



2018 Chittenden County ECOS Plan

Pending Adoption 6/20/2018

For a healthy,
inclusive, and
prosperous
community



This plan is the Regional Plan, Metropolitan Transportation Plan, and Comprehensive Economic Development Strategy in one.

**This plan can be found online at:
www.ecosproject.com/plan**

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CCRPC AND GBIC RESOLUTIONS

(after adoption)

2018 Chittenden County ECOS Plan

INTRODUCTION

Environment. Community. Opportunity. Sustainability.

- The ECOS Project is both a process and a plan for managing sustainable growth in Chittenden County.
- The ECOS Project is a unique opportunity for municipalities, organizations, businesses and residents to work together to preserve and improve our quality of life.
- The ECOS Project is for anyone and everyone interested in how we live, work and play together in Chittenden County.

Three Plans Combined into One

The Chittenden County Regional Planning Commission (CCRPC) is charged by the State of Vermont with preparing a regional plan at least every eight years to protect the County's resources and to guide its development. The CCRPC is also charged with establishing a Metropolitan Transportation Plan every five years to address the long-term transportation needs of Chittenden County. The Greater Burlington Industrial Corporation (GBIC) is charged with establishing a Comprehensive Economic Development Strategy (CEDS) every five years to establish economic development priorities for Chittenden County. More detail on the purpose of these plans can be found in their respective Supplements. In 2011 an opportunity to update all three regional planning documents with one process became available when the region received a Partnership for Sustainable Communities grant (a partnership of Federal Housing and Urban Development, Environmental Protection Agency, and US Department of Transportation). The result of this effort was the adoption of the ECOS Plan in 2013; now being updated in 2018. The ECOS Plan *is* the combined Chittenden County Regional Plan, Metropolitan Transportation Plan and Comprehensive Economic Development Strategy.

Community and regional planning enable people with different outlooks and awareness to learn about important and sometimes controversial matters, to agree on common objectives, and to collaborate on undertaking coordinated agendas of actions. Public planning should strive to engage people not only because our laws and democratic traditions require it, but also because public engagement makes planning better. Effective public planning promotes:

- Greater understanding of key facts;
- Deeper and more widespread appreciation of divergent views;
- Increased consensus on important goals and objectives; and
- Improved collaboration among stakeholders.

Planning for an entire region is especially challenging. While we all agree that Chittenden County should be a "great place to live, work and play," there are myriad visions of exactly how such a place should look and which actions we should undertake to achieve this goal. The *ECOS Plan* is intended to articulate the current consensus for our County's future.

Document Overview

The 2018 ECOS Plan is organized in the following way to bring emphasis to how the plan will be implemented; while the analysis can be found in the supplements:

1. 2018 ECOS Plan - this main section includes the vision, goals and collective strategies and actions to address the region's concerns, including CCRPC's top ten actions for the coming 5 years.
2. Supplement 1 - process and public engagement.
3. Supplement 2 - regional analysis, culminating in a list of 31 high-priority concerns.
4. Supplement 3 – Regional Plan including a description of the maps, planning areas, Act 250/Section 248 role, and compatibility with municipal and surrounding regional plans.
5. Supplement 4 - Comprehensive Economic Development Strategy (CEDS) including a strengths/weaknesses/opportunities/threats analysis and project list of the region's utility and facility needs.
6. Supplement 5 - is the Metropolitan Transportation Plan (MTP) including the 2050 scenario, financial plan and the region's transportation project list.
7. Supplement 6 – Enhanced Energy Planning methodology and data guide.

In addition, there is a glossary that defines many of the terms used in this Plan. It can be found here: <https://www.ccrpcvt.org/glossary/>.

VISION, MISSION & GOALS

Vision

Our vision is that Chittenden County be a healthy, inclusive and prosperous community.

Mission

We will have a collaborative planning process with citizens, public and private organizations to develop a consensus regarding priority actions to achieve the goals below. The intent of this effort is to strengthen and enhance coordination, accountability and implementation of the plans of participating organizations such as state and local governments, planning organizations and other partner organizations - including business, environmental, education, and human services.

Principles

Principles describe our underlying values and guide the selection of strategies and actions to achieve our goals. These 10 principles will guide the selection of strategies and actions to achieve our goals (adapted from Sustainability Goals & Guiding Principles, ICLEI, October 2010).

1. **Think—and act—systemically.** Sustainable communities take a systems perspective and recognize that people, nature and the economy are all affected by their actions. Local governments in these communities consider the broader implications before embarking on specific projects, and they look for ways to accomplish multiple goals rather than default to short-term, piecemeal efforts.
2. **Instill resiliency.** Sustainable communities possess a strong capacity to respond to and bounce back from adversity. Local governments in these communities prepare for and help

residents and institutions prepare for disruptions and respond to them swiftly, creatively and effectively.

3. **Foster innovation.** Sustainable communities capture opportunities and respond to challenges. Local governments in these communities cultivate a spirit of proactive problem solving to provide access to futures otherwise unobtainable and to enable the risk-taking inherent in innovation.
4. **Redefine progress.** Sustainable communities measure progress by improvements in the health and wellbeing of their people, environment and economy. Instead of focusing on GDP (throughput of dollars), local governments in these communities use a broad set of indicators.
5. **Live within means.** Sustainable communities steward natural resources so that future generations have as many opportunities available to them as we do today. They also recognize that resources exist for the benefit of life forms other than humans. Local governments in these communities assess resources, track impacts, and take corrective action when needed so that they meet the needs of today while maintaining and improving what they leave for future generations.
6. **Cultivate collaboration.** Sustainable communities engage all facets of society in working together for the benefit of the whole. Local governments in these communities bring government representatives, community members and organizations together and create a culture of collaboration that encourages innovation, sharing of resources, and jointly shared accountability for results.
7. **Ensure equity.** Sustainable communities allocate resources and opportunities fairly so that all people who do the full range of jobs that a community needs can thrive in it. Local governments in these communities actively eliminate barriers to full participation in community life and work to correct past injustices.
8. **Embrace diversity.** Sustainable communities feature a tapestry of peoples, cultures and economies underpinned by a richly functioning natural environment. Local governments in these communities celebrate and foster ethnic, cultural, economic and biological diversity and encourage multiple approaches to accomplish a goal.
9. **Inspire leadership.** Sustainable communities provide leadership through action and results. Local governments in these communities recognize their opportunity to effect change by backing visionary policies with practices that serve as an example for citizens and businesses to emulate.
10. **Continuously improve.** Sustainable communities engage in continuous discovery, rediscovery and invention as they learn more about the impacts of their actions. Local governments in these communities' track both performance and outcomes, are alert for unintended consequences, and modify strategies based on observed results.

Goals

There are 17 goals, organized under four Broad Goals as follows:

Natural Systems – Design and maintain a strategically planned and managed green infrastructure network composed of natural lands, working landscapes, and open spaces that conserve ecosystem values and functions, and provide associated benefits to our community.

1. Ecological Systems (Habitats, Water Quality, Air Quality) - Conserve, protect and improve the health of native species habitats, water quality and quantity, and air quality.

2. Scenic and Recreational Resources - Conserve, protect and improve valued scenic, recreational, and historic resources and opportunities.
3. Climate Change - Reduce greenhouse gas emissions contributing to climate change and adapt to become more resilient to a changing climate.

Social Community – Promote the skills, resources, and assurances needed for all community members to participate in the workforce and in their family, civic and cultural lives, within and among their neighborhoods, and in the larger community.

4. Education, Knowledge and Skills - All Chittenden County children and adults have the education, skills and opportunities necessary to meet their full economic and social potential and well-being.
5. Health - All Chittenden County residents are healthy.
6. Public Safety and Criminal Justice - Improve the safety of the public including the loss of life and property from natural and manmade hazards.
7. Social Connectedness - Increase opportunities for people of all backgrounds to engage in the multicultural social fabric and activities of the community.
8. Arts, Culture and Recreation - Increase access to, and participation in, arts, culture and recreational opportunities.
9. Civic Engagement and Governance - People from diverse backgrounds feel that they have a say in political and non-political decisions that affect their lives, neighborhoods and communities.

Economic Infrastructure – Build the region's capacity for shared and sustainable improvements in the economic wellbeing of the community through support of both local and globally competitive initiatives.

10. Economy - Retain and support existing employers and job growth, grow target sector employers and entrepreneurs, and work to attract a greater diversity of employers and employees.
11. Household Financial Security - Improve the financial security of households.
12. Working Lands - Support the growth and vitality of working farms and managed forests; and sustainably manage sand and gravel extraction operations.

Built Environment - Make public and private investments in the built environment to minimize environmental impact, maximize financial efficiency, optimize social equity and benefits, and improve public health.

13. Land Use - Encourage future growth in the Center, Metro, Enterprise, Suburban, and Village Planning Areas to maintain Vermont's historic settlement pattern and respect working and natural landscapes.
14. Housing - Increase the opportunities for safe, decent, energy efficient, affordable, accessible and fair housing for all types of households in all neighborhoods.
15. Transportation - Provide accessible, safe, efficient, interconnected, secure, equitable and sustainable mobility choices for our region's businesses, residents and visitors.
16. Infrastructure - Ensure adequate infrastructure and facilities (i.e. water supply, wastewater treatment, stormwater treatment, broadband coverage and solid waste recovery and recycling) to support areas planned for growth while conserving resources.

17. Energy - Move Chittenden County's energy system toward a cleaner more efficient and renewable system that benefits health, economic development, and the local/global climate by working towards the State's Comprehensive Energy Plan goals.

ECOS Plan Priorities & Implementation

Forecast & Scenario Planning – Choices for the Future

Vermont Statute requires that all plans shall be based upon surveys of existing conditions and probable future trends, and shall be made in the light of present and future growth and requirements (24 VSA §4302(d)). Therefore, CCRPC has historically prepared future demographic and employment forecasts for the Regional Plan and the Metropolitan Transportation Plan. RSG and Economic & Policy Resources (EPR) worked with CCRPC to develop a 2050 forecast for the county and municipalities. In addition, scenario planning is a tool that enables decision makers to analyze land use patterns and gauge the costs and benefits of a variety of transportation investments to help set policies and strategies for the County's future.

The forecast, as approved by the CCRPC Board in March 2017, is in Table 1. While it is important to note this forecast is lower than the forecast in the 2013 ECOS Plan (which estimated twice as much population growth in less time), this Plan is not a plan to achieve a particular amount of growth, rather it is a plan that recognizes that there are many external factors over which we have little control locally. Our region continues to be an attractive place from environmental, economic, and social perspectives. In large part, the strategies are focused on how we manage growth to accomplish positive outcomes, both to address the concerns we face (as described in the Chart of How Strategies Address Concerns) and to achieve the vision for our future.

Table 1: Chittenden County 2050 Population, Employment & Household Forecast

Demographics	2015	2050	2015 to 2050 % increase
Population	161,382	183,172	14%
Employment	135,511	182,688	35%
Household	63,498	79,151	25%

Source: EPR

This forecast was then used in various transportation and land use scenarios that were analyzed using the regional travel demand model. Detailed scenario results are presented and discussed in the "Forecast of Future Transportation Conditions" section of the MTP Supplement. Generally, scenario results indicate the following:

- Concentrating land uses and increasing densities on the transportation system decreased delay and reduces auto travel due to the increased viability of transit, walking, and biking that occurs when more people live closer to transit routes and there is transportation infrastructure that supports walking and biking.
- Transportation Demand Management investments – including expansion of bicycle and pedestrian infrastructure in Villages and Center planning areas and significant expansion of transit service –

together with concentrated land-use in those areas reduces auto travel (Vehicles Miles Traveled) and delays per capita by increasing the mode-share of non-auto modes. Other possible benefits include:

- Improve livability by creating vibrant municipal centers/downtowns
- Improve health by providing safe facilities to walk and bike
- Reduce Green House Gas emissions
- Improve mobility to underserved populations (elderly, youth, people with disabilities)
- Investing exclusively in roadway projects (capacity expansion, safety improvements and some multimodal upgrades) mainly addresses localized congestion and safety issues.
- Increasing Interstate capacity and investing in interchanges can reduce congestion and improve traffic flows on the Interstate segments adjacent to the improved facility but it creates congestion issues further away from the improvement.
- The transportation and land use implications of Connected and Autonomous Vehicles (CAVs) are still unknown. Two very different CAV scenarios were analyzed with vastly different transportation results – see the “Forecast of Future Transportation Conditions” section of the MTP Supplement for more information.

All future scenarios developed and evaluated are starkly different from one another and from the past historical programmatic transportation investments, and unlikely to proceed in the manner outlined in each individual scenario. However, results from the various scenarios helped frame the conversation about what to include in our MTP Scenario so it is a more balanced, achievable and sustainable future transportation program. The MTP Scenario is described in Figure 1.

FIGURE 1 - MTP SCENARIO DESCRIPTION

2050 Metropolitan
Transportation Plan

Approx. \$420 million

- All MTP Projects (See ECOS/MTP Supplement 5) including:
 - Third lane on I-89 between Exit 14 and Exit 15
 - Exit 12B is included as a placeholder for a future interchange improvement between Exits 12 and 16 including new 12B or 14 N Interchange or reconstructing Exit 14.
 - Intelligent Transportation System investments and signal upgrades for major arterials in the county.
 - Local projects identified by municipalities and the CCRPC through various planning studies and plans.
- 15-minute headways all day for the existing trunk routes of US2, US7, VT15, and North Avenue; 20 to 30-minute headways for all other routes; and a new *VT-127 to Colchester* transit loop service.
- Substantial increase in bicycle and pedestrian infrastructure in Villages and City/Town Centers.
- Land Use: 90% of the approved 2050 household growth is allocated to TAZs that correspond to areas planned for growth with concentration in the urban center and village planning areas.
 - The 90% concentration of HH was deemed appropriate as the county has been averaging 86% - 89% HH growth in the areas planned for growth in the past five years.

Concerns for the Future (from the end of Supplement 2)	Strategies (in brief) to Address the County's Concerns							
	1. Improve Economy	2. Concentrate Development & Infrastructure	3. Improve Water Quality and Safety	4. Protect Working Landscapes and Habitats	5. Increase Health and Personal Safety	6. Educate our Residents	7. Improve Efficiency of Financing and Governance	8. Ensure Equity
1. Habitat Loss		✓		✓			✓	
2. Unstable Rivers			✓					
3. Non-point Source Water Pollution			✓	✓			✓	
4. Climate Change		✓	✓	✓	✓			
5. GHG Emissions		✓		✓				
6. Climate Health Impacts		✓		✓	✓			
7. Tobacco & Substance Abuse		✓			✓			
8. Obesity		✓			✓			
9. Emergency Preparedness			✓	✓	✓			
10. K-12 Proficiency						✓	✓	✓
11. Workforce Development	✓					✓		✓
12. Inclusion	✓	✓			✓	✓		✓
13. Disparities	✓	✓			✓	✓		✓
14. Aging		✓			✓			✓
15. Job Opportunities	✓							
16. Manufacturing Diversity	✓							
17. Industrial Sites	✓							
18. STEM	✓					✓		
19. Housing Cost	✓	✓					✓	
20. Working Lands Loss	✓	✓		✓				
21. Sprawl	✓	✓		✓	✓		✓	
22. Lack of Rental Housing		✓					✓	
23. Affordable Homes		✓					✓	
24. Maintenance of Existing Housing		✓						
25. Supportive Housing		✓						
26. Fuel Price Decline		✓					✓	
27. Household Transportation Costs		✓					✓	✓
28. Lack of Multi-Modal Alternatives		✓					✓	✓
29. Reliance on Gas Tax		✓					✓	
30. Meeting State's Energy Goals		✓	✓	✓				
31. Water & Wastewater		✓	✓				✓	
32. Stormwater Investments		✓	✓				✓	

FIGURE 2 - CHART OF HOW STRATEGIES ADDRESS CONCERNS

Implementation Program

Given the forecasted growth in our region, the challenges we already know we face, and the vision for the region's future the following strategies and actions provide a strategic approach for achieving this Plan's goals. The challenges are multi-faceted and often inter-related. For this reason, we are focusing on comprehensive, cross-cutting solutions to achieve a healthy, inclusive and prosperous community.

*We need to work
together to achieve
collective impact*

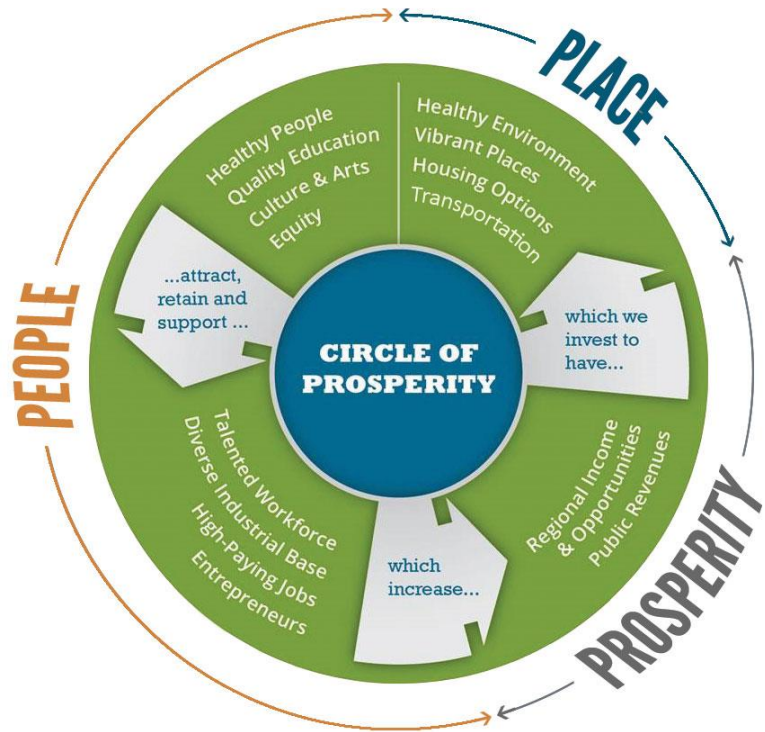
Collective impact is the commitment of a group of important actors from different sectors to a common agenda for solving a specific problem. These sectors include the public (state, municipal and regional), business, and non-profit. If we do this well, we can achieve improved outcomes without the need for additional public expenditures. As an example, as this Plan has been implemented over the last five years, numerous collective impact programs (some true to form, some not) were developed including: Neighbor Rides, Building Homes Together, Regional Prevention Partnership, and the Chittenden County Opioid Alliance. It is unlikely that these partnerships would have developed without the relationships that were built during the development of the ECOS Plan. Moving forward to the next five years of implementation, CCRPC will continue to partner with community stakeholders on the collective impact strategies and implementation of program level actions.

