas, Shoreland setback and buffer areas, special natural areas, Wildlife habitat (as identified in Charlotte Town Plan or as field delineated)	1. Conserved Land 2. Historic Districts, Site, and Structures 3. Slopes greater than 15% 4. Land in Active Agriculture 5. Water Supply Protection Areas 6. Scenic Views 6. Significant Wildlife Habitat	Zoning Regulation page 65 states Land development in Charlotte is evaluated and sited so as to avoid and / or minimize impacts to the following AHPV as identified in Charlotte's Town Plan and Land Use Regulations: Historic districts, sites and structures (as listed in Vermont State Historic Register); Steep slopes (equal to or in excess of 15%),Land in active agricultural use

Municipality	Comments	Answer to Question 4: Do you want your regional plan (ECOS Plan) to prohibit energy generation in areas with state and local known constraints?	Responding Entity	Request for TA
Burlington		the Planning Commission does not feel comfortable providing comment on this issue until the CCRPC receives feedback from the state.	Planning Commission	No
Bolton	Bolton's Conservation District does allow very limited development of ski facilities and telecom towers. CCRPC staff are unsure whether this means it should be a possible constraint instead of a known constraint or not.	Yes (also see above)—otherwise how do these differ from “potential” constraints? Per §4384a(3) the regional energy element/plan and enhanced local energy elements/plans are required to identify both “potential areas for the development and siting of renewable energy resources <i>and areas that are unsuitable for siting those resource</i> s...” That was the intent behind A.174 w/re to integrating energy and land use planning, in association with giving more weight to regional and municipal plans in Section 248. This also suggests however, that known constraints should be given pretty careful consideration at the regional as well as local level.	Sharon Murray, Selectboard Member	At some point RPC assistance in this area would be welcome, but likely not in FY18. As you know, our Planning Commission will be focusing on an update of our development regulations over the next year or so—which potentially could include some assistance with solar facility screening standards?
Charlotte		According to Act 174, “the ECOS Plan will carry greater weight—substantial deference—in the Section 248 siting process for energy generation. The EC recommends that yes, we want our regional plan (ECOS Plan) to prohibit energy generation in areas that have “known” constraints.” If this were not the case, then making the distinction between “known” and “possible” constraints would be rendered meaningless and not have any weight or credibility. It’s crucial for public buy-in on the “possible” constraints to demonstrate a willingness to protect the “known” constraints.	Planning Commission, Energy committee	Yes

Municipality	Resource Areas with Development Prohibition (aka known constraints)	Supporting Regulation	Possible Constraints	Supporting Regulation
Colchester	1. Shore Land Overlay District 2. Steep Slopes 20% 3. Water Protection Overlay District	1. <u>Zoning Regulation</u> To preserve the natural growth and cover of the shorelines, to preserve water quality, to prevent pollution, to regulate development and appearance of the shorelines, to prevent erosion, to prevent nuisance, and to preserve the property rights of the shoreline property owners. Permitted uses are those uses which are permitted in the underlying zoning district. 2. <u>Zoning Regulation</u> Setback from Slopes. The minimum setback from a slope exceeding 45 degrees (See Appendix B) shall be fifty (50) feet (ARTICLE 2). 3. It is the purpose of this Section to provide for the protection and improvement of the surface waters and wetland within the Town of Colchester. These regulations and standards are intended to lead to the establishment and protection of natural areas along the Town’s surface waters and wetlands to provide improved protection for water quality and the provision of open space areas and wildlife habitat. It is the further purpose of this Section to provide for the retention of preexisting residential neighborhoods located along surface waters and streams in a manner consistent with the resource protection goals of this Section and the Municipal Plan. For the FEH portion of this district, permitted uses are those uses which are permitted in the underlying zoning district. For wetlands and surface waters, encroachment is allowed only for very specific uses recreation, access, stormwater management, or agriculture.	1. Shoreland Setback and buffer area	following AHPV as identified in Charlotte's Town Plan and Land Use Regulations: flood hazard areas, Surface waters, wetlands and associated setback and buffer areas, Shoreland setback and buffer areas, special natural areas
Essex	1. Core Habitat 2. Habitat Blocks 3. Steep Slopes 20 Percent or Higher	1 and 2. Town Plan Policy 3(S).4 (p. 63): “Critical wildlife habitat, including but not limited to deer wintering areas, rare and/or endangered species habitat, local fisheries, and identified travel corridors, shall be protected from inappropriate development and land management activities.” Town Plan p. 63: “By recognizing its natural features – topography, slopes, geology, soils, water resources, agricultural and forest lands – a town can protect those resources and ensure a high quality of life for its residents.” Town Plan p. 72, Forest Lands: “Essex’s forests provide large habitat blocks for animals and offer economic potential through timber harvests. Forest trails open to hiking, mountain biking, horseback riding, cross-country skiing and snowmobiling improve quality of life and can support a recreation-based sector of the economy. Nearly 13,000 acres in Essex are forested, yet forest fragmentation from development is a major problem in Vermont, including Essex. The largest forests in Essex stretch north from the northeastern and northwestern parts of town into Colchester, Milton, Westford, and Underhill. The largely unbroken woodlands serve as prime habitat – the Vermont Agency of Natural Resources scores both forests as 9 out of 10. When development must occur in those habitat blocks, every effort shall be taken to minimize the intrusion on the forests through the use of siting standards.” 4. Town Plan Page 63: Development shall be designed to prevent the destruction of important natural resources, including wetlands, floodplains, unique geological features, primary agricultural soils, and slopes exceeding 15 percent; and Zoning Regulations 5.6.B.2: Development...shall be prohibited on slopes of 20 percent and steeper due to the likelihood of environmental damage.	1. Scenic Resources Protection Overlay District 2. Resource Protection District Industrial 3. Steep Slopes 15-20%	1. Essex Zoning Table 2.20.A: The purpose of this overlay district is to avert or minimize the adverse impacts of development on identified scenic resources, viewsheds and roadscape corridors in the Town of Essex through appropriate site planning and design practices. The standards are intended to provide flexibility so that proposed development can be designed to fit the particular characteristics of the site on which it is located. 2. Essex Zoning Table 2.14: The objective of the RPD-I and the related O1 District parcel is to protect such natural attributes for public enjoyment, and, to carry out development activities in harmony with the natural surroundings. Of the 751.7 acres in this district, 60 percent has been formally designated for recreation/conservation use (including all of the related O1 District acreage) and the remaining 40 percent for permitted uses as set forth in (B) below that satisfy all other district requirements. 3.Zoning Regulations 5.6.B.2: Development is discouraged on slopes of 15 percent or steeper due to the likelihood of erosion and stormwater runoff problems.
Essex Junction				
Hinesburg	1. Steep Slopes (25% or greater)	1. Hinesburg Zoning 5.26.2(1): Building sites and related development areas...shall avoid primary resource areas...including steep slopes of 25% or greater.	1. Moderately Steep Slopes (15-25%) 2. Core Wildlife Habitat 3. Village Growth Area and Industrial zoning districts	1 and 2. Hinesburg Zoning 5.26.2(1): Building sites and related development areas...shall minimize impact on secondary resource areas...including slopes between 25-25% and core wildlife habitat. 3. Hinesburg Zoning, Section 3.1: Village Growth Area Purpose. Development densities should be maximized to the extent practical in order to better realize Hinesburg’s overall “smart growth” strategy.
Huntington				

Municipality	Comments	Answer to Question 4: Do you want your regional plan (ECOS Plan) to prohibit energy generation in areas with state and local known constraints?	Responding Entity	Request for TA
Colchester	Dwelling units are a permitted use in GD4 Overlay District, so it was changed from Known to Possible	The Commission was supportive of including language in the regional plan regarding renewable energy prohibitions in areas of known, previously called Level 1, constraints. The Commission did agree that projects located on existing structures or impervious areas were acceptable (i.e. an existing home located within the Floodplain), and that any prohibition should be based on a site investigation to ensure the presence of the constraint. There was not support for prohibiting renewable energy generation in areas of possible constraints, previously called Level 2.	Planning Commission	we are currently working with Colchester in FY 2017 and work will likely continue in FY18
Essex	Town requested that the Scenic Resources Overlay be a Known Constraint; CCRPC staff did not find it prohibited all development	did not provide comments to 4/30 memo		
Essex Junction	Village requested that Conserved Lands be elevated to a Known Constraint. CCRPC staff finds that the development of conserved lands are governed on a case-by-case basis per their individual development restrictions	did not provide comments to 4/30 memo		
Hinesburg	Town requested that Conserved Lands be elevated to a Known Constraint. CCRPC staff finds that the development of conserved lands are governed on a case-by-case basis per their individual development restrictions	We do want the regional plan to prohibit energy generation in areas with known constraints; however, we recognize that gaining access to unconstrained areas may require passing through a constrained area. We allow for this in traditional development projects as follows (section 6.12.1 #2, Subdivision Regulations): “Building sites and related development areas (e.g., roads, driveway, lawn, etc.) shall avoid primary resource areas and minimize impact on secondary resource areas. Limited impacts to primary resource areas for access (e.g., road or driveway) may be allowed, at the discretion of the Development Review Board, if there are no alternate development plans and no other means of access. In such cases, the access shall be designed to impact as little of the primary resource area as possible.” We encourage the regional plan to take a similar approach.	Planning Commission	Yes
Huntington				Yes

