2013 Chittenden County ECOS Plan

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SECOND PUBLIC HEARING DRAFT

For a healthy, inclusive, and prosperous community

Chittenden County RPC
Communities Planning Together

GBIC
Good Jobs In A Clean Environment

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

2.2.1 ECOLOGICAL SYSTEMS

Ecological Systems Goal: Conserve, protect and improve the health of native species habitats, water quality and quantity, and air quality.

Key Issues/Trends/Insights

[Data for this section drawn from Natural Systems Analysis Report and Lake Champlain Basin Program's State of the Lake Reports]

- **Wildlife and Native Species** Chittenden County continues to see fragmentation and loss of *habitat* and connectivity largely due to mounting development pressures. Increasing land parceling and subsequent habitat conversion, lack of local regulations responsive to wildlife habitat concerns, and construction of transportation infrastructure (including roads and trails) continue to adversely impact habitat integrity. In addition, acid deposition from air pollution, migration of invasive species including destructive insect species, and climate change continues to threaten native forest plant and animal habitat.
- **Water Quality** Vermont water bodies continue to face mounting pressures from unsustainable development, farm and forest activities. Cumulative impacts from these land use activities have degraded water quality, aquatic habitat and altered the stability of river corridors and lakeshores. Issues that predominate in the County include disappearing wetlands, increasing impervious surfaces, steady high pollutant loads (mainly from nonpoint sources such as unmanaged stormwater), that result in nutrient enrichment and sedimentation, as well as other impairments. In addition, aquatic nuisance species continue to enter our waterways, contributing to the degradation of both habitat and recreational opportunities. Climate change is expected to bring us more intense storms at a higher frequency, which will only exacerbate the problem.
- **River Corridors** *River corridor resilience* is also critical to the health of our ecological systems as well as protection of nearby infrastructure. Channelization of streams and rivers, reduction and alteration of natural floodplains, river corridor encroachment, stormwater runoff and reduction and elimination of vegetative buffers are practices that lead to river corridor instability causing excessive erosion of river channels, pollution and additional fluvial erosion hazards. Of the river miles assessed in Vermont, 74% have become confined to deeper, straighter channels and no longer have access to historic floodplains essential to stable streams and sustainable water quality management. River Corridor means the land area adjacent to a river that is required to accommodate the dimensions, slope, planform, and buffer of the naturally stable channel and that is necessary for the natural maintenance or natural restoration of a dynamic equilibrium condition, as that term is defined in 10 V.S.A. §1422, and for minimization of fluvial erosion hazards. River Corridor maps are officially posted on the ANR Natural Resources Atlas. In the coming year the maps will be updated to represent field-based Phase 2 data which have been delineated for many Chittenden County communities. An FEH is essentially equivalent to a River Corridor Protection Area (RCPA). Both delineate the extent of the rivers meander belt, however the FEH areas are field-based data and more accurate than the current State mapped RCPAs. A River Corridor includes the meander belt *and* the area to maintain a riparian buffer (defined as 50 feet from the meander belt). These areas are mapped in the 2016 update of the *Chittenden County All Hazards Mitigation Plan* and associated municipal Annexes, and are officially posted on the ANR Natural Resources Atlas. River Corridor protection is a goal in statute for municipalities, regions and state agencies. Important incentives such as the Emergency Relief Assistance Fund (see Section 2.3.3 for more information) are available to communities protecting river corridors.
- **Groundwater** As of 2005, 22,120 residents of Chittenden County (almost 15% of the population) relied on *groundwater* sources for their drinking water (Source: USGS Water Use

Compilation). Protection of groundwater resources from failing septic systems and petroleum spills/leaks is critical.

- **Regulations** *Local zoning lags behind town plans.* There is a disconnect between the vision for natural systems as expressed in Municipal Plans, and the Zoning Regulations that implement those plans. In addition, many zoning regulations have vague review standards and definitions, a situation that complicates enforcement and opens the town to due process legal challenges. Conversely, local bylaws protect the majority of Fluvial Erosion Hazard areas in the County with stream setbacks and floodplain regulations from new development. However, agriculture and forestry practices are exempt from local review and without State enforcement of accepted agricultural practices fluvial erosion hazard areas are subject to degradation.
- **Air Quality** *Outdoor air pollution* in significant concentrations can raise aesthetic and nuisance issues such as impairment of scenic visibility; unpleasant smoke or odors; and can also pose human health problems, especially for more sensitive populations like children, asthma sufferers, and the elderly. While Chittenden County's air quality meets current National Ambient Air Quality Standards (NAAQS), we are close to the limits for ground-level ozone and fine particulates. We are also subject to pollution from the mid-west that we cannot control. If the NAAQS are revised to be more stringent - or air pollutant levels increase - so that we exceed the NAAQS, additional and costly environmental regulations will apply to our region (Source: http://www.anr.state.vt.us/air/).
- **Climate Change Mitigation –**Plants are able to remove carbon from the atmosphere and store it in biomass and soils – a process called carbon sequestration. Maintaining forests, wetlands, agricultural lands and vegetated spaces in developed areas is important for ensuring current and future carbon sequestration. Vegetated landscapes are also important for the natural absorption of stormwater, reducing runoff and the potential for flooding. By concentrating development we can protect vegetative cover throughout the County.

Key Indicators

- **Chittenden County Land Cover Losses (Source: USGS 2001 and 2006 National Land Cover Data):**
  - .19 net acres of agricultural land and natural resource land lost annually to development per new resident between 2001 and 2006.
  - 210,619 acres or 61% of the land are covered by forest.
  - Between 2001-2006, 241 acres or .11% of barren land, deciduous forest, evergreen forest, mixed forest, shrub, grassland, woody wetlands, and emergent herbaceous wetlands were converted to development. These land cover categories are being used as a surrogate for wildlife habitat as there is currently a lack of a better, more accurate data source.
  - In particular, 55 acres or .5% of wetlands were developed in Chittenden County.

2.2.2 SCENIC, RECREATIONAL, AND HISTORIC RESOURCES

Scenic and Recreational Resources Goal: Conserve, protect and improve valued scenic, recreational, and historic resources and opportunities.

Key Issues/Trends/Insights

[Data for this section drawn from Natural Systems Analysis Report]

- Chittenden County is rooted in its scenic, recreational, and historic resources. These provide residents a place to relax, play, gather, and learn about nature, conservation, and our heritage. They also provide important ecological functions including wildlife habitat, and water and air quality protection. These are supplemented by indoor and outdoor recreation facilities. In addition to the many recreational opportunities associated with Lake Champlain (swimming, boating, fishing, etc.), ~~A~~an extensive system of shared-use paths, on-road bike lanes, and off-road trails connect the County's recreational facilities and areas (this data can be found under the Natural Systems section of the online map located here: http://maps.ccrpcvt.org/ChittendenCountyVT/). In addition, municipalities are planning for new facilities and improvements to existing facilities to expand access and opportunities for recreation. See the CEDS Project list in Section 4.2.6 for cost estimates, funding sources and proposed timelines for fourteen recreation related projects throughout the County.
- Scenic resources represent an important element of the region's landscape and contribute directly to sense of place, quality of life and economic vitality through tourism and by attracting new residents and businesses.
- Historic resources include buildings, structures, landscapes, and archeological sites, both on land and under water. There are over 4,400 designated historic sites in Chittenden County and over 80 designated historic districts (this data can be found under the Natural Systems section of the online map located here: http://maps.ccrpcvt.org/ChittendenCountyVT/).
- The recreational value of our water bodies (swimming, fishing, boating, etc.) is critically dependent on water quality. E-coli and algal blooms lead to beach closures, while invasive species threaten our native fish populations. Events and encroachments such as these are exacerbated by the effects of climate change.
- As we work toward encouraging future development in areas planned for growth to maintain VT's historic settlement pattern of villages and urban centers, surrounded by rural countryside, ***access*** to valued scenic, recreation and historic resources should also be maintained and improved for all residents and visitors. In addition, accessible design standards should be incorporated into recreation facility projects.
- Eight of the County's municipalities (Milton, Colchester, Essex Junction, Winooski, Burlington, South Burlington, Shelburne and Charlotte) are member communities of the Lake Champlain Byway, a State-designated Scenic Byway that extends from Alburg in the Champlain Islands through Chittenden County on U.S. 7 and south into several towns in Addison County. Since 2002 these communities have secured competitive grants from the National Scenic Byway Program to improve the visitor experience by implementing projects such as wayfinding signage, interpretive panels, brochures, kiosks, and other amenities. In particular, the Byway focuses on improving interpretation and information about municipal and non-profit intrinsic resource sites such as parks, town forests, natural areas, trails and smaller museums.

- There is low compatibility between municipal plan recommendations for natural and scenic resources and the implementation of those recommendations through zoning bylaws and subdivision regulation. Further, there are often contradictory goals within municipal plans regarding natural and scenic preservation and new infrastructure for energy generation and transmission. Reconciliation of these is necessary to meet community visions and bring predictability to the development process.

2.3.1 EDUCATION, KNOWLEDGE AND SKILLS

Education, Knowledge, and Skills Goal: All Chittenden County children and adults have the education, skills and opportunities necessary to meet their full economic and social potential and well-being.

Key Issues/Trends/Insights

[Data for this section drawn from Education Analysis Report and references as incorporated below.]

- Chittenden County requires a well-educated workforce and well-educated individuals to attract good employers and livable wage jobs, to engage in civic affairs and the arts, and to take responsibility for the welfare of ourselves, each other and the natural environment we cherish. Our region's economic, social and intellectual well-being depends on educational attainment through a continuum of accessible and affordable educational opportunities from the early years through adulthood.
- The first five years of life are critical to a child's lifelong development. Young children's earliest experiences and environments set the stage for future development and success in school and life. Children from families that are economically secure and have healthy relationships are more likely to get a good start in kindergarten and maintain that advantage as they progress through school. The larger the gap at school entry, the harder it is to close. (National School Readiness Indicators Initiative)
- Research shows that children who are not performing proficiently in reading by the end of third grade are at very high risk for poor long-term outcomes, such as dropping out of school, teen pregnancy and juvenile crime. (National School Readiness Indicators Initiative)
- While Vermont can boast of a solid K-12 system which benefits from strong community support, small class sizes and high graduation rates (2nd in nation), it ranks 48th in its college-going rate. (Nation's Report Card, 2009)
- Though the educational level of Chittenden County residents 25 and older with four year bachelor's degree or higher exceeds state (32.6%) and national (27.5%) levels at 42%, of every 100 high school 9th graders, only 26 will complete a college program within 150% of normal time. (6 years for a 4-year degree and 3 years for a 2-year degree) (New England Board of Higher Education, 2006 data)
- Student achievement measures show clear performance gaps for low-income and students of color. If we are to remain an economically and socially viable community, all of our youth need the skills and education to participate as they are the future drivers of our region. A high quality public education can be the "great equalizer," ensuring the democratic ideal of equal opportunity. The Vermont PreK-16 Council and the Lake Champlain Regional Chamber of Commerce have identified goals to close the achievement gaps and create a seamless PreK-16 student-centered, performance-based learning system framed by rigorous standards and high expectations for all students, regardless of racial/ethnic background or socioeconomic status. The system will provide not just content learning but —21st century skills. These include (1) information and technology skills, (2) life and career skills, and (3) learning and innovation skills such as critical thinking, collaboration, and creativity. Ensuring for equity so that all members of our community can reach their fullest potential is assuring for a more inclusive, prosperous and sustainable region.
- We need to close the lingering achievement gaps and work to create a seamless PreK-16 education system framed by rigorous standards and high expectations for all students.

- About 45% of matriculated first-year students at the Community College of Vermont (CCV) are taking non-credit remedial classes in writing or mathematics. At other Vermont State Colleges, the number ranges from 5%-45%, with an overall average of 22% taking remedial courses. (VT PreK-16 Council, 2012)
- 38 of Vermont's 50 fastest-growing occupations — including six of the 10 fastest-growing jobs — require significant postsecondary education. (Vermont Business Roundtable)
- 30% of employers (largely within the skilled machine trades) report that they have training needs that are not met by local resources. (WDGT Chittenden Employer Survey, 2011)
- Childcare costs and availability are significant issues for the majority of Vermont parents who rely on out-of-home-care for their youngest children. According to the 2015 Building Bright Futures report, *How Are Vermont's Young Children and Families?,* child care costs for two-parent two-child families is over $19,000 a year—more than the cost of full-time, in-state tuition at a Vermont State College. This equates to 28-40% of household income for two-parent two-child families with incomes between $47,700 (200% federal poverty level) and the state median family income of $82,047. Even if families can afford care, finding availability is challenging. The need is greater than current capacity to care for our region's children. In 2014, there were 8,668 children under age 5 in Chittenden County and 76% of families with all parents in the workforce. However, as of July 2014, Child Care Resource (CCR) reports there were 5,970 slots to serve children ages 5 and under. Childcare availability is especially lacking for parents that work the third shift or have non-traditional erratic hours, like farmers. Challenges for the child care providers include very low salaries. According to Let's Grow Kids the average annual income is only $24,070. Vermont has established a Blue Ribbon Commission on Financing High Quality, Affordable Child Care to help understand and address these challenges. Addressing these challenges is imperative so that we can properly prepare our young children for school, and enable parents to work in a time when our workforce population is declining.
- Although some schools are seeing an increase in enrollment (So. Burlington being an example), the majority of schools in Chittenden County are facing declining enrollment. From the 2002-2003 school year to the 2011-2012 school year Chittenden County public schools experienced a decline in the ten year compounded annual growth rates (CAGR), 27% of Chittenden County schools experienced an increase in the ten year CAGR, and this figure was not available for 13% of the schools. NOTE: CAGR is used to measure enrollment growth or decline in Vermont. The formula looks at the first and last years' enrollment values and compares them over the number of years in the specified time frame to determine a rate of change. The CAGR is different from a percent change which does not consider the number of years over which a change occurs. There were 22,229 students enrolled in Chittenden County in the 2011-2012 school year, a decrease of 4.9% from the 23,387 students enrolled in the 2003-2004 school year. See the Vermont Department of Education's Public School Enrollment Report for the 2011-2012 School Year for more information. Regarding independent school enrollment, there were 1,778 students enrolled in independent K-12 schools in Chittenden County in the 2015-2016 school year.
- There has been a significant effort to further efficiency and consistency in the education system through voluntary unification of school governance structures. The VT Legislature passed Act 46 of 2015 which provided a number of voluntary options with associated incentives to unify (http://education.vermont.gov/laws/2015/act-46). Mount Mansfield Modified Union School District is now the main board which oversees 8 schools as of July 2015 (Bolton, Richmond, Jericho and Underhill voters approved this consolidation in November 2014). Huntington residents also took a

vote on this matter but it did not pass. Also residents from the towns of Essex, Essex Junction, and Westford voted to streamline their governance structure, forming one unified district to serve 10 schools in the three communities – will begin operation in July 2017 (https://www.cctv.org/watch-tv/programs/education-bill-act-46). These unifications reduce the number of school boards and aim to bring greater consistency across the curriculums – a direct implementation of ECOS Strategy 3.2.6.4. See the municipal and school capital plans for school facility improvement needs.

- There are currently 19 school governing bodies operating either as or under the 3 Supervisory Unions and 6 School Districts, 51 public schools, 18 independent schools (reported for SY16), and 6 colleges/universities in the County (see the ECOS Map Viewer for locations).