The ECOS Project will be implemented through this collective impact approach and is structured in the following way:

- a. **Strategies** - Eight (8) broad, high priority, cross-cutting, strategic implementation measures. This list is not meant to be exhaustive or to undermine any steps currently underway to effect positive change, but to focus our 5-year implementation efforts.
- b. **Actions** - Under each strategy is a list of general actions identifying the method in which the strategy will be achieved. The actions address the concerns of the community (see end of Supplement 2). Many of these are not new ideas; however, they may need additional commitment or additional partners to achieve the desired outcomes.
- c. **Projects** - The full ECOS/CEDS and ECOS/MTP Project Lists in Supplement 4 & 5 (respectively) include specific projects proposed for implementation. The ECOS/CEDS list includes facility and utility needs, mostly capacity expansion, but also large maintenance projects. Transportation projects generally begin as an identified need in corridor studies or other high-level plans; then scoping is conducted to examine the problem and results in a preferred alternative; and then the preferred alternative proceeds to design, environmental permitting and construction once funding is identified. The ECOS/MTP Project list includes transportation projects that have been scoped or have some preliminary planning completed and projects included in the current four-year Transportation Improvement Program (TIP). TIP projects have funding identified and are scheduled for construction within the next 7 years. All ECOS/MTP projects may be implemented with a combination of federal, state and local funds. These implementation projects are each directly related to the strategies

described below, and include details regarding the Lead Partner, expected start date, and estimated costs.

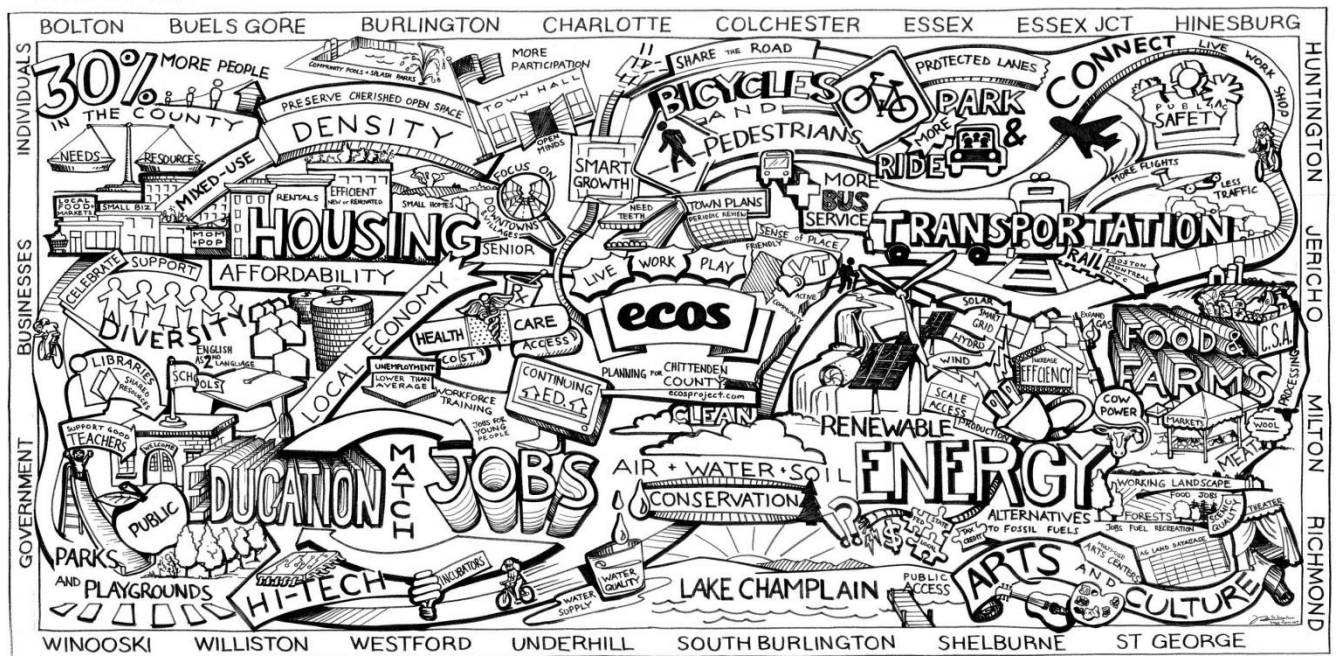
- d. **CCRPC's Top Actions for the Next Five Years** - While the Strategies, full list of Actions, and the Project Lists make up the full implementation program, CCRPC has highlighted a number of actions to focus on over the next five years. These actions will help inform the development of CCRPC's annual Unified Planning Work Program.



This implementation approach serves as a strategic plan for CCRPC, GBIC, and ECOS partners for the next 5 years. CCRPC will adopt the actions and projects to which they are a party into their annual Unified Planning Work Program and report progress each year. It is important to note that when implementing actions at the municipal level we must acknowledge the uniqueness of each community and resist blanket approaches.

While this implementation approach is collective in that many partners are needed to participate, it is also collective in that no one piece will bring success without the others. For example, it will be difficult to achieve greater mobility, accessibility, affordability and health without concentrating development in our areas planned for growth. Further, we can't concentrate our growth without providing adequate infrastructure in those areas. Visually, these collective, inter-relationships are described in this circle of prosperity.

An underlying theme in all 8 strategies is resiliency. Resiliency is the ability to adapt to difficult situations and successfully overcome adversity. Building on the example above, concentrating growth makes us more economically and socially resilient in our communities when we diversify our economy and provide job opportunities for all residents thereby increasing equity and income for our residents. Investing in properties in our existing communities also allows us to focus on projects that reduce energy consumption and reduce costs to residents. On the flip side, concentrating growth also helps to protect our rural land and natural resources – bringing greater stability to the rural economy, and greater resiliency to a changing climate.



Mural by Matt Heywood, The Image Farm

STRATEGIES & ACTIONS

1. IMPROVE AND STRENGTHEN THE ECONOMIC SYSTEMS OF OUR REGION TO INCREASE OPPORTUNITIES FOR VERMONT EMPLOYERS AND EMPLOYEES.

Economic development is about building a community's capacity for shared and sustainable improvements in the economic well-being of residents. Providing access to good jobs that can support an adequate standard of living for all residents of a region or community; continuous and sustainable improvements in the internal functioning of the economy, where its structural underpinnings are made stronger without sacrificing long-term quality of life; and providing the means and the continuous processes to strengthen the foundation of our communities.

Actions

1. **High wage employers** – The primary goal of any economic development strategy is retaining and growing the already existing high wage jobs within the economy. The region should maintain economic diversity by deepening existing sectors, and increase diversity by identifying and supporting businesses in sectors with high location quotients (a higher concentration in the region compared to the country as a whole). Providing support and connecting available resources is critical to ensuring that this economic base remains vital and is able to grow. The high wage sectors in which Chittenden County expects to drive our economy are: Information Technology, Communications and Media (including Information Technology, E-Commerce, and Digital Media); High Value-Added Manufacturing; Higher Education; Clean Tech/Green Tech; and Health Care and Wellness (see the [Target Sector Analysis Report](#)).
 - a. Build relationships with these employers. For example, the Region's Tech Jam highlights some of the region's many successful tech companies. Success here connects to the action on innovation and entrepreneurial development and includes: developing and attracting a tech workforce, access to financing, marketing VT and the region as a home for tech jobs and tech companies, supportive infrastructure such as broadband access, incubator space, and networking.
 - b. Facilitate access to employment and infrastructure development resources made available by the State. Currently these include programs such as the Vermont Employment Growth Incentive, Vermont Training Program, and the Vermont Tax Increment Financing (TIF) District Program.
 - c. Market the quality of life – the Vermont brand and the growing brand recognition of local municipalities, which make the county an appealing place to start or expand a company, especially in target sectors such as tech. Accolades won by Chittenden County's municipalities should be promoted and celebrated.
2. **Industrial Site Locations** – With only a few years supply of existing buildings or permitted sites left for high wage industrial or manufacturing businesses in the region, additional sites need to be identified and carefully planned to ensure a smooth permitting process to be ready for employers' needs for expansion or relocation in Chittenden County. The most likely employment sectors with this need are high wage, technology-based and other types of manufacturing. The best opportunities for these sites are on vacant portions of land owned by

current major employers, within close proximity to - or already connected to - existing infrastructure services for long term efficiency.

- a. CCRPC and GBIC will work with ACCD to have business/industrial parks recognized as benefit locations in state designation programs. (Funded by GBIC and CCRPC. No direct additional employment is expected, but this would help to create future opportunities.)
- b. Rather than re-zoning land for industrial development, development should be prioritized on land that is already zoned for industrial uses, or that has been used for industrial processes in the past. This will ensure that industrial development is concentrated in areas planned for growth. To advance this, CCRPC will continue the strategies discussed in Strategy 2 of this plan.
- c. Prepare a “longevity analysis” to project when additional fully-serviced and permitted land should be added to the regional inventory (GBIC action).

3. Workforce Education and Skills Development – Promote public/private partnerships for education that connect the skills development infrastructure of our institutions of higher education, vocational programs, and technical schools with the direct needs of the Vermont workforce. If education takes place with connections to our economic needs, students and retrained workers will have their skill sets match with the employment market.

- a. Maintain, improve and market the assets that attract and retain young professionals, such as the Vermont brand and local brands, social and professional opportunities, and affordable and attractive housing.
- b. GBIC will work to advance the recommendations of the S.135 Working Group’s State Workforce Development System Report of Findings and Recommendations. CCRPC will assist with this work where appropriate.
- c. See Strategy 6 for more actions

4. Innovation and Entrepreneurial Development – Promote and expand the support ecosystem for entrepreneurs: providers, programs, and services available in the State to create an economic system of resources that is easily navigable at all stages of the innovation and entrepreneurial continuum. This support ecosystem must aggregate and address services such as finding capital, mentorship, prototyping, commercialization, etc.

- a. Encourage home-based small businesses throughout the Region as allowed by municipal zoning.
- b. Ensure that sufficient telecommunications infrastructure, especially high-speed internet, is available to make these businesses possible. Support the State of Vermont’s Broadband Action Plan goals of ensuring universal availability of internet speeds of 10/1 megabits per second by 2020, and 100/100 megabits per second by 2024.
- c. Encourage co-working spaces, generator spaces and business incubators to provide low-cost space for new business + innovation.
- d. Research successful efforts to capitalize on the entrepreneurial spirit of recent immigrants and ensure that they are a cornerstone of economic development policy and actions, and incorporate strategies as appropriate.

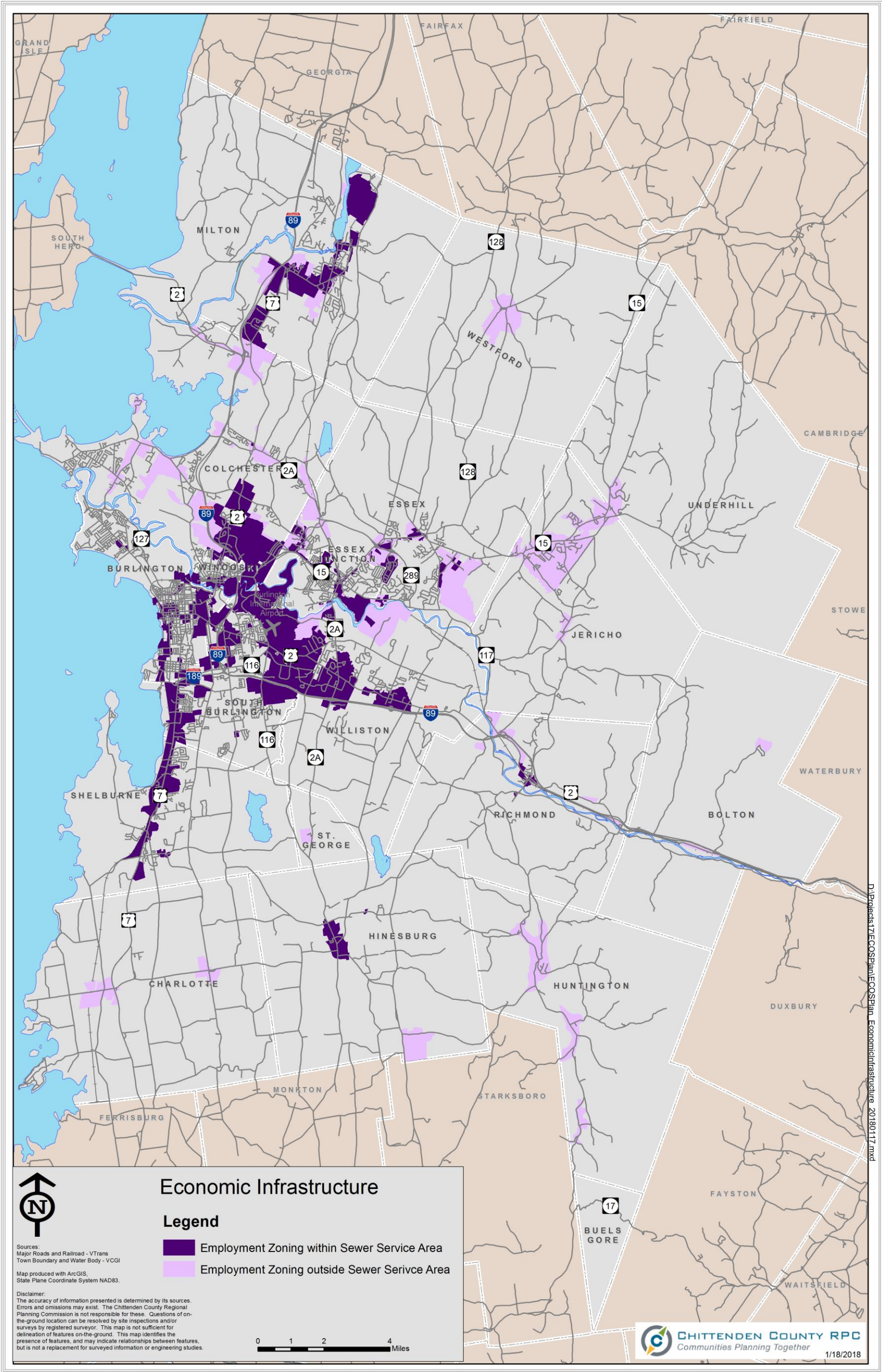
- 5. Creative Economy and the Arts** – Arts and the creative economy are what drives a large and diverse amount of economic activity in our region (e.g. local foods, design, technology, media, craftsmanship/fabrication, arts, emergent media, music, dance, festivals, education, and recreation). This portion of the economy is fundamentally unique in that it is a significant contributor to the culture in our region. Support creative economy and arts programs and efforts.

Create collaborations between arts, culture and recreation groups and the Chamber of Commerce and local businesses to promote the use of local artists in regular business needs (i.e. advertising, branding, communications, etc.) and to share vacant or underutilized commercial spaces with artists for gallery and/or studio space.
- 6. Working Lands** - Support value-added foods, farms and forest products through the work of Farm to Plate by Vermont Sustainable Jobs Fund and Working Lands Enterprise Board. See Strategy 4 for more details.
- 7. Tourism** – Continue good efforts in tourism including VT Convention Bureau, Lake Champlain Regional Chamber of Commerce, and Lake Champlain Byway. Ensure that tourism materials are available in languages besides English, especially French. Support the work of the Vermont Outdoor Recreation Economic Collaborative, a task force created by Governor Phil Scott in 2017, to strengthen and expand Vermont’s outdoor recreation economy.
- 8. Economic Development Coordination** – Work with the State of Vermont to implement the 2014 Vermont Comprehensive Economic Development Strategy (Vermont 2020). Coordinate with Northwest Regional Planning Commission on their economic development efforts. Support municipalities in local economic development, including the development of local “brands” intended to attract and retain new residents and employers.
- 9. Public Infrastructure and Project Lists** – Adequate funding for public infrastructure is necessary to maintain and expand our economy. See the Metropolitan Transportation Plan and the ECOS/CEDS Project List for more details on critical projects. These lists include some of the projects necessary to support the region’s economic development: The Metropolitan Transportation Plan Project List includes transportation infrastructure projects and the CEDS Project List includes other infrastructure and utility projects.
- 10. Project Support** – the ECOS/CEDS and Metropolitan Transportation Project Lists should not be taken to mean that this plan only supports funding applications for infrastructure and utility projects. Rather, we will support the funding applications of any project that supports the strategies of this plan, such projects aimed at housing construction or business recruitment, retention and growth, and projects supporting our five target industries (Information Technology, Communications, and Media; High Value-Added Manufacturing; Higher Education; Clean Tech/Green Tech and Health Care and Wellness).
- 11. Housing Affordability** – Rental and owner-occupied housing that is affordable is a key component of economic development. The proportion of Chittenden County employees who live outside the county has increased since 2002, and this is projected to continue if housing trends continue as they have been. Reversing this trend will require two things: enough housing to

accommodate all Chittenden County workers, and housing stock that is affordable and accessible to a wide variety of residents.

- a. Strive for 75% of Chittenden County workers to live in the region.
- b. See Strategy 2, Action 3 for detailed actions related to housing.

MAP 1 – ECONOMIC INFRASTRUCTURE



2. STRIVE FOR 80% OF NEW DEVELOPMENT IN AREAS PLANNED FOR GROWTH, WHICH AMOUNTS TO 15% OF OUR LAND AREA.

The areas planned for growth are defined as the Center, Metro, Suburban, Village, and Enterprise Planning Areas (all but Rural) as displayed on the Future Land Use Map. This strategy mimics the development patterns we've seen in the recent past.