Municipality	Resource Areas with Development Prohibition (aka known constraints)	Supporting Regulation	Possible Constraints	Supporting Regulation
Jericho	1. Well Protection Area Overlay District 2. Natural Areas and Natural Communities 3. Primary Conservation Areas	<p>1. Only the following uses are permitted within 200 feet surrounding the water supply wells service the Jericho Village Water District, the Foothills water supply, the Jericho East water supply, and the Underhill-Jericho Water District, the Jericho Heights water supply, and any other public water supply: Wildlife management, Passive recreation, Proper operation and maintenance of existing dams, splash boards, and other water control, supply and conservation devices, Maintenance and repair of any existing structure, Agriculture and forestry provided that fertilizers, herbicides, pesticides and other leachable materials are neither applied nor stored outdoors. (No conditional uses) [Land Use Regulations 6.6.2]</p> <p>2. Natural Resources Overly District: §6.7. The purpose of the Natural Resources Overlay District is: to preserve wildlife habitat such as deeryards; to conserve and protect identified natural areas and natural communities such as significant habitat for flora and fauna; and to preserve identified scenic resources such as ridgelines. Only wildlife management, passive recreation, selective timber cutting and agriculture not involving structures is allowed in the natural areas and natural communities. Areas delineated as “natural areas and natural communities” shall consist of areas designated by the Vermont Natural Heritage Program and indicated on the map titled “Biological Natural Areas of Chittenden County” dated January, 1991 which are hereby incorporated by reference and made a part of this section.</p> <p>3. Tiered Conservation Priorities, as shown on Map 9 of the Town Plan, depicts all the conservation priorities identified in Jericho in three tiers of priority.</p> <ul style="list-style-type: none">• Primary Conservation Areas are the most sensitive places: the rare natural communities, rare species, vernal pools, riparian areas, river corridors, and wetlands. These areas occupy a small percentage of the town and should not be developed. (pg. 38) [May be added to zoning in next update]	1. Secondary Conservation Areas 2. Village Centers	<p>1. Tiered Conservation Priorities, as shown on Map 9 of the Town Plan, depicts all the conservation priorities identified in Jericho in three tiers of priority.</p> <p>Secondary Conservation Areas are also very sensitive but some activities can occur within them without compromising their integrity. These include wildlife road crossings, a larger area surrounding vernal pools, significant (but not rare) natural communities, and ledge and cliff habitat that may be important for wildlife. In general, these places should be evaluated carefully when development is proposed within them for potential conflicts with the natural resource values. (Town Plan Pg. 38)</p> <p>2. The purpose of the Village Center District is to encourage the concentration of people and community-focused activities in traditional centers (Land Use Regulations 3.2.7)</p>
Milton			1. Agriculture Soils: 2. Town Forest and Municipal Natural and Rec Areas with Management Plans 3. Habitat Blocks 8-10 4. Encumbered Open Space	<p>1. For PLANNED UNIT DEVELOPMENTS-Residential that occur outside of the Town's core, in areas zoned Agricultural/Rural Residential, Shoreland Residential and Forestry/Conservation/Scenic Ridgeline, a key goal for PLANNED UNIT DEVELOPMENTS-Residential shall be to retain rural community characteristics through the selection of appropriate BUILDABLE ENVELOPES that will minimize the visual impact of proposed developments from existing roadways. Included within the realm of rural community character is the preservation of existing farms and prime agricultural soils</p> <p>2. Selectboard Authority</p> <p>3. Town Plan Goal 8.1: Continue protection of existing natural resources identified in this chapter. [Including critical habitat]</p> <p>4. Section 804.6: OPEN SPACE Requirements for developments with ten (10) or more multi-family residential units. The proposal shall provide for the preservation and maintenance of OPEN SPACE which is designed to be an integral part of the whole development. The size, shape and locations of OPEN SPACE shall be approved by the Development Review Board. The OPEN SPACE shall be protected by appropriate legal devices to ensure the continued USE of such lands for the purpose of AGRICULTURE, FORESTRY, recreation or conservation. Such mechanisms include dedication of development rights, conservation easements, homeowners associations, restrictive covenants, conveyance to land trusts, or other appropriate grants or restrictions approved by the Development Review Board. Permitted future USES and maintenance of the OPEN SPACE shall be specifically identified as part of the approval of development with ten (10) or more multifamily units. HOWEVER, the town plan recognizes the need to improve these regulations: Goal 8.5 is to "Establish standards for more appropriate, useful, and usable open space that is set-aside as a result of cluster subdivisions, such as Planned Unit Developments."</p>
Richmond				

Municipality	Comments	Answer to Question 4: Do you want your regional plan (ECOS Plan) to prohibit energy generation in areas with state and local known constraints?	Responding Entity	Request for TA
Jericho		[The Planning Commission members] are generally OK with that [the statement] but are concerned about potential future technology for renewable structures that could be developed that would not be intrusive or harmful to these areas. If that could be considered in the language, that is OK. Also, just for clarity, they would like it to add the following underlined word "... unless located on an existing structure or <u>existing</u> imperious surface."	Planning Commission	Yes
Milton	Milton originally requested all constraints as known constraints, but CCRPC staff were unable to find supporting regulation in either zoning or the town plan. Hydric soils were requested, but not included because no documentation could be found. Additionally, the Town requested that Conserved Lands be elevated to a Known Constraint. CCRPC staff finds that the development of conserved lands are governed on a case-by-case basis per their individual development restrictions	did not provide comments to 4/30 memo		no response
Richmond	Richmond has requested the following constraints, but there is not supporting language for them in the zoning or in the town plan, as the plan is expired and a drafting process is ongoing. The following will be considered by CCRPC staff after the adoption of the Town Plan: 1. Ridges 2. Slopes >_ 30% 3. Trails 4. Conserved Land 5. ANR Primary Conservation Areas 6. Highest Priority Habitat derived from STA Report	No response	Richmond Conservation and Planning Commission	