School Districts or Unions	# of Governing Boards	# of Schools	Towns Served
Burlington School District	1 Board	10 Schools	Burlington
Chittenden Central Supervisory Union	4 Boards	7 Schools	Westford, Essex and Essex Junction
Essex Town Supervisory District	1 Board	3 Schools	Essex
Chittenden East Supervisory Union	2 Boards	9 Schools	Bolton, Buel's Gore, Huntington, Jericho, Richmond, Underhill
Chittenden South Supervisory Union	7 Boards	6 Schools	Charlotte, Hinesburg, Shelburne, St. George, Williston
Colchester School District	1 Board	5 Schools	Colchester
Milton School District	1 Board	3 Schools	Milton
South Burlington School District	1 Board	5 Schools	South Burlington
Winooski School District	1 Board	3 Schools	Winooski

- Library facilities are well distributed across the region, and residents benefit from reciprocal agreements among all of the libraries in the County with the exception of Burlington (an additional fee is charged for non-Burlington residents). Only three municipalities in the region do not have a library: Bolton, Buel's Gore and St. George. These communities do not have any current plans to build a library, and the residents use the libraries in surrounding communities. All libraries in the region offer high speed internet access. See Vermont Department of Libraries, Vermont Public Library Statistics for more information. Current library expansion and improvements are needed in South Burlington, Essex Town, Colchester, and Jericho as identified in the CEDS Project list (see the list in Section 4.2.6 for cost estimates, funding sources and proposed timelines for these projects).

Key Indicators

- % of children entering kindergarten school ready according to developmental domains (Source: Statewide Assessment of Kindergarten Readiness across 5 domains - AHS, United Way)

	Year	Approaches to learning	Cognitive. Dev./General Knowledge	Communication	Socio-emotional Development	Health
State of Vermont	**2009**	**66%**	**61%**	**81%**	**67%**	**n/a**
Colchester (2007 data; 2009 not available)	2008	81%	64%	91%	67%	86%
Milton	2009	67%	73%	81%	77%	n/a
Chittenden East	2009	75%	67%	88%	77%	n/a
Chittenden Central	2009	62%	70%	84%	55%	n/a
Chittenden South	2009	75%	74%	90%	83%	n/a
Burlington	2009	70%	66%	82%	75%	n/a
South Burlington	2009	71%	61%	82%	70%	n/a
Winooski	2009	32%	50%	51%	49%	n/a
Essex Town	2009	70%	61%	86%	72%	n/a

FIGURE 19 - SCHOOL READINESS ACCORDING TO DEVELOPMENTAL DOMAINS

- Percent of Chittenden County's students scoring proficient or above on 2011-2012 state assessments

SUBJECT	READING		MATH		SCIENCE
GRADE	4	11	8	11	11
All Students	78%	76%	69%	43%	44%
Female	83%	83%	68%	42%	46%
Male	72%	69%	70%	44%	43%
Hispanic or Latino	85%	75%	68%	32%	42%
American Indian or Alaskan Native	*	*	*	*	*
Asian	65%	61%	59%	45%	40%
Black or African American	59%	33%	29%	7%	11%
Native Hawaiian or other Pacific Islander	*	*	*	*	*
White	80%	79%	72%	45%	46%
Not FRL	87%	84%	79%	51%	53%
FRL	57%	44%	39%	16%	14%
ELL	20%	9%	8%	7%	5%
Not ELL	80%	79%	72%	45%	46%

Based on 2011-2012 testing year. Reading and Math tests evaluate prior year's learning.
* = data suppressed because of an N<11

FIGURE 20 - STUDENT PROFICIENCY BY RACE

Source: VT Dept. of Education

- Cohort Drop Out Rates - % of students who do not complete high school

Cohort Drop Out Rates

School	Four-year Drop Out Rate	Five-year Drop Out Rate	Six-year Drop Out Rate
Burlington Senior High School	13.0%	13.5%	9.0%
Champlain Valley UHS #15	7.2%	2.9%	1.8%
Colchester High School	6.9%	3.9%	6.5%
Essex High School	10.4%	6.8%	4.3%
Milton High School	9.9%	4.5%	5.0%
Mt. Mansfield US #17	2.9%	6.0%	5.8%
South Burlington High School	7.4%	4.6%	4.4%
Winooski High School	37.8%	29.0%	29.2%
Total	***9.5%***	***7.1%***	***6.0%***

FIGURE 21 - COHORT DROP-OUT RATE

Note: Cohort dropout rates track individual students who enrolled for the first time in ninth grade in 2008 for the four-year rate, 2007 for the five-year rate, and 2006 for the six-year rate. Students are considered dropouts if they left high school permanently at any time during the four-year, five-year, or six-year period prior to receiving a regular diploma, GED or other completion certificate. Source: VT Dept. of Education

- Highest level of education attained for those 25 and over.

	Vermont	Chittenden County
Percent high school graduate or higher	91.3%	93.6%
Percent bachelor's degree or higher	34.0%	46.1%

FIGURE 22 - HIGHEST LEVEL OF EDUCATION ATTAINED (25+)

Source: 2011 ACS 3-year

- # of internship grants from the State of Vermont Department of Labor offered in Chittenden County (7/1/09-6/30/10)

of internship grants from the State of Vermont Department of Labor offered in Chittenden County FY period of 2010 (7/1/09-6/30/10)
185 internship grants
93 secondary
92 post-secondary
Total of 7 programs

FIGURE 23 - INTERNSHIP GRANTS FROM STATE DEPT. OF LABOR

- Child Care Indicators: Building Bright Futures and Let's Grow Kids is working on developing county-specific data in coordination with several partners, including the Child Development Division and Vermont Insights. This data will be added to the ECOS Scorecard as they become available.

2.3.3 PUBLIC SAFETY, CRIMINAL JUSTICE & HAZARD MITIGATION

Public Safety, Criminal Justice Goal: Improve the safety of the public including the loss of life and property from natural and manmade hazards.

Key Issues/Trends/Insights

[Data for this section drawn from 2011 *Chittenden County Multi-Jurisdictional All Hazards Mitigation Plan*.] This Plan will be updated in 2016. More information can be found on the Flood Ready Vermont website.]

- Feeling safe and secure in our homes, communities and urban areas is key to overall health in the community. Safety and perceptions of safety feature highly in people's view of their living environment, their sense of well-being and quality of life. As urban areas grow, the need for safe social and physical environments, where people are able to participate fully in their communities, becomes an increasing challenge.
- The cost of emergency response and multiple law enforcement agencies is a challenge to municipalities.
- The lack of volunteers for volunteer fire departments is causing concerns about the ability and timeliness of response and is resulting in the need to hire firefighters.
- As identified by the 2011 *Chittenden County Multi-Jurisdictional All Hazards Mitigation Plan (AHMP)*, the highest ranked county-wide hazards are severe winter storm, flooding, telecommunications failure, power loss, major transportation incident, fluvial erosion and epidemic. Three of the top hazards are natural hazards, three are technological hazards, and one is a societal hazard.
- Flooding and fluvial erosion can damage or destroy homes, businesses and transportation infrastructure. In Chittenden County there are 866 structures (1.5% of total County structures) in flood-prone locations as identified in detail in the AHMP and municipal Annexes. Chittenden County experienced damage from five FEMA-Declared Natural Disasters between 2010 and 2014 (severe storm, flood, tropical storm), more declarations than occurred in the four previous 5-year periods. Additional data, including non-declared events, will be updated in the 2016 AHMP.
- Winter storms, flooding, transportation incidents and epidemics can cause human injury, illnesses and even death.
- Winter storms, telecommunications failure, power loss and transportation incidents can cause serious disruption of public safety services.
- Flooding, fluvial erosion and possibly epidemics may be made worse by projected climate changes. While Incident Command System training has continuously been offered throughout the state, post-Irene analysis has shown that previous ICS training was positively correlated with increased ability to respond to the challenges posed by Irene. This increase was due to the ability to organize a unified command structure within the town and work more efficiently.
- Emergency Management Planning of all types needs to be kept up to date to best be able to respond, recover, and mitigate disasters. These plans include ~~Basic~~ Local Emergency Operations Plans (~~B~~LEOP) for each municipality, implementing improvement plans from exercises, and hazard mitigation plans.
- The State has incentivized flood resilience planning through the Emergency Relief and Assistance Funds (ERAF) program. There are a number of steps a municipality can take to improve the local match requirement for FEMA post-disaster relief funds. Generally, in the event of a Federal-disaster declaration FEMA covers 75% of the cost of "Public Assistance" projects,

typically repairs to roads and culverts and debris cleanup. The remaining 25% must be matched by the State and municipal government. Four requirements are needed for the State to provide half of that requirement, 12.5% match assistance. As of early 2016, nearly all of Chittenden County's municipalities have met these four benchmarks as follows:

- adopt Local Emergency Operation Plans annually – 18 or 95% of Chittenden County municipalities have adopted these.
- adopt the Town Road and Bridge Standards that meet or exceed the VTrans 2013 standards – 18 or 95% of Chittenden County municipalities have adopted these; Bolton is considering adoption of these standards.
- participate in the National Flood Insurance Program – 17 or 89% of Chittenden County municipalities participate. St. George is considering adoption in FY17 while Buel's Gore has no mapped floodplain; and
- adopt a FEMA-approved Local Hazard Mitigation Plan – 19 or 100% of Chittenden County municipalities have an adopted Plan.

- There is an opportunity for the State to provide 17.5% of the FEMA post-disaster relief funds match, if the municipality protects river corridors. Currently 14 of our municipalities have received early adopter recognition for river corridor protection due to having strong municipal water quality buffers and floodplain regulations. This early adopter status will end two years after the river corridor maps are updated. Municipalities will need to adopt more stringent standards in order to be eligible for the 17.5% match. Municipalities will have two years to adopt these new protections, once the State incorporates the more accurate Fluvial Erosion Hazard areas into the published River Corridor map. There are two options: receive FEMA's Community Rating System (CRS) designation and prohibit structures in Flood Hazard Areas; or Adopt River Corridor (with the 50' buffer) or River Corridor Protection Area (without the 50' buffer) regulations for streams draining over 2 square miles, and a setback of 50' from top of bank for streams draining under 2 square miles that cannot be waived, and Fluvial Erosion Hazard protections. As of April 2016 Colchester is the only municipality with CRS designation. Hinesburg and Jericho have FEH overlay regulations although these may need refinements prior to the two year limit, and Westford is considering River Corridor regulations.

2.4.3 WORKING LANDS & LAND BASED INDUSTRIES

Working Lands Goal: Support the growth and vitality of working farms and managed forests; and sustainably manage sand and gravel extraction operations.

Key Issues/Trends/Insights

[Data for this section drawn from Natural Systems Analysis Report; Farm to Plate Annual Reporting; *Informing Land Use Planning and Forestland Conservation Through Subdivision and Parcelization Trend Information* – Vermont Natural Resources Council, September 2010; The Action Plan of the VT Working Landscape Partnership.]

- Working lands and resource extraction industries are critical components of a self-reliant and diverse economy, making a region less vulnerable to market crises. Local food and fuel production is preferred since the transportation to import these products consumes tremendous amounts of energy and generates pollution. In addition, when food is imported from far-away places, nutrient value is reduced during the transport time.
- Working lands and resource extraction industries are economically viable within the constraints of our natural landscape. Sustainably managed farmland and forest land means less developed land, fewer impervious surfaces, and thus a greater presence of the natural ecosystem's features and functions. Conversely, high quality food and productive forests are dependent upon clean water and clean, nutrient-rich soils. It is imperative that we maintain high quality water and soils for healthy and viable food and forest product industries.
- A major challenge to forest and farm businesses is the value of the land in these industries versus the value of the land for development. Often when these industries are no longer economically viable, the land is sold and developed, resulting in forest fragmentation and increased parceling of land. The number of parcels has gone up, while their size has gone down, diminishing their economic viability and the ecological services they provide. This situation has far-reaching potential consequences for the future of Vermont's local economies, including tourism.
- Markets for forest products are necessary to ensure that landowners can afford to hold and manage their forest land (Vermont Forest Resource Plan, page 57). Unfortunately, the Vermont forest products industry is in slow and unheralded decline which has resulted in dramatic reductions in wood processing and manufacturing (Action Plan of the Vermont Working Landscape Partnership, page 14)). In the face of increasing gas prices and international trade, the importance of local products and processing cannot be overstated. Markets for forest products are often influenced on regional scales beyond the county level, though support of opportunities to develop and take advantage of markets must occur at the local scale.
- In recent decades, farm enterprises in the County have been employing new forms of business ownership, engaging in non-farm employment, limiting the size of farm operations to control the growth of farm production expenses, producing different types of farm products, producing more farm-related products, and engaging in more direct sales to consumers. These trends present a new set of challenges for farmers and communities, including access to markets and access to affordable land. Difficulties acquiring the proper equipment, or accessing to a certified processing facility are also a common problem for some new farmers. We will need to adjust our regulations and programs to ensure that we are not unnecessarily prohibiting agricultural enterprises from diversifying as well as continue efforts to ensure that agricultural enterprises remain economically viable. It is not just about growing more or different things – it is also about

creating higher value products from what is grown. An example is helping dairy farms by increasing production of yogurt, ice cream, artisanal cheeses, and other dairy based products.

- Chittenden County contains two major zones of bedrock geology: Sedimentary Zone – Rocks formed by the deposit of sediment, located predominantly in the lowlands between Lake Champlain and the uplands on the eastern side of the County; and Metamorphosed Zone – Rocks formed by metamorphic processes located predominantly in the uplands on the eastern side of the County. No major geologic threats (such as major active fault lines, seismic disturbances, areas prone to sinkholes or subsidence) or opportunities (such as major deposits of valuable minerals) exist in the County. In Chittenden County, the extraction of sand, stone and gravel are currently commercially viable. These resources play an important role in our land development practices and economy. While it is important to manage the environmental impacts of these operations, it is also important to manage these finite resources because a reduction of these locally available products will likely have an impact on construction costs. ~~Extraction industries are associated with different land management issues than farms and forests; these are included here for lack of a better location at this time.~~ These nonrenewable resources are used to produce building materials (such as concrete and railroad ballast), to use as landscaping materials, and to build and maintain public and private roads and buildings~~and to maintain roads~~. ~~The earth resources in Chittenden County that currently are commercially viable are sand (over two billion cubic yards available) and gravel (430 million cubic yards available).~~ Chittenden County contained 3 primary producing construction sand and gravel areas, and a total of 10 producing mines within those areas (Vermont Geological Survey/U.S. Geological Survey, 2010-2011 and USGS Mineral Resource Data System, 2015). ~~While these resources are limited they play an important role in our land development practices and economy and it is important to manage them carefully.~~

Key Indicators

- **Use Value Appraisal (UVA) Enrollment:** UVA is a State program allowing land to be taxed based on its income producing potential from agriculture or forestry, rather than its – typically higher - fair market (development) value. (Source: UVA program and the USGS National Land Cover Data)
  - In 2010, 66,411 acres and 789 parcels of UVA Forest Land enrollment.
  - In 2010, 16,895 acres and 311 parcels of UVA Agricultural Land enrollment.
  - From 2001 to 2006, 514 acres or 1% of agricultural land was converted to development; and 140 acres or .07% of forest land was converted to development.

- **The number of farms has increased, while the acreage of farmland has decreased.**

2.5.2 HOUSING

Housing Goal: Increase the opportunities for safe, decent, energy efficient, affordable, accessible and fair housing for all types of households in all neighborhoods.

Key Issues/Trends/Insights

[Data for this section drawn from Housing Analysis Report Analysis Report. Another reference that is currently under development is the Fair Housing Equity Assessment.]