Increasing investment in denser, mixed use growth areas will improve economic opportunities, housing options, transportation options and improve community health. Focusing growth in the appropriate planning areas is also a cost-effective approach to increasing the supply of affordable housing and using existing infrastructure efficiently. Also, this pattern of growth reduces energy consumption for transportation. Homes are in closer proximity to jobs and other services, making trips shorter and making travel by walking, biking, transit and carsharing more feasible.

Actions

1. Invest in Areas Planned for Growth -

- a. Invest in wastewater, water and stormwater infrastructure, energy systems (e.g. distribution, storage, and generation) and transportation infrastructure (including bike, pedestrian and public transit) in areas currently developed and/or planned for growth.
- b. Target reuse, rehabilitation, redevelopment, infill, and brownfield investments to the non-rural Planning Areas.
- c. Retrofit existing buildings to reduce energy use and greenhouse gas emissions.
- d. Improve design quality of high density areas, and allow flexibility for creative solutions.

2. Municipal Planning and Zoning - Strengthen and direct development toward areas planned for growth through infill development and adaptive reuse of existing buildings through municipal plan and bylaw revisions and state designation programs.

- a. Municipal Development Review Regulations should be revised to improve the mix of uses, shared parking, support for transit, access to a variety of services (for example restaurants, grocery stores, parks, entertainment) via active transportation, energy efficiency, renewable energy and the affordability of housing. A particular emphasis is needed on providing for affordable rental housing.
- b. Integrate capital planning and budgeting in planning efforts to provide the right mix of infrastructure over time. Official maps can also be a useful tool to drive infrastructure improvements in the areas planned for growth.
- c. Health Impact Assessments (HIA) provide a tool to use at the regional, municipal, agency, and organizational level to assure that planning decisions maintain or improve the public health. Access can be improved by co-locating public facilities, in particular, medical and mental health facilities in areas with easy access via active transportation and public transit. Town health officers should be encouraged to participate in community planning efforts.
- d. Empower local officials through trainings and education on strategies to achieve the above plan and bylaw amendments, and implementation of them during development review. This could include how to effectively analyze development costs and benefits, and select appropriate multi-modal congestion mitigation measures.

- 3. Affordable Housing** – Producing more affordable housing helps meet basic needs, creates jobs and 50-year hard assets. This is a critical part of the infrastructure of the community and the economy.
- a. Implement incentives that encourage more housing construction that is lower cost including, but not limited to, affordable and supportive housing. This housing should be integrated within our communities throughout the County to provide a mix of housing for different incomes and access to jobs and services. These actions include:
 - i. Chittenden County Regional Planning Commission and its partners should study the current and projected shortage of affordable housing units by type (rental, owner, multi-family, single family).
 - ii. Increase density in areas planned for growth considering community character and design.
 - iii. Revise infrastructure requirements with a goal of reducing costs for developers.
 - iv. Consider fee waivers or other development review process incentives.
 - v. Continue to work with the University of Vermont and Champlain College and to develop specific plans to increase the percentage of students who reside in dedicated student housing.
 - b. Maintain or increase local and state resources that fund additional affordable housing, make housing more affordable, and/or maintain existing affordable housing. These actions include:
 - i. The state should fully fund the Vermont Housing and Conservation Board with 50% of property transfer tax revenues. This funding should be used to increase the stock of permanently affordable housing in Chittenden County.
 - ii. Review and amend (if necessary) local ordinances impacting the maintenance and use of existing buildings to ensure they're encouraging maintenance and retrofits of existing housing stock without adding undue cost.
 - iii. Advocate for more Tax Increment Financing (TIF) districts to help fund infrastructure improvements. Encourage the use of municipal housing trust funds to assist in the financing of affordable housing.
 - iv. Take steps to preserve existing affordable housing (including protecting subsidized housing and ensuring perpetual affordability through shared equity programs) from being converted to market rate housing; and continue to encourage shared equity for new owner homes.
 - c. Engagement and education efforts should continue and be improved. These actions include:
 - i. Increase fair housing education and outreach for landlords, property managers, real estate professionals, and anyone involved in the sale, rental or finance of housing. Work with the Vermont Refugee Resettlement Program, The Association of Africans Living in Vermont, Opportunities Credit Union, and other organizations to develop strategies for new Americans to quickly develop credit history. Create educational materials that encourage landlords to use alternative criteria for new Americans that don't penalize them for a lack of credit or rental history.
 - ii. Provide fair housing and land use planning training for land use professionals and municipal officials throughout the County.
 - iii. Train municipal officials and staff, the public, and developers to promote better development practices that achieve a higher level of density with quality design.
 - d. Increase efforts to comply with fair housing requirements. These actions include:

- i. Identify gaps in municipal implementation of State Fair Housing laws and ADA compliance (including but not limited to municipal bylaws should include language that explicitly permits officials to make reasonable accommodations to accommodate the needs of people with disabilities without delay or public input).
 - ii. The Vermont legislature should enact legislation that limits security deposits to no more than one month's rent with no more than one-half month's rent and no more than \$200 for pet deposits (excluding assistance animals for persons with disabilities). For tenants with rent subsidized through public programs, security deposit amounts should be based on the tenant's share of the rent before the application of any utility allowance. These limits do not apply to service deposits for residential care/assisted living settings.
 - iii. Implement the recommendations (as best as possible within current resource capacities) of the 2010 Burlington Analysis of Impediments and the 2012 State Analysis of Impediments. This includes tracking zoning variances, local permit applications, adjusted residential permit application and denials to identify disparities and trends.
- e. Increase enforcement and testing capacity of fair housing organizations such as Vermont Legal Aid. Currently, Vermont Legal Aid is only funded to test the protected classes included in federal fair housing law. Seek funding sources that would allow Vermont Legal Aid to test and enforce state protected classes (Age, marital status, sexual orientation, gender identity, receipt of public assistance).

4. Energy – Move the Region's energy system to meet the goals of Vermont's energy and greenhouse gas reduction goals while balancing economic vitality and affordability.

- a. Reduce energy consumption and decrease greenhouse gas emissions, to support the State's goals:
- Reduce greenhouse gas emissions 50% from 1990 levels by 2028,
 - Reduce greenhouse gas emissions 75% from 1990 levels by 2050,
 - Reduce per capita energy use across all sectors (electricity, transportation and heating) 15% by 2025,
 - Reduce per capita energy use across all sectors (electricity, transportation and heating) by more than 1/3 by 2050, and
 - Weatherize 25% of all homes by 2020.
- i. Continue and evaluate partnerships with Vermont Gas, Burlington Electric Department, Efficiency Vermont and the State Weatherization Assistance Program to facilitate the weatherization and increased energy efficiency of housing stock and other buildings.
 - ii. Decrease fossil fuel heating by working with partners such as Efficiency Vermont and Burlington Electric Department for Burlington residents to educate developers and homeowners on the benefits of technology such as cold climate heat pumps, wood heating and geothermal systems. Examples include district heating (for example, using waste heat from the McNeil Plant to heat buildings in Burlington) and biogas generation (capturing the methane produced by landfills or farms and using it instead of natural gas).
 - iii. Reduce fossil fuel consumption in the transportation sector, through the Transportation Demand Management and electric vehicle promotion strategies

outlined in Part 6 of this section and in the Metropolitan Transportation Plan (MTP) included in this plan.

- iv. Collaborate with the State of Vermont and utilities to ensure that state energy policy implementation (i.e. permits for non-renewable fuels) reflect state energy goals and our policies in Section b.
 - v. Encourage the State of Vermont to implement a single energy standard which includes a process for verifying compliance.
 - vi. Provide assistance to municipalities when requested to enhance town plans to be consistent with Act 174 standards for the purpose of enabling municipalities the ability to gain substantial deference in the Certificate of Public Good Section 248 process. This assistance will include working with municipalities to identify natural, cultural, historic, or scenic resources to be protected from all development types, identify preferred locations for renewable energy generation facilities, and encourage municipalities to lead by example with respect to energy efficiency for buildings and transportation and the deployment of renewable energy.
 - vii. Use the Energy Action Network (EAN) [Community Energy Dashboard](#) to educate residents and municipalities about opportunities to reduce energy use and switch to renewable energy sources. Additionally, institutions (including municipalities, institutions of higher education, businesses and non-profits) can use the Vermont Climate Pledge Coalition Tracker to upload actions that will help the State achieve its 90% renewable energy 2050 goal.
 - viii. Support a wide variety of renewable energy generation types, including sustainable uses of biomass for heating, passive solar building design, bio-digesters for electricity generation, photovoltaic solar, wind turbines, and optimizing the energy potential for existing hydro-electric dams.
 - ix. Work with the utilities on long-range infrastructure capacity planning.
 - xi. Support in-place upgrades of existing facilities, including existing renewable energy generation, storage, transmission lines, distribution lines and substations as needed to reliably serve municipalities and the region.
 - xii. Support changes in federal, state, and local policies to achieve the state of Vermont Comprehensive Energy Plan goals.
- b. CCRPC supports the generation of new renewable energy in the County to meet the Vermont Comprehensive Energy Plan's goal of using 90% renewable energy by 2050, in a manner that is cost effective and respects the natural environment. Specifically, Chittenden County needs to generate a total of 756,250 MWh (Megawatt hours) of energy to meet the low target (a 51% increase), or 1,265,134 MWh to meet the high target (a 152% increase). Currently, Chittenden County generates 501,661 MWh of renewable energy. The targets are technology neutral, meaning that they can be met with any mix of technologies. The following statements are CCRPC's renewable energy generation facility siting policies and will inform CCRPC's preferred sites policy.

Constraint Policies: Ground mounted renewable energy generation is constrained in certain areas due to state and local restrictions on development.

- i. Site renewable energy generation to avoid state and local known constraints and to minimize impacts to state and local possible constraints, as defined in Strategy

- 3, Action 1.f, and Strategy 4, Action 1.f, and Action 2.e. Renewable energy generation sited on existing structures or parking lots complies with this policy.
- ii. Site ground-mounted solar development in accordance with setback standards as defined in [30 V.S.A. §248\(s\)](#) and municipal screening requirements adopted in accordance with [30 V.S.A. §248\(b\)\(B\)](#).

Suitability Policies: After considering the constraints referenced above and found in Supplement 3, different levels of suitability exist for different scales and types of renewable energy generation depending on location within the County. To determine an appropriate location for a facility, first review the constraints above and then look at the policies below to determine how and where CCRPC encourages renewable energy generation facilities. CCRPC recommends the location of renewable energy generation facilities in accordance with the relevant guidelines below. Inability to meet these guidelines does not necessarily preclude the ability to develop renewable energy generation development.

- i. Locate energy generation proximate to existing distribution and transmission infrastructure with adequate capacity and near areas with high electric load (See Green Mountain Power's [Solar Map](#) and Burlington Electric Department's [Distributed Generation Map](#))
- ii. Locate renewable energy generation in areas designated by a municipality in an adopted plan for such use, including specific preferred sites for solar (state preferred sites are mapped on Map 5).
- iii. Locate solar generation (including but not limited to net metering) on previously impacted areas (such as, parking lots, previously developed sites, brownfields, State regulated landfills with post-closure certification, gravel pits/quarries, or on or near existing structures).
- iv. Locate ground-mounted solar larger than 15 kW AC and wind turbines with a hub height larger than 30 meters (98 ft.) outside of state designated village centers, growth centers, downtowns, new town centers, neighborhood development areas, and historic districts on the State or National Register.
- v. Locate ground-mounted solar generation, and small-scale wind (1 or 2 turbines, up to 50 meters (164 ft.) in Chittenden County's areas planned for growth, while allowing infill development wherever reasonably practical.
- vi. Locate wind generation in areas with high wind potential, such as the prime and base wind potential areas shown on Map 7.

5. State/Local Permitting Coordination & Improvement

- f. Support changes to the local and state permitting process to make the two more coordinated and effective. Participate in the Commission on Act 250 to improve the State's development review process, particularly to encourage development in appropriately planned places and discourage development outside of those areas. This could include expedited permitting processes for projects in areas that are: a) designated for growth; and b) where a community has a robust plan, regulations and staff capacity. In conjunction with a reduction of permit review redundancies in areas planned for growth it may be appropriate to develop more stringent standards and thresholds for development review in rural areas.

- g. Collaborate with stakeholders to ensure local and state regulations, bylaws and plans encourage transparency, predictability and timely review of sustainable and environmentally sound development applications. Support the establishment of an ambassador position to help those wishing to start businesses in Vermont understand and navigate the state permitting process.
- h. Develop a transportation assessment process that supports existing and planned land use densities and patterns in Center, Metro, Suburban, Village, and Enterprise Planning Areas to allow for more congestion and greater mode choice than allowed by current standards. The CCRPC will collaborate with the Vermont Agency of Transportation (VTrans), the Natural Resources Board, and other state and local stakeholders to develop a process that evaluates the transportation impact from a multi-modal perspective rather than just a traffic flow standpoint.
- i. Policies and planning studies that are adopted as part of this ECOS Plan and subsequent amendments will guide CCRPC's position in permit proceedings.

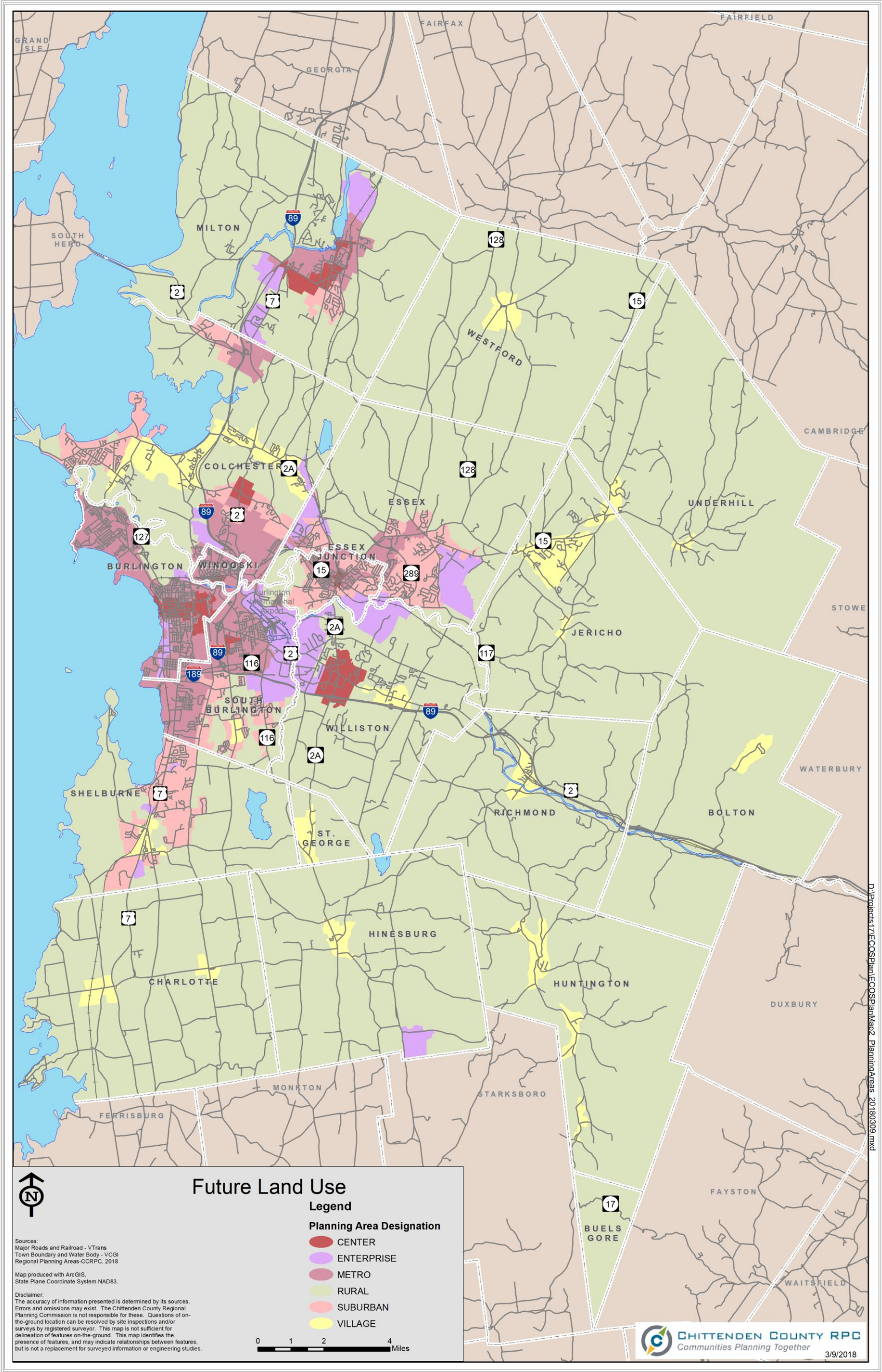
6. Metropolitan Transportation Plan Investments

- a. Adequately fund the maintenance and preservation of our existing transportation assets including roads, bridges, rail, transit, walking/biking, park-and-ride facilities, and transportation demand management (TDM) programs.
- b. Invest in our transportation system by addressing safety and localized congestion issues on our roadways.
- c. Expand the deployment of Intelligent Transportation Systems (ITS) to facilitate efficient flow of traffic on the roadway system which will improve safety, reduce delays and congestion, decrease transportation energy use, and minimize the need for major roadway expansion projects.
- d. New transportation system investment should focus on the transportation projects as detailed in the ECOS/Metropolitan Transportation Plan (MTP) Project List. Transportation Improvement Program (TIP) projects are expected to be implemented within the next seven years.
- e. Future transportation investments will support our areas planned for growth by facilitating a shift away from Single Occupancy Vehicle (SOV) trips; and focusing on the following areas and programs:
 - i. Encourage increased use of public transit by:
 - 1. Increasing investment in GMT transit services in the county to achieve 15-minute headways all day for all trunk routes in the county (US2, US7, VT15, and North Avenue) and 20 to 30-minute headways on all other routes (Excluding the LINK Express).
 - 2. Working in cooperation with GMT on their NextGEN Transit and Transit Development Plans to identify new and future opportunities for transit expansion. Integrate park-and-ride facilities with transit routes; including access to the Montpelier LINK at the future Exit 12 Park-and-Ride.
 - 3. Invest in transit signal priority technology in partnership with GMT, VTrans and municipalities.
 - 4. Maximize ridership for public school buses and minimize use of private vehicles for student transport.