Municipality	Resource Areas with Development Prohibition (aka known constraints)	Supporting Regulation	Possible Constraints	Supporting Regulation
Shelburne			1. Significant View Areas 2. Archeologically Sensitive Areas 3. Lakeshore Buffer	1. Direct development in a manner to minimize undue adverse impacts on the Town’s scenic beauty, open lands, shorelines, and ridgelines with particular attention paid to roadside views or views from Lake Champlain. Identification of such resources can be aided by the maps listed in Objective 1 (Town Plan pg. 30) 2. could not map these 3. The purpose of this district is to preserve vegetation and natural cover of the shore adjacent to Lake Champlain in order to preserve views both from and of the lake, the preservation of water quality and prevention of pollution, the recognition of the extreme vulnerability of lakeshore properties to erosion and other nuisances, and the avoidance of problems resulting from over intensive exploitation of the lakeshore. Uses are permitted according to underlying district (Zoning)
St. George				
South Burlington			1. Source Protection Area Zone 1 2. wetlands and buffers 3. Habitat Blocks and Riparian Connectivity 4. Slopes 20% or greater 5. SEQ Natural Resource Protection Area	1. The 2016 Comprehensive Plan includes a section on energy siting (page 3-41) states “South Burlington recognizes that there may at times be competing goals. While the City supports the harnessing of renewable energy, particularly in the case of solar arrays, it must consider the impacts of such structures on open spaces and wildlife corridors. As such, this plan shall strive to provide guidance as to where the siting of renewable energy facilities should be avoided in favor of certain conservation areas: <ul style="list-style-type: none">• All Primary Conservation Areas identified per the map included in the 2014 South Burlington Open Spaces Report• Uncommon Species, Habitat Blocks identified per the Secondary Conservation Maps included in the 2014 South Burlington Open Spaces Report.” SPA-Zone I is indicated on the Primary Conservation Areas map. 2. Zoning It is the purpose of this Section to provide appropriate protection of the City’s wetland resources in order to protect wetland functions and values related to surface and ground water protection, wildlife habitat, and flood control. Encroachment is conditional with State CUD and/or DRB approval (Article 12) 3. this plan shall serve to provide guidance as to where the siting of renewable energy facilities should be avoided in favor of certain conservation areas: All Primary Conservation Areas identified per the map included in the 2014 South Burlington Open Spaces Report. Uncommon Species, Habitat Blocks identified per the Secondary Conservation Maps included in the 2014 South Burlington Open Spaces Report. (Town Plan, 3-41) 4. The presence of important ecological resources, as well as steep slopes, shallow soils, and extensive bedrock outcroppings should be incorporated into all types of planning for development and conservation (Town Plan, 2-105). 5. ??? Dwellings are permitted
Underhill	1. Mt. Mansfield Scenic Preservation District 2. Wetlands and associated buffers, Surface Waters and buffers 3. Steep Slopes (>25%) 4.Above 1,500 ft. Elevation	1. <u>Zoning Regulation</u> : All structures, with the exception of telecommunications and wind towers and ancillary 25 facilities, tent platforms and lean-tos, and alpine and Nordic ski facilities, are prohibited over 1,500 feet in elevation above mean sea level. <u>Town Plan</u> : The Planning Commission should continue to support the current regulation prohibiting development above 1500’; but the Commission should also ascertain whether the community desires alternative energy structures on hillsides and ridgelines, including those above the 1500’ elevation level (pg. 21). The Planning Commission shall reconcile the seeming conflict between the competing interest of 1500’ elevation ridgeline protection and wind power development through regulatory tools such as specific regulations; individual site plan review; and conditional use review (pg. 67). 2. <u>Zoning Regulations</u> : Protect the beneficial functions of wetlands including retaining stormwater runoff, soil stabilization, pollutant filtering, flood reduction, and protecting groundwater quality and quantity. Prevent soil erosion and river/stream channel instability. Protect and maintain water quality. .Protect wetland and riparian wildlife, fish, and rare, threatened or endangered species habitat. Preserve public health and safety through the establishment of vegetated riparian buffer zones, which serve to slow and absorb floodwaters (pg. 60). 3. <u>Zoning Regulations</u> - to avoid site disturbance on very steep slopes (> 25%),Exemption Utilities, including telecommunications facilities, power generation facilities, and transmission lines regulated by the Vermont Public Service Board. (pgs. 53-54) 4. All structures, with the exception of telecommunications and wind towers and ancillary facilities, and tent platforms and lean-tos are prohibited in this district over 1,500 feet in elevation above mean sea level (pgs 14,17,20,23)	1. Steep slopes (15-25%)	1. The purpose of this section is to regulate land subdivision and development to 35 minimize site disturbance and construction on steep slopes (15% to 25%), and to avoid site 36 disturbance on very steep slopes (> 25%) in order to
Westford	1.Steep Slopes 25% or greater 2. Deer Wintering Areas 3. Ledge Outcroppings; Flood Hazard Overlay District, Water Resources Overlay	1. Development must not occur on areas containing steep slopes (pgs. 3-20, 3-51) 2. Development must not disturb areas with significant natural resources (SNR),deer wintering areas are included in the definition of SNR (pg. 3-52) 3. For the purposes of this provision, unbuildable land will include: (a) Land within the Water Resources or Flood Hazard overlay district. (b) Land with a slope of 25% or greater. (c) Ledge outcroppings. (pg. 3-20) [ALL EXCERPTS FROM ZONING REGUALTION]	1. Prime (and State-wide significant) Agricultural Soils	1. Development must not disturb areas with significant natural resources (SNR),prime or statewide ag soils are included in the definition of SNR (pg. 3-52)

Municipality	Comments	Answer to Question 4: Do you want your regional plan (ECOS Plan) to prohibit energy generation in areas with state and local known constraints?	Responding Entity	Request for TA
Shelburne		No response		
St. George				Yes
South Burlington	The City as requested that their Source Protection Area - Zone 1 be a Known Constraint, but the source policy for this reads more like a possible constraint.	I would recommend that renewable energy siting be treated, in these areas, as any other form of development would be treated. In most cases, this will mean that yes, these facilities would be prohibited. But there may be circumstances where a State or Federal permit would grant other forms of development in these areas; renewable energy should be treated similarly.	Staff with input from energy committee	Yes assistance with identifying preferred sites
Underhill	1. Dwelling units are a permitted use in the Mt. Mansfield Scenic Preservation District. The towns desire to restrict renewable energy development does not match heir zoning regulations. The language in the Plan expresses that that the Town has a desire to protect its ridgelines for all types of development.	Both the Planning Commission and the Energy Committee answered in the affirmative to this question, as both generally believed that the regional plan should regulate energy generation in areas with State and local known constraints.	Planning Commission and Energy Committee	Yes
Westford	Check to ensure the Water Resource Overlay District covers streams draining less than 2 miles, Town requested ag soils as a possible constraint but regulation is more restrictive--should possibly be a Known Constraint?	No response		Yes

Municipality	Resource Areas with Development Prohibition (aka known constraints)	Supporting Regulation	Possible Constraints	Supporting Regulation
Williston	1. Watershed Protection buffers 2. Primary Viewshed Areas	1. Williston Unified Development Bylaw 29.9.6: Watershed protection buffers shall remain undeveloped, except as provided here: Development within watershed protection buffers shall be limited to utility and road crossings; trails and trail crossings, with minor related facilities like signs and benches; and runoff and erosion control measures (29.9.6.3). 2. Bylaw 27.9.4: Site work, structures, and/or impervious surfaces shall not encroach upon the designated Scenic Viewshed except: All lands that are included in Williston’s designated growth center, and all minor improvements to residential property listed in Chapter 20.	1. Conservation Areas/Natural Communities	1. 27.4.4 Avoid Undue Adverse Impact. Alternative site designs may be required, alternative locations for the development may be required, and the minimum amount of land required to be set aside as open space may be increased, if necessary to avoid undue adverse impacts to Conservation Areas .

Municipality	Comments	Answer to Question 4: Do you want your regional plan (ECOS Plan) to prohibit energy generation in areas with state and local known constraints?	Responding Entity	Request for TA
Williston	<p>The Town requested that Conservation Areas be a Known Constraint, but the regulations indicate that it is more appropriately a Possible Constraint.</p> <p>The town also requested that there be difference constraints for wind (viewsheds, watersheds, conservation areas) and solar (watershed, conservation)</p> <p>The town requested that Significant Wildlife Habitat Areas be listed as a possible constraint, but 27.5.6.4 specifically exempts alternative and renewable energy installations from SWHA regulations.</p>	No response	Conservation Commission	No Response

4.3.1 METROPOLITAN TRANSPORTATION SYSTEM

The primary focus of the MTP is the Metropolitan Transportation System (MTS). The MTS is the multimodal network of highways, arterial and major collector roadways, transit services, traffic signal systems, rail lines and stations, walk/bike facilities, park and rides, Burlington International Airport, and other intermodal facilities critical to the movement of people and goods in the region. It is also the system (with the inclusion of all public bridges over twenty feet in length) eligible for federal transportation funding investment. **Figure X-X** depicts the existing Chittenden County MTS. To examine in detail, see the larger scale version here: <https://map.ccrpcvt.org/ChittendenCountyVT/>

While not specifically addressed in this plan, local roads are also an important part of the road network in Chittenden County. Local roads are owned and maintained by the municipality in which they are located and are generally not eligible for federal transportation funding investment.

Evaluating transportation facilities on a system-wide basis using the MTS framework facilitates identifying problems, developing solutions, and evaluating performance across the entire interrelated transportation system. The MTS distinguishes locally important transportation facilities and services (?) from those that are strategically significant at the regional, state and even federal levels. The regionally significant facilities and services form the modal components critical to Chittenden County's mobility needs. As the transportation system evolves and grows over time based on the recommendations later in this MTP, the MTS continues to change to accommodate those new facilities and services. The MTS is not stagnant but a dynamic system requiring periodic updates.

For example, the MTS framework recognizes that bus transit systems run on local streets and arterials, and therefore these operations cannot be effectively analyzed independently of arterial congestion. Similarly, arterial access management must also provide for safe and appropriate pedestrian facilities within that same arterial corridor. Resulting problems therefore may be difficult to resolve, given the variety of travel modes, services, and facilities potentially coming into conflict. However, by addressing the transportation system as a single entity of interrelated elements, we become more aware of potential conflicts in the planning stage, rather than finding unexpected consequences later in the project implementation phase.