- Adequate and affordable housing is central to a sustainable community. A healthy community is made up of households with a variety of incomes and affordable housing is needed to satisfy residents' wide range of needs. Lack of affordable housing contributes to many social stresses, including homelessness. Housing diversity supports the workforce and helps ensure that residents of all ages are continuously present in the community.
- The financial burden of paying a mortgage, homeowner's insurance, property taxes, utility expenses and other housing fees is unaffordable when these costs consume more than 30% of the household's income. Further, paying more than half of income on housing expenses creates a severe strain on a household's budget. These households are at much higher risk of foreclosure, eviction, homelessness, and frequent moving—all of which harm residents and the community. Approximately 4,000 owner households and 6,000 renter households living in Chittenden County pay more than half of their incomes for housing expenses. Cost burdens are highest for the lowest income residents, especially those living on fixed incomes or public assistance and those working at low-wage jobs.
- Approximately 500 people in Chittenden County were homeless during the January 2011 one-night count, clearly demonstrating gaps in the access to the types of housing options and services that could have kept these people housed.
- Some Chittenden County residents do not have equal access to housing opportunities. Members of the County's growing population of non-White residents, residents with disabilities, and single-parent families are more likely to experience poverty and less likely to become homeowners than other types of households. Insufficient housing options for all residents, regardless of their race, disability status, or membership in other protected classes, help prevent those residents from reaching their potential as contributing community members.
- Nearly 60% of the County's housing stock was built before 1980—when lead-based paint was widely used, when most home insulating/heating/energy technology was inefficient, and when building and accessibility codes did not yet accommodate all types of residents. (Note: Lead was banned from paint in 1978.)
- More than 11% of Chittenden County residents commute 25 or more miles to work—with potential adverse effects on both the health of the driver and the environment. In addition, with the exception of some neighborhoods in Burlington and Winooski and a few other Census blocks in the County, the vast majority of the County's working residents pay more than 45% of their income for the combined cost of housing and transportation.
- The County's population is expected to continue growing, albeit at a slower pace than in the past decade. Between 2010 and 2015, demand for additional owner homes is likely to be lower than prior levels of home building in the County. However, demand for renter homes is predicted to increase. Tools to ensure adequate housing supply for renters include renovation and

conversion of existing buildings as well as new construction. Looking further out roughly 4,000 additional housing units (rental and ownership combined) will be needed from 2010 to 2020.

- There are many needs for permanent supportive housing in the County, including housing for those transitioning out of a correctional facility. There are 69 beds in Chittenden County Transitional Housing Programs (FY2016 Department of Corrections). While this is certainly meeting a need, these are not permanent housing solutions, and not all inmates are able to transition to these houses. The statewide inmate population held in a correctional facility beyond their mandated sentence due to a lack of housing decreased by half between 2015 to 2016. However, as of February 2016, approximately 120 people statewide (28 in Chittenden County) remain in a correctional facility for this reason. Finding housing that will work for those that remain has proven challenging, due to the circumstances and needs of those inmates. For example, some of them previously violated rules in transitional housing locations.

Key Indicators

- **% households spending over 30% of income on housing expenses (owners and renters).**

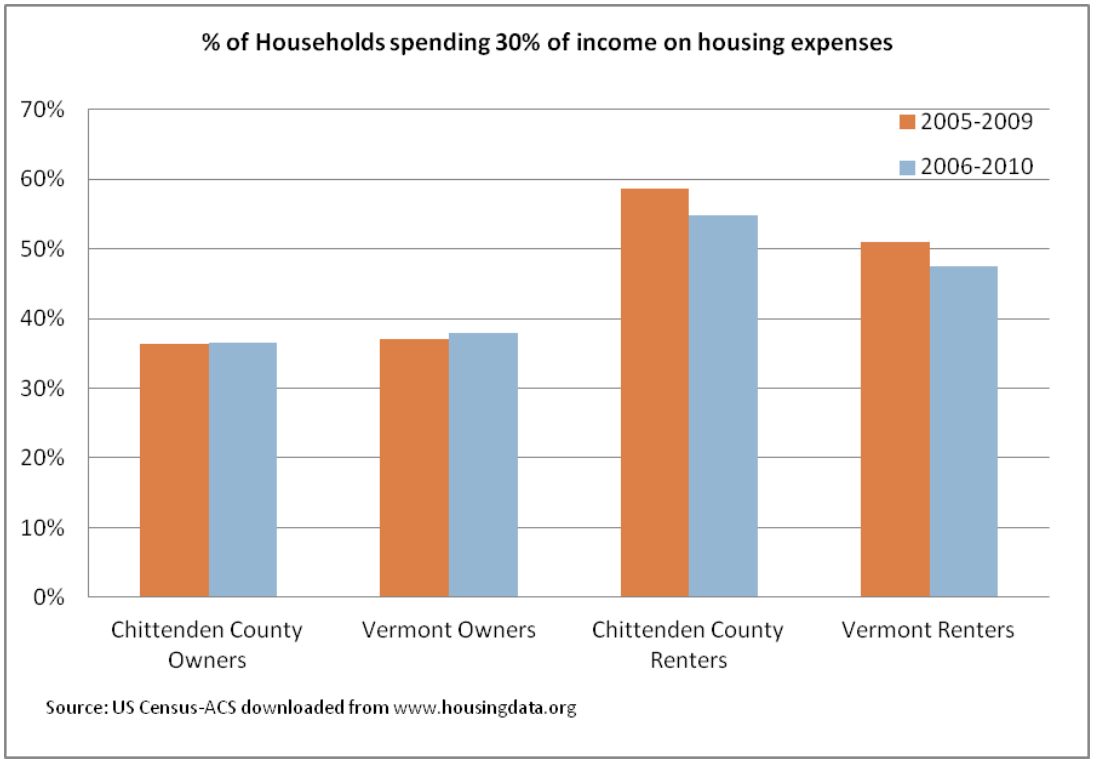

FIGURE 43 - PERCENT OF HOUSEHOLDS SPENDING 30% OF INCOME ON HOUSING EXPENSES

- **# of new housing units in 2010 by Municipality.** This data will be collected going forward.
- **Metro and non-metro vacancy rate for renters**. A healthy vacancy rate needs to be based on local circumstances, and long-term local averages (setting a national standard is not effective). The target for Chittenden County may be somewhere between 3% and 5%, though more analysis would need to be done to find a more accurate target. In Burlington

2.5.4 INFRASTRUCTURE & FACILITIES

Infrastructure & Facilities Goal: 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.

Key Issues/Trends/Insights

[Data for this section and more information can be found in the: Section 2.2.1 Ecological Systems Topic for water quality; Broadband Action Plan; Stormwater websites: http://www.ccrpcvt.org/stormwater/ and www.smartwaterways.org; and other sources listed below.]

- The majority of the residents in the County get their drinking water from Lake Champlain, via two utilities: the Champlain Water District and the City of Burlington's DPW Water Division. Both Champlain Water District and the City of Burlington's DPW Water Division utilities have received Phase III Director's Awards from the USEPA's Partnership for Safe Water Program; and Champlain Water District was the first in the United States to receive the Phase IV Excellence in Water Treatment Award in 1999, and is one of 11 in the US to presently maintain this award status following required annual reviews. In addition, Richmond, Hinesburg, Underhill and Jericho have smaller public water supply utilities – some of which are facing capacity and water quality challenges (Hinesburg for example).
- Currently, there are 12 municipal wastewater treatment plants in the County; together they have a treatment capacity of 21 million gallons per day (MGD) (Source: State of Vermont Wastewater Management Division). As of 2010, CCRPC estimated an aggregate reserve capacity of 9 MGD (this does not account for unconnected committed capacity and capacity limitations of individual facilities.). The estimated future demand for wastewater capacity in 2035 is 7 MGD. While these figures indicate that there is sufficient sewage treatment capacity to absorb anticipated growth in housing and employment county-wide, this does not account for location specific limitations. Colchester, Essex Junction, Huntington, Hinesburg, Westford, and Williston were among the municipalities in need of more wastewater capacity.
- Management of our storm water is critically important to maintaining and improving water quality throughout the County. Stormwater treatment is challenging in both urban and rural areas of the County for a variety of reasons: existing urban areas need to retrofit old infrastructure, financing new infrastructure in areas planned for growth when development is incremental, and impacts from agriculture and forestry practices that don't follow best management practices. Stormwater is managed at a variety of levels including EPA's National Pollutant Discharge Elimination System (NPDES) permits; VT's discharge permits; and some municipalities have additional stormwater regulations and programs. VT's discharge permits are structured to address site level development for projects over 1 acre of disturbance; therefore, incremental and cumulative impact of development is not addressed through this program. The municipalities are facing the challenges of dealing with the cumulative impact – and most are regulating stormwater through local regulations. In addition, nine municipalities and three public entities are subject to MS4 permitting (a NPDES program) in Chittenden County: Burlington, Colchester, Essex, Essex Junction, Milton, Shelburne, South Burlington, Williston, Winooski, Burlington International Airport, UVM and VTrans. A new MS4 permit was issued by the State in December 2012. There are two additional requirements: each permittee/municipality must develop and implement a Flow Restoration Plan (FRP) for the stormwater impaired waters within their jurisdiction (current estimates for restoration of individual impaired streams ranges in the millions); and each permittee/municipality must now pay for the annual operation of stream flow gauges (formally funded by the State/UVM/USGS).

- Information technology is integral to fulfilling the economic needs of residents and businesses in the region. Telecommunications is the communication of information through various media. The ECOS Competitive Assessment Analysis Report identifies quality and costs of telecommunications services as the weakest utility infrastructure based on the Employer Survey. ~~Broadband technology is widely available throughout Chittenden County: a~~As of December 2011, broadband technology was widely available in Chittenden County. ~~a~~Approximately 99% of Chittenden County residents and 99.5% of non-residential structures (analysis included commercial, industrial, municipal structures) had~~ve~~ access to Broadband defined as 768 kbps download/200 kbps upload speeds. However, in 2015 the Federal Communications Commission has increased the benchmark definition of broadband internet service to 25 Mbps (megabits a second) download and 3 Mbps upload. While a coverage analysis has not been completed under this new definition it is very likely that Chittenden County no longer has such extensive coverage. ~~The federal definition of broadband is 768 kbps download/200 kbps upload speeds.~~ It ~~will be~~ is~~important~~ imperative to ensure that we are on par with other urban areas in the realm of number of service providers, service tiers, and affordability as the technology is constantly improving and we must keep up. ~~Specifically, the defined broadband speeds are quite slow and will need to improve.~~
- A sustainable society minimizes the amount and toxicity of the waste it generates, reuses materials, recycles, and composts. The Chittenden Solid Waste District (CSWD) is responsible for the management of solid waste in Chittenden County. The system in the County is a combination of public, private, and public/private programs. CSWD has established a range of programs and facilities to manage waste through reduction, diversion, and proper disposal. CSWD also has identified the need for and is in the process of developing a regional landfill site (See the CEDS Project list in Section 4.2.6 for cost estimates, funding sources and proposed timeline for CSWD landfill design and construction projects). The tons of refuse disposed in Chittenden County have been declining over the last 5 years, while the amount of recycled materials has increased. While those trends are positive, there is room for improvement. It is estimated that 27% of the municipal solid waste sent to the landfill is comprised of recyclable materials and 32% is comprised of organic materials that could be composted (Source: CSWD Estimate of the Components of Solid Waste Disposed for FY 2012). A State law passed in 2012 (Act 148) bans disposal of certain recyclables (effective July 1, 2015), yard debris and clean wood (effective July 1, 2016), and food scraps (phased in over time) from disposal. Residents and businesses in CSWD have been required to separate yard debris and recyclables from waste destined for disposal since 1993. The additional bans on food scraps and clean wood will have a significant impact on waste diversion in Chittenden County.
- As can be seen on the ECOS Map Viewer, there are the following government/administrative facilities in the County: 13 police stations, 21 post offices, 2 courthouses, 18 municipal offices, 27 fire/rescue stations, and 1 state correctional facility.
- Larger municipalities such as Burlington, Winooski, Colchester, Essex, Essex Junction, Milton, Shelburne, South Burlington and Williston have a variety of government and school facilities, and provide a wide range of municipal services such as planning and zoning, recreation, highways, libraries, water, sewer, fire, rescue and police. In contrast, small rural municipalities such as Bolton, Buel's Gore, and St. George support only a few part-time employees such as a municipal clerk and road foreman, and often contract for other services. Municipal government in the remaining communities commonly consist of a few full-time employees such as a municipal clerk, an administrative aide for the selectboard and a highway foreman and small crew, supplemented by part-time or seasonal employees for activities such as recreation programs or the municipal library.
- This variation is particularly apparent in regards to Emergency Services. Almost every municipality has a locally-based fire department (with the exception of Buel's Gore, Huntington,

and St. George), half have police departments, and fewer have their own emergency medical services. Many of the smaller municipalities receive primary police services from the Vermont State Police (VSP) on an "as-needed" basis, but must "rent" traffic enforcement services from the Chittenden County Sheriff's office, the VSP or neighboring communities. Many of the municipalities have reciprocal agreements for assistance in fire and rescue services. The majority of these fire and rescue departments rely on volunteers; and recruitment and retention of these volunteers is a challenge. For more information see Section 2.3.3 of this Plan, the All Hazard Mitigation Plan and Annexes and the Local Emergency Operations Plans for each municipality (particularly Section 5.2 provides the specific services, volunteers and personnel for each operation). Discussions around consolidation of some municipal services, such as dispatch, continue in an effort to achieve greater efficiency. As an example of creative solutions, Essex and Essex Junction have consolidated a number of services since July 2013. Specifically, in accordance with the 2015 Town of Essex Annual Report: a shared manager has successfully administered both Town and Village municipalities, a joint stormwater policy committee has been appointed and begun planning Town and Village stormwater permit activity, one tax bill now exists for the Village taxpayers, one Town-wide collection system has been successfully implemented, the Senior Center has been consolidated, and a plan is underway to create a consolidated finance and administrative service delivery system.