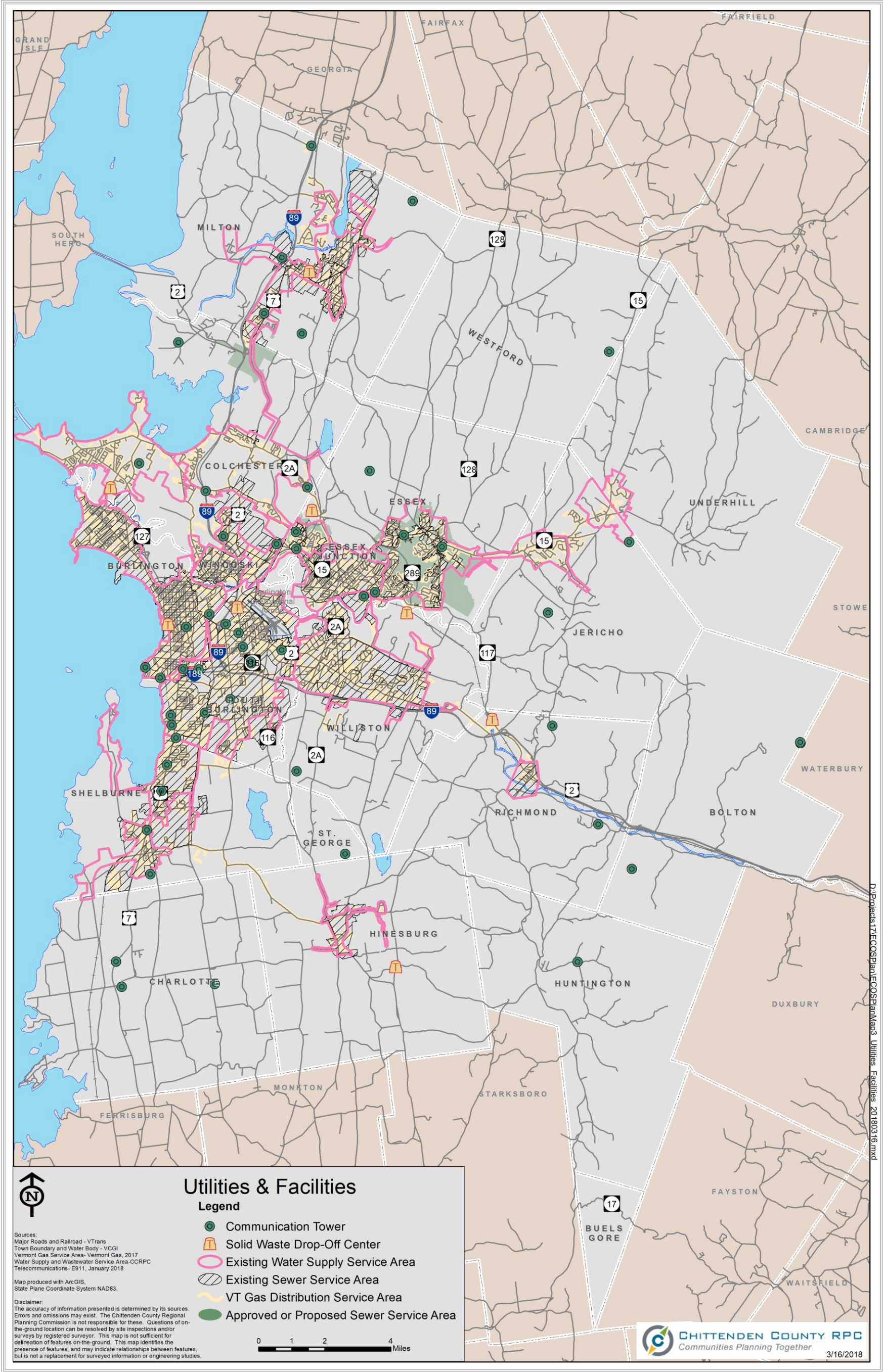
- ii. Expand walking and biking infrastructure to support active transportation and to provide interconnection with the region's transit system by:
 - 1. Implementing the strategies, projects and priorities identified in the 2017 Chittenden County Active Transportation Plan to provide safe and efficient facilities to connect common trip origins and destinations.
 - 2. Working with municipalities to update municipal road standards (for maintenance and new construction) to reflect complete streets principles.
 - 3. Reviewing state transportation projects to ensure that complete streets are implemented.
 - 4. Ensuring that site plans include adequate bike and pedestrian infrastructure and safety measures, through participation in the Act 250 hearing process.
 - 5. Assisting municipalities with scoping of future bike and pedestrian facilities to improve safety, accessibility, efficiency and continuity of the system. Municipalities could use the outcomes of the scoping studies to apply for various VTrans implementation grants.
 - iii. Promote Transportation Demand Management and Car Sharing programs:
 - 1. Promote and support the Go! Vermont program that links travelers to a variety of transportation resources and choices and the TravelSmarterVT initiative.
 - 2. Support the continued development and expansion of Chittenden County Park-and-Ride facilities as recommended in the 2011 Regional Park-and-Ride Plan.
 - 3. Work with the Chittenden Area Transportation Management Association (CATMA) to support employer programs to encourage telecommuting, carpooling, vanpooling, walking, and biking for employee commute trips.
 - 4. Support CarShare Vermont's initiatives.
- f. Promote a shift away from gas/diesel vehicles to electric or other non-fossil fuel transportation options through the following actions:
 - I. Work with the Clean Cities Coalition to encourage municipal fleets to switch to biodiesel for heavy-duty vehicles.
 - II. Work with local employers and nonprofit partners such as the Vermont Energy and Climate Action Network and Vermont League of Cities and Towns to encourage broader implementation of EV incentives, such as free or reduced parking costs for EV and fuel-efficient vehicle owners and preferential access to parking spaces limited in supply.
 - III. Promote the Drive Electric Vermont webpage, which connects users to financial incentives dealers, and recharging stations for EVs.
 - IV. In partnership with Drive Electric Vermont, Vermont Clean Cities Coalitions and other entities, increase awareness of the benefits of and access to EVs and alternative-fuel vehicles by:
 - 1. Organizing high-visibility events where people can see and test drive EVs, such as county fairs, energy fairs, and summer festivals. Events should also

- leverage local newspaper and public access coverage to showcase local residents and organizations that are helping to propel the transition to EVs.
2. Encouraging municipalities and other entities that operate fleets to switch a portion of their vehicles to electric or biodiesel-fueled vehicles.
 3. Providing technical assistance and support to communities interested in accessing VW diesel settlement funds for EV charging and/or heavy-duty vehicle replacements according to VT ANR's mitigation plan that will detail eligible activities.
 4. Assisting with deploying EV Infrastructure (paired with solar generation) at workplaces and key public locations.
 5. Assessing current access to public and workplace charging (to the extent known) in the community or region and identify strategic locations in busy areas (large employers or areas of high visitation in downtowns and villages) where charging stations should be added or expanded.
 6. Encouraging electric utilities to invest in charging infrastructure, offer incentives to increase EV ownership, and build awareness of charging opportunities as part of their strategy for complying with the state's Renewable Energy Portfolio Standard.
 7. Seeking grants to fund the installation of DC fast-charging infrastructure at strategic locations along major travel corridors and in transit hubs such as park and-ride locations and along the Interstate 89 Alternative Fuels Corridor.
 8. Educating municipalities and providing technical assistance on amending zoning regulations to include electric vehicle charging infrastructure.
- g. Support and enhance our rail infrastructure for both passenger and freight by investing in Amtrak facilities and the Essex Junction to Burlington line (Winooski branch). Where needed, provide additional rail infrastructure for the support and promotion of more efficient and safe movement, handling and storage of goods by rail, thus helping relieve the burden on our existing roadway network.

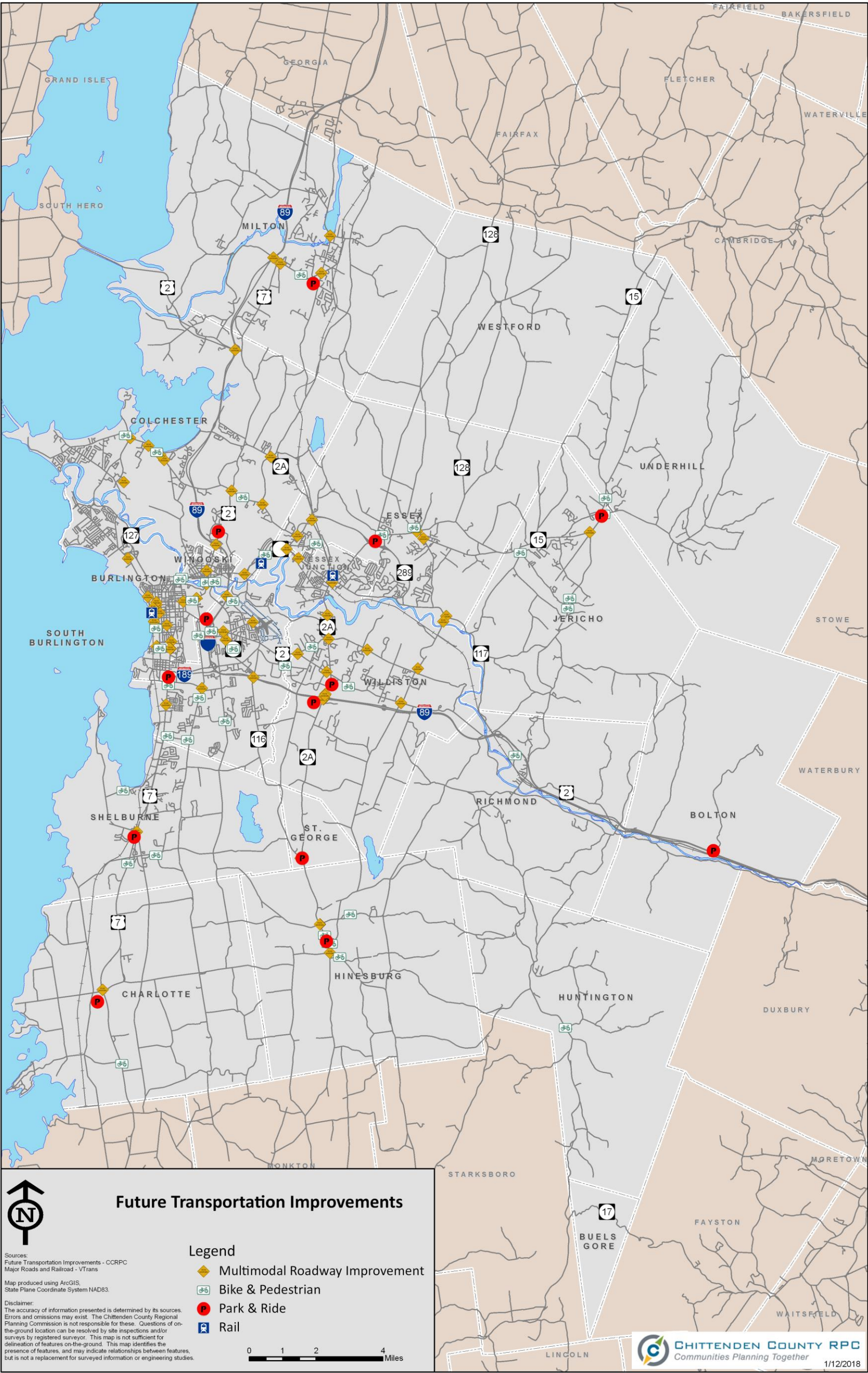
MAP 2 - FUTURE LAND USE



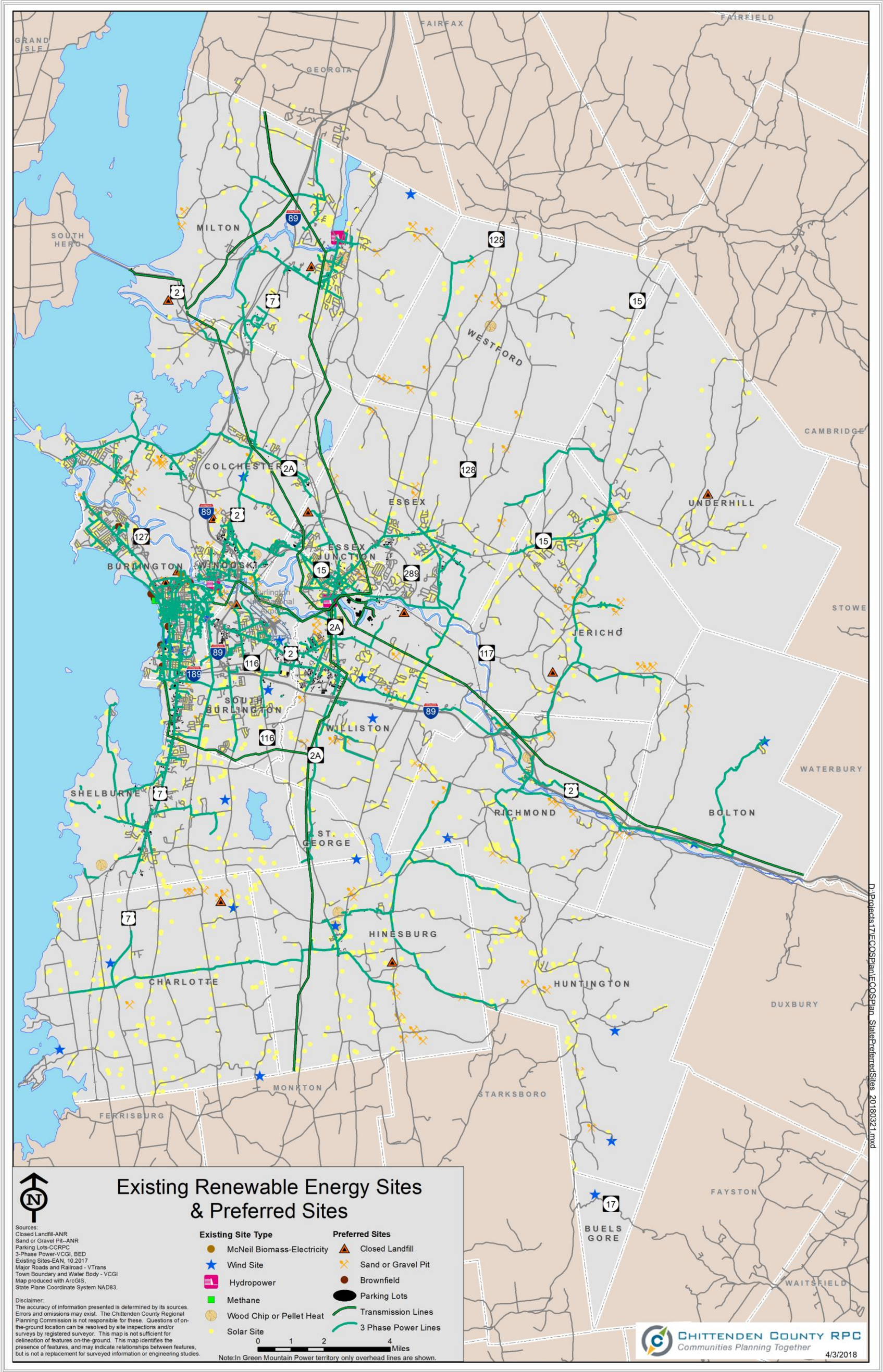
MAP 3 – EXISTING UTILITIES AND FACILITIES



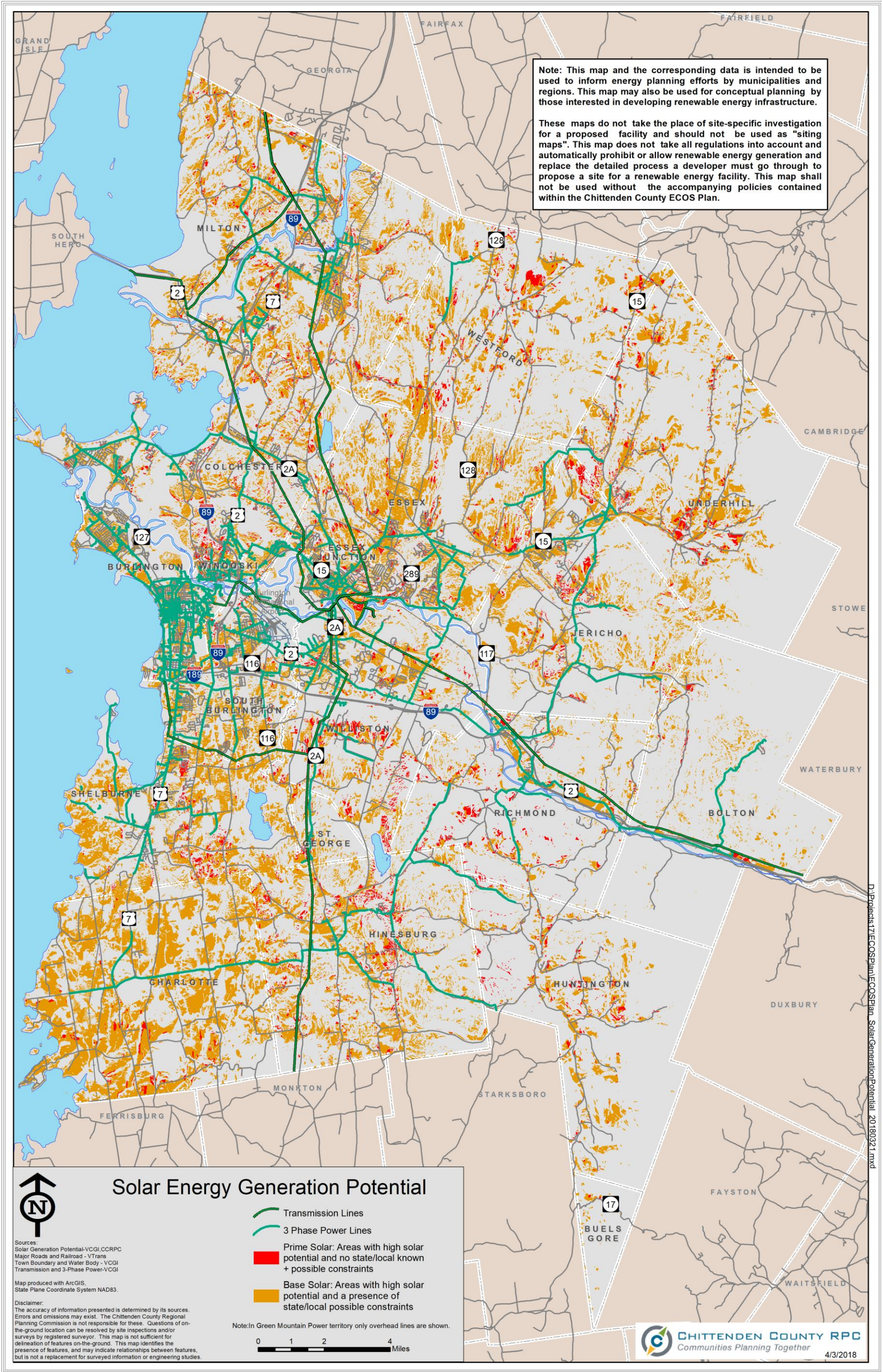
MAP 4 – FUTURE TRANSPORTATION IMPROVEMENTS