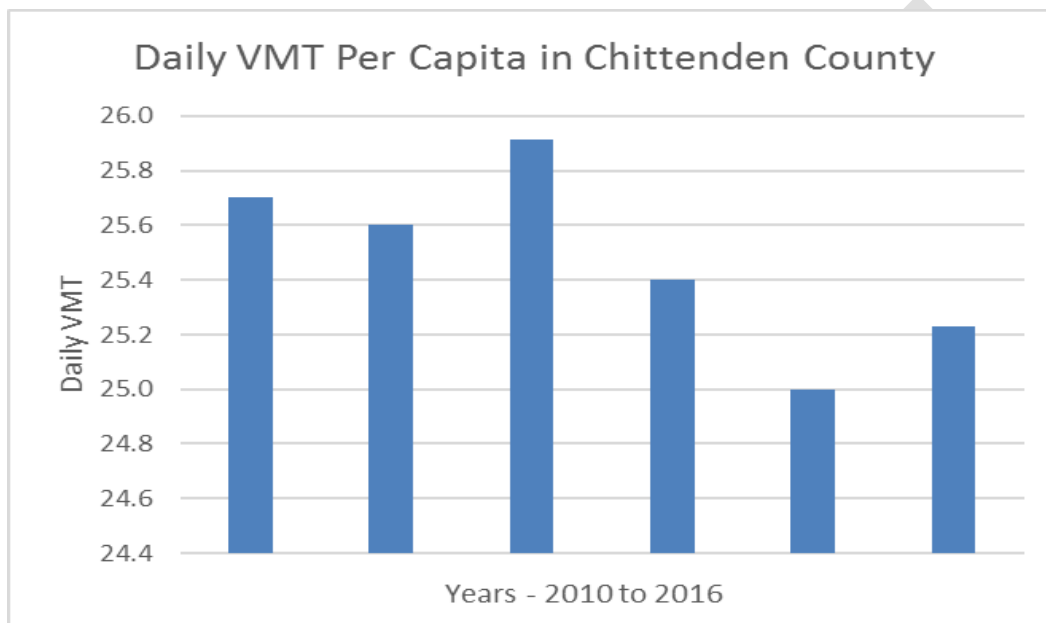
4.3.2 CURRENT TRANSPORTATION CONDITIONS

The current condition of the region's Metropolitan Transportation System is assessed in the following sections. This assessment supports the need for maintaining the existing MTS, and also highlights the major issues and concerns about the system condition and identifies areas where improvements are necessary.

Arterial Roadways, VMT, and Congestion

The MTS in Chittenden County consists of highways classified as Interstate Highways, Principal Arterials, Minor Arterials, Major Collectors, and Minor Collectors. The classification system is organized as a hierarchy of facilities based on the degree to which the roadway facility serves mobility and access to adjacent land uses. Interstates and Arterials make up just over 12 percent of County road mileage, yet carry 67 percent of all vehicle miles traveled (see: VTrans 2015 VMT data: http://vtrans.vermont.gov/sites/aot/files/2015_Extent_and_Travel_Report.pdf).

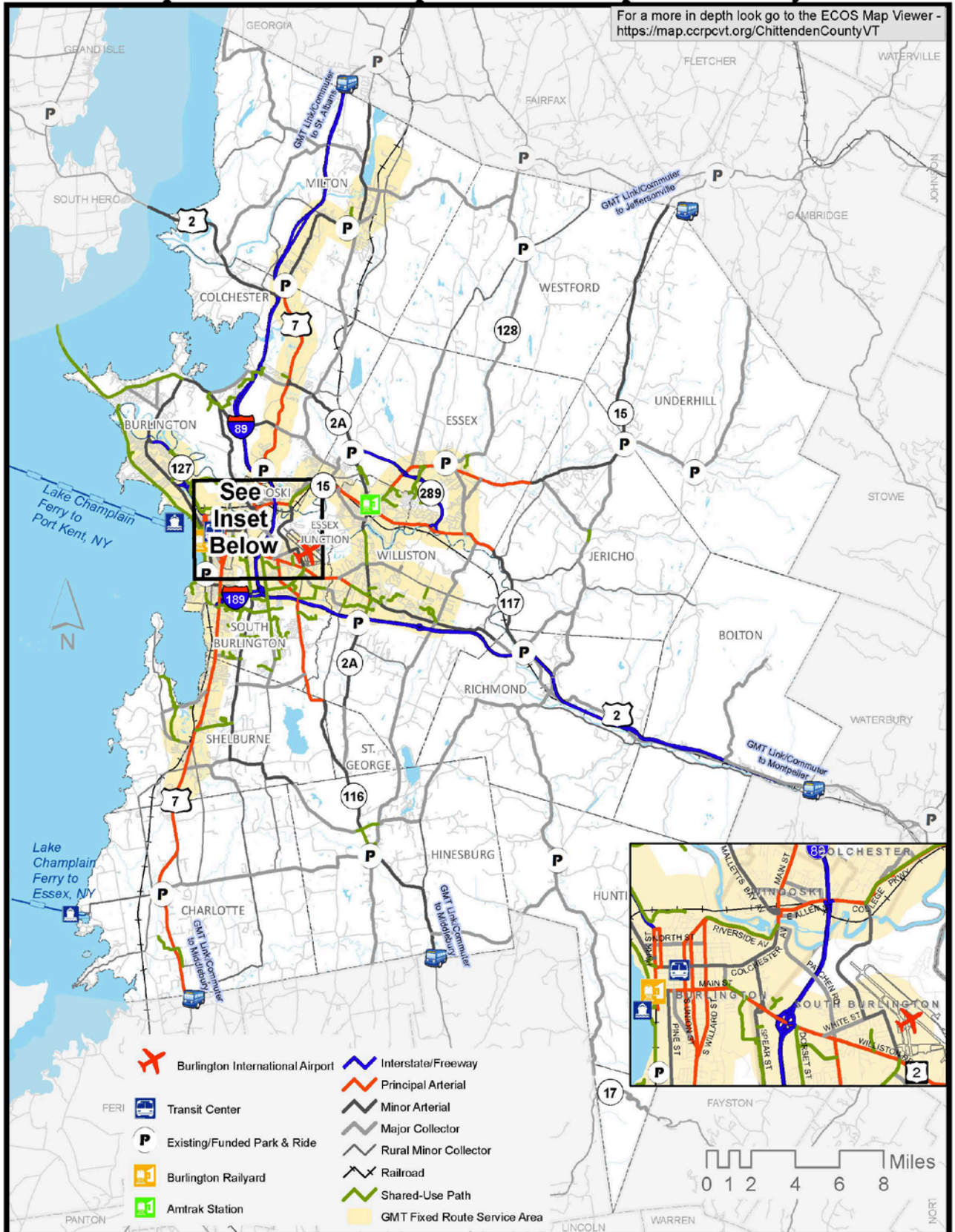
Vehicle Miles Traveled(VMT) is a measurement of miles traveled by all motor vehicles in a specified region over a specified period of time. VMT data are collected at the state level and disaggregated down to the County level. As historic auto ownership spread along with the construction of our roadway system, VMT rose year after year, especially post WWII. More recently, that rise slowed and then appeared to fall as less driving, other mode use and economic conditions seemed to impact the long-term trend. As part of the ECOS Regional Sustainability Plan, the CCRPC tracks both Chittenden County VMT and VMT per capita. The last several years of driving per person is revealed in the chart below.



While no clear trend is evident, recent history has shown that we are generally driving less than just a few years ago. However, current fuel prices appear to be leading to a rise in VMT.

Map 8 - 2017 Metropolitan Transportation System

For a more in depth look go to the ECOS Map Viewer - <https://map.ccrpcvt.org/ChittendenCountyVT>



Using the congestion measure of volume to capacity ratio (V/C) the CCRPC's Transportation Demand Model identifies congestion problems in the afternoon peak hour on several road segments identified in the table below.

NOTE: Table of 2015 V/C problem areas will be prepared and inserted here following updates to the Chittenden County Transportation Demand Model and analysis of subsequent model runs.

The combination of truck and automobile traffic on arterials can further exacerbate congestion, primarily due to slow truck acceleration at traffic signals and in stop- and-go traffic.

High Crash Locations

High Crash Locations (HCLs), as defined by VTrans, are road segments and intersections where the rate of crashes exceeds a VTrans established(?) threshold known as the critical rate. Locations are ranked by calculating a ratio between the critical rate and actual rate. According to the VTrans High Crash Location Report for 2012 through 2016, there are several dozen HCL road segments in Chittenden County, and nearly as many HCL intersections.

The locations of these road segments and intersections are identified on Maps 9 and 10. The most severe intersection sites are located in Winooski and Burlington. The most severe road segments for crashes are in Burlington and South Burlington. Nearly all high crash intersections fall within the urban or suburban towns, while the road crash segments are spread throughout the county including rural communities.

Note: the 2012 – 2016 HCL reports have not yet been released by VTrans. This text and the maps will be updated once the HCL information is available.

MAP 9 - 2012-2016 HIGH CRASH LOCATIONS-INTERSECTIONS

DRAFT

MAP 10 - 2012-2016 CRASH LOCATIONS-SEGMENTS

DRAFT

Public Transit

In 2016, after completing a merger with the Green Mountain Transit Authority, the Chittenden County Transportation Authority (CCTA) became Green Mountain Transit (GMT). This regional public transit provider has been providing transit services in parts of Chittenden County since 1974, and with the merger, now all of northwestern Vermont. GMT currently serves the Chittenden County communities of Burlington, Essex, South Burlington, Shelburne, Williston, Winooski, Milton, Hinesburg, Jericho, Underhill and a section of Colchester with over a dozen scheduled transit routes. Additionally, GMT operates LINK Express routes that connect Chittenden County communities with Montpelier, Middlebury, and St. Albans. School tripper service, limited Sunday service, and targeted shuttle services round out GMT's transit offerings.