- Chittenden County's community hospital is the University of Vermont Medical Center, also Vermont's only academic medical center, serving in this role for patients from across the state and the upper northeast corner of New York. The UVM Medical Center provides a full range of tertiary-level inpatient and outpatient services, provides primary care services at 10 Vermont locations, operates the region's only Level I Trauma Center, and is home to the University of Vermont Children's Hospital. As some of the inpatient facilities are 50 to 70 years old, the Medical Center has a Master Facilities Plan to address the long-term health needs of our region, focusing on single rooms for inpatients and more space for providers and the equipment they need to provide high quality health care, while striving for LEED certification for healthy and efficient building design. The UVM Medical Center continues to focus on becoming fully permitted to construct a new inpatient building with 128 replacement beds on the main campus. They are looking at all older primary care sites to ensure they are adequately sized and equipped to meet all of their patients' needs. The UVM Medical Center is not currently planning changes to other outpatient facilities. Other health care facilities in Chittenden County include 53 primary care sites; the Community Health Centers of Burlington (the local Federally Qualified Health Center, or FQHC); Howard Center (the local designated agency that provides mental health, developmental, and substance abuse services); two home health agencies (Visiting Nurse Association of Chittenden and Grand Isle Counties and Bayada Home Health Care); 6 Nursing Homes; 13 residential care homes; and 4 assisted living facilities.
- The shift in our demographics is important when analyzing what facilities and services are needed. According to the 2015-2020 Chittenden County Housing Needs Assessment (Bowen National Research) between 2015 and 2020, the number of households between the ages of 65 and 74 will increase the most, adding 1,085 households during this time. Overall, Chittenden County will add a projected 3,345 households age 55 and older between 2015 and 2020." Also, according to the State of Vermont Population Projects – 2010 to 2030 (VT Agency of Commerce and Community Development August, 2013) we are expecting a significant population increase in all age cohorts 60 years old and older. In 2010, 17% of the Chittenden County population was 60 years old and older. According to these projections, this age cohort will grow to 23% of the population in 2020; and 28% of the population in 2030. Changes in specific age cohorts is shown here:

Chittenden County Population Projections for 60 Years Old and Older										
	2010 Census	2020 Low Projection	% Change of '10-'20 Growth	2030 Low Projection	% Change of '10-'30 Growth		2020 High Projection	% Change of '10-'20 Growth	2030 High Projection	% Change of '10-'30 Growth
Age										
60-64	8,220	10,872	32.26%	8,901	8.28%		10,909	32.71%	8,922	8.54%
65-69	5,609	8,910	58.85%	9,578	70.76%		9,115	62.51%	9,732	73.51%
70-74	3,823	6,812	78.18%	9,143	139.16%		7,379	93.02%	9,925	159.61%
75-79	3,099	4,505	45.37%	7,247	133.85%		4,805	55.05%	7,904	155.05%
80-84	2,563	2,851	11.24%	5,133	100.27%		3,006	17.28%	5,870	129.03%
85+	2,591	3,484	34.47%	4,881	88.38%		3,452	33.23%	5,090	96.45%
Source: VT Agency of Commerce and Community Development, August 2013										
Note: During the 1990s (High Projection), the national economy was generally healthier than during the 2000s (Low Projection) and Vermont saw greater rates of net in-migration. As a result, the High Projection using 1990s migration rates generally, show higher populations than the Low Projection using the migration rates of the 2000s.										

- Not only is this a major demographic change, the needs of people within these age cohorts have changed with greater desire on aging in place and emphasis on providing home based care. While the State has had some success in addressing these needs, there is a long way to go and the demand is expected to increase. Expansion of the Vermont Respite House and use of technology in medical services (i.e. the Visiting Nursing Association of Vermont has tele-monitors to conduct daily in-home check-ins with patients remotely) are two examples of how Vermont is responding to these growing and changing needs. Also, the State has shown progress in the Choices for Care program and are currently serving those that qualify in the highest needs category (long-term care program that assists with care and support for older Vermonters and people with physical disabilities whether they are at home, an enhanced residential care setting, or a nursing facility. Participants in Choices for Care must qualify for Level II nursing home placement and meet financial eligibility criteria). However, the Visiting Nurses Association (VNA) has a significant number of clients who are clinically eligible for the highest needs Choices for Care program but don't qualify because their Medicaid eligibility has not yet been established. The VNA considers this delay a major factor in preventing them from serving a vulnerable population. In addition, VNA is currently experiencing a waiting list of over 250 people for the Moderate Needs (homemaking services) and their ability to serve the people on this list is limited by a lack of funding.

Key Indicators

- **Current Water Capacity and Reserve for Large Water Utilities** The reserve capacity below equates to 39,000 new homes (as a comparison there are 65,722 housing units in Chittenden County in 2010).

Utility	Capacity	Reserve
Champlain Water District	20 mgd	6.5 mgd
City of Burlington	7.5 mgd	1.3 mgd
Total:	27.5 mgd	7.8 mgd

FIGURE 47 - CURRENT WATER CAPACITY AND RESERVE FOR LARGE WATER UTILITIES

- **Current Wastewater Capacity v. Capacity Needed for Growth Projections in Areas Planned for Growth** Source: ANR and CCRPC Municipal Growth Projections. Chittenden County has the capacity to treat an additional 7 million gallons per day of wastewater. In 2035, it is estimated that the anticipated demand will be 7 MGD which is adequate capacity to accommodate 80% of the future development within the various sewer service areas. However, capacity varies for each treatment plant and some facilities may have a narrow margin of additional capacity.
- **16.9% of impervious area is under storm water management through operational stormwater permits countywide**. Source: ANR VTDEC Stormwater Permit database, ANR's 2008 NDVI Impervious Surface Layer.
- **52% of the impervious area in Chittenden County is covered by the Municipal Separate Storm Sewer System Permit (MS4).** Source: MS4 Boundary, ANR's 2008 Impervious Surface Layer.
- **Pounds of Waste Disposed/Capita/Day for MSW (Municipal Solid Waste) and C&D (Construction Debris).**

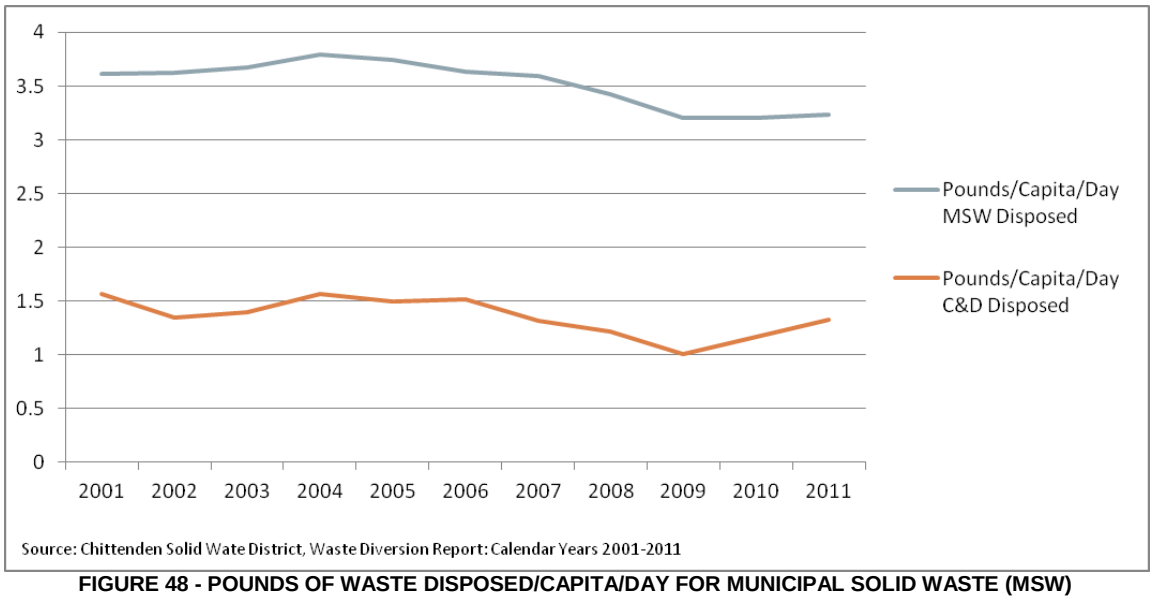

FIGURE 48 - POUNDS OF WASTE DISPOSED/CAPITA/DAY FOR MUNICIPAL SOLID WASTE (MSW)

2.5.5 ENERGY

Energy Goal: Reduce Chittenden County's consumption of energy and reliance on non-renewable, energy. Improve the cost-effectiveness, efficiency and reliability of the energy production, transmission, and distribution system.

Key Issues/Trends/Insights

[Data for this section drawn from: Energy Analysis Report and Climate Change Trends and Impacts Report].

- Chittenden County citizens, businesses, and industries spent about $617 million on energy in 2009 (25% of Vermont's total). Much of this money leaves the County and state immediately. This outflow of energy dollars acts as a drain on the local economy.
- The price of energy is forecasted to continue increasing in the future, which will result in an additional burden on the County's residents and businesses, unless energy consumption can be reduced.
- Chittenden County has a long history of electrical and natural gas energy efficiency programs, dating back to 1990, which have provided significant energy savings and economic benefits to the state and County. These programs along with improvements in federal standards have led to a reduction in per household and per employee energy consumption of electricity and natural gas. Reduction in energy consumption directly results in a reduction in energy bills.
- While efficiency programs targeting electricity and natural gas have been largely successful, there is an urgent need to fund and develop similar programs for non-regulated thermal fuels and for the transporation sector.
- Fossil fuel combustion increases the atmospheric concentration of carbon dioxide and other greenhouse gases, which are the causes of global climate change. Climate change will have profound impacts on the environment, public health, infrastructure, and economy of Chittenden County.
- Vermont, and the County, relies heavily on fuel oil for building heat and on gasoline and diesel for transportation. Gasoline consumption has increased as more residents drive to and from work, run errands, and consume for goods.
- Vermont's rural nature offers challenges for the transmission and distribution of energy. It is important to maintain and develop an energy production, transmission, and distribution infrastructure in Chittenden County that is efficient, reliable, cost-effective, and environmentally responsible. Current energy distribution projects include: Extension of 3-phase power in south Hinesburg along VT116 by Green Mountain Power; Extension of natural gas service in Hinesburg up Richmond Road by VT Gas; and Extension of natural gas service to St. George village center. In addition, Burlington's plan to recapture "waste heat" from the McNeil power plant and distribute it to the Old North End of Burlington and heat greenhouses at the Intervale is a thermal energy project with a more efficient distribution of a previously wasted energy source. See the CEDS Project list in Section 4.2.6 for cost estimates, funding sources and proposed timelines for these projects.
- The cost of electricity is related to the distance it travels. When electricity is transmitted over long distances, a significant amount of electricity is lost. Improving line efficiency or encouraging distributed generation (such as locally sited small scale renewable projects) reduces losses and could result in more cost effective rates.
- Every three years, Vermont Systems Planning Committee (VSPC) launches a process to update and identify constrained areas and reliability needs for the electric transmission grid. Chittenden County has areas identified as needing improvement.

3.2.2 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. CCRPC is committed to annually monitoring the quantity and location of development to measure our progress on concentrating 80% of new growth in these Planning Areas at a regional scale (not each municipality). This goal mimics the development patterns we've seen in the recent past (see Section 2.5.1 Indicators for more detail). CCRPC will monitor this through annual updates of its housing, employment, and commercial/industrial square footage databases and also by the State of Vermont's e911 locational database. The databases identify when a structure was built, number of dwelling units, employees, and square footage at a specific location. The major source of information for updating these databases will be gathered from CCRPC's member municipalities.

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, reducing energy consumption and using existing infrastructure efficiently.

Actions

1. **Invest in Areas Planned for Growth** -

    a. Establish wastewater, water infrastructure 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.
        - FUNDED VITAL PROJECT - South Burlington's Pathway to Sustainability –The overall project includes a series of initiatives to support, develop, and create a community that will be a leader in sustainable food production, housing, transportation, energy efficiency, natural resource protection, transit oriented development, residential quality of life and economic growth. Specifically, ECOS funding is supporting an overhaul of the City's Land Development Regulations, with a special focus on Form Based Codes, to implement the goals of ECOS and the City's Path to Sustainability.

- FUNDED VITAL PROJECT – PlanBTV Form Based Code. Burlington will develop and adopt form based code zoning for their Downtown and Waterfront districts consistent with PlanBTV.
- FUNDED VITAL PROJECT – Shelburne Road, Shelburne Form Based Code. Shelburne will develop and adopt form based code zoning for the Shelburne Road corridor north of the Village.
- FUNDED VITAL PROJECT – Winooski Gateway Development Regulations. Winooski will develop and adopt updated zoning for their gateway districts.

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, Champlain College and Burlington College to develop specific plans to increase the percentage of students who reside in dedicated student housing.
    - FUNDED PROJECT – VHFA is working with South Burlington, Williston, and Essex Junction to analyze their local needs and suggest improved bylaws and programs to create more affordable housing and increase housing choice.

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

a. Reduce Energy Consumption - Education and outreach to key sectors regarding weatherization, life cycle fuel costs, and behavioral adjustments will be essential elements for reducing energy use and costs over time.
b. Decrease greenhouse gas emissions, to support the State's goal of reducing greenhouse gas emissions 50% from 1990 levels by 2028.
    i. Encourage individual homes and businesses to include electric and thermal energy efficiency in building and/or retrofitting. Weatherization should be promoted and executed as a first step to reduce overall energy consumption before investing in renewable energy systems. There is a need for focused study to determine solutions for vermiculite removal as it relates to weatherization, in particular low income weatherization. Vermiculite was used as an insulator for decades (1960-1990) – and was mined with asbestos thus any home with vermiculite is assumed to be contaminated.
    ii. Provide alternatives to fossil fuels for heating.
    iii. Reduce fossil fuel consumption in the transportation sector.
    iv. 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.
c. Increase Renewable Energy Generation, to support the State's goal of 90% renewable energy by 2050.
    i. Determine appropriate sites for community-level renewable energy generation. Recent work on this topic has included the Legislature's Solar Siting Task Force Committee in 2015; and three Regional Planning Commissions have received Department of Energy grants. CCRPC has not yet received these funds, but will benefit from the work of the other three RPC's – and will hopefully be able to build on that work if CCRPC receives its own grant to work on this task further.
    ii. Encourage individual homes and businesses to include renewable energy options in building and/or retrofitting.

5. State/Local Permitting Coordination & Improvement

a. Support changes to the local and state permitting process to make the two more coordinated and effective. Participate in the Agency of Commerce and Community Development's (ACCD) process to improve the State's designation programs designed to encourage development in appropriately planned places and discourage development outside of those areas. This program could be improved with regulatory and/or fiscal incentives. These 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; and reduction of redundancies such as delegation of permitting for certain local and state reviews (such as exemption from Act 250). In conjunction with delegation it may be appropriate to develop more stringent standards and thresholds for development review in rural areas.
b. 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.
c. 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.

- 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 facilities, and transportation demand management (TDM) programs and facilities.
b. New transportation system investment should focus on the highest priority transportation projects as detailed in the ECOS/Metropolitan Transportation Plan (MTP) Project List. In the next five years, these projects will primarily be those that are included in the Transportation Improvement Program (TIP), as may be amended. The TIP projects are considered FUNDED VITAL PROJECTS for the purposes of the Comprehensive Economic Development Strategy (CEDS).
c. Future project investments and specific focal areas for targeted implementation impact include:
    i. For transportation planning studies that have been adopted as part of this ECOS Plan, the specific recommendations for project, policy, and program investments will guide CCRPC investment priorities.
    ii. Expand Intelligent Transportation Systems (ITS) for the roadway network, and traffic and transit operations, to improve safety and reduce congestion;
    iii. Expand the Go! Chittenden County Transportation Demand Management (TDM) program (including park and ride facility development) to reduce single occupancy vehicle (SOV) trips
    iv. Increase investment in CCTA transit services to increase user accessibility
    v. Expand walking and biking infrastructure to support active transportation and to provide interconnection with the region's transit system
    vi. Develop a regional network of electric vehicle charging stations to accommodate the growth in low emissions, low energy costs electric vehicles and support the expanded adoption of natural gas vehicles for heavy duty fleets.

3.2.3 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 ~~– particularly wetlands, rivers, lakeshore, and other areas where extreme weather can cause flooding~~. 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 Section 3.2.2); 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 ~~& ensure enforcement~~ – 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 ~~FEH hazard zones~~ 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 ~~and culvert and bridge replacements~~.
   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.
   ~~d.~~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.

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 ~~accepted~~ 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.
   - FUNDED PROJECT - Connecting the Drops: A Water Story –Winooski Natural Resources Conservation District (WNRCD) aims to continue public awareness of water quality issues with a call to action in the 2013 summer season. The project includes a public art and education display in downtown Burlington where art, public participation, science education, and environmental stewardship will highlight stormwater's impact on Lake health and steps each of us can take to improve it.

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 Project List (see Section 4.2.6). 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 ranges 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.

~~3.~~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.)