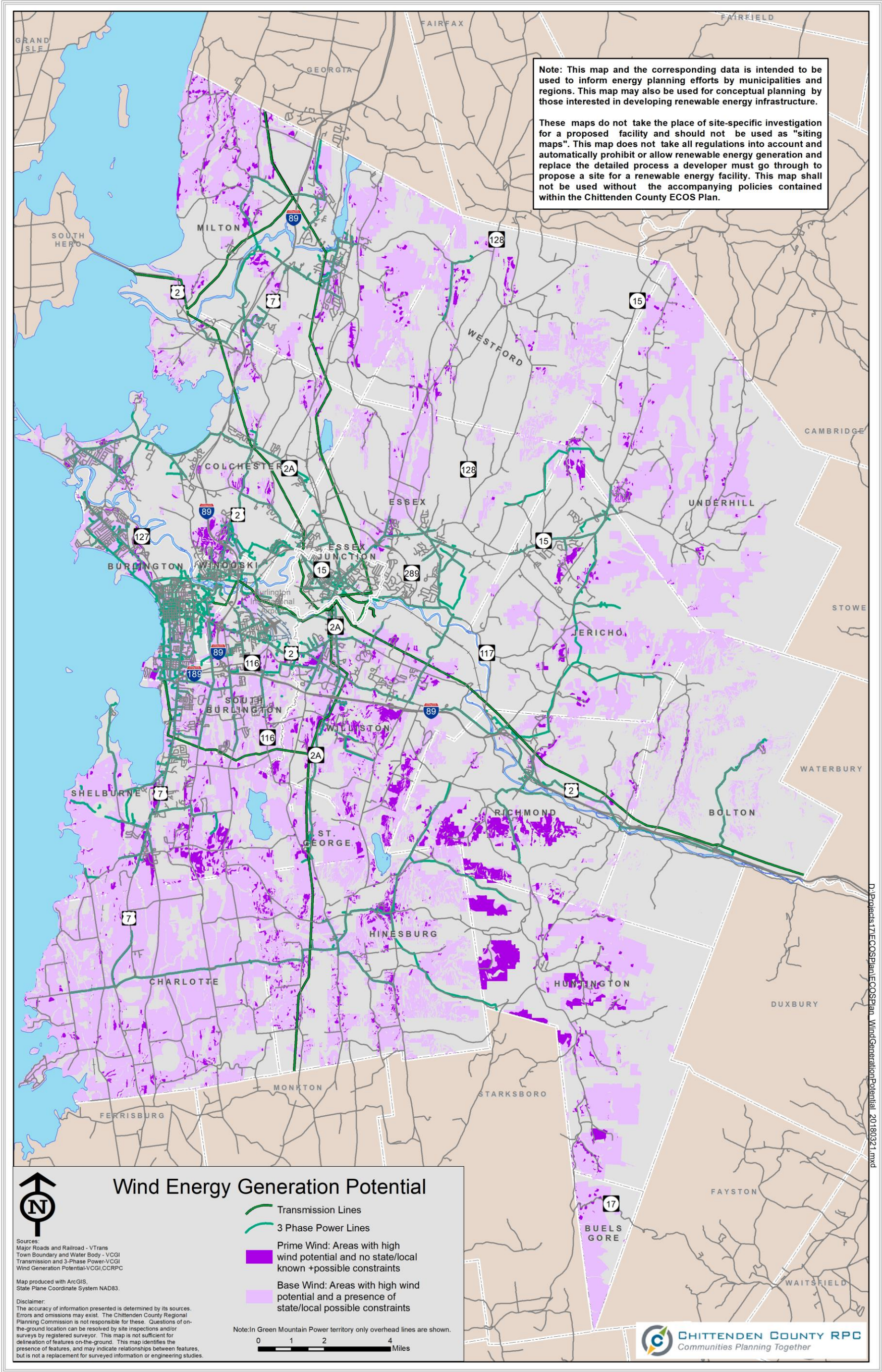
MAP 5 – STATE PREFERRED SITES FOR SOLAR GENERATION + EXISTING RENEWABLE ENERGY GENERATION SITES



MAP 6 – SOLAR GENERATION POTENTIAL



MAP 7 – WIND GENERATION POTENTIAL



3. IMPROVE THE SAFETY, WATER QUALITY, AND HABITAT OF OUR RIVERS, STREAMS, WETLANDS AND LAKES IN EACH WATERSHED.

While striving toward all of these ECOS strategies, and particularly Strategy #2 – 80% of growth in 15% of our land area, it is essential to do so in such a way that we do not impair our essential water resources (including potable water) and that we prepare ourselves for the impacts of a changing climate.

1. **River Hazard Protection** – Develop and implement adaptation strategies to reduce flooding and fluvial erosion hazards. While supporting planned growth, ensure that growth is evaluated in terms of preparedness for a changing climate. Chittenden County will continue its efforts, along with the municipalities, to avoid development in particularly vulnerable areas such as floodplains, river corridors, wetlands, lakeshore and steep slopes; protect people, buildings and facilities where development already exists in vulnerable areas to reduce future flooding risk; plan for and encourage new development in areas that are less vulnerable to future flood events (see Strategy 2); and implement stormwater management techniques to slow, spread and sink floodwater (see the Non-Point Source Pollution section below).
 - a. Identify problem locations - Conduct on the ground inventories and map flow and sediment attenuation locations and problematic infrastructure (undersized culverts, eroding roadways, "vulnerable infrastructure" - infrastructure subject to repeat damage and replacement, etc.).
 - b. Revise bridge/culvert designs - Revise public works and zoning ordinances with culvert and bridge design specifications that allow for wildlife passage and movement of floodwater and debris during high intensity events. Implement culvert and bridge designs that produce stable structure in river channels (i.e. fluvial geomorphology).
 - c. Protect river corridors– Existing bylaws protect the majority of Fluvial Erosion Hazard (FEH) areas with stream setbacks and floodplain regulations. Work with ANR to get the FEH data incorporated into the River Corridor Protection Area maps. Work with municipalities and ANR to improve bylaws to protect the River Corridor Protection Areas or River Corridors not currently protected and enforce these bylaws. Continue protection of river corridors including non-regulatory protection measures such as stream re-buffering, river corridor easements on agricultural lands, river corridor restoration and culvert and bridge adaptation.
 - d. Support non-regulatory conservation and/or preservation of vulnerable areas through public and land trust investments, including identification of repetitively damaged structures and provide assistance to elevate, relocate or buy out structures, and identify where flood storage capacity may be restored and conserved.
 - e. Participate in the development and implementation of the Lamoille, Winooski and Direct to Lake Tactical Basin Plans. CCRPC will work with the State, municipalities and other partners to address river hazard protection, flood resiliency and water quality through these Plans – including prioritizing projects for funding.
 - f. To protect water quality, development should be located to avoid state and local known constraints that have been field verified, and to minimize impacts to state and local possible constraints that have been field verified.
 - i. State and Local Known Constraints, as protected by municipalities and State agencies, are shown on Map 9 and include the following: DEC River Corridors,

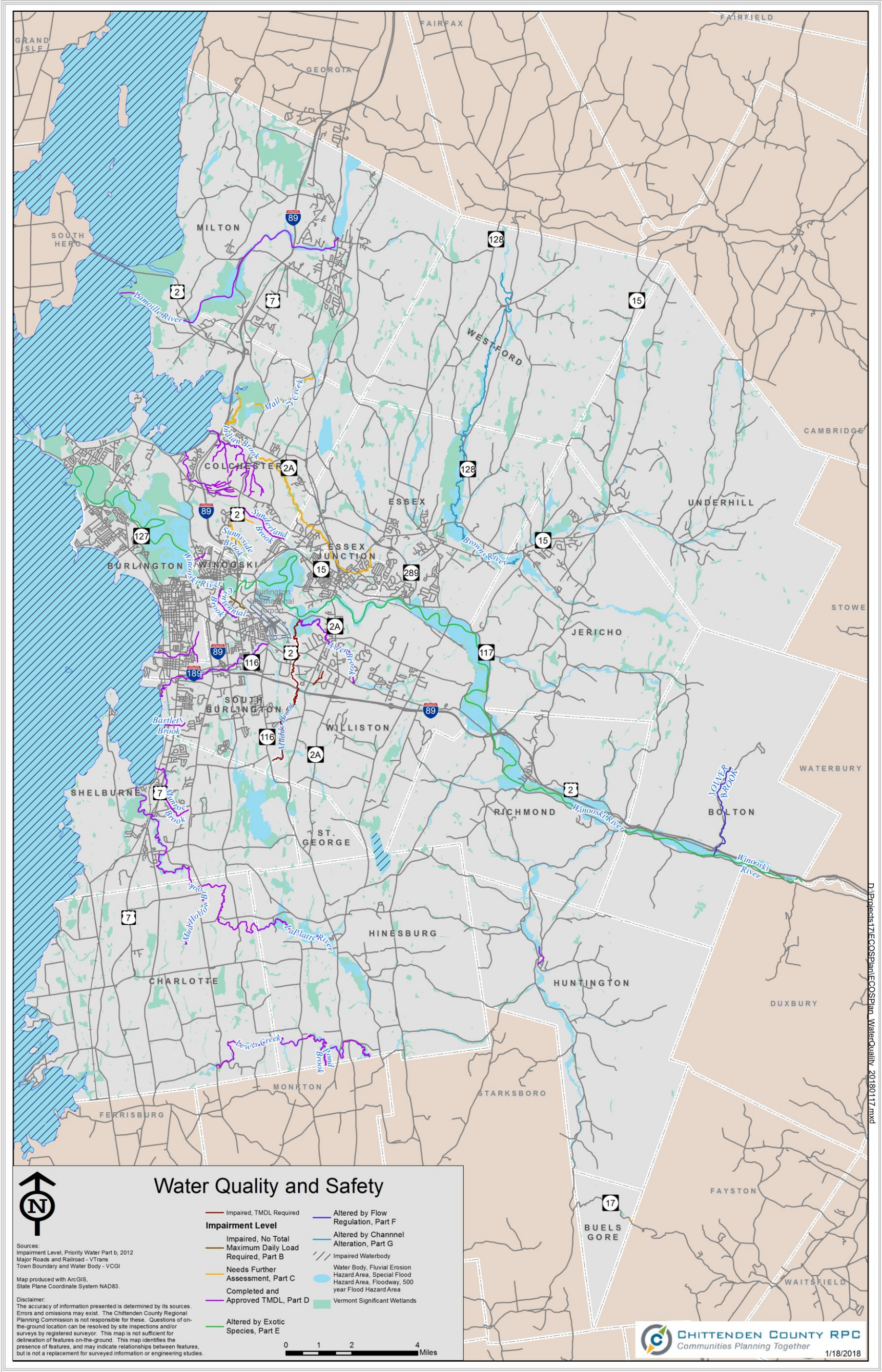
- FEMA Floodways, and Municipal Water Quality Setbacks, Local Known Constraints – see constraint tables under the description of Map 9 in Supplement 3.
 - ii. State and Local Possible Constraints are shown on Map 9 and include the following: FEMA Special Flood Hazard Areas and hydric soils, Local Possible Constraints – see constraint tables under the description of Map 9 in Supplement 3.
- 2. **Non-point Source Pollution** - While we have addressed point sources of pollution, non-point sources are still contributing pollutants to our water bodies.
 - a. Assemble data – Work from existing data collected and further identify the locations that are contributing to water quality pollution such as flow, sediment, pathogen and nutrient. Where needed, conduct on-the-ground inventories of water quality and biological assessments (in-stream), wetlands, sub-watersheds, river corridors (buffered or not) and geomorphology. Map the existing and new data on one regional map.
 - b. Revise Plans and Bylaws and Ensure Enforcement -- Incorporate the above data into municipal plans; establish specific statements that protect these resources; develop clear standards for how to protect these resources within zoning regulations; and initiate on-going enforcement of the regulations. Encourage low impact development techniques, and shared storm water control programs to maximize land development in areas planned for growth. Incentivize best management practices for agricultural uses; and encourage the Agency of Agriculture to better enforce their required agricultural practices. In addition, EPA's DRAFT Lake Champlain Total Maximum Daily Load (TMDL) for phosphorus, Vermont's Phase 1 TMDL Implementation Plan, and the Vermont Clean Water Act (2015 Act 64) have established a variety of regulatory programs to address phosphorus reduction. CCRPC will work with the municipalities and other partners to implement these programs: Municipal Roads General Permit, Phosphorus reduction integration into the existing MS4 permit, and Developed Lands (3 or more acres of impervious). See Chittenden County's Work Plan and the 2016 All Hazard Mitigation Plan (in development) for more detail on these actions.
 - c. Implement Non-regulatory approaches - Identify and implement non-regulatory approaches to nutrient, pathogen and sediment pollution management. Under new MS4 permit requirements, municipalities will be developing flow restoration plans to achieve the total maximum daily load requirements for impaired streams, rivers, and Lake Champlain. These plans may require additional public investment in storm water facilities or investments or actions by individual property owners. Support watershed organizations.
- 3. **Wastewater Treatment Plant Upgrades** – The non-point sources have been identified as the largest contributors of phosphorus to Lake Champlain, and therefore Vermont's August 2015 *Draft* Lake Champlain Phosphorus TMDL Phase I Implementation Plan, does not allocate any additional phosphorus reductions to wastewater treatment plants in the Lake Champlain basin. However, EPA's *Draft* Phosphorus TMDLs for Vermont Segments of Lake Champlain, dated August 14, 2015, does include reductions at some of the County's wastewater treatment plants as identified in Table 9 of that document. These treatment plants are listed in the ECOS/CEDS Project List (in

Supplement 4). To provide further context to the treatment plants on this list, here is further information from EPA's Phosphorus TMDL:

"The currently permitted WWTF [wastewater treatment facility] contributions in [the Main Lake, Shelburne Bay and Burlington Bay] segments range from 16 to 97% of the total segment base load and should be reduced. EPA has made WWTF waste load allocations [WLA] equivalent to setting the phosphorus limit at 0.2 mg/l at design flow for the 17 facilities with flows greater than 0.20 MGD. Those facilities [in Chittenden County] are: Burlington East, Burlington Main, Burlington North, Essex Junction, Hinesburg, Global Foundries, Shelburne #1 and #2, Richmond, South Burlington Airport Parkway, South Burlington Bartletts Bay, and Winooski. [Some] of these facilities have recently made upgrades or have the ability to make process improvements that would enable them to meet permit limits consistent with the new allocations without major construction upgrades. [Within Chittenden County] these include, Essex Junction, South Burlington Airport Parkway, Shelburne #1 and #2, and South Burlington Bartlett Bay.... There are two exceptions to this general approach. The 2002 WLAs for Weed Fish Culture Station and Burlington Electric were lower than a limit equivalent to 0.2 mg/l at design flow. The more stringent 2002 allocations have been retained and are already reflected in the permit limits for these facilities." EPA's Phosphorus TMDLs for Vermont Segments of Lake Champlain August 14, 2015, page 31.

4. Support and promote the use of more holistic, less chemical dependent and less energy intensive effluent management efforts whenever possible (for example, composting toilets, localized grey water systems, passive grey water and black water septic systems, rain water harvesting and storage, etc.)

MAP 8 – WATER QUALITY & SAFETY



4. INCREASE INVESTMENT IN AND DECREASE SUBDIVISION OF WORKING LANDS AND SIGNIFICANT HABITATS, AND SUPPORT LOCAL FOOD SYSTEMS.

1. **Habitat Preservation** - Protect forest blocks, wildlife connectivity resources and crossings, surface waters, riparian areas and other significant habitats (e.g. wetlands) from development and fragmentation; and promote vegetative landscaping in urban areas to maintain natural habitats, natural storm water management, water quality, air quality, carbon sequestration and cultural heritage. This work should focus on the broader concept of the pattern of forest cover versus focusing on core forest areas because forest blocks in Chittenden County are getting smaller and more isolated from other forest blocks, as well as surface water and riparian areas. Leaving isolated islands of habitat contributes to losses in biodiversity.
 - a. Inventory – Map 10 provides a starting point for regionally important forest blocks and wildlife habitat and is the basis for this Plan’s compliance with Act 171 of 2016 (Forest Integrity). The map includes Vermont Conservation Design’s highest priority and priority resources defined as two scales: Landscape Scale (aka forest blocks and connectivity resources) and Species and Community Scale (aka rare, threatened and endangered species and other specific habitat sites). This data and the component layers are located on the State’s BioFinder website. Over the coming years CCRPC will work with municipalities to be compliant with this new statutory requirement, by:
 - i. assisting with on the ground surveys and inventories of forest blocks, wildlife crossings, natural communities (i.e. special features within the forest blocks and surface water and riparian areas), and other significant habitats (e.g. wetlands), scenic resources and locations of invasive species and map this information.
 - ii. Prioritize these resources based on ecological information, connectivity and local information. For example, a landscape scale forest block may be more important than another if it contains multiple community species within it. Or a portion of a forest block may be more important than another if it is planned for growth. For example, the Forests, Wildlife & Communities: Science to Action project was done in the Towns of Richmond, Bolton, Jericho, and Huntington, by Vermont Natural Resources Council, Arrowwood Environmental, Vermont Fish & Wildlife Department, VT Forests, Parks & Recreation Department, and CCRPC. Hinesburg has also done some great work in this area. Also, the VT Agency of Transportation’s BioFinder and *Planning: A Key Step Towards Protecting Forest and Wildlife Resources* are helpful resources for this work.
 - iii. incorporate this data into municipal and regional plan text and maps and establish specific policies that address and protect these resources. This data can be added to a natural features map, and the highest priority resources can be added to the future land use map as an area to be protected in the future.