GMT is also responsible for providing Americans with Disabilities Act (ADA) paratransit services for persons unable to use the GMT fixed route bus system because of a disability. Paratransit services are required to be provided to areas within three-quarters of a mile of each side of each fixed transit route. The ADA service is currently contracted out to the Special Services Transportation Agency (SSTA), a private not-for-profit paratransit operator whose service area covers most of Chittenden County. Of SSTA's total 136,000 rides in 2016, 40% were ADA trips. SSTA is also the contracted transportation provider to a number of other client groups through a variety of social service agencies.

GMT also runs a program with area colleges - UVM, Champlain and St. Michael's - called Unlimited Access, allowing faculty, staff, and students to use their college ID cards as fare-free unlimited transit passes. This privately funded program was first initiated in 2003 through a collaborative partnership with GMT and the Chittenden Area Transportation Management Association (CATMA). Additionally, GMT also partners with the Go! Chittenden County program to provide employers with support and information to facilitate transportation benefit offerings to their employees with support from CATMA, CarShare Vermont, and Local Motion. More information on these organizations is provided in later sections of this plan.

GMT currently provides over two and a half million trips per year, a 65% increase over the past seventeen years. However, in recent years, GMT has experienced a downward trend in ridership, which matches the overall national trend due in large part to low gasoline prices. (See **Figure 57** - GMT Ridership, FY2000 – 2016 below). Note that the ridership dip in FY14 was likely due to the three-week drivers' strike when virtually all service was halted. In the past, public transit service in Chittenden County had served mostly non-driving segments of the population (low income, seniors and children) with a limited ability to attract people with access to cars. However, GMT has made significant strides to improve passenger amenities and services with onboard Wi-Fi, fifteen-minute frequencies at peak times on select local routes (Essex Junction, Williston and Pine Street) and enhanced multimodal coordination. GMT's entire fleet is also equipped with bike racks to encourage this type of multimodal trip making.

During the fall of 2016, GMT unveiled its new Downtown Transit Center on St. Paul Street in Burlington. The Downtown Transit Center replaced the former Cherry Street station, which was originally constructed over 30 years ago. Plans for a new transit center in Burlington date back to 1992. The Downtown Transit Center features free wireless internet, a climate-controlled indoor waiting area, bathrooms, real-time electronic bus monitors, radiant heating, and a roof that covers the outdoor platform. Moreover, long-distance transit providers such as Megabus,

Vermont Translines, and Greyhound have included the new Downtown Transit Center for regional pickups and drop-offs.

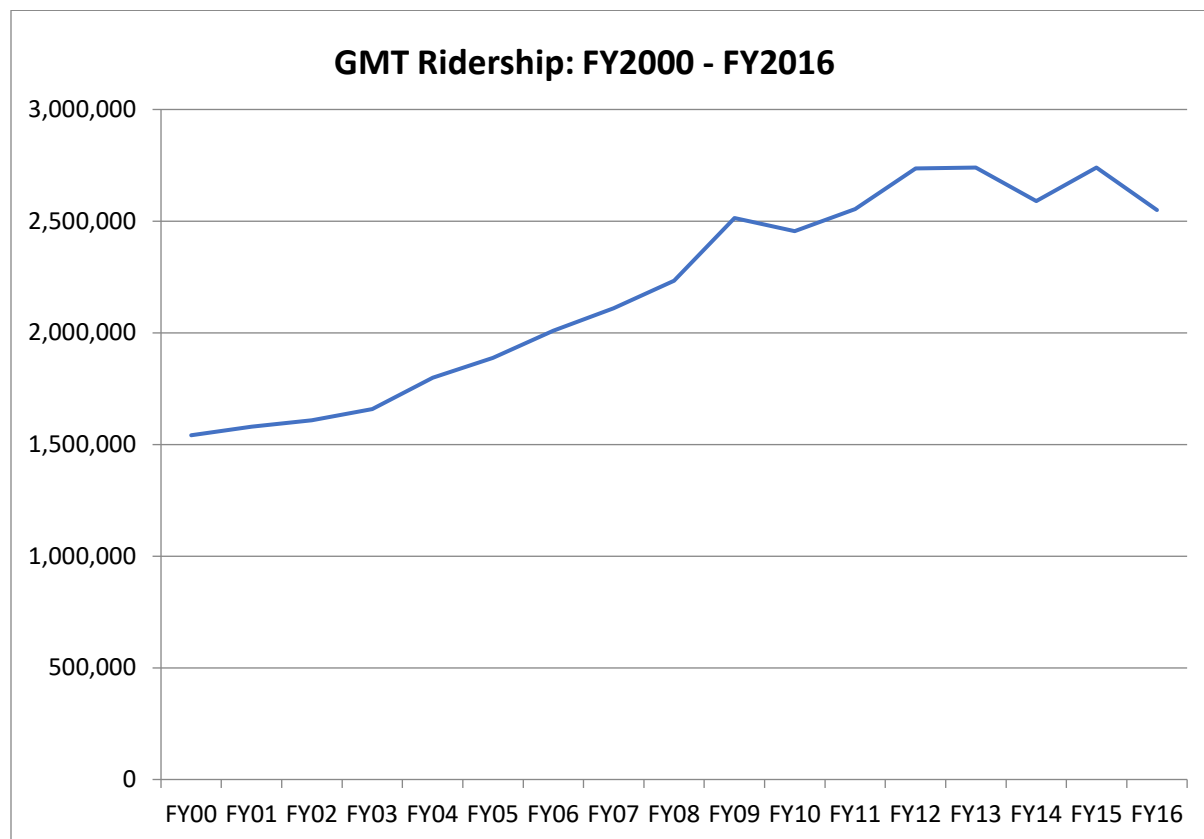


FIGURE 1 - GMT RIDERSHIP, FY2000 - FY2016

GMT is in the process of developing its NextGen Transit Development Plan to improve transit service throughout its northern Vermont service area. The NextGen Plan will identify methods to enhance public transportation by making it more convenient, direct, and simple to use. GMT will also evaluate ways to better integrate urban and rural services throughout its service area. A comprehensive service analysis will also be conducted to improve outdated service routes and address shifting demographics. Furthermore, GMT will gather extensive public and stakeholder input throughout the development of the NextGen Plan. For more information see: <http://ridegmt.com/nextgen/>

Passenger Rail

Passenger rail service available in Chittenden County consists of Amtrak's Vermonter train, with Vermont stops in Essex Junction, Brattleboro, White River Junction, Montpelier, Waterbury, and St Albans. This service was established in April 1995 as a reconfiguration of the discontinued Montrealer train from Montreal to Washington, D.C. The Vermonter service runs daily between Washington, D.C., and St. Albans, with numerous stops including Baltimore, Philadelphia, and

New York City. Figure 2 - AMTRAK VERMONTER RIDERSHIP, FY2008 – 2016 provides the most recent history of ridership on this service. As with GMT's public transit ridership, Amtrak has also experienced a decrease in ridership from 2015 to 2016.

YEAR	2008	2009	2010	2011	2012	2013	2014	2015	2016
RIDERS	72,655	74,016	86,245	77,783	82,086	84,109	89,640	92,699	89,318

FIGURE 2 - AMTRAK VERMONTER RIDERSHIP, FY2008 – 2016

Source: Amtrak annual ridership

In recent years, the State of Vermont has been pursuing multiple initiatives to expand passenger rail service. Planning is underway to extend Amtrak's Vermonter service north to Montréal. In 2015, U.S. and Canadian officials signed an agreement to develop a preclearance facility for both U.S. Customs and Border Protection and the Canada Border Security Agency at Central Station in Montréal. This facility would allow Amtrak passengers to clear the customs and immigration process without the need to physically stop at the border between the U.S. and Canada. While the U.S. Congress signed the necessary legislation into law in December 2016, the Canadian Parliament must still pass the enabling legislation prior to constructing the preclearance facility. Additionally, there are several operating agreements that must be finalized with various stakeholders before this cross-border service can be officially reinstated.

Another top priority for VTrans has been to reconnect Rutland to Burlington through the Ethan Allen Express, which currently operates between Rutland and New York City by way of Albany. In 2016, Vermont's congressional delegation announced that they had secured a \$10 million Transportation Investment Generating Economic Recovery (TIGER) grant to fund three new passenger platforms, replace numerous crossing gates, and upgrade 11 miles of track. After the track improvements are made, passenger trains will be able to reach a maximum speed of 59 miles per hour while traveling from Rutland to Burlington's Union Station.