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

1. **Habitat Preservation** - Protect forests, wetlands and agricultural lands from development, and promote vegetative landscaping in urban areas in order to maintain natural habitats, natural storm water management and carbon sequestration. This will keep people and infrastructure out of harm's way and allow for natural flood attenuation areas.
   a. Inventory - Conduct on the ground surveys and inventories of significant habitats (include wetlands), connectivity corridors, scenic resources and locations of invasive species and map this information. Incorporate this data into municipal and regional plan text and maps and establish specific policies that address and protect these resources.

      - FUNDED PROJECT - Forests, Wildlife & Communities: Science to Action – Town of Richmond with Towns of Bolton, Jericho, Huntington, Vermont Natural Resources Council, Arrowwood Environmental, Vermont Fish & Wildlife Department, VT Forests, Parks & Recreation Department, and CCRPC. This project is a comprehensive four-town natural resource inventory of wildlife habitat, wetlands, uplands, natural communities and working lands; technical assistance in the development of bylaws and non-regulatory conservation tools tailored to our communities' needs to provide permitting predictability, protect, restore and enhance critical habitat, and advance the goals specified in each town's plan; and engagement of property owners and other citizens in all aspects of the project.

   b. 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.
   c. Education - Educate engineers, developers, real estate professionals, planners and the public regarding resources and methods for restoration and protection.
   d. 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.

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.
    - FUNDED PROJECT - New American Food –Association of Africans Living in Vermont, Inc. is leading this revenue-generating, culinary job skills training project. It will prepare unemployed refugee Reach Up (Temporary Assistance for Needy Families) recipients, with limited English proficiency, for jobs in the food preparation and food processing industries through the 120-hour, 10-week FRESH food course. The AALV Employment Counselor places graduates into employment opportunities that result in movement off welfare. In addition, there will be an increase in sales by refugee farmers of organic, locally grown crops.
c. Support non-regulatory conservation and/or preservation through public and land trust investments (including but not limited to municipal land conservation funds).

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.

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.

3.2.6 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.
~~b.~~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.

- CCRPC's Executive Committee considers whether an applicant's proposal is in conformance with the Regional Plan, with specific attention given to the Planning Areas of this Plan (for the same reasons described above for the SRI definition), and the criteria dealing with traffic and other criteria within CCRPC's expertise.
- Staff initially reviews each Act 250 application (with specific attention given to those applications going to a hearing as the FY13 CCRPC contract with the Agency of Commerce and Community Development requires that the CCRPC review and comment on Act 250 and Section 248 applications if a hearing is held).
- CCRPC staff will discuss potential Act 250 and Section 248 projects with Planning and Zoning staff and members of the Planning Advisory Committee to identify emerging development proposals to assess their conformance with the Regional Plan. The intent is that this proactive, collaborative approach attempts to work out any concerns about Act 250 and Section 248 applications prior to their submission.

The Planning Advisory Committee may recommend to the CCRPC revised procedures for participation in Act 250 and Section 248 proceedings in order to better achieve the goals of this Chittenden County 2013 ECOS Plan. These revisions will be established through formal amendments to the Guidelines and Standards for Reviewing Act 250 and Section 248 Applications, and if appropriate, as amendments to this Plan as well. Changes in the review of transportation impacts and CCRPC policies will be coordinated with VTrans and the District Environmental Commission as appropriate to seek consistency in Act 250 reviews.

Subsequent to Plan adoption, the CCRPC anticipates a change to the measures and thresholds used to evaluate allowable congestion in Planning Areas Designated for Growth:

- Currently, Level of Service (LOS) is the predominant measure used to quantify traffic congestion of the transportation system and often determines whether or not mitigation is required for specific development proposals LOS measures quality of service of a transportation facility from a driver's perspective. Alternatively, LOS will not be used as the predominant measure of congestion when reviewing overall intersection performance in traffic impact studies as part of Act 250 applications. For Planning Areas Designated for Growth (excludes Rural Planning Areas), the CCRPC will use both LOS and volume-to-capacity (*v/c*) measures to evaluate congestion. Rather than focusing on incremental and often inconsequential changes between different levels of service, the *v/c* measure provides information on whether capacity of an intersection is being fully utilized. Applying both LOS and *v/c* measures will more effectively assist in reaching the land use and transportation goals of the region. The CCRPC will work with VTrans and other stakeholders to develop LOS and *v/c* thresholds that will allow for higher levels of congestion within non-Rural CCRPC defined Planning Areas than currently defined in the VTrans LOS Policy.

4.1.3 STATEMENT OF COMPATIBILITY AND CONSISTENCY

Pursuant to 24 *VSA* 4302 (f), 4345a (5), 4348a (a), and 4348a (a)(8), CCRPC has reviewed the approved plans of its member municipalities and of its adjoining regional planning commissions and concluded that this *ECOS Plan* is compatible with those plans (that is, this *ECOS Plan*, as implemented, will not significantly reduce the desired effect of the implementation of the other plans).~~;~~ ~~and~~

Chittenden County is bordered to the north by Grand Isle and Franklin Counties, which are served by the Northwest Regional Planning Commission. The ECOS Plan is compatible with the NRPC 2015 Regional Plan. Most bordering areas are designated as Rural in the ECOS Plan and as Agricultural Resource, Rural or Conservation and Forest Resource in the NRPC 2015 Regional Plan. There are two areas near the border with Franklin County that should be monitored in the future. Any development near around Exit 17 on Route 2 in Colchester may have an impact on Grand Isle County. Additionally, there is an area in Milton planned for Enterprise in the ECOS Plan near, but not bordering, an area planed for Conservation in Georgia in Franklin County. Development in the future should be monitored to ensure no adverse effects.

Chittenden County is bordered to the east by Lamoille County (served by the Lamoille County Regional Planning Commission) and Washington County (served by the Central Vermont Regional Planning Commission). The ECOS Plan is compatible with the Lamoille County Regional Plan: 2014-2022. The Lamoille County Regional Planning Commission's Future Land Use Map designates the areas bordering Chittenden County as Rural Residential, Forest Conservation or Agricultural Conservation. This is compatible with the ECOS Plan's designation of adjoining municipalities as Rural Planning Areas. The ECOS Plan is also compatible with the 2015 Amendment to the Central Vermont Regional Plan. The Plan's future land use map designates areas bordering Chittenden County as Resource and Rural areas. This is compatible with the ECOS Plan's designation of adjoining municipalities as Rural Planning Areas.

Chittenden County is bordered to the south by Addison County (served by the Addison County Regional Planning Commission). The ECOS Plan is compatible with the Addison County 2011 Regional Plan. The Addison County 2011 Regional Plan designates areas bordering Chittenden County to the south as Rural and Agricultural or Forestland and Conservation/Floodplain areas, which is generally compatible with the designation of bordering areas in the ECOS Plan as Rural Planning Areas. There are two possible points of conflicts between future land uses. In Hinesburg, a designated Enterprise Zone is Hinesburg borders a Rural and Agricultural area in Starksboro. In Ferrisburgh, a designated Village and Commercial/Industrial area borders a Rural Planning Area in Charlotte. Development in the future should be monitored to ensure no adverse effects.

Beyond the abutting land designations as described above, it is likely that there is housing pressure on the surrounding regions based on a lack of housing within Chittenden County. This is evidenced by a low vacancy rate in Chittenden County, and the number of commuters from outside of the region.

County	Percent of Primary Jobs held by County Residents located in Chittenden County (2013)	Number of Primary Jobs held by County Residents located in Chittenden County (2013)
Grand Isle County	57.50%	2,009
Franklin County	42.30%	9,538
Lamoille County	19.80%	2,279
Washington County	16.20%	4,105
Addison County	26.90%	4,160

Source: http://onthemap.ces.census.gov/

While some of these commuters may prefer to live outside of Chittenden County for reasons other than the housing expense within the County, continued efforts to increase the housing stock within the areas planned for growth in the County will hopefully minimize this pressure on the surrounding regions.

Due to the amount of commuting traffic from the surrounding regions into Chittenden County, there is a demand for transportation services and infrastructure to get residents to their places of work and home again. All four regional plans include a similar sentiment as this one from the Northwest Regional Plan: "As this demand increases, efforts to combine infrastructure capacity improvements with increased public transportation services should be examined at every possible opportunity." A recent example of this type of improvement, selected by the Circ Alternatives Task Force, is the CCTA Jeffersonville Commuter bus route on Route 15. The Plans are consistent in calling for access management, and concentrated development to maintain these arterial corridors for mobility and preservation of character. Concentrated development of jobs and housing that is affordable in the areas planned for growth is a major tenant of the ECOS Plan and a critical component in addressing some of the cross regional pressures on transportation networks. Particular roadway improvements and corridor plan recommendations identified in the surrounding regional plans are consistent with the ECOS Plan.

Also, hazard mitigation and emergency services are regional issues as responders cross municipal and county boundaries. All four regional plans include a similar sentiment as this one from the Addison County Regional Plan: "To maintain a strong and effective response system that is built on the concept of cooperation and mutual aid."

CCRPC has also reviewed the goals of 24 *VSA* 4302 and concluded that this *ECOS Plan* is consistent with those goals (that is, implementation of this *ECOS Plan* will result in substantial progress toward attainment of the goals established in 24 *VSA* 4302).

Municipal Plan Review & Compatibility

In determining whether the Municipal Plans are compatible with this Regional Plan (upon request by the Municipality and in accordance with VT Statute 24 VSA 4350b), the CCRPC will refer to the Planning Areas depicted on the Future Land Use Map, the goals in Chapter 2 and the strategies in Chapter 3. In conducting these reviews and determining compatibility CCRPC's Planning Advisory Committee will use the *Guidelines and Standards for Confirmation of Municipal Planning Processes and Approval of Municipal Plans* and when needed seek guidance from community partners with expertise in subject areas outside of CCRPC's realm.

Municipalities may also find it useful to consult the ECOS Criteria included in Appendix B. The ECOS Criteria were established to prioritize transportation projects (for the MTP), and the ECOS implementation grants in order to ensure that limited financial resources will go to the projects that will have a high rate of return and move many ECOS goals in the right direction. In addition, the MTP sections of this plan, particularly the corridor improvement sections, may be helpful to the municipalities in planning for future land use and transportation improvements.

Decisions for how we create denser mixed use communities are made at the local municipal level of government. Therefore, municipalities are encouraged to apply ECOS strategies in their development decision making process. Specific implementation of the ECOS strategies will vary throughout the County as municipalities consider their own unique needs and relationship to the region as a whole.

2015 ECOS/CEDS Project List

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1	3.2.1	4.2.5.8.i	GBIC	Industrial Infill Sites (IBM)	Master planning and preliminary approval of new industrial sites, part of an existing industrial campus, to accommodate future job growth of value added employers. Also keep an inventory of available sites.	$100,000	1,000	N	VITAL	$25,000 ECOS grant and GBIC funds	completed
2	3.2.1	4.2.5.8.iv	Lake Champlain Regional Chamber of Commerce	Chittenden County After School Aspirations Program/ASAP (GBIC, Lake Champlain Workforce Investment Board, Boys and Girls Club of Burlington, Linking Learning to Life, Sara Holbrook Community Center, King Street Center, Community College of Vermont, and many businesses)	The project partners will design and implement a replicable and sustainable after-school curriculum for at-risk youth in grades 8-12 that will assess their interests and skill levels, raise post secondary education aspirations, expose them to the fields of science, technology, engineering and math (STEM), and prepare them for viable careers in Chittenden County.	$45,279	0	Y	VITAL	$40,000 ECOS Grant, LCRCC funding	completed
3	3.2.1	4.2.5.8.iv	GBIC	Innovate Vermont	GBIC is working with the State of Vermont, the University of Vermont, and the Vermont Technology Council to produce a virtual front door for entrepreneurs called "Innovate Vermont." The intent is to create an online portal for entrepreneurs and innovators to find programs, resources, and services across many different needs and throughout Vermont.	$25,000	TBD	Y	VITAL	GBIC funds	ongoing
4	3.2.1	4.2.5.8.i	Burlington	Redevelopment of King Street Dock Site / Ferry Yard Relocation (CEDO)	Relocation of maintenance yard, and redevelopment of King Street dock site and ferry terminal - mixed use development	$60-65,000,000	75-200	N	VITAL	TIF, public/private partnership	2014
5	3.2.1	4.2.5.8.i	Burlington	Pine Street Corridor Redevelopment (CEDO)	Ongoing work with businesses along Pine St.(Sondik, Noyes, Champ. Choc., Dealer and others). Individual Projects may be funded by private businesses. Complete street improvements would be publicly funded.	TBD for private projects, $10,000,000 for complete streets	250	Y	H	Municipal	Ongoing
6	3.2.1	4.2.5.8.i	Burlington	Town Center Mall redevelopment	Mixed use redevelopment	$60-80,000,000	20-200	N	H	TIF, public/private partnership	In progress
7	3.2.1	4.2.5.8.i	Colchester	"Branding" Colchester	#1 Priority for Town	$50,000	0	Y	H	100%	In Progress
8	3.2.1	4.2.5.8.i	Colchester	Colchester Strategic Economic Development Plan Implementation	Implement recommendations of the 2012 Colchester Economic Development Plan	$16,000	0	Y	H	100%	In Progress
9	3.2.1	4.2.5.8.i	GBIC	Chittenden County Economic Resource Center (GBIC)	A non-profit economic and planning support resources center anchored by GBIC with co-location by CCRPC, CCMPO, LCRCC, VT SBDC, VMEC, VEDA, and other related non-profits	$4,000,000	TBD	N	H	Cynosure	ongoing
10	3.2.1	4.2.5.8.iv	GBIC	Chittenden County Career Fair (7Days, UVM, VSC)	Explore developing an annual, county-wide Career Fair that expands on Tech Jam work. Expose High School Freshmen and Sophomores to the jobs available in the County at all major employers, salaries of those jobs, skills needed to obtain those jobs, and classes needed to obtain those skills. An intention of this Career Fair should be to demonstrate to the region's future workforce that there are good jobs available paying good wages.	$6000	60	Y	H	GBIC Funds; local businesses; business organizations	2013
11	3.2.1	4.2.5.8.i	Colchester	Biotechnology Research Park/Incubator	Exit 16 center of UVM life sciecne research center, Vt Health Dept Laboratory, and Albany College of Pharmacy also a research facility	$10,000,000	Depends of company - from 10 to 100	N	M	No funding yet. Will seek grants for emerging technologies being developed.	TBD
12	3.2.2	4.2.5.8.vi	Hinesburg	New water service	Two new wells on the Wainer property located off of Shelburne Falls Road, along with the first municipal nanofiltration treatment system in Vermont. To address current needs and water quality concerns. Another source still needed for projected demand.	1,175,000	TBD	Y	VITAL	Municipal Water Enterprise Fund	In Progress - construction start December 2015
13	3.2.2	4.2.5.8.ii	Burlington	Railyard Enterprise District (CEDO)	Develop and build out new street grid including bike/ped/, mixed use, greenspace and connections to the lake and bike path.	$10-30,000,000	TBD	Y for planning phase	VITAL	Various options	2012
14	3.2.2	4.2.5.8.vi	Burlington	Marina Expansion and Long-term Improvements (Parks)	In conjunction with Plan BTV, the Parks Master Plan, and an assesment of the existing Boathouse, opportunities to improve/renovate/replace the Boathouse, increase transient boater slips, and improve land side amenities should be considered.	$2-3,000,000	10	N	VITAL	TIF	2014