- iv. Aggregate these locally important forest blocks, wildlife habitat and associated resources into a regionally significant map so that we can see these resources across municipal boundaries and work together to protect them.
 - b. Resource Protection Audit – Identify what resources are being protected and to what standard. Map this information based on tiers of resources based on scale (i.e. small scale rare species locations and wetlands versus landscape scale forest blocks) and protection standards. Small scale resources may require higher standards, where landscape scale resources may accommodate some development and require less protective standards to maintain functions and values.
 - c. Municipal Development Review Regulations - Develop clear definitions of the resources to be protected and establish standards to describe how to protect these resources within zoning and subdivision regulations.
 - d. Education - Educate engineers, developers, real estate professionals, planners and the public regarding resources and methods for restoration and protection.
 - e. Non-regulatory Protection - Support non-regulatory conservation and/or preservation through public and land trust investments. Establish invasive plant removal management plans, implement the plans and include long-term monitoring.
 - f. To protect significant habitats, development should be located to avoid state and local known constraints that have been field verified, and to minimize impacts to state and local possible constraints that have been field verified.
 - State and Local Known Constraints, as protected by municipalities and State agencies, are shown on Map 9 and include the following: State - significant natural communities and rare threatened and endangered species, vernal pools (unconfirmed and confirmed), and Class 1 and Class 2 Wetlands, Local Known Constraints: see constraint tables under the description of Map 9 in Supplement 3.
 - Possible State and Local Constraints, as protected by municipalities and State agencies, are shown on Map 9 and include the following: Protected Lands (state lands in fee simple ownership and privately conserved land), deer wintering areas, the Agency of Natural Resources Vermont Conservation Design Highest Priority Forest Blocks, Local Possible Constraints: see constraint tables under the description of Map 9 in Supplement 3.
2. **Working Lands Implementation** – To preserve the soul of Vermont, as well as move forward into the future with resiliency, Vermont needs to protect the farmland and forestland we have and support existing and new operations (including, but not limited to, un-intensive urban and suburban home gardens and mini-homesteads). Support implementation of the Farm to Plate Strategic Plan and the VT Working Landscape Partnership Action Plan.
- a. Municipal Development Review Regulations - Develop clear definitions of working lands to be protected and establish zoning and subdivision standards to describe how to protect these areas from development so that they may be retained and accessible as “working” lands. Maintain access and scale of working lands to ensure

viability after subdivision in the rural landscape (including but not limited to protection of log landings of previously logged forested parcels, zoning techniques such as fixed area ratio zoning to separate lot size from density, conservation zoning and homeowners association bylaws that allow for farming on the open space lots, etc.); while promoting urban agriculture in areas planned for growth. While farming is generally exempt from municipal zoning, some structures such as farm houses, processing facilities, the generation of energy for on-farm use, and on-farm retail and related enterprises may be regulated. The economic viability of farm enterprises can often depend on these facilities so municipal regulation should not impede reasonable farm related improvements.

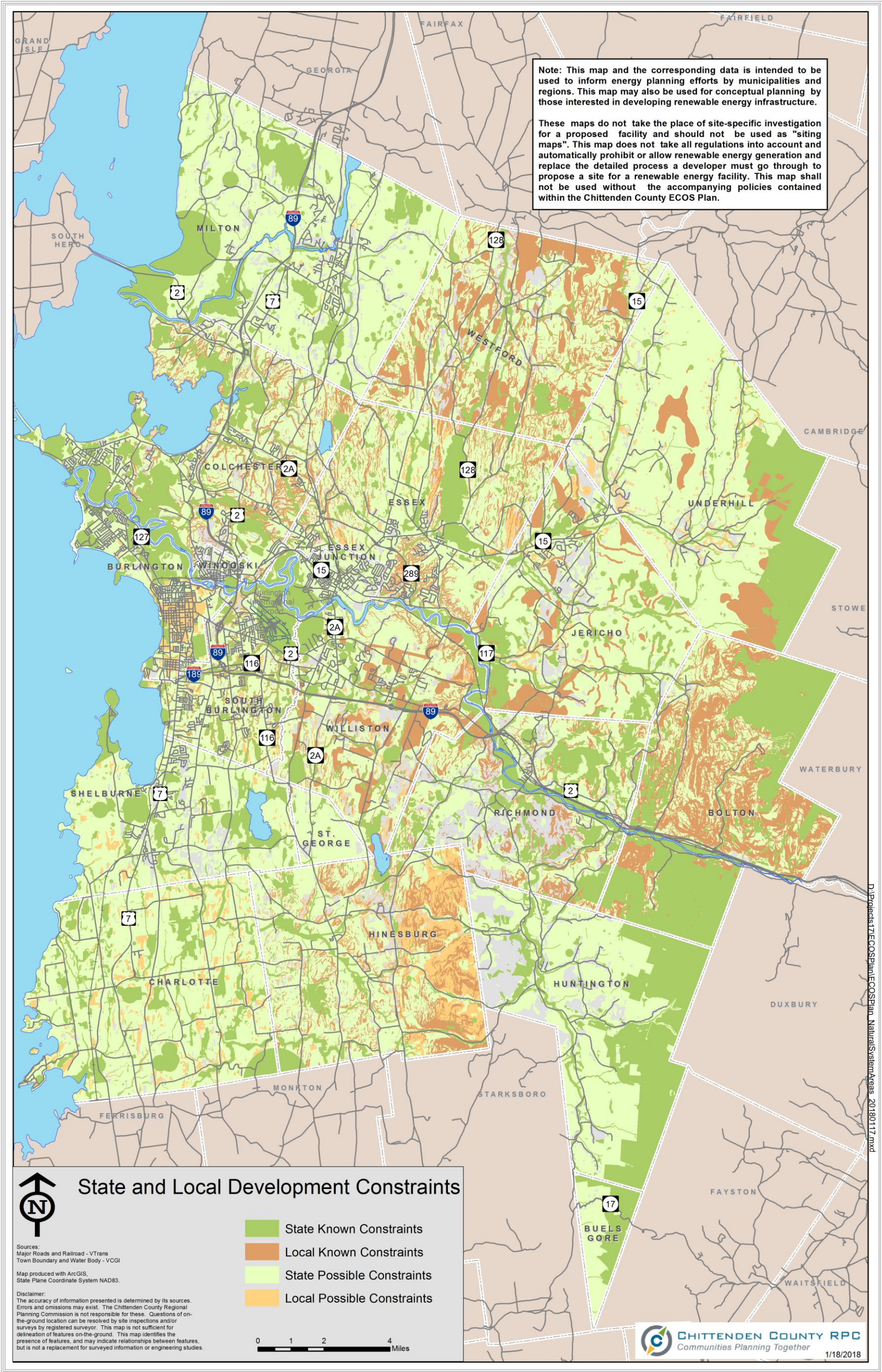
- b. Infrastructure & Systems – support establishment of food processing industries, value-added product markets, workforce training, etc. to help support the viability of these industries.
- c. Biomass Energy Potential – support the continued sustainable harvesting of biomass in Chittenden County for uses including wood heating and electricity production, which will support the viability of the forestry industry and move the region towards the energy goals discussed in Strategy 2.
- d. Support non-regulatory conservation and/or preservation through public and land trust investments (including but not limited to municipal land conservation funds).
- e. Work with farmers and the Farm to Plate Initiative to balance this plan's goals of a strong local food system and increased production of renewable energy.
- f. To preserve working lands, development should be located to avoid state and local known constraints that have been field-verified, and to minimize impacts to state and local possible constraints that have been field-verified.
 - i. Possible State or Local Constraints, as protected by municipalities and State agencies, are shown on Map 9 and include the following: Agricultural soils and Act 250 agricultural soil mitigation areas, and local constraints listed in the constraint tables under the description of Map 9 in Supplement 4.

3. Earth Resources Extraction - Mineral extraction and processing facilities, including smaller private extraction operations existing to support agricultural operations, should be planned, constructed, and managed, in conjunction with State and local regulations, to:

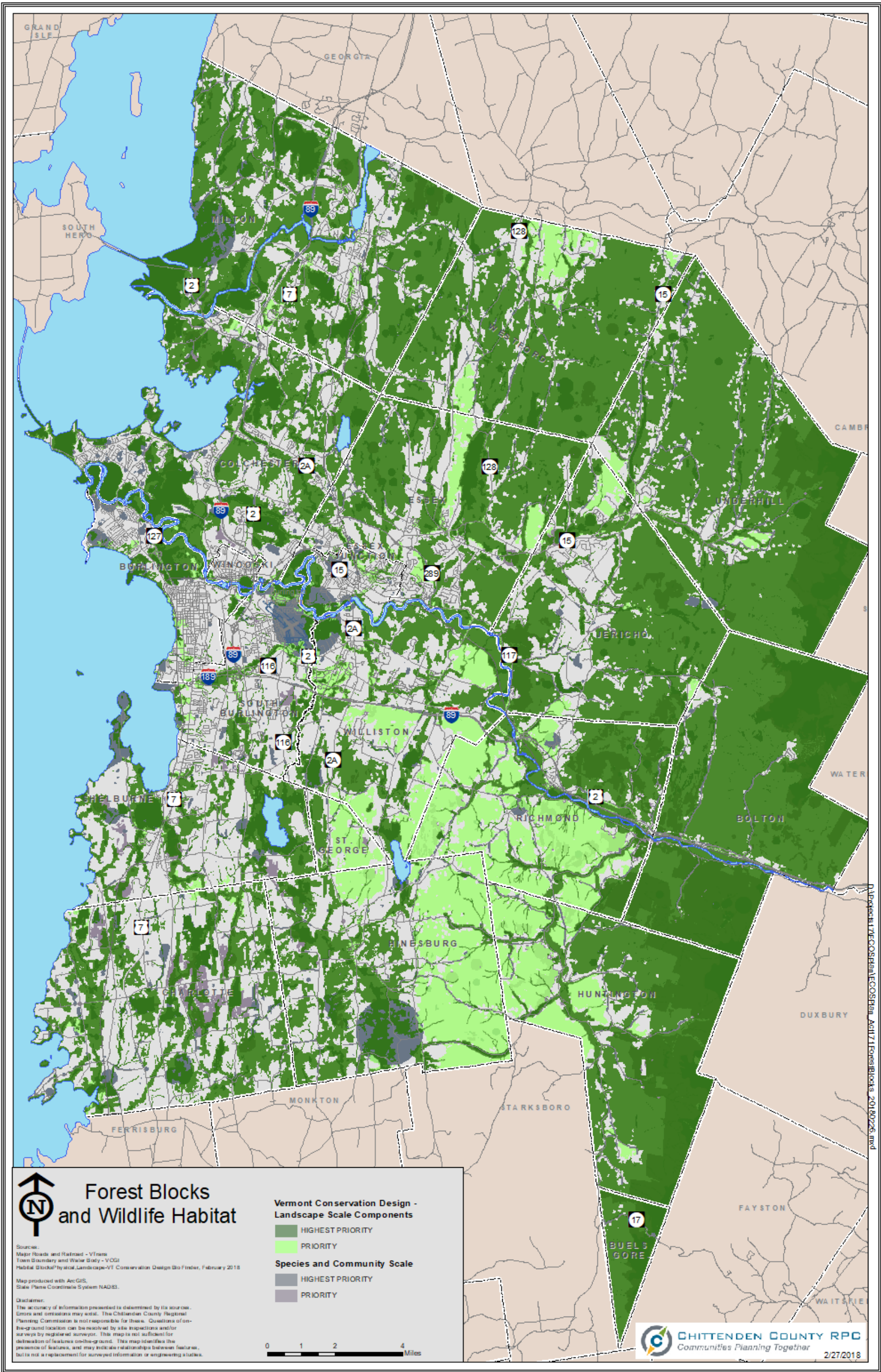
- a. Not place an excessive or uneconomic burden on local and state highways and bridges – including but not limited to a burden to the function and safety of existing roads and bridges serving the project site, strain from heavy loads on roadbeds and bridges, conflicts with pedestrians or bicyclists and increased heavy traffic in dense residential areas; and
- b. Minimize any adverse effects on water quality, fish and wildlife habitats, and adjacent land uses; and
- c. Plan for their eventual rehabilitation so that slopes are stable, and the surface is revegetated with a variety of native species to support a wide range of biodiversity. To that end, topsoil should not be removed from sites and excavations should stop early enough so that stable slopes can be established on the property; and

- d. Extraction sites should be screened to the extent practical if topography and vegetation allow.

MAP 9 – NATURAL SYSTEMS/DEVELOPMENT CONSTRAINTS



MAP 10 – FOREST INTEGRITY

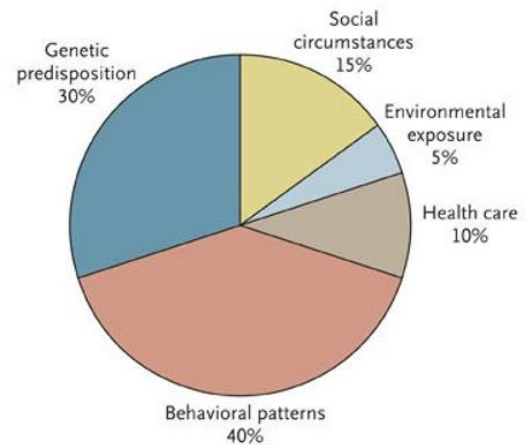


5. INCREASE OPPORTUNITY FOR EVERY PERSON IN OUR COMMUNITY TO ACHIEVE OPTIMAL HEALTH AND PERSONAL SAFETY.

What Contributes to Health?

The [World Health Organization](#) defines health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”. Many people think health care has a big impact on health, but health care contributes only 10% to what makes us healthy. Behaviors contribute 40%, while social circumstances contribute 15%. Social circumstances also strongly influence behavior, so together, the two largely [contribute to health](#).

Unfortunately, [what we spend on health](#) is mostly health care. Medical services account for close to 90% of the money we spend as a society to treat disease and to maintain health. Only a small portion of the remaining 10% is used to fund health promotion strategies that focus on behavior change. Increased investments in improving socioeconomic conditions and creating a healthy built environment have the greatest potential to improve health and save health care costs.



The Impact of Health Behaviors on Chronic Disease

[Three behaviors](#) (tobacco use, lack of physical activity, and poor nutrition), lead to 4 chronic diseases (cancer, heart disease and stroke, type 2 diabetes, and lung disease) that result in more than 50% of all deaths in Vermont. Substance abuse also has a large impact on health and public safety.

Decreasing tobacco use, increasing physical activity, improving nutrition, and decreasing substance use are most effectively accomplished through improving socioeconomic conditions (often measured as a combination of education, income and occupation) and creating healthy places for people to live, learn, work, play, and worship. For example, a child who is born into a home where other family members smoke, plays in a park where smoking is allowed, and lives in a community with heavy tobacco advertising in storefronts is more likely to become a smoker than a child who is born into a home with no smokers, and a community with smoke-free parks and restrictions on tobacco advertising.

Improving the conditions that shape our behaviors depends upon the collaborative work of many sectors, including public health, land use and transportation planning, and economic development. Below are recommended strategies for cross-sector approaches to improve health. Applying a health equity lens to these strategies is essential to increasing the opportunity for every person in our community to achieve optimal health and personal safety.

Health in All Policies

[Health in All Policies \(HiAP\)](#) is a collaborative approach to improving the health of all people by incorporating health considerations into decision-making across sectors and policy areas. A HiAP approach identifies the ways in which decisions in multiple sectors affect health, and how better health can support the achievement of goals from multiple sectors. In 2015, Executive Order No.7-15

established and cabinet-level [HiAP Task Force](#) to identify programs, policies and strategies to improve the health of Vermonters, especially vulnerable populations, and to coordinate across agencies around issues if healthy communities.

Healthy Community Design

Your zip code has more bearing on your health than your genetic code. The [physical design of a community](#) affects residents' health every time they step out their front door. Sometimes making healthy choices is not easy--being physically active is hard if you do not have access to sidewalks or parks, and eating right is hard if healthy foods are not available. Communities can be planned and developed in a way that increases opportunities for physical activity, reduces incidence of injury, increases access to healthy food, and provides equitable access to education, employment, and vital services. Improving air and water quality and minimizing the effects of climate change further support population health. These approaches also serve to support mental health by decreasing stress and by strengthening the social fabric of the community.

Healthy Impact Assessments

[Health Impact Assessment \(HIA\)](#) is a process that helps evaluate the potential health effects of a plan, project, or policy before it is built or implemented. HIA brings potential positive and negative public health impacts and considerations to the decision-making process for plans, projects, and policies that fall outside traditional public health arenas, such as transportation and land use. An HIA provides practical recommendations to increase positive health effects and minimize negative health effects.

Health Equity

[Health Impact Assessment \(HIA\)](#) is a process that helps evaluate the potential health effects of a plan, project, or policy before it is built or implemented. HIA brings potential positive and negative public health impacts and considerations to the decision-making process for plans, projects, and policies that fall outside traditional public health arenas, such as transportation and land use. An HIA provides practical recommendations to increase positive health effects and minimize negative health effects.