Commuter Rail

While no commuter rail service currently operates within Vermont, there has been renewed interest in evaluating a commuter rail transit network. In early 2017, VTrans published the Montpelier to St. Albans Commuter Rail Service Feasibility Study to examine the feasibility of developing a commuter rail line between Montpelier, Burlington, and St. Albans. Conceptual capital cost estimates to establish commuter rail service were between \$300 million and \$363 million for upgraded rail infrastructure, stations, new rolling stock and additional implementation costs. Moreover, the annual operating expenses were projected to be up to \$9 million. The study also envisioned that a Montpelier to St. Albans commuter rail service would serve between 135 and 2,850 riders a day. The higher ridership estimate factors in an aggressive promotional campaign along with new transit-focused policies. In response to this study, several rail advocates have asserted that the cost of this service could be dramatically reduced by purchasing refurbished rolling stock, which was not evaluated in this study.

Intercity Bus

There are currently three carriers that provide intercity bus services in Chittenden County: Greyhound Lines, Megabus, and Vermont Translines. These services carry passengers, baggage and packages on fixed routes and schedules. Greyhound runs four daily trips between Montreal and Boston with stops at Burlington International Airport and GMT's Downtown Transit Center. Megabus connects Burlington (at Downtown Transit Center) to both Montpelier and Boston with one trip daily. In the past, Megabus had operated a route from Burlington to New York City, but the carrier recently cut this service due to dwindling demand. Vermont Translines is the most recent addition to the intercity bus options available to Vermonters. Founded in 2013 by Premier Coach and funded in part by VTrans, Vermont Translines offers three Chittenden County pickup and drop-off locations; in Colchester, Burlington, and South Burlington, with service along the Route 7 corridor to Albany, New York.

Freight: Rail and Truck Facilities

Since the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991, MPOs have been strongly encouraged to include freight planning as part of the metropolitan transportation planning process. Freight plays a fundamental role in the economic health of Chittenden County communities. About 6.3 million tons of freight flow into, out of, or within the region each year, far more than in any other region of Vermont. According to the 2012 Vermont Freight Plan, over 9 million tons of freight will pass through Chittenden County annually by 2035. Burlington and Winooski are the only two Chittenden County municipalities that have designated truck routes. As reported by the 2001 CCMPO *Regional Freight Study and Plan* (the most recent detailed look at freight in the region), more than 91 percent of the freight tonnage moved in the County moves by truck, while rail moves 5.7 percent. Rail has historically been used to carry large volumes of bulk materials, such as fuel, stone, wood chips, and salt. Nearly 60 percent of the region's freight flows to or comes from nearby – other parts of Vermont, New Hampshire, or New York.

In recent years, the County's freight distribution system has had to adapt to a changing and more competitive marketplace. With the advent of new information technologies truck containers, rail cars and airplanes are increasingly viewed as mobile warehouses that feed goods into the production process or on to market shelves to meet immediate demand.

The *Regional Freight Study* noted that the freight infrastructure in Vermont does not meet national industry standards for motor carriers and railroads and this affects freight access to Chittenden County. These freight system deficiencies were also cited in the more recent 2010 Western Corridor Study. For example, US 7 and VT 22A do not meet industry standards and are the only north/south highways in western Vermont. Further, part of the rail system in Chittenden County has weight and clearance limits that affect its ability to function effectively in the regional, national and North American rail systems. The amount of freight transported by rail has decreased over the last few decades and, as a result, the number of direct rail sidings and transload facilities – facilities that connect rail to trucks in order to transfer goods – has reduced. However, a new transload facility opened in late 2010 in the Vermont Railway yard in Burlington.

There are two rail freight operators in Chittenden County: 1) The Genesee & Wyoming who purchased the New England Central Railroad (NECR)/RailAmerica and currently has a base in St. Albans. The former NECR was Vermont's largest privately owned and operated rail operating freight service from Alburgh, VT to New London, CT. NECR, now G&WR, also operates on the spur line that connects their mainline in Essex Junction to Burlington. 2) The Vermont Railway is based on the waterfront in Burlington and operates on state owned lines south to Bennington, branching off in Rutland to Whitehall, NY and Bellows Falls, VT.

In 2010 Vermont received a \$50 million federal grant award which, combined with the NECR's \$19.5 million match, provided a sizeable reinvestment opportunity for the entire NECR line through the state. Now completed, the improvements allow 286,000 pounds gross weight rail car capacity from St. Albans to the VT/MA state line, bringing this entire line up to the national standard. These improvements do not apply to the NECR spur from Essex Junction to Burlington, where track and bridge repairs are still needed.

In 2017, representatives from the CCRPC, FHWA, and VTrans formed a Vermont freight working group to evaluate freight provisions of the FAST Act, identify national goals and plans that are relevant to Vermont(?), and discuss ongoing freight issues. In addition to monitoring national freight policies and strategies, the working group will also evaluate potential corridors to designate as Critical Urban and Rural Freight Corridors. These corridors provide access and connection to the Primary Highway Freight System and the Interstate with ports, public transportation centers, and intermodal transportation facilities. The Primary Highway Freight System is an identified network of highways that contain the most vital portions of the U.S. freight transportation system, based on measurable and objective national data.

Active Transportation Facilities

Active transportation networks create opportunities to increase physical activity, support healthy communities, enhance economic development, and promote environmental sustainability. Furthermore, communities that support walking and biking provide transportation access to all residents regardless of age, gender, or socioeconomic status. Chittenden County has a range of dedicated transportation facilities to accommodate bicyclists, pedestrians, and other physically active forms of transportation. Facilities dedicated to non-motorized uses (such as sidewalks and off-road, shared use paths) are concentrated in and around the metropolitan core. Non-dedicated facilities that bicyclists and pedestrians share with motorized users are located throughout the region. According to Ecos Scorecard data:

<file:///K:/ftproot/Marshall/BikePedData/> since the last comprehensive inventory in 2008, there has been an increase in the shared use path mileage. Most shared use paths (except for portions of the Burlington Bike Path) were recently built and are currently in good condition. There are also about 404 miles of existing sidewalks in Chittenden County. These mileage figures are expected to increase annually as planned bicycle and pedestrian projects continue to be implemented.

Between 2005 and 2015, the CCRPC facilitated a municipal sidewalk grant program to provide communities with access to federal funds to improve public sidewalk systems. The program was established to advance the development of an integrated sidewalk system and encourage connections between neighborhoods, schools, parks, town centers, and other public spaces to support active transportation in Chittenden County. Since 2005, 12 Chittenden County

municipalities have received a total of nearly \$3 million for 38 new sidewalk projects. Sidewalk projects have been, and continue to be, funded through two VTrans programs: Transportation Alternatives and the Bicycle & Pedestrian Program.

Community support for non-motorized facilities is substantial, as surveys in 2000, 2006, and 2012 revealed. These facilities have rated second highest (only following transportation system maintenance) on the list of transportation improvements the public desires. This survey will be replicated again in 2018 to evaluate the transportation-related attitudes and opinions of Chittenden County residents.

The CCRPC has regularly updated its regional Pedestrian/Bicycle Plan, most recently in 2017 – see: <http://www.ccrpcvt.org/our-work/our-plans/regional-bikeped-plan/>. The updated Chittenden County Active Transportation Plan (ATP) identifies its goal as creating a safe, comfortable, and connected regional network of pedestrian and bicycle routes that appeal to all ages and abilities. After a robust public input process, detailed existing conditions assessment, and a Level of Traffic Stress model analysis, the ATP outlines recommendations for both non-infrastructure and infrastructure improvements to enhance network connectivity for active transportation in Chittenden County. The ATP recommendations focus on priority corridors as opposed to defining detailed facility types in specific places.

Intermodal Facilities

There are numerous strategically located intermodal transportation facilities in Chittenden County. These multi-functional facilities serve as hubs where connections occur between transportation systems and various travel modes. The CCRPC is committed to advancing the development of new and existing intermodal facilities to support the efficient movement of people and goods throughout Chittenden County. Current facilities fitting this category are the Downtown Transit Center on St. Paul Street in Burlington, the Essex Junction Amtrak station, University Mall in South Burlington, Burlington International Airport, the Vermont Railway Yard in Burlington, two privately operated ferry terminals (Charlotte and Burlington), and eight designated park-and-ride facilities scattered around the region.

Park-and-ride facilities span a spectrum from small undesignated lots to large, federally funded, high-capacity facilities like the one at I-89 Exit 11 in Richmond, which was enlarged in 2014 with 53 new spaces and improved bus accommodations. The most common intermodal connection made by commuters at park-and-ride facilities is transferring to a shared carpool. However, some facilities such as the Richmond and Colchester park-and-ride facilities off of I-89 also offer links to public transportation. VTrans' 2015 Park-and-Ride Facilities Plan (http://vtrans.vermont.gov/sites/aot/files/planning/documents/planning/Appendix_2015-12.pdf) calls for enhanced transit access at State-owned facilities.