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15	3.2.2	4.2.5.8.vi	Burlington	Redevelopment of 453 Pine (CEDO)	Redevelop Brownfield at 453 Pine St to allow growth in the South End. Possible inclusion of solar array	$6-12,000,000	100-300	N	VITAL	Private equity	2013
16	3.2.2	4.2.5.8.vi	Shelburne	Form-based code on Shelburne Road	North of the Village	$70,000	0	Y	VITAL	State, CCRPC, Local	In Progress
17	3.2.2	4.2.5.8.vi	South Burlington	Pathway to Sustainability (Chamberlin School, Pomerleau Real Estate, Green Mountain Power, Encore Redevelopment, Efficiency Vermont, South Burlington Realty, Dorset Street Associates, LLC., Llewellyn-Howley Incorporated, Hayes Avenue Homeowner Associations, and the Farm at South Village)	The overall project includes a series of initiatives to support, develop, and create a community that will be a leader in sustainable food production, housing, transportation, energy efficiency, natural resource protection, transit oriented development, residential quality of life and economic growth. Specifically, ECOS funding is supporting an overhaul of the City's Land Development Regulations, with a special focus on Form Based Codes, to implement the goals of ECOS and the City's Path to Sustainability.	$202,000	0	Y	VITAL	$50,000 ECOS grant, City funding	In Progress
18	3.2.2	4.2.5.8.ii	VTrans, CCRPC	transportation projects	federally eligible transportation investments are included by reference in this list and can be found in the MTP Section 4.3.6, TIP Projects are VITAL.	~$30,000,000 annually	125	Y	VITAL	FHWA, FTA, VTrans, Muni	2013
19	3.2.2	4.2.5.8.vi	Essex Junction	Sewer Treatment Plant Refurbishment	Plant is $15M and pump station $1.3	$16,300,000	1	Y	H	State Revolving Loan fund eligible.	completed
20	3.2.2	4.2.5.8.vi	Hinesburg	Extension of 3-phase power	to South Hinesburg along VT116 by Green Mountain Power. Job creation possibly substantial, service extension to existing industrial district with ample build out potential.	TBD	TBD	N	H	From Utility Provider (GMP) and destination Industrial District Businesses	TBD
21	3.2.2	4.2.5.8.ii	Burlington	Burlington Bikepath (Parks and CEDO)	Reconstruct and enhance 7.5 mile bike path	$17,000,000	25 to 50	N	H	$2.7M TIF, EDA, Municipal, Other TBD	In Progress
22	3.2.2	4.2.5.8.ii	Burlington	Cherry Street Streetscape - Phase 1	Creating walkable environment and links between the waterfront and Church Street Marketplace	$1,500,000	0	N	H	TIF, CCTA	2015
23	3.2.2	4.2.5.8.ii	Burlington	Side Streets Project (CEDO)	Expand amenitiesof CSMP to more of the downtown district. Add connectivity to waterfront from CSMP. Stimulate downtown business growth.	$28,000,000	TBD	N	H	TIF and other grants, BID	2013-25
24	3.2.2	4.2.5.8.iii	Burlington	Urban Reserve Planning and Redevelopment (CEDO)	Develop new conservation map that includes a land use/land cover analysis.	TBD	TBD	N	H	TIF, Conservation Legacy Fund	2013
25	3.2.2	4.2.5.8.iv	Burlington	General utility upgrades in waterfront district	Water, sewer, lighting, electrical, conduit, telecommunications upgrades to prepare sites for development and enhanced public space.	$6,500,000	0	N	H	TIF	2014
26	3.2.2	4.2.5.8.vi	Burlington	North Beach Emergency Access Road Improvement (Parks)	Renovation of roadway to better accommodate emergency vehicle access to North Beach Campground.	$300,000	0	N	H	TBD	TBD
27	3.2.2	4.2.5.8.vi	Burlington	Gateway Block Redevelopment (CEDO)	Redevelopment of the Gateway Block at Main and North Winooski. Properties include Memorial Auditorium, Municipal surface lot, motel and firehouse.	$10,000,000	100	N	H	private/public partnership, TIF Investment	2014
28	3.2.2	4.2.5.8.vi	Burlington	Housing renovation and construction (CEDO)	Ongoing through HOME funds, Lead Program and other initiatives.	$20,000,000	20-100	N	H	TIF, private/public partnership	Ongoing
29	3.2.2	4.2.5.8.vi	Burlington	District Heating Plan (CEDO)	Plan to recapture "waste heat" from the McNeil power plant and distribute it to the Old North End of Burlington, a densely populated area within the City.	Feasibility study underway; TBD	15-50	N	H	$140,000 grant and in-kind to pay for study	2012
30	3.2.2	4.2.5.8.vi	Burlington	Moran Plant/Waterfront Redevelopment (CEDO)	To redevelop one of the last parcels/vacant buildings on the shores of Lake Champlain in downtown Burlington. The Moran plant has been vacant for decades and the city is now working to develop a private/public partnership to renovate the facility.	$21,000,000	60-80	N	H	$2M Section 108 Loan; $1.3 Million in Historic Tax Credits; $1.5 Million in Grants, TIF	2013-14
31	3.2.2	4.2.5.8.vi	Burlington	Grocery Store site in South End. (CEDO)	Working with brokers and local grocery store to find a suitable location in the south end of the city. Discussions are currently underway.	$3-10,000,000	100	N	H	Private equity	In progress
32	3.2.2	4.2.5.8.vi	Burlington School District	Burlington High School Renovations	to meet 21st century learning needs, such as electrical outlets and capacity, wireless infrastructure, smart boards and projectors.	$5 million to start basic upgrades; $80 million for complete renovations	0	N	H	Local	2014
33	3.2.2	4.2.5.8.ii	Burlington, South Burlington	Airport Improvements - South End Development PHASE 6	Taxiway G Extention, Taxiway B rehabilitation.	$9,780,000	0 Beyond Contruction	N - Dependent on FAA reauth.	H	Anticipated 10% Local/State Match Dependent on FAA reauthorization	2013-2016 Multi-year project

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34	3.2.2	4.2.5.8.ii	Burlington, South Burlington	Airport Improvements - South End Development Engineering Design	General Aviation/Corporate Taxiway & Apron.	$330,000	0	N - Dependent on FAA reauth.	H	Anticipated 10% Local/State Match Dependent on FAA reauthorization	2013
35	3.2.2	4.2.5.8.ii	Burlington, South Burlington	Airport Improvements - Noise Compatibility Program	Noise study and authorization of possible mitigation measures.	$330,000	0	N - Dependent on FAA reauth.	H	Anticipated 10% Local/State Match Dependent on FAA reauthorization	Planning In Progress
36	3.2.2	4.2.5.8.vi	CCRPC	State/local permitting process and bylaw improvements	Work with municipalities, state agencies and the legislature to encourage development in areas planned for growth.	$5,000	0	Y	H	municipal match funds	Ongoing
37	3.2.2	4.2.5.8.vi	Charlotte	Alberts Way affordable housing units	Habitat for Humanity. 3 single family homes and 1 duplex = 5 units total.	$825,000	$0	N	H	$528,000	completed
38	3.2.2	4.2.5.8.v	Colchester	Community Broadband Wireless Technology Access	Totally dependent on private sector initiative.	$500,000	TBD	N	H	N/A	In progress
39	3.2.2	4.2.5.8.v	Colchester	Fiber optic Redundancy in Colchester's 3 economic zones	Private sector initiative - redundancy in place for Rt 15 and Exit 16.	TBD	TBD	N	H	N/A	Underway
40	3.2.2	4.2.5.8.vi	Colchester	Water Storage Capacity Addition & Expanded Distribution System	Provide necessary fire storage capacity for growth center.	$1,500,000	20 to 300	80%	H	100%	completed
41	3.2.2	4.2.5.8.vi	Essex Town	New Police Station, permits design and construction	Construct new Police Station off Maple Street.	$7,100,000	0	Y	H	Capital Funds and Long term debt	completed
42	3.2.2	4.2.5.8.vi	Essex Town	Renovate Municipal Office Building at 81 Main Street - planning, design and construction	Expand municipal offices into area vacated by Police and refurbish.	$1,700,000	0	N	H	Capital Budget and existing Capital Funds	completed
43	3.2.2	4.2.5.8.vi	Jericho	Village water/wastewater	preliminary engineering study to develop options for creating water/sewer infrastructure in Jericho's 3 Designated Village Centers.	TBD	2	N	H	TBD	2015
44	3.2.2	4.2.5.8.vi	Jericho	Library improvements	Improve to be ADA compliant and add community center.	TBD	1	N	H	TBD	In progress
45	3.2.2	4.2.5.8.vi	Milton	Milton 4D Streetscape Improvements: Defining Downtown from the Diner to the Dam	this project invests in lighting, street trees, sidewalk improvements, and wayfinding/placemaking signage along US Route 7 in the Town Core.	$2,300,000	50	N	H	Seek grants, loans, and local funding, TIF	ongoing
46	3.2.2	4.2.5.8.vi	Richmond	New Water Tower	The steel water storage tank built in 1969 is deteriorating and requires replacement. This is the sole water storage tank for the Richmond water system. Additionally the needs of the water system have changed requiring a larger tank with more elevation.	$1,500,000	0	N	H	State and Local	completed
47	3.2.2	4.2.5.8.vi	South Burlington	City Center Development	Assure there is an adequate inventory of "develop-able" sites with the necessary infrastructure to promote retention and expansion of existing firms and the recruitment of new-startup operations in strategic business clusters in the region and workforce housing.	$88,000,000	2,000	N	H	Property Taxes, TIF, Private	In progress
48	3.2.2	4.2.5.8.vi	South Burlington	Market Street	Assure there is an adequate inventory of "develop-able" sites with the necessary infrastructure to promote retention and expansion of existing firms and the recruitment of new-startup operations in strategic business clusters in the region and workforce housing.	$7,200,000	111	Y	H	Fed, Property Taxes, TIF, Private	In progress
49	3.2.2	4.2.5.8.vi	South Burlington	Community Center	Expanded facility to meet community programming needs	$7,500,000	4	N	L	Federal/State/Local	2018
50	3.2.2	4.2.5.8.vi	St. George	New Town Center Designation/Master Planning	Village Center master planning is in nascent stage in conjunction w/ ongoing development applications; no funding or professional assistance yet acquired.	$20,000	TBD	N	H	municipal funds and grants	2013
51	3.2.2	4.2.5.8.vi	St. George	Expansion of Village Center Municipal Septic System	to enable concentrated growth center. Town has funded feasibility study- construction costs are undetermined (To be based on final design).	TBD	TBD	N	H	municipal funds and grants	2013
52	3.2.2	4.2.5.8.vi	VHFA	Affordable housing program	Assist municipalities with to develop improved bylaws and programs to create more affordable housing.	$30,000	0	Y	H	ECOS funding	completed
53	3.2.2	4.2.5.8.vi	Westford	Upgrade/Expand Municipal parking area	provide an adequate number of parking spaces to serve the town office.	$15,000	0	N	H	Local	in progress - 1/2 completed
54	3.2.2	4.2.5.8.vi	Westford	Form-based code	for the Village center.	TBD	0	Y	H	Local	In progress

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55	3.2.2	4.2.5.8.vi	CSWD, Burlington, Hinesburg	Relocate Burlington, Colchester and Hinesburg Drop-Off Centers	Build New Drop-Off Centers.	$1,300,000	1	N	H	Partially funded by CSWD. CSWD will match any grant funding.	2016 and ongoing
	3.2.2	4.2.5.8.vi	CSWD, Burlington, Hinesburg	Construct new relocated Burlington and Hinesburg Drop-Off Centers	Construct new Drop-Off Centers.	$1,000,000	1	N	H	Partially funded by CSWD. CSWD will match any grant funding.	2016 and ongoing
56	3.2.2	4.2.5.8.vi	Essex Junction	Essex Junction WWTF Combined Heat and Power	design and construct improvements to the Essex Junction Wastewater Treatment Facility combined heat and power generation system.	$750,000	0	Y	H	Fully by Village of Essex junction	completed
57	3.2.2	4.2.5.8.vi	CSWD	Develop Business and Location Plan for Drop-Off Center Program	Future Drop-Off Planning. Will likely be performed in-house with limited survey and Cadd assistance from consultants	$50,000	0	N	M	Not funded. CSWD will match any grant funding.	2016
58	3.2.2	4.2.5.8.vi	CSWD	Study Consolidated Collections - Design System, Develop RFP and Contracts	Consolidated Collections Study.	$150,000	2	N	H	Not funded. CSWD will match any grant funding.	TBD
59	3.2.2	4.2.5.8.vi	Hinesburg	Extension of Natural Gas Service	in Hinesburg up Richmond Road by Vermont Gas.	TBD	0	N	M	From Utility Provider (VT Gas)	TBD
60	3.2.2	4.2.5.8.vi	CSWD	Analysis of Alternative Waste Management Systems	Waste Conversion Study.	$100,000	0	N	M	Not funded. CSWD will match any grant funding	completed
61	3.2.2	4.2.5.8.vi	CSWD	Design & Permitting of Regional Landfill	New Regional Landfill in Williston, design presently on hold indefinitely.	$400,000	0	N	M	$300,000 budgeted; $100,000 in grants possibly needed	TBD
62	3.2.2	4.2.5.8.vi	CSWD	Design for HHW Facility - Future processes and needs	HHW Facility.	$25,000	0	N	H	Not funded. CSWD will match any grant funding.	2016
	3.2.2	4.2.5.8.vi	CSWD	Construction for HHW Facility Upgrades	HHW Facility upgrades construction.	$160,000	0	N	H	Not funded. CSWD will match any grant funding.	2016
63	3.2.2	4.2.5.8.vi	CSWD	Construction of Regional Landfill	New Regional Landfill in Williston, design presently on hold indefinitely.	$50,000,000	4	N	M	To be borrowed	TBD
64	3.2.2	4.2.5.8.vi	CSWD	Construction of Special Waste Management System	Special Waste & C&D Facility.	$1,000,000	1	N	M	Not funded. CSWD will match any grant funding.	TBD
65	3.2.2	4.2.5.8.vi	CSWD	Study Residential Organics for Future Planning	Residential Curbside Organics Study. Results used in planning curbside collection.	$60,000	0	N	H		completed
	3.2.2	4.2.5.8.vi	CSWD	Study Biosolids for Future Planning	Biosolids Study 10% Complete. Preliminary results being used for evaluating next step.	$300,000	2	N	M		In progress
66	3.2.2	4.2.5.8.vi	BSD with partners	Downtown parking garage on the campus of Edmunds School for the use of School, Champlain College and the community (BSD)	Underground facility with turf surface above to extend green area for School. Consider parking revenue as one source of funding.	$6,500,000	0-5	N	M	Not funded - consider revenue bond, public/private funding.	2016
67	3.2.2	4.2.5.8.ii	Burlington	Cherry Street Streetscape - Phase 2	Creating links from Battery Street at foot of Cherry Street down to Lake Street.	$23,000,000	0-100	N	M	TIF, public/private partnership	TBD
68	3.2.2	4.2.5.8.ii	Burlington	Realignment of Birchcliff Pkway and Sears Lane	Realigning the roads tofacilitate better, safer traffic connections.	$5-10,000,000	0-30	N	M	?	2015
69	3.2.2	4.2.5.8.vi	Burlington	City Hall Park (BCA/Parks)	Imagine City Hall Park master planning process completed; park slated for major reconstruction. Stimulate downtown business growth.	$2,500,000	TBD	N	M	Penny for Parks (PFP), TIF	2016
70	3.2.2	4.2.5.8.vi	Burlington	Transient Mooring Upgrades (Parks)	Existing mooring field requires upgrades. Expands waterfront economic activity.	$85,000	TBD	Y	M	N/A	Completed
71	3.2.2	4.2.5.8.vi	Burlington	Perkins Sea Wall Repair (Parks)	Existing wall failed in late summer 2012. Need for reconstruction.	$75,000	0	N	M	Penny for Parks (PFP)	Completed
72	3.2.2	4.2.5.8.vi	Burlington	Parks Signage Improvements (Parks)	Installation of improved entry signs & kiosks.	$20,000	0	Y	M	Penny for Parks (PFP)	Completed
73	3.2.2	4.2.5.8.vi	Burlington	Calahan Athletic Field Renovations (Parks)	Soil ammendment and field improvement to middle athletic fields.	$60,000	0	N	M	Penny for Parks (PFP)	Completed
74	3.2.2	4.2.5.8.vi	Burlington	Parks System Master Plan (Parks)	Development of a comprehensive parks master plan: inventory, assessment, community outreach, strategic plan.	$200,000	0	Y	M	Penny for Parks (PFP)	Completed
75	3.2.2	4.2.5.8.vi	Burlington	Leddy Arena Renovations (Parks)	Includes renovation of public restrooms, kitchen & snack shop improvements, ventilation & electrical upgrades.	$165,000	0	TBD	M	Capital Improvement Progam (CIP)	Completed
76	3.2.2	4.2.5.8.vi	Burlington	Leddy Arena Parking Lot Renovation (Parks)	Existing parking lot deteriorating and in need of major reconstruction.	$575,000	0	TBD	M	TBD	In progress
77	3.2.2	4.2.5.8.vi	Burlington	Waterfront North (CEDO)	Providing modern infrastructure to support the northern end of Burlington's waterfront including new road surfaces, sidewalks, streetlighting (increasing multi-modal access and public safety), stormwater, parking, skatepark and undergrounding of overhead utilities.	$7,500,000	0	Y	M	$2,000,000 TIF, other small grants and local resources.	In progress