1. **Basic needs** – Investment in the health, safety and education of citizens is the tide that lifts all boats. Provide the basic needs of all people through access to healthy food, access to safe shelter, greater and more equitable opportunities for education, job training, jobs, affordable housing and public transportation.
2. **Tobacco Use** – Reduce access and exposure to tobacco by restricting retail promotion of tobacco products and designating tobacco-free outdoor public spaces and events.
3. **Obesity** -- Create policies and environmental supports that increase access to active transportation, active recreation, and healthy foods.
4. **Substance Abuse** - Support residents in choosing to be free from alcohol abuse and addiction by restricting retail promotion of alcohol products and designating alcohol-free outdoor public spaces and events.
5. **Emergency Preparedness**

- a. Assure that all municipalities and social service organizations have well-developed emergency preparedness plans that take an all-hazards approach and thereby can be used in weather emergencies (such as widespread and prolonged loss of electrical power in winter) as well as biological, chemical, radiological and terrorist emergencies; address the needs of their residents/clients with access or functional needs; and address the needs of residents/clients who speak a language other than English. Include action steps that municipalities would take in the case of a major emergency event at nearby locations that create a refugee situation in the Chittenden area.
 - i. Assure an understanding of these plans by entities named in the plan as well as those supported in the plan.
 - ii. Practice implementing the plan through regular emergency exercises.
- b. Train Chittenden County employers on the development, practice, and regular review of Businesses Continuity Plans and Business Recovery Plans.
- c. Develop systems that monitor for impacts of climate-change that would affect human health or safety. Assure communication systems are in place to share this information with entities that are best suited to engage in prevention planning and provide any necessary emergency support.

Increase resilience to potential interruptions of grid power, especially for maintaining essential services (including water supply and sewage disposal) without electrical power. Such services need, in the short term, backup power with at least a week's supply of stored fuel. In the long term, redesign these services in a more resilient way.

- 6. **Caregiving** - Assure that older adults and people with disabilities are well cared for as needed.
 - a. Support family members who provide care for them.
 - b. Ensure that older adults and people with disabilities who need formal care in their daily living have access (including transportation) to the appropriate services as needed.

- 7. **Social Connectedness** - Increase opportunities for residents to come together, interact, and network.

- a. Support organizations and businesses that bring diverse people together around a myriad of themes: arts and cultural events, recreational and leisure activities, civic engagement initiatives, educational workshops, family events, or any other activity that brings people together with a common interest. Encourage organizations of all kinds to offer and/or support free arts and leisure opportunities so that everyone, regardless of location or social/economic status, can experience the benefits of cultural events and participate in civic engagement.

6. EQUIP OUR RESIDENTS WITH THE EDUCATION AND SKILLS THAT THEY NEED TO THRIVE.

During 2012, several efforts were concurrently conducted with a focus of improving education outcomes. The actions below summarize the result of that work. These efforts include the Lake Champlain Regional Chamber of Commerce/GBIC Education Task Force, the Vermont Superintendents Education Quality Framework, and the ECOS Education Subcommittee.

Vermont is home to a public education system that has provided a significant economic benefit to students, businesses and the broader community. There is vital connection between a strong education system, the attractiveness of our region, and a healthy economy. Nonetheless, like much of the nation, Vermont faces challenges. We have an aging workforce, an increasing number of jobs that require a post-secondary degree, entrants to the workforce and college who lack the basic skills necessary to be successful and a lingering achievement gap that is tied to income and race across the state. In an environment with fewer students in the system to enter the workforce, it is an economic and community imperative that our schools help a higher percentage of all students achieve college and career readiness than ever before. Investment in public education is vital for our success as a community and a society – though the costs of education can be exceptionally high. Education financing along with other public costs need to be balanced and evaluated as suggested in 3.2.7.6.

1. **Coordinate Efforts** - Establish a Chittenden County regional initiative of all interested stakeholders to undertake the action steps below drawing upon successful nationally recognized programs in other states. (e.g. STRIVE in Cincinnati, OH)
2. **Elementary Readiness and Comprehensive Student Needs** – Students need to begin kindergarten and every school day after that ready to learn.
 - a. Improve access and funding for pre-kindergarten programs so that children are ready to learn by the time they begin kindergarten.
 - b. Ensure that our young children are nurtured by knowledgeable and capable caregivers by: increasing the capacity, knowledge and skills of parents to nurture their young children; providing families access to high quality early care and education settings; and, supporting the ability of early care and education providers to develop the skills and knowledge needed to care for children.
 - c. Provide adequate meals to students who need them.
 - d. Quantify the financial realities of the human service cost shift and integrate the social, health and nutritional services that schools currently provide.
3. **Student-centered, Proficiency-based, Flexible Pathways to Graduation**
 - a. Adopt the Smarter Balanced assessments, which are administered on-line and based on the Common Core Standards. These assessments provide teachers with rapid results, allowing for timely adjustments.
 - b. Develop a comprehensive advisory system within schools that includes a sustained relationship with an advisor throughout a student's career, and a personal learning plan tied to proficiency expectations for graduation rather than Carnegie units of credit. These plans may rely on traditional course-work, school choice, college courses through dual enrollment, internships for credit, on-line courses, community-based work, and service learning.
 - c. Expand the use of on-line resources and technology such as the Vermont Virtual Learning Cooperative (which only one third of Vermont high schools have signed on to) and the Learning Network of Vermont (real time interactive video technology in 130 Vermont school sites).
4. **Consistency Across the System** - Make the changes to governance necessary to improve consistency and equity across the state.
 - a. Explore the impacts and outcomes of adopting a common statewide school calendar or targeted and personalized summer program opportunities with the overall goal of deterring summer learning loss.

- b. Adopt a common, statewide daily schedule to allow for distance learning, flexible pathways and the ability to access courses outside of a home school district.
- c. Adopt a statewide teacher's contract, with allowance for regional cost-of-living disparities, and acknowledgment for innovation.
- d. Set a state deadline for voluntary consolidation to achieve a target number of supervisory unions and districts. If the necessary consolidation is not achieved voluntarily, the Legislature should appoint an independent panel to draft a statewide slate of consolidations. Ask districts and supervisory unions (SUs) to describe what unique circumstances prevent their reorganization to serve an average of 1,500 students. Grass roots, community-driven consolidation is the healthiest and most viable course. However, reducing the number of SUs and school districts presents an opportunity to use cost savings to support innovation, improve programs and reduce unnecessary and duplicate spending as well as property taxes.

5. Career Awareness/Skill Alignment

- a. Develop a community needs advisory system that embeds current and anticipated career information from employers into each district and SU. Expand early career exposure and awareness that is based on local employer feedback and that begins in middle school or earlier. It should assist families and students with career awareness, goal-setting and the link to relevant learning, training and career opportunities.
- b. Strengthen programming and delivery of math curriculum.
- c. Allow Career and Technical Education Centers to be accessible either full or part-time starting in the 9th grade.
- d. Offer credit-bearing, structured, 40-hour internships subsequent to a 20-hour pre-employment skills segment, and tied to a high school learning outcome (e.g., the Linking Learning to Life TIPS (Training Interns & Partnering for Success) model for structured internships).
- e. Provide training and support for people who are leaving incarceration.
- f. To develop creative and collaboration skills, make sure there are opportunities for students to come together, interact, and network. Bring diverse people together around arts, music, cultural events, recreation, and sports activities.

6. Teacher Preparation and Ongoing Professional Development

- a. Support innovation in teacher preparation, training and ongoing professional development. Twenty-first century teachers are facilitators, coaches and guides who will measure student learning through proficiency, instead of serving as the exclusive distributors of classroom and course content.
- b. Allow for greater flexibility in licensing to accommodate transitions from career to classroom.
- c. Improve the numeracy skills and confidence of educators through content-specific professional development and adoption of strong math benchmarks based on the Common Core.

7. Postsecondary aspiration, continuation, retention and completion - Public higher education in Vermont is chronically underfunded relative to the rest of the nation. In the near term, additional state investment should be targeted to desired performance: enrollment of Vermonters and successful degree completion.

- a. Adopt a loan forgiveness program tied to the timely completion of a degree, in which a student or his/her parents are provided with an economic incentive to be staggered over five years which forgives the equivalent of one year's tuition at a four-year public college.

- b. For students who demonstrate college or career readiness before they would otherwise finish high school, use the state's commitment to their education through age eighteen to support an additional year of learning. This funding might be applied to an apprenticeship, an experience in entrepreneurship, a certificate program, a year in college, an internship, or community service.
- 8. **Child Care** - Ensure that children ages (0-5) have adequate access to high quality and affordable early learning and education programs by integrating child care issues into the planning process, including child care financing, infrastructure, business assistance for child care providers, and child care workforce development.
 - a. Work with municipalities to review land-use and development regulations to identify needed amendments to authorize quality child-care services in appropriate locations convenient to households, employment centers accessible via transit, and near recreation facilities. Amendments could include incentives to provide space for childcare in all types of projects.
 - b. Work with municipalities to consider waiving impact fees for new child care businesses.
 - c. Review the recommendations of the Vermont Blue Ribbon Commission on Financing High Quality, Affordable Child Care when complete, to determine how our partners may help advance these efforts.

7. DEVELOP FINANCING AND GOVERNANCE SYSTEMS TO MAKE THE MOST EFFICIENT USE OF TAXPAYER DOLLARS AND REDUCE COSTS.

Considering development and growth comes with both costs and benefits, this Plan attempts to reach a balance by directing growth in such a way that new infrastructure and long-term maintenance costs are minimized. For example: Promotion of and incentives for compact development in areas planned for growth will help keep rural areas open; this can also minimize stormwater problems and prevent new watersheds from becoming impaired. Incentives and promotion for public transit can reduce the need for parking lots which will reduce stormwater impacts and costs. Compact development will make public transit more cost effective.

1. **Community Development Finance Tools** – Expand and improve implementation of financing tools available to municipalities with particular emphasis on options that level the playing field between greenfield development and infill development and to help direct new investment dollars to strengthen existing neighborhoods. This would include tax increment financing (TIF), Local Option Sales Taxes, Impact Fees, Special Assessment Districts, and capital planning and budgeting. Also support downtown tax credits, and additional incentives as part of State Designated Growth Centers, Downtowns, Villages, New Town Centers, and Neighborhoods. Keep the Vermont Municipal Bond Bank highly functional, accessible and AAA rated as it is key to the financial health of this region. Explore and develop other financing mechanisms for maintaining and improving infrastructure. Develop revolving loan funds for business to improve access to capital. Monitor the State of Maryland's health enterprise zone program to determine if it is successful and if a similar program would be appropriate for VT.
2. **Affordable housing financing and Implementation** – Increase resources for housing, which includes but is not limited to: local housing trust funds, state housing trust fund, state housing tax credits, and strongly advocating for increased federal resources.
3. **Energy Investment** – Encourage property assessed clean energy (referred to as PACE) efforts, weatherization, tax incentives and other financing opportunities for investments in energy efficiency and renewable energy.
4. **Transportation Financing** - Encourage municipalities to implement local transportation funding programs such as Tax Increment Financing Districts, Local Option Sales Taxes, Impact Fees, or Special Assessment Districts as appropriate. Monitor and participate in state and federal transportation financing reform efforts such as the 2012 Vermont Legislature's Act 153, Section 40 Transportation Funding study and the Natural Resources Board/VTrans Fair Share Cost Study to help address declining revenue from the gas tax.
5. **Clean water Financing** – Monitor and participate in state financing reform such as the 2012 Vermont Legislatures Act 138 study which the Agency of Natural Resources is leading to make recommendations on how to implement and fund the remediation or improvement of water quality. Ensure that stormwater regulation and requirements do not financially burden or penalize dense and compact development in the areas planned for growth.
6. **Monitor State and municipal tax burdens** (education, utilities, municipal services and state) - Examine the structure of government to identify opportunities for restructuring, streamlining or eliminating programs to increase efficiency, reduce costs and enhance accountability. Substantive changes to our tax policy such as expanding the sales tax, internet and cloud taxation, and migrating to Adjusted Gross Income should not be made until we have a

comprehensive picture of Vermont's tax structure, including the property tax and health care financing.

7. **County coordination and alignment** – Coordinate and align investments and actions to advance the ECOS Plan. Monitor and report accomplishments.
8. **Multi-jurisdictional services** – There are a number of services that are provided on a regional or sub-regional basis. These include: Supervisory Unions, Chittenden Solid Waste District, Champlain Water District, Winooski Park District, Chittenden County Regional Planning Commission, Chittenden County Transportation Authority, Chittenden County Sheriff, Chittenden Unit for Special Investigations, and 911 dispatch. Examine and advance appropriate, efficient and effective governance structures to deliver improved services (i.e. Regional Walk/Bike/Park-n-Ride)

8. ENSURE THAT THE PROJECTS AND ACTIONS IN ALL ECOS STRATEGIES ASSESS EQUITY IMPACTS, AND THAT THE DESIGN AND DEVELOPMENT OF PROGRAMS ARE INCLUSIVE OF ALL AND ENGAGE UNDERREPRESENTED POPULATIONS.

Equity, by definition, means fair and just inclusion. The theory underlying the Sustainable Communities Initiative is that economic competitiveness, social equity, and environmental and public health are interconnected and that all of these outcomes can be improved if regions better coordinate their public investments, including transportation systems, toward the goal of sustainability. Past development patterns have prevented regions from maximizing their potential.

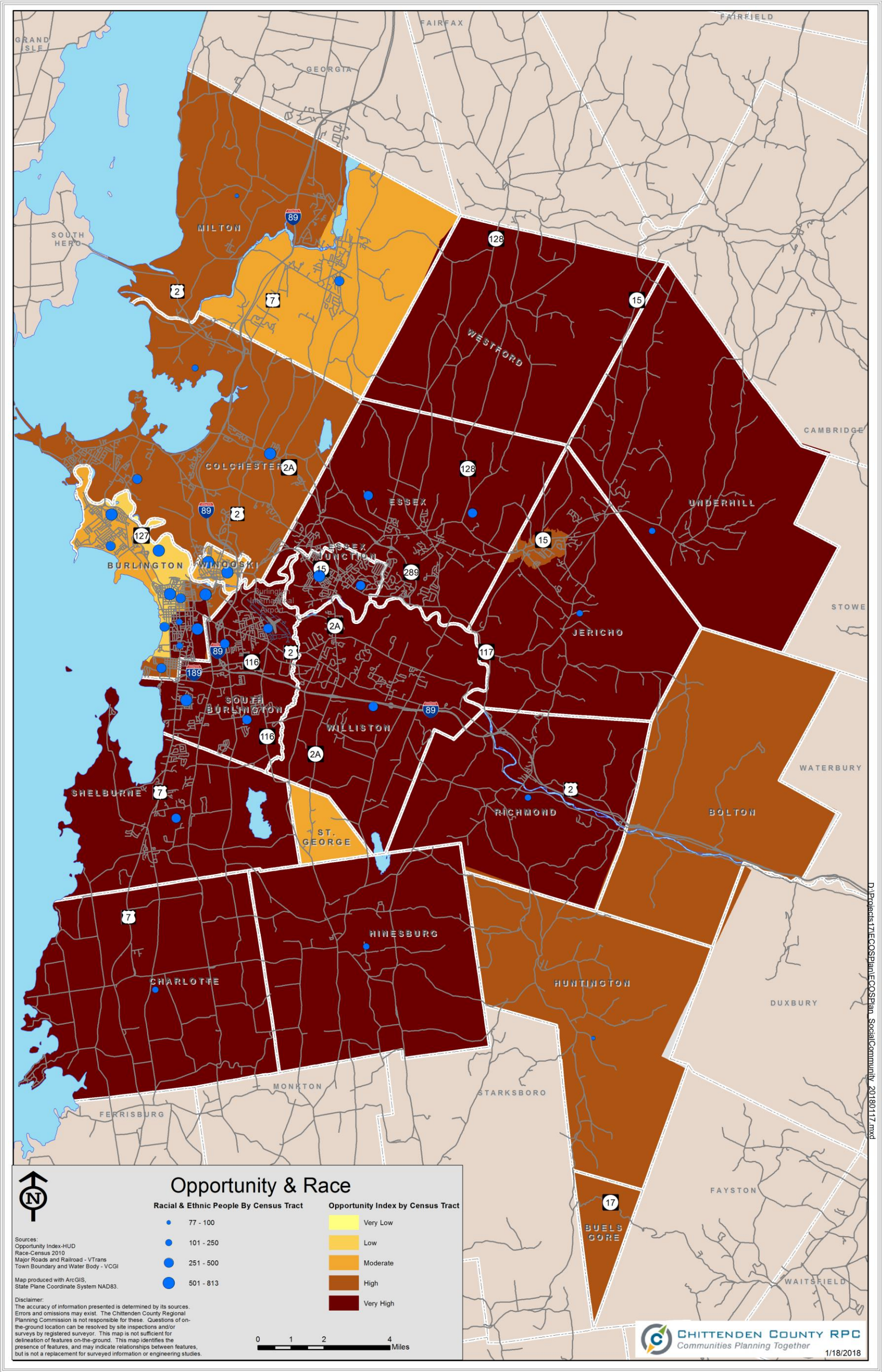
Low-income communities and communities of color are often isolated from economic opportunities because the only homes affordable to their members are in neighborhoods far from growing job centers, good public schools, and basic amenities like grocery stores and banks. Meanwhile, transportation and other infrastructure—critical to attracting and keeping jobs—is crumbling and the risk of climate change is growing. (*America's Tomorrow: Equity is the Superior Growth Model*, PolicyLink, 2011.)

Ensuring equity so that all residents can access and take advantage of the region's economic, social, and environmental assets requires new networks of relationships, new problem-solving methods, and new, inclusive decision-making tables. Substantial efforts are already underway in other communities tackling inequities such as health disparities, transportation and environmental justice, educational equity, and income inequality that can be examined for best practices. New tools need to be created by a diverse group of equity stakeholders in order to ensure for meaningful community engagement, identification and tracking of disparities, and decision-making that weighs the burden placed on different groups. By bringing together diverse and disparate interests while developing new leaders, ECOS projects can be the seeds for an equitable, prosperous and healthy future for Chittenden County.

1. **Track and analyze inequities in all sectors.**
2. **Target and prioritize positive programs** and investments to low opportunity places (see Opportunity Map).
3. **Civic Engagement** - Increase opportunities and remove barriers for civic engagement for all, including underrepresented populations.
 - a. Provide leadership development training for all civic leaders, including underrepresented communities, to increase knowledge about and encourage service on boards and commissions.