The CCRPC regularly updates a regional park-and-ride plan, most recently in 2011, see: http://www.ccrpcvt.org/wp-content/uploads/2016/01/Parknride_InterceptFacility_FinalPlan_20110615.pdf. The 2011 Park-and-Ride & Intercept Facility Plan details high-priority sites and projects, while also offering recommendations to support a regional network of park-and-ride facilities that are accessible by multiple modes of transportation. A robust network of strategically spaced and located park-

and-ride facilities will help to promote multimodal transportation options, decrease carbon emissions, and reduce traffic congestion.

The Railyard Enterprise Project in Burlington is a current and significant intermodal planning projects. The project encompasses the Burlington Railyard, which is a National Highway System (NHS)-designated intermodal facility located on City's south waterfront. The overall purpose of the project is to expand a network of multimodal transportation infrastructure to support economic development, improve neighborhood livability, and enhance intermodal connections to the Burlington Railyard.

Air Service Facilities

Burlington International Airport (BTV) is the largest airport in the State of Vermont. BTV is located in South Burlington and owned by the City of Burlington. It is governed by an Airport Commission that oversees general airport operations and guides future development. The airport is accessed primarily from US 2 (Williston Road), and serves as a vital link to the national air transportation system for the residents and businesses of northwestern Vermont and northern New York State. Additionally, about 40% of BTV's passengers are from Quebec, Canada. There are currently five commercial airlines that provide 31 daily departures directly serving 12 destinations from BTV. The airport is also serviced by UPS Air Cargo and FedEx Express commercial parcel carriers, two general aviation/fixed base operators, and two airframe and power plant maintenance facilities. The airport also serves as home to a unit of the Air National Guard fleet of F-16s (soon to be upgraded to F-35s), a National Guard Blackhawk helicopter air ambulance service and a maintenance and repair facility for Blackhawks. There are 94 aircraft based at BTV, which includes both general aviation and military aircraft.

Since it saw a record of 759,021 enplanements in 2008, BTV has experienced a steady decline in passenger volumes through 2015. However, from 2015 to 2016, enplanements rose by 1.77% to 604,576, ending the seven-year decline. The 2016 enplanements data represent a 20% drop since 2008, which is in contrast with the 2011(?) BTV Airport Master Plan vision of 1.6 million annual enplanements by 2030.

Landside connections to the airport are provided by private auto, taxi, GMT fixed route service, and intercity bus via Greyhound Lines and Vermont Translines. The State's recent Statewide Intercity Bus Study (2013) noted that there is a public transportation service gap between the airport and GMT's Downtown Transit Center as this trip is not direct, requiring a transfer at University Mall.

Bridges

There are 178 bridge structures greater than or equal to 20 feet in length in Chittenden County. Of these, 85 are owned by the State and the remaining 93 by local governments. Nearly all of the State-owned bridges over 20 feet long are located on major highways, i.e. principal arterials and major collectors. The majority of municipally owned bridges over 20 feet long are located on less heavily traveled highways, i.e. minor collectors and local roads. Note that many bridges and other structures less than 20 feet long are also owned and maintained by both the State and municipalities.

The condition of every local and State bridge is evaluated every two years by VTrans. Using a sufficiency rating system developed by the U.S. Department of Transportation, bridges are assigned a value between 0 and 100. Ratings are based on evaluations in three areas – structural adequacy and safety, essentially for public use, and serviceability and functional obsolescence – with special reductions given for extreme safety problems and lack of alternative routes.

Sufficiency ratings on bridges are used to determine the eligibility for funding for improvements. A sufficiency rating below 50 qualifies that bridge for replacement funding. Below 80, bridges are eligible for rehabilitation money. Bridges rated above 80 are not eligible for federal funding. Based on this system and VTrans' latest inspection reports, just over 4 percent (8 of 178) of Chittenden County bridges are eligible for replacement and nearly half of the total number are eligible for rehabilitation – 87 of 178. The remaining 83 bridges (47 percent) are deemed sufficient. Since 2010, there has been a marked improvement in the number of bridges in the replacement category, down to 8 from 18, a 56 percent improvement. Bridge rating data can be found here: <http://vtransparency.vermont.gov/#>

Other Transportation Demand Management Programs

Transportation Demand Management, or TDM, is a general term for policies, programs or strategies that result in more efficient use of transportation resources. Two organizations in the region have notable programs generally fitting this broad category. These are 1) CarShare Vermont, 2) the Chittenden Area Transportation Management Association (CATMA).

CarShare Vermont, a non-profit organization founded in 2008, strives to provide an accessible and affordable car sharing service to reduce vehicle dependency and improve mobility for people of all income levels. CarShare Vermont currently has a fleet of 17 vehicles at 11 locations around the Greater Burlington area. Vehicles are available 24 hours a day, 7 days a week and can be used to drive to any destination. CarShare members pay for vehicle use based on how much they drive. The organization provides routine maintenance, roadside assistance, car washes, insurance, gas, and parking. The program is designed to save members money (less need to own a vehicle) and reduce unnecessary trips that impact the environment. Since 2013, CarShare Vermont has added seven vehicles to its fleet and 166 new members, for a total of 1,046 members in 2016. CarShare Vermont recently expanded into Winooski by adding a vehicle pod at Spinner Place. In 2015, CarShare Vermont partnered with VTrans to implement a two-year pilot project to add two vehicles outside Montpelier's City Hall. However, a year after the start of the pilot, CarShare Vermont announced that it would cease service in Montpelier because of declining membership and revenues.

CATMA, also a non-profit membership based organization, was formed in 1992 to jointly address, plan and manage a viable, cost-effective and sustainable transportation and parking network in and around Burlington's educational institutions. CATMA's founding members -- UVM, UVM Medical Center, Champlain College and American Red Cross – worked to efficiently coordinate land use planning, share resources, administer transportation and parking programs, infrastructure and associated facilities through CATMA, while minimizing environmental impacts. In order to effectively promote and administer transportation demand management programs at a larger scale, CATMA expanded its service area to businesses and developers throughout Chittenden County starting in 2015.

CATMA has significantly reduced the use of single occupant vehicles by its members, as well as their costs and need for parking, by providing a suite of sustainable TDM strategies including: free and reduced-cost transit pass, bike-walk rewards program, convenient guaranteed ride home program, CarShare Vermont campus membership program, staggered work and class scheduling, coordinated carpool and vanpool services, frequent drawings and contests, and outreach and consistent messaging. CATMA continues to market the benefits of TDM and its managed comprehensive commuter programs to area employers, including its Employee Transportation Coordinator Network in Chittenden County.

In 2011, after receiving a grant from the Transportation, Community and System Preservation program (TCSP), the CCRPC established Go! Chittenden County. Go! Chittenden County is a regional TDM program that serves as a one-stop resource for information about transit, carpooling, vanpooling, car-sharing, bicycling, and walking. The Go! Chittenden County project was a comprehensive effort to achieve regional transportation goals outlined in the ECOS Regional/Metropolitan Transportation Plan, as well as address national policy objectives including the need to conserve energy, reduce reliance on energy imports, lessen congestion, and clean our nation's air. With specific TDM projects funded by the TCSP grant successfully completed, and with the countywide expansion of CATMA, specific promotion of Go! Chittenden County as a brand and resource will cease at the end of 2017. The goal of Go! Chittenden County to connect individuals and businesses with transportation resources and solutions will continue through individual partners including CATMA, CarShare Vermont, Local Motion, and Green Mountain Transit.

In addition to reducing roadway congestion and providing multiple ways to get around, the impact of widespread TDM program implementation could significantly benefit Chittenden County municipalities by enhancing mobility, reducing dependence on fossil fuels, improving air quality, and supporting high levels of community livability. While only 5.9% of Chittenden County workers currently work from home (2011-2015 American Community Survey), the CCRPC's 2012 Transportation Survey revealed that over 23% of Chittenden County employees work for an employer that allows them to work from home. Employers need encouragement and support to implement an employee commute program that will assist in reducing congestion and parking demand, resulting in less strain on our existing roadways and influencing individual transportation behavior. There is an opportunity to focus on shifting transportation costs to a sustainable model and better integrating land use and transportation.

Transportation and Climate Change

The overwhelming majority of scientists agree that changes in climate worldwide can be mainly attributed to human activities, primarily the burning of fossil fuels. In Vermont, the largest contributor of greenhouse gas (GHG) emissions is the transportation sector – mostly carbon dioxide (CO₂) coming from the combustion of petroleum-based fuels, like gasoline and diesel in internal combustion engines. Transportation's 45% statewide contribution to GHG emissions (see: <http://climatechange.vermont.gov/climate-pollution-goals>) is closely mirrored by our 49% Chittenden County estimate. These compare to a nationwide contribution share of 27% from transportation (according to 2015 EPA Greenhouse Gas Emissions data).