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78	3.2.2	4.2.5.8.vi	Burlington	Public/Private lighting standards and implementation. (CEDO)	Develop lighting standards for energy efficiency, cost effectiveness and decrease light pollution. Costs for implementation are TBD.	$20,000 to develop standards	0	N	M	BED and other grants.	2013-25
79	3.2.2	4.2.5.8.vi	Burlington	Champlain Parkway Related Development (CEDO)	Identify appropriate development/redevelopment opportunities along Parkway route.	TBD	0-200	N	M	Private/public partnerships	2013-16
80	3.2.2	4.2.5.8.vi	Burlington	Intervale Heated Greenhouse (CEDO)	Build greenhouses on intervale land heated by excess heat from the McNeil Plant.	$1,500,000	40	N	M	Farm Investment	2015
81	3.2.2	4.2.5.8.vi	Burlington	Gilbane Smart Growth Center, Phase III (CEDO)	South End Tranit Center - This is an ongoing discussion on how best to utilize the site.	$65,000,000	100-500	N	M	Private/public partnerships	2015
82	3.2.2	4.2.5.8.vi	Burlington	YMCA	Redevelopment of current site.	$13,000,000	10	N	M	Capital campaign and donations	Ongoing
83	3.2.2	4.2.5.8.vi	Charlotte	Community wastewater for Charlotte village	examine feasibility.	TBD	TBD	N	M	TBD	TBD
84	3.2.2	4.2.5.8.vi	Essex Town	New Waterline to feed Susie Wilson Road, planning, design and construction	New connection with increased pipe size needed to provide adequate fire flows and pressures.	$190,000 to $250,000	0	N	M	Water user fees and bond vote	Study completed, will pursue in future yr.
85	3.2.2	4.2.5.8.vi	Essex Town	Sandhill Road Waterline Improvements Planning , design and construction	Increase waterline with 8 inch pipe to replace section of 3 inch piping and add pressure reducing valves.	$200,000	0	N	M	Water user fees and bond vote	Initial work in progress
86	3.2.2	4.2.5.8.vi	Huntington	Village wastewater service	study has been completed.	TBD	TBD	N	M	TBD	TBD
87	3.2.2	4.2.5.8.vi	Richmond	Village Subsurface Project	improve water and sewer lines on E Main and Bridge St.	$2,100,000	0	N	M	Local, State, Federal Transportation Funding	2017
88	3.2.2	4.2.5.8.vi	South Burlington	City Center Parking Decks	Construct 500 spaces to provide necessary infrastructure to facilitate business and residential development.	$12,000,000	190	N	M	TIF/Private	2017
89	3.2.2	4.2.5.8.vi	Westford	Town Salt & Salted Sand Shed	protect water resources from salt contamination.	$250,000	0	N	M	Local	TBD
90	3.2.2	4.2.5.8.vi	Westford	Westford Community Wastewater (large scale)	to serve the Village center. Follow-up to 2008 wastewater feasibility study.	$2,200,000	0	N	M	Fed/State/Local	TBD
91	3.2.2	4.2.5.8.ii	Burlington	Miller Community Recreation Center Sidewalk Improvements (Parks)	Pervious concrete was improperly installed at time of 2009 facility renovation. The pervious concrete has failed, does not drain, and is crumbling. Need for removal and installation of standard concrete.	TBD	25 to 50	N	L	TBD	completed
92	3.2.2	4.2.5.8.vi	Burlington	Boathouse Public Restroom Renovation (Parks)	Significant leaking has deteriorated existing facilities. Need for renovation.	$95,000	TBD	Y	L	TBD	2013
93	3.2.2	4.2.5.8.vi	Burlington	Waterfront Electrical Distribution Design (Parks)	Improvements needed to better support waterfront events.	$15,000	0	Y	L	Penny for Parks (PFP)	In progress
94	3.2.2	4.2.5.8.ii	Burlington, South Burlington	Airport Improvements - South End Development PHASE 5	Construction of New Cargo Area.	$5,250,000	TBD	N - Dependent on FAA reauth.	L	Anticipated 10% Local/State Match Dependent on FAA reauthorization	2019
95	3.2.2	4.2.5.8.ii	Burlington, South Burlington	Airport Improvements - South End Development PHASE 7	General Aviation/Corporate Taxiway & Apron.	$5,000,000	0 Beyond Contruction	N - Dependent on FAA reauth.	L	Anticipated 10% Local/State Match Dependent on FAA reauthorization	2018-2019 Multi-year project
96	3.2.2	4.2.5.8.vi	Colchester	Burnham Memorial Library Expansion	The current public community library has outgrown its space and is limited to what it can and should potentially offer to the public. Serving 60,000+ patrons.	$5,000,000	3	N	L	Friends of the Library & Library Trustees primary fundraising source	2020
97	3.2.2	4.2.5.8.vi	Colchester	Multi-Generational Community Recreation Center	Land secured; funding needed to build.	$5,000,000	20	N	L	TBD	TBD
98	3.2.2	4.2.5.8.vi	Essex Town	Highway Garage planning , design and construction Expansion	Expand existing space to accommodate all vehicles and repair activities.	$360,000	0	N	L	Capital Budget and existing Capital Funds	Post 6/18
99	3.2.2	4.2.5.8.vi	Essex Town	Library Expansion and Renovation, Planning , design and construction	Expand existing space to meet current needs.	$103,000	0	N	L	Capital Budget and existing Capital Funds	Post 6/18
100	3.2.2	4.2.5.8.vi	Essex Town	Painesville area sewers, construction	Install municipal sewers on Pinecrest Drive, Blair, portions of Pioneer and Ira Allen.	$700,000	0	N	L	Bond vote and local users	Post 2018
101	3.2.2	4.2.5.8.vi	Essex Town	Indoor Recreation Space study only	Prepare study on feasibility, cost, layout and location.	$30,000	0	N	L	Capital Budget and existing Capital Funds	TBD
102	3.2.2	4.2.5.8.vi	Essex Town	Historic Structure repairs, construction	Fort Ethan Allen Water Tower requires funds for preservation of structure.	$100,000	0	N	L	Existing Capital Funds and grants	2016
103	3.2.2	4.2.5.8.vi	Huntington	Village form-based code	draft has been completed. Dependent upon wastewater service being made available.	TBD	TBD	N	L	TBD	TBD
104	3.2.2	4.2.5.8.vi	South Burlington	New City Hall	Expanded facility to meet community needs for municipal services and municipal meeting space.	$6,300,000	7	N	L	Property Taxes	2018
105	3.2.2	4.2.5.8.vi	South Burlington	Library	Recreation facility serving community.	$8,900,000	12	N	L	Local	2018

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106	3.2.2	4.2.5.8.vi	Colchester	Waste Water Treatment & Service	For Mallets Bay and Exit 17 area - add one sentence description.	$30,000,000	TBD	N	TBD	TBD	TBD
107	3.2.2	4.2.5.8.ii	Williston	Taft Corner Grid Streets	construct local streets in Taft Corner area to improve circulation	$3,900,000	TBD	N	TBD	local impact fees, private funds, grants	TBD
108	3.2.2	4.2.5.8.vi	Williston	Water Storage Tank Expansion	Tank on Tower Lane needs to be replaced to a new location and brought up to standards	$870,000	TBD	N	TBD	$400,000 & Borrowing $470,000	2020
109	3.2.2	4.2.5.8.vi	Williston	Williston Entry-Level Housing.	Potentially develop a housing trust fund and/or projects with Champlain Housing Trust and Affordable Housing Task Force	$3,500,000	TBD	N	TBD	Buyer mortgages, VT Community Development Program; VT housing & Conservation Trust Fund; Habitat for Humanity	TBD
110	3.2.2	4.2.5.8.vi	Winooski	Winooski West-end Revitalization	Assist with homeownership and literacy	TBD	TBD	N	M	TBD	TBD
111	3.2.2	4.2.5.8.vi	Winooski	City Plan Update	update Plan to reflect revised principles	$20,000	0	N	H	MPG and municipal funds	In progress
112	3.2.2	4.2.5.8.vi	Winooski	Bylaw updates	make updates as appropriate for each district	$50,000	0	N	H	CCRPC, MPG and municipal funds	In progress
113	3.2.2	4.2.5.8.vi	Winooski School District	Winooski School District Renovations and Upgrades	TBD	$591,000	TBD	TBD	TBD	Municipal Funds	TBD
114	3.2.2	4.2.5.8.vi	Burlington	Miller Community Recreation Center Roof Renovation (Parks)	Facilty currently experiences serious, extensive leaking throughout building. Repair/replace existing roof; remove chimney.	TBD	0	TBD	TBD	TBD	TBD
115	3.2.2	4.2.5.8.vi	Burlington	Leddy Park Softball Renovation (Parks)	Existing facility has poor and limited drainage. Project includes installation of new drainage systems and field renovations.	$100,000	0	TBD	TBD	Penny for Parks (PFP)	completed
116	3.2.2	4.2.5.8.vi	CVE, Essex Junction	Champlain Valley Exposition (CVE) music pavilion/grandstand	Renovation & expansion	$8,000,000	TBD	TBD	TBD	TBD	TBD
117	3.2.2	4.2.5.8.vi	St. George/VTGas	Vermont Gas service	to enable concentrated growth center	TBD	TBD	TBD	TBD	Vermont Gas	TBD
118	3.2.2	4.2.5.8.vi	Underhill	Village designation for Underhill Center	Obtain Village Center Designation for the Center area.	TBD	N/A	N/A	TBD	TBD	completed
119	3.2.2	4.2.5.8.vi	Underhill	Rezoning of Underhill Flats, including the Jacobs parcel	In process via MPG. Rezoning voted down at Town Meeting. PC to determine pursuit.	$8,200	N/A	Y	TBD	N/A	TBD
120	3.2.2	4.2.5.8.vi	Underhill	Rezoning of Underhill Center	In process via MPG. Will also need water system Rezoning voted down at Town Meeting. PC to determine pursuit.	$8,200	N/A	Y	TBD	N/A	TBD
121	3.2.3	4.2.5.8.iii	CCRPC	Comprehensive Transportation Hazard Mitigation and Water Quality Program	Infrastructure protection and hazard mitigation, water quality planning through FEH Bylaw equivalent tracking to ANR, culvert mitigation and AOP planning	$90,000	0	Y	H	municipal match funds	ongoing
122	3.2.3	4.2.5.8.iii	CCRPC	Green Infrastructure Grant	Lead statewide effort to communicate guidance on green infrastructure techniques to municipalities through RPCs	$100,000	0	Y	H	regional planning and municipal match funds	completed
123	3.2.3	4.2.5.8.iii	Essex Town	Stormwater projects –planning, design and construction	Construct stormwater projects to meet MS4 permit and Flow Restoration Plans	$1,000,000	0	N	H	Existing Capital Funds and bond vote	2016 and beyond
124	3.2.3	4.2.5.8.iii	Westford	Huntley Road culvert	replace culvert	$110,000	0	N	H	Fed/State/Local	completed
125	3.2.3	4.2.5.8.vii	Winooski Natural Resources Conservation District	Connecting the Drops: A Water Story (ECHO Lake Aquarium and Science Center, Church St. Marketplace, and ArtsRiot)	The project includes a public art and education display in downtown Burlington where art, public participation, science education, and environmental stewardship will highlight stormwater's impact on Lake health and steps each of us can take to improve it.	$46,000	0	Y	H	$40,000 ECOS Grant, Local funding	completed and ongoing by Stream Team
126	3.2.3	4.2.5.8.iii	Essex Junction	Storm water Improvements	MS4 permit investments	TBD	0	N	L	TBD	TBD
127	3.2.3	4.2.5.8.iii	South Burlington	Storm water Improvements	Continue to comply with State Standards. Prepare for the implementation of the MS-4 Permits.	$50,000,000	0	N	H	Federal/State/Local	Ongoing
128	3.2.3	4.2.5.8.iii	Burlington	Oakledge Drainage & Paving Improvements (Parks)	Renovation of entrance roadway to improve deteriorating infrastructure and support recent stormwater drainage improvements	$30,000	0	TBD	TBD	Penny for Parks (PFP)	completed
129	3.2.4	4.2.5.8.i	Association of Africans Living in Vermont, Inc.	New American Food (Burlington School District – Food Services, Vermont Works for Women, Union Street Media, The Skinny Pancake, and The Intervale Center)	It will prepare unemployed refugee Reach Up (TANF) recipients, with limited English proficiency, for jobs in the food preparation and food processing industries through the 120-hour, 10-week FRESH food course. The AALV Employment Counselor job places graduates into employment opportunities that result in movement off welfare. In addition, there will be an increase in sales by refugee farmers of organic, locally grown crops.	$98,425	6	Y	VITAL	$50,000 ECOS grant, local funding	completed
130	3.2.4	4.2.5.8.iii	Burlington	Breakwater planning and construction	Breakwater to protect harbor from north and south winds	$7-10,000,000	0	N	H	TIF	2013

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131	3.2.4	4.2.5.8.vi	Richmond	Forests, Wildlife & Communities: Science to Action (Towns of Bolton, Jericho, Huntington, Vermont Natural Resources Council, Arrowwood Environmental, Vermont Fish & Wildlife Department, VT Forests, Parks & Recreation Department, and CCRPC)	This project is a comprehensive four-town natural resource inventory of wildlife habitat, wetlands, uplands, natural communities and working lands; technical assistance in the development of bylaws and non-regulatory conservation tools tailored to our communities' needs to provide permitting predictability, protect, restore and enhance critical habitat, and advance the goals specified in each town's plan; and engagement of property owners and other citizens in all aspects of the project.	$98,800	0	Y	H	$40,000 ECOS Grant, State, Local	completed
132	3.2.4	4.2.5.8.iii	Burlington	Stormwater outfall at foot of College Street improvements	Extending the outfall further into the lake to diminish the creation of silt build up and scouring that clouds the harbor	$200,000	0	N	M	TIF	2015
133	3.2.4	4.2.5.8.vi	Burlington	Burlington Food Enterprise Center (CEDO)	Finalize Environmental remediation of the site (CAP) and possibly sell property to Intervale Center for future redevelopment.	$4,300,000	15-20	N	M	Public/private partnerships, City	2015
134	3.2.4	4.2.5.8.vi	Essex Town	Study for use of Buildings and grounds at the Tree Farm	Investigate alternative uses for the property and associated costs	$15,000	0	N	M	Capital funds and planning grant	TBD
135	3.2.4	4.2.5.8.vi	CVE, Essex Junction	Champlain Valley Exposition Agricultural Center	create an agricultural center	$8,000,000	TBD	TBD	TBD	TBD	TBD
136	3.2.5	n/a	United Way	Community Driven Transportation for Seniors & Adults with Disabilities (SSTA, CCTA, Champlain Area Agency on Aging, UVM Center for Aging, and Fanny Allen Corporation)	The program will create a community-driven transportation service model that provides low-cost transportation services to medical appointments and non-medical rides for seniors and adults with disabilities, especially those with no other means of transportation.	$80,000	1	N	VITAL	$20,000 ECOS Grant, Local	completed and ongoing
137	3.2.5	n/a	all coalitions (see list below)	SUBSTANCE ABUSE,TOBACCO	Varying mix of policy, systems, and environmental strategies in school and community settings.	other funding	n/a	Y	H	VDH	ongoing
138	3.2.5	n/a	BPHC	OBESITY-Enhance mixed use development	Complete assessment in contract with Local Motion to identify factors that limit mixed use development, present assessment results to the community	BPHC $40,000, CY $10,000, MCYC $20,000, WCSPC $12,165	n/a	Y	H	VDH	completed
139	3.2.5	n/a	BPHC	OBESITY-Improve access to parks, recreation facilities, and open spaces	Complete assessment in contract with Local Motion to determine town support for and resident access to local parks, recreation facilities, and open spaces, present assessment results to the community.	same as above	n/a	Y	H	VDH	completed
140	3.2.5	n/a	BPHC, WCSPC, CHIPS	TOBACCO-Provide education to community leaders about effects of tobacco retail outlet number, location, type, and/or density.	Work with community leaders to promote evidence based practices in their community concerning tobacco retail outlets.	same as above	n/a	Y	H	VDH	ongoing
141	3.2.5	n/a	BPHC, CY	SUBSTANCE ABUSE-Strategies to reduce underage drinking and drug abuse	Includes conducting assessments to providing education to the community about effects of alcohol retail outlet number, location, type, and/or density, and other strategies.	Total Alcohol Prevention Award FY13: BPHC $40,000, CY $40,000	n/a	Y	H	VDH	ongoing
142	3.2.5	n/a	BPHC, CY (Hinesburg and St. George only for this strategy), MCYC, WCSPC	OBESITY-Improve access to healthy foods	Conduct assessments identifying barriers to access to healthy foods, present assessment results to the community. WCSPC: Farm stand at community center in collaboration with Association of Africans Living in Vermont.	same as above	n/a	Y	H	VDH	completed
143	3.2.5	n/a	BPHC, CY, MCYC	OBESITY,SUBSTANCE ABUSE-Healthy Retailers	Support local convenience stores to make small changes to promote healthy foods and limit tobacco and alcohol advertising.	Total Healthy Retailer Awards FY13: BPHC $10,000, CY $10,000, MCYC $10,000	n/a	Y	H	VDH	completed
144	3.2.5	n/a	BPHC, CY, MCYC, CHIPS, WCSPC	TOBACCO-Reduce second hand smoke exposure	Provide education about various smoke-free policies for post-secondary campuses, public events, and public parks, beaches, and other open air spaces. Example: Breathe Easy Campaign in Burlington.	same as above	n/a	Y	H	VDH	Ongoing
145	3.2.5	n/a	BPHC, MCYC	OBESITY-Increase pedestrian and bicycle friendly communities	Complete walkability and bikability assessments, present assessment results to the community.	same as above	n/a	Y	H	VDH	ongoing - partially complete

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146	3.2.5	n/a	Burlington Partnership for a Health Community (BPHC), Connecting Youth (CY), Milton Community Youth Coalition (MCYC), Winooski Coalition for a Safe and Peaceful Community (WCSPC)	TOBACCO-Provide education to community leaders about tobacco advertising	Provide education about tobacco product placement.	BPHC $45k, MCYC $45k, WCSPC $32k, CHIPS $45k	n/a	Y	H	VDH	ongoing
147	3.2.5	n/a	Burlington School District	SUBSTANCE ABUSE-School-Based Substance Abuse Services Grant	Student Assistance Professional funding to provide substance abuse prevention, treatment, and referal.	Total Grant Award FY13: $40,000	n/a	Y	H	VDH	ongoing
148	3.2.5	n/a	Hunger Free Vermont	Eat Well, Age Well (American Association of Retired Persons, United Way, Champlain Valley Agency on Aging, State of Vermont Department for Children and Families)	This project will connect committed and trained United Way volunteers aged 55+ with Vermonters aged 60+ who may be eligible to participate in 3SquaresVT.	$20,000	0	Y	H	$15,000 ECOS Grant, Local	completed
149	3.2.5	n/a	most all munitipalities	SUBSTANCE ABUSE	law enforcement START activity (Stop Teen Alcohol Risk Team).	other funding	n/a	Y	H	VDH	ongoing
150	3.2.5	n/a	most all schools	SUBSTANCE ABUSE,TOBACCO	varying mix of in-school prevention groups (eg LEAD = Chittenden South, START = Burlington), Student Assistance Professionals (SAP's), Prevention Coordinators,teach d/a in heath ed.	other funding	n/a	Y	H	VDH	ongoing
151	3.2.5	n/a	most coalitions (see list below)	FAMILY-support parents,youth	Safe Home Initiative,Parent Up VT, field trips, mentors.	other funding	n/a	Y	H	VDH	In progress
152	3.2.5	n/a	Public School Districts and Supervisory Unions	MEDICAL,DENTAL,MENTAL HEALTH-Early Periodic Screening Diagnostic and Treatment- Medicaid Administrative Claiming Reimbursements	Reimbursements for Medicaid promotion, outreach, and connection to medical, dental, and mental health services by school health professionals. Funds must be reinvested into school for population-based prevention and wellness programs and positions serving students.	$375,000	n/a	Y	H	VDH	2013
153	3.2.5	n/a	Various Public Schools	TOBACCO-VKAT/OVX	School-based youth tobacco prevention programs.	$25,000	n/a	Y	H	VDH	ongoing
154	3.2.5	n/a	Westford	emergency shelter at Westford School	emergency shelter at Westford School.	TBD	0	Y	H	Local	completed
155	3.2.6	4.2.5.8.iv	Burlington	Vermont Aviation Center (CEDO)	Working with VTC, Heritage Aviation and the Airport to establish a facility housing the Burlington Aviation Tech Program, Vermont Flight Academy and allowing room for VTC to expand their future aviation program offerings.	$8,300,000	25-30	N	H	TBD	In progress
156	3.2.6	4.2.5.8.iv	Champlain College	Health Information Technology Program	Development funds are being sought by Champlain College to offset tuition and/or for additional curriculum development to support the growing needs of the healthcare industry.	$300,000	0	N	H	Champlain College	TBD
157	3.2.7	4.2.5.8.vii	CCRPC	Annual Indicator Report	Lead partnership in producing an Annual Report on ECOS Plan implementation.	$90,000	0	N	H	reg'l plng, MPO, muni match funds	ongoing
158	3.2.7	4.2.5.8.vii	Colchester	24/7 Municipal Government	with capacity to issue permits and collect taxes and fees on line.	$200,000	$0	Y	H	Municipal	In progress
159	3.2.7	4.2.5.8.vii	Colchester, Essex, Milton, Winooski	Partnership Revolving Loan Fund Capitalization	Business loans for small start-up businesses that are unable to secure capital from other sources.	$490,000	1 to10	Y	H	VT Community Development Program.	In progress
160	3.2.7	4.2.5.8.vii	Burlington	Fire station consolidation (CEDO)	This is an ongoing conversation related to Gateway Block Redevelopment.	TBD	0-50	N	M	TIF	TBD
161	3.2.1	4.2.5.8.i	Essex Town, Essex Village, Williston, GBIC, CCRPC	Infrastructure utilization, access or acquisition plan	The creation of a plan to examine the future utilization, access, or acquisition of the already existing infrastructure on the IBM Vermont Campus. Infrastructure to include, but not be limited to: water, wastewater, road, bridge, electric transmission, etc.	$100,000		N	VITAL	CDBG, State	TBD
162	3.2.1	4.2.5.8.iv	GBIC	Chittenden County workforce development needs	Work with area employers, higher education institutions, and workforce development professionals to create programs and curriculum to meet the needs of manufacturing, technology, and value-adding employer workforce needs.	$10,000	TBD	N	H	GBIC Funds; local businesses; business organizations	In Progress

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163	3.2.2	4.2.5.8.i	Burlington CEDO	Downtown mall redevelopment	To redevelop the downtown mall to include significant residential infrastructure and parking to complement new commercial opportunities. Design planning has begun.	$200,000,000	TBD	N	H		2016
164	3.2.1 3.2.2	4.2.5.8.i 4.2.5.8.v	University of Vermont	UVM STEM Building	Development of a University building designed to meet the specific needs of classes to teach Science, Technology, Engineering, and Mathematics related courses. Under construction.	$106,000,000	TBD	N	H		In Progress
165	3.2.5		University of Vermont (University of Vermont Medical Center)	UVM Medical Center Inpatient Facility	Development of a new inpatient facility to serve the population of Northwest Vermont. Design completed, in permit process.	$187,000,000	TBD	N	H		2016
166	3.2.2		Milton	Milton Hourglass Intersection	this project invests in an area planned for growth and would address a high accident intersection at US7, Middle and Railroad Street by creating an hourglass-shape intersection scoped by the RPC.	costing in progess, at least 1.2 million.	TBD				In Progress
167	3.2.4		Westford	Conserve Working Lands	draft land use and development regulations to conserve working lands	$5,000					In Progress
168	3.2.2 3.2.3		Westford	Westford Community Wastewater (small scale)	to serve municipal & community facilties. Follow up to 2014 site-specific wastewater feasiblity study	$60,000			V		In Progress
169	3.2.2		Westford	formalize on-street parking in front of brick meeting house	upgrade, pave and strip parking are in front of bmh	$15,000					2020
170	3.2.2		Westford	Pedestrian infrastructure	construct sidewalks connecting public facilities (common, library, town office, post office, school, meeting house, etc.)	$250,000					2017
171	3.2.4		Westford	preserve significant natural resources	after conducting a natural resource inventory, draft regulations to preserve significant natural resources through forestry districts and/or conditional use review	$30,000			V		2017
172	3.2.4 3.2.5		Westford	westford-milton rd recreation	identify the recreation potential/possiblities of the westford milton road property and utlize property accordingly	TBD					2016
173	3.2.5		Westford	common to school river path	create a path from the common to the school along the Browns River.	$10,000	0	Y	H	local / state	In Progress
174	3.2.2		Hinesburg	Highway Garage	planning, design and construction	TBD					2016
175	3.2.2		Hinesburg	zoning bylaw update	zoning rewrite to make them shorter, simpler and easier to understand	$35,500				local/state	2016
176	3.2.5		VDH - Burlington Di	Health Impact Assessment	Assessment potential positive and negative affects of transportation and other projects or policies on the health of residents.		n/a	Y	H		Completed anc
177	3.2.2		Jericho	Jericho Corners pedestrian connection - scoping study	Approved scoping study will evaluate alternatives for creating a safe pedestrian connection between several residential developments along Lee River Rd and Jericho Corners VCTR on Route 15. Will need future implementation funds. Will likely request TA from CCRPC working with our trails committee	Scoping $27K Construction TBD	0	Y		Bike/Ped Grant Program	In Progress
178	3.2.2		Jericho	Commercial District access management	Hire consultant to conduct outreach and provide access management recommendations that could be employed in the Commercial District to reduce the appearance of sprawl, improve public safety, and integrate this district with the adjacent Riverside designated Village Center District	$20K	0	N			Fall 2015
179	3.2.2		Jericho	Master Plan and Form-based Code	Created a Master Plan and Form-based Code for the Riverside/Underhill Flats Village Center, creating a template for future commercial and residential growth in this designated VCTR	$70,000	0	Y		ECOS funding, MPG Grant	Completed
180	3.2.4		Jericho	Natural Resources Regulatory and Town Plan Updates	Conservation Commission and Planning Commission are working collaboratively to incorporate new inventory data from the ECOS S2A project into new overlay definitions, new map resources, protections for wildlife corridors, and regs for reducing forest fragmentation	TBD	0	Y			In progress

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181	3.2.4		Jericho Conservatio	Jericho Wetlands Map	Conservation Commission would like to create and maintain going forward, a Jericho Wetlands Map of previously unmapped wetlands and vernal pools, for reference in the Town Plan and Regulations. This data was collected during the ECOS S2A project, and needs to be put into map form.	TBD	0	N			2015
182	3.2.2		Richmond	Jolina Court Interim Zoning	Interim Zoning adopted for the area around the abandoned Creamery building to increase redevelopment flexibity.	n/a	n/a	n/a	n/a		In Progress
183	3.2.2		Richmond	New Town Plan	The process of developing a new town plan will start soon, with the recent annoucement of MPG funding. One componet of the process will include a specific density+village growth workshop, flood resiliency workshop, .	$15,000 +	n/a	Y	VITAL	State, Local	In Progress
184	3.2.2		Richmond	Streamline municipal permit process	Increase coordination of process of issuing local approvals and increase awareness of State permit requirements for applicants.	unknown	unknown	N	H		TBD
185	3.2.3		Richmond	Richmond Draft Flood Hazard Overlay Dsitrict Regulaitons and Post Flood Procedures	Draft guidance document to asssit in the adminsitration of the flood regulations and includes a post-flood procedure to guide the Adminstrative Officer in communicating permit requirements to flood-damaged property owners. Document includes copies of "how to" guides to help property owners make buildings less suseptible to flood damages and increase prepardness.	n/a	n/a	Y	M		
186	3.2.2		Richmond	Property Assessed Clean Energy	Created PACE District, implemented in August 2013					N/A	In progress
187	3.2.2		CCRPC and Richmond	VT RT 2 Bicycle and Pedestrian Scoping Report	Develop a plan to link the village center to transit stop at the State-owned Park and Ride at I-89 Exit 11 by way of multi-use path.	$40,000/$5,000,000		Y			Completed
188	3.2.2		South Burlington	Public-pirvate partnerships including UVM Medical Center Facilities	Coordinate with major employeers such as UVM Medical Center and provide multi-modal transportation			N	M	Federal, State, Local, Priv	In Progress
189	3.2.2		South Burlington	Williston Road Network Assessment Ph I & II	Transportation network analysis for the City Center / Exit 14 area		0	N	H	Local, CCRPC	In Progress
190	3.2.2		South Burlington	Kimball / Kennedy / Tilley area network study	Transportation network analysis for the Kimall / Kennedy / Tilley