- b. Increase boards' and commissions' knowledge and understanding about diverse population and importance of inclusion and representation.
 - c. Support voter registration drives targeting all citizens, including underrepresented groups.
 - d. Invest in the naturalization process: civics classes, connected with civic opportunities.
 - e. Appoint members of underrepresented communities to committees, boards, and commissions.
 - f. Key documents should be made accessible online and translated (or translation services available when necessary).
 - g. Improve municipal and regional government organization websites to increase accessibility of English and non-English speaking community members while complying with ADA standards.
4. **Develop an equity toolkit** that guides the decision-making at the policy, program and budget level.
5. **Dissemination of Findings and New Tools** – Encourage the propagation and dissemination of improved procedures by joining the national dialogue on equity, through online availability, workshops, and peer exchange.

MAP 11 – OPPORTUNITY & RACE



CCRPC'S TOP ACTIONS FOR THE NEXT FIVE YEARS

While the Strategies, full list of Actions, and the Project Lists make up the full implementation program, CCRPC has highlighted a number of actions to focus on over the next five years. These actions will help inform the development of CCRPC's annual Unified Planning Work Program.

1. Support and inform municipalities on setting the stage for smart, multi-modal development in our areas planned for growth, and protection of our rural planning area, through plan and bylaw assistance, participation in the Act 250 Next 50 Years Committee, brownfields assessments, etc.
2. Invest in our transportation system by maintaining our existing transportation system, addressing safety and localized congestion issues on our roadways and investing in Intelligent Transportation Systems to facilitate traffic flows on our arterials and minimize the need for major roadway expansion projects; and supporting our areas planned for growth by expanding bike and pedestrian infrastructure, improving transit services, investing in and supporting Transportation Demand Management partners and programs such as Green Mountain Transit, Chittenden Area Transportation Management Association, CarShare, Local Motion and NeighborRides.
3. Assist and inform municipalities with research and technical assistance to support housing development in our areas planned for growth, and continue participation in the Building Homes Together campaign.
4. Assist and inform municipalities on enhanced energy planning for the heating, electricity and transportation sectors including a shift away from gas/diesel vehicles to electric or other non-fossil fuel transportation options.
5. Assist the State and municipalities in implementation of the Lake Champlain Total Maximum Daily Load and other water quality improvement efforts through participation in the Tactical Basin Plans, Municipal Road General Permit assistance, Regional Stormwater Education Partnership/Rethink Runoff, etc.
6. Assist municipalities and the state in emergency management planning through implementation of the All Hazards Mitigation Plan, Local Emergency Planning Committee coordination, Local Emergency Operation Plan assistance, regional dispatch support, etc.
7. Support local and regional efforts to improve population health by continuing coordination with partners such as the University of Vermont Medical Center, United Way of Northwest Vermont, Chittenden Prevention Network, Vermont Department of Health, and the Chittenden County Opioid Alliance.
8. Monitor the advancement of autonomous vehicles and work with the state, municipalities, and other partners on preparations for this technology to ensure the ECOS goals are met.
9. Continue annual coordination with our municipalities and partners to monitor and report on progress toward our shared goals through the ECOS Annual Report, ECOS Scorecard and annual performance reports to our municipalities and state funding agencies.
10. Monitor our shifting demographics and support workforce development by focusing on these top actions and continuing coordination with GBIC.

PLAN ACCOUNTABILITY AND MONITORING

Progress on implementing Regional and Municipal Plans has received greater emphasis, and this section describes how CCRPC monitors its progress, and provides examples of progress achieved since the 2013 Plan.

Since the ECOS Plan was originally adopted in 2013, data associated with the indicators have been updated annually (as data is available) and are located online in a data [Scorecard](#). The Scorecard promotes easy and efficient access to the 90+ indicators that measure how Chittenden County is doing with regard to achieving the ECOS goals. In addition, [ECOS Annual Reports](#) have been produced for each of the five years. These reports include a summary of regional trends and accomplishments. This report has been and will continue to be guided by the ECOS Leadership Team. This Team is charged with improving partnership efforts and reviewing the draft Indicator and Progress Report and communications each year. Moving forward, this work will continue.

CCRPC also adopts and implements the Unified Planning Work Program on an annual basis; and reports on this progress in an annual report. This CCRPC Annual Report is outlined in CCRPC's Bylaws, and are posted [here](#). The report features a summary of the CCRPC's local and regional efforts and is submitted every September to the Vermont Agency of Commerce and Community Development (ACCD). CCRPC also provides each member municipality with an annual progress report each year.

In addition, and as identified above, the ECOS Plan is a collective impact strategy. Since the 2013 ECOS Plan, CCRPC, its member municipalities and partners, have collectively implemented strategies and actions. A few examples of these collective actions include:

- Neighbor-Rides – Initially funded by an ECOS implementation grant, continually funded by CCRPC, and managed by the United Way – this program uses volunteer drivers to meet the transportation needs of seniors and persons with disabilities.
- Building Homes Together - The Champlain Housing Trust, Housing Vermont, and the Chittenden County Regional Planning Commission are currently undergoing a coordinated campaign to increase the housing supply in Chittenden County by 3,500 homes (700 affordable) by 2021. After the first year, we are 916 units toward the 3,500 goal.
- Chittenden County Opioid Alliance - CCRPC was asked to serve as the backbone for the Chittenden County Opioid Alliance and took on that role for the first two years of the program. The United Way is now managing this partnership. The Opioid Alliance is a unique commitment from state, local government, and non-profit leaders to put forth a comprehensive mutually reinforcing approach to reducing opioid abuse and the ancillary burdens they bring to our community. (<http://www.ecosproject.com/chittenden-county-opioid-alliance>)

It is also important to highlight the success of Strategy 2. The region has exceeded the 80% growth strategy by achieving an average 86% of residential growth in the areas planned for growth over the last 5 years (5-year average).

PLAN CROSSWALK

The following table explains how the ECOS Plan satisfies the required elements of the Regional Plan, CEDS and MTP; and provides the reader with the location of the relevant content.

	Regional Plan Elements (VSA, Title 24, Chapter 117, Section 4348a)	Strategy to Address: Where/How
		Note: Analysis reports listed below are located here: http://www.ecosproject.com/plan/sector-analysis/
(a)	A regional plan shall be consistent with the goals established in section 4302.	Each of the 4302 goals are addressed within the goal statements in this main section of the Plan (as well as in Supplement 2).
(1)	A statement of basic policies of the region to guide the future growth and development of land and of public services and facilities, and to protect the environment;	These policies include the 17 Goal statements in this main section of the Plan (as well as in Supplement 2), the 8 Strategies in the main part of the ECOS Plan and are further supported by the following sections in this Supplement: ECOS Plan Policies & Maps; and Act 250, Section 248 & Substantial Regional Impact.
(2)	A land use element, which shall consist of a map and statement of present and prospective land uses. This includes areas for protection, areas for development, intensity and character of these land uses, agriculture and how it will be protected, and forest blocks and habitat protectors;	This can be found throughout Supplement 2 (and particularly within topics under the Natural Systems and Built Environment Sections), the <i>Historic Development and Future Land Use/ Transportation Analysis Report</i> , Strategy 2, Strategy 4 and the ECOS Plan Policies & Maps Section of this Supplement.
(3)	An energy element, which may include an analysis of energy resources, needs, scarcities, costs and problems within the region, a statement of policy on the conservation of energy and the development of renewable energy resources, and a statement of policy on patterns and densities of land use and control devices likely to result in conservation of energy;	This can be found in the Energy Section of Supplement 2, the Energy Analysis Reports and throughout Strategy 2. In addition, the Climate Change section in Supplement 2, Chittenden County Climate Change Trends and Impacts and Chittenden County Regional Climate Action Plan , and throughout Strategy 2.
(4)	A transportation element, which may consist of a statement of present and prospective transportation and circulation facilities, and a map showing existing and proposed highways, including limited access highways, and streets by type and character of improvement, and where pertinent, anticipated points of congestion, parking facilities, transit routes, terminals, bicycle paths and trails, scenic roads, airports, railroads and port facilities, and other similar facilities or uses, and recommendations to meet future needs for such facilities, with indications of priorities of need, costs and method of financing;	See MTP description below as this fulfills the regional plan transportation element requirement. In addition, this can be found in the transportation Section of Supplement 2, the <i>Historic Development and Future Land Use/ Transportation Analysis Report</i> , and throughout Strategy 2.
(5)	A utility and facility element, consisting of a map and statement of present and prospective local and regional community facilities and public utilities, whether publicly or privately owned, showing existing and proposed educational, recreational and other public sites, buildings and facilities, including public schools,	This can be found in the Infrastructure & Facilities Section of Supplement 2, the CEDS/ECOS project list in Supplement 4, and throughout Strategy 2.

	state office buildings, hospitals, libraries, power generating plants and transmission lines, wireless telecommunications facilities and ancillary improvements, water supply, sewage disposal, refuse disposal, storm drainage and other similar facilities and activities, and recommendations to meet future needs for those facilities, with indications of priority of need;	
(6)	A statement of policies on the preservation of rare and irreplaceable natural areas, scenic and historic features and resources; and protection and improvement of the quality of waters of the State to be used in the development and furtherance of the applicable basin plans.	This can be found in the <i>Natural Resources Analysis Report</i> , the Ecological Systems and Scenic, Recreational, and Historic Resources Sections of Supplement 2; and Strategies 2, 3 & 4.
(7)	A program for the implementation of the regional plan's objectives, including a recommended investment strategy for regional facilities and services based on a capacity study of the elements in this section;	These can be found in the Strategies and Actions in the main part of the ECOS Plan, and Section Act 250, Section 248 & Substantial Regional Impact in this Supplement, the CEDS/ECOS Project List in Supplement 4, and the MTP Project List in Supplement 5.
(8)	A statement indicating how the regional plan relates to development trends, needs and plans and regional plans for adjacent municipalities and regions;	This can be found in the Statement of Compatibility and Consistency Section in this Supplement.
(9)	A housing element that identifies the need for housing for all economic groups in the region and communities. In establishing the identified need, due consideration shall be given to data gathered pursuant to subsection 4382(c) of this title. If no such data has been gathered, the regional planning commission shall gather it;	This can be found in the Housing Section in Supplement 2, the <i>Housing Analysis Report</i> , the <i>Fair Housing and Equity Assessment Report</i> and throughout the Strategies in the main section of the ECOS Plan (and particularly within Strategies 2 and 7).
(10)	An economic development element that describes present economic conditions and the location, type, and scale of desired economic development, and identifies policies, projects, and programs necessary to foster economic growth.	See CEDS description below as this fulfills the requirements of this element. In addition, this can be found in the Economic Infrastructure Section of Supplement 2, the Economic Analysis Reports, and Strategy 1 and 2.
(11)	(A) A flood resilience element that: (i) identifies flood hazard and fluvial erosion hazard areas, based on river corridor maps provided by the Secretary of Natural Resources pursuant to 10 V.S.A. § 1428(a) or maps recommended by the Secretary, and designates those areas to be protected, including floodplains, river corridors, land adjacent to streams, wetlands, and upland forests, to reduce the risk of flood damage to infrastructure and improved property; and (ii) recommends policies and strategies to protect the areas identified and designated under this subdivision (A) and to mitigate risks to public	This can be found in the following Supplement 2 Sections: Ecological Systems; Public Safety, Criminal Justice & Hazard Mitigation (this section also includes a reference to the Chittenden County All Hazard Mitigation Plan); and Infrastructure & Facilities; the following Strategies: 2, 3, and 4, and Map 8.

	safety, critical infrastructure, historic structures, and public investments. (B) A flood resilience element may reference an existing regional hazard mitigation plan approved under 44 C.F.R. § 201.6.	
(b)	The various elements and statements shall be correlated with the land use element and with each other. The maps called for by this section may be incorporated on one or more maps, and may be referred to in each separate statement called for by this section.	This is the intention of the entire ECOS Plan. Figure 2 in the main section of this Plan helps to describe this.
	Requirements for Comprehensive Economic Development Strategies from the Economic Development Administration's regulations at 13 C.F.R. part 303.7	Strategy to Address: Where/How
(1)	A summary of economic development conditions of the Region.	See the sections "Economic Base Analysis" and "Competitive Assessment" in Supplement 4: Comprehensive Economic Development Strategy (CEDS), as well as the Economic Base and Competitive Assessment Analysis Reports at http://www.ecosproject.com/plan/sector-analysis/ .
(2)	An in-depth analysis of economic and community development strengths, weaknesses, opportunities, and threats (commonly known as a "SWOT" analysis).	See the section "SWOT Analysis" in Supplement 4: Comprehensive Economic Development Strategy (CEDS).
(3)	(iii) Strategies and an implementation plan to build upon the Region's strengths and opportunities and resolve the weaknesses and threats facing the Region, which should not be inconsistent with applicable State and local economic development or workforce development strategies.	See the section "CEDS Implementation" in Supplement 4: Comprehensive Economic Development Strategy (CEDS).
(4)	Performance measures used to evaluate the Planning Organization's successful development and implementation of the CEDS.	The ECOS Plan's key indicators are tracked and reported annually on the ECOS Scorecard, https://app.resultsscorecard.com/Scorecard/Embed/8502 . A list of indicators related to the CEDS is included in the section "Evaluation Framework" in Supplement 4: Comprehensive Economic Development Strategy (CEDS).
(5)	The CEDS must incorporate the concept of economic resilience (i.e., the ability to avoid, withstand, and recover from economic shifts, natural disasters, the impacts of climate change, etc.). The EDD or community responsible for the CEDS can address resilience as a separate section, distinct goal or	See the section "Economic Resilience" in Supplement 4: Comprehensive Economic Development Strategy (CEDS), which explains how the different strategies and actions throughout the ECOS Plan increase the region's economic resilience.

	priority action item, and/or as an area of investigation in the SWOT analysis.	
	Required MTP Elements (United State Code, 23 CFR 450.324)	Strategy to Address: Where/How
1	<p>Consider the following planning factors:</p> <p>(A) support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;</p> <p>(B) increase the safety of the transportation system for motorized and nonmotorized users;</p> <p>(C) increase the security of the transportation system for motorized and nonmotorized users;</p> <p>(D) increase the accessibility and mobility of people and for freight;</p> <p>(E) protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;</p> <p>(F) enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;</p> <p>(G) promote efficient system management and operation;</p> <p>(H) emphasize the preservation of the existing transportation system;</p> <p>(I) improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation; and</p> <p>(J) enhance travel and tourism.</p>	<p>The transportation projects and strategies, and the indicators identified to measure transportation progress, are based on the ECOS transportation goal on page 3, ECOS Supplement #5 and the issues, trends, observations that follow that goal: <i>“Provide accessible, safe, efficient, interconnected, secure, equitable and sustainable mobility choices for our region’s businesses, residents and visitors.”</i> Factors related to safety, environmental protection, respect for land use and economic development patterns, system integration/connectivity, efficiency and preservation, are directly reflected in recommended projects and strategies in the project list on pages 83 - 92 ECOS Supplement #5. Economic vitality, security, accessibility and mobility, as well as themes from the other planning factors, are core elements to be found in ECOS goals and sub goals on discussed throughout the ECOS plan 2018 draft. The ECOS high priority strategies and follow up actions identified in ECOS plan page 48 take into consideration the themes from the planning factors as well.</p>
2	Estimated transportation demand for people and goods addressing no less than a 20-year planning horizon as of the plan’s effective date.	Housing and employment projections are identified in ECOS demographics section on page 6 of the ECOS Plan and programmed into the CCRPC travel demand model. The plan looks out to 2050, well beyond the 20-year planning horizon.
3	An identification of existing and proposed transportation facilities (including major roadways, transit, multimodal and intermodal facilities, and intermodal connectors) that should function as an integrated metropolitan transportation system, giving emphasis to those facilities that serve important national	The existing system is identified in ECOS Supplement #5 as the Metropolitan Transportation System (MTS) where it is defined and mapped, see pages 17 and 18. Proposed facilities identified as high priority are listed and identified in a table on pages 83 - 92, ECOS Supplement #5.

	and regional transportation functions over the period of the transportation plan.	
4	A description of the performance measures and performance targets used in assessing the performance of the transportation system and a system performance report and subsequent updates evaluating the condition and performance of the transportation system with respect to the performance targets	Transportation performance measures, with several years of tracking, are identified on pages 6 through 16, ECOS Supplement #5. VTrans safety performance targets are also identified. The CCRPC will likely adopt VTrans performance targets for most of the federally identified measures. The historic tracking for the various measures illustrates recent trends and constitutes an initial draft of the performance report that will be annually updated.
5	A discussion of potential environmental mitigation activities developed in consultation with Federal, State, land management, and regulatory agencies.	See Environmental Mitigation and Consultation section on ECOS Supplement #5 on pages 95 - 99.
6	A financial plan that demonstrates how the adopted transportation plan can be implemented.	The full financial plan is in ECOS Supplement #5, pages 37 - 45.
7	Operational and management strategies to improve the performance of existing transportation facilities.	ITS and TDM projects are on the MTP project list in ECOS Supplement #5, pages 83 – 92 as well as in the Corridor section, pages 61 - 78. ITS projects fall within the Multimodal Roadway Improvement category. TDM projects/programs are under the Park and Ride category.
8	Capital investment and other strategies to preserve the existing and projected future metropolitan transportation infrastructure	The level of capital investment (and its sources) required to preserve the existing system and finance future infrastructure are described in the financial plan on pages 37 - 45 ECOS Supplement #5. Seventy percent (70%) of future financial resources are dedicated to system operations/maintenance/preservation.
9	Pedestrian and bicycle facilities	Bike/Pedestrian projects are identified in the corridors discussion on pages 61 - 78 and the MTP Project list on pages 83 - 92, ECOS Supplement #5. Bike and pedestrian facilities plans are also identified in the Active Transportation Plan, approved by the CCRPC 4/19/17. and adopted by reference with the ECOS Plan.
10	Proposed transportation and transit enhancement activities.	Transportation and transit enhancement projects are located on the MTP project list on pages 83 -92 and identified as Bike/Ped, Park and Ride or Transit. Intercity bus is discussed on pages 27 – 28 of ECOS Supplement #5.