To address this continuing and growing environmental issue while also combating climate change, emissions from the transportation sector need to be reduced. By 2025, Vermont's Comprehensive Energy Plan has a goal to reduce statewide transportation energy by 10%. Reducing the number of vehicle miles traveled (VMT), increasing investment in alternative forms of transportation, and shifting to low or zero-emission fuels are strategies that could be implemented in order to achieve this goal. Transportation planning looks at the problem from two perspectives: 1) How to mitigate climate changes through policies, programs, and technologies, and 2) How to adapt transportation infrastructure and services to the coming climate changes.

Climate change is only one of many factors to consider as we plan the region's future transportation investments but we need to carefully monitor its potential impacts while implementing programs that will slow its progress. For more information go to the air quality and climate sections of the [CCRPC website](#).

Travel Patterns

Residents of Chittenden County make thousands of trips every day (for example, people driving to work, children walking to school, shoppers taking the bus to the market and students cycling to a friend's house). Transportation planners have typically classified travel as peak and off-peak trips. Traditionally, peak-period trips focus on commuter traffic in the early morning (AM peak) and late afternoon (PM peak) periods, while off-peak trips typically refer to shopping and leisure trips taken throughout the day and in the evening. Peak and off-peak trips typically make different demands on the transportation network. Peak period travel tends to be the most congested and adds the greatest amount of stress to the transportation system. However, the pattern of AM and PM peaking is being eroded over time and those "peaks" are beginning to flatten, showing a more even spread of traffic volume over the course of the day. The CCRPC has therefore enhanced its computer Travel Demand Model to reflect all day travel (while retaining the ability to examine peak periods) thus improving our analytical capabilities.

In Chittenden County, most trips (as measured in person-trips) are internal, meaning they do not cross sub-regional boundaries (e.g. urban, suburban, rural and external boundaries). The largest share (32 percent) of daily person trips begin and end in the region's urban communities (Burlington, South Burlington, and Winooski). A smaller share (18 percent) take place within suburbs (Milton, Colchester, Essex, Essex Junction, Williston and Shelburne) or from suburb to suburb.

Fewer daily trips begin and end within rural communities (less than 2 percent). Roughly the same amount of travel occurs within rural areas as takes place between rural areas and other sub-regions. These travel patterns reflect lower levels of economic activity in rural areas resulting in rural residents traveling longer distances to the suburbs or urban core for employment, shopping, and other activities.

The amount of travel originating from outside Chittenden County into the region is relatively small compared to the total amount of travel within the County. This travel totals about 50,000 daily trips or eight and one half percent of the greater region's total. Approximately four percent of all trips in the region are between external areas and the urban core and nearly the same share are between external areas and the region's suburban communities. Less than half of

one percent of all trips in the region are “through trips” (i.e., trips that begin and end outside the region).

The Larger Northwest Vermont Region

Chittenden County is the population and jobs center of a larger area encompassing all of northwestern Vermont – see Figure 3 - 30 and 45 Minute Commute Zones from Downtown Burlington below. Its economic and cultural impacts spread well beyond the county lines. Data from the U.S. Census Bureau’s Longitudinal Employer-Household Dynamics show that 35,187 residents from our neighboring counties come to Chittenden County for work, while 15,020 Chittenden County residents regularly commute outside of the county for work. Proximity and easy access to Chittenden County have been determinants as to which towns in our neighboring counties have grown the fastest. Franklin County’s fastest growing towns are those along the I-89 corridor and/or bordering our northern municipalities. The northern tier communities in Addison County have likewise grown at faster rates than other county towns, and in Lamoille County, Cambridge and Stowe have been two of the most rapidly growing communities.

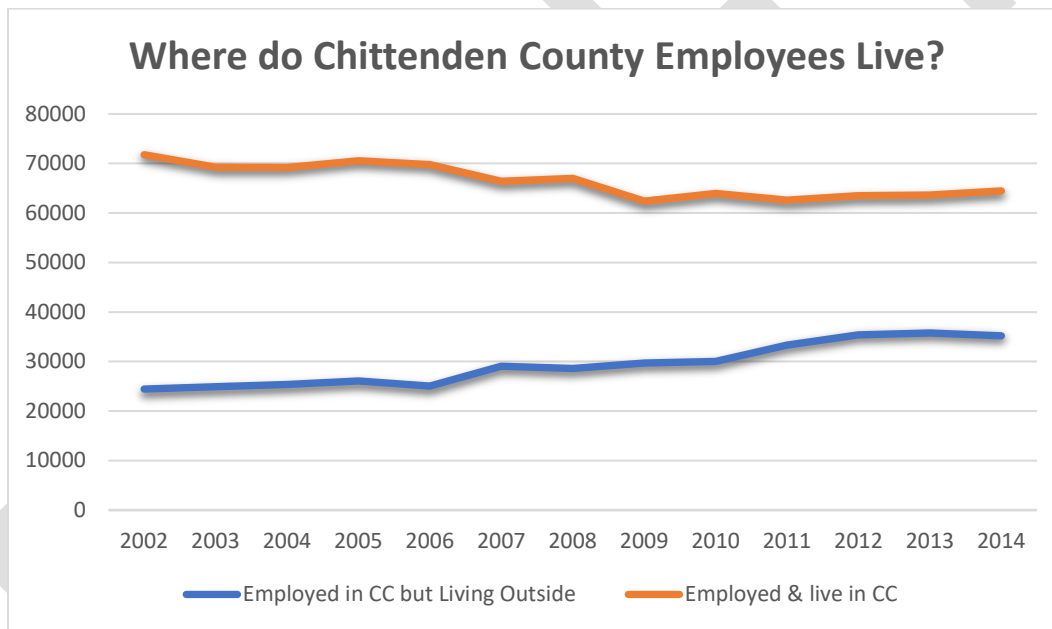
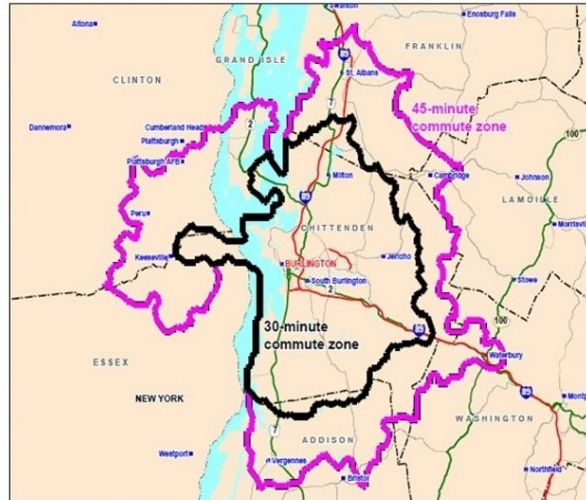


FIGURE 3 - 30 CHITTENDEN COUNTY EMPLOYEE COMMUTING

Chittenden County is a Net Importer of Employees from other Counties



30 and 45 minute commute zones from Downtown Burlington

FIGURE 3 - 30 AND 45 MINUTE COMMUTE ZONES FROM DOWNTOWN BURLINGTON

The traffic volumes to the north (especially when combined with traffic to and from the islands to our northwest) reveal the significant ties to the areas in that direction. Over 40 percent of all Chittenden County interregional traffic flows to/from the north along the I-89 corridor or northwest, in and out of Grand Isle County. **NOTE: When the Chittenden County Transportation Demand Model update is complete, this travel pattern will be revisited and reexamined and the section updated as needed.**

2016 Statewide Transportation Public Opinion Survey

In 2016, VTrans initiated an update to its Long Range Transportation Plan (LRTP) to guide multimodal transportation initiatives and investments through 2040. The public participation process for the LRTP included a statewide transportation survey that was conducted by Resource Systems Group, Inc. (RSG). The survey had four focus areas (Travel Behavior, Customer Satisfaction, Policy and Funding, Emerging Trends and Technology) and was administered in five distinct geographic regions through an address-based random sample. Chittenden County residents were grouped within the Champlain Valley region, which also included residents from Addison, Franklin, and Grand Isle Counties.

In total, nearly 900 respondents completed surveys in the Champlain Valley region. Results from the survey showed that the Champlain Valley region had the lowest percentage of respondents who drove alone (79%) when compared to the other regions. Furthermore, the

Champlain Valley region also stands out as the region with the highest percentage of respondents reporting that they walk, bike, or take public transit. Additionally, while less than 14% of statewide respondents reported biking frequently, 20% of Champlain Valley respondents reported biking frequently. When asked about congestion frequency, the Champlain Valley region had the lowest proportion (32%) of respondents reporting that traffic congestion has no negative effect on their overall quality of life. Within the policy and funding section, the questionnaire prompted respondents to rate the importance of a variety of services or issues. Champlain Valley respondents reported that ensuring the safety of the traveling public was the most important transportation-related issue.

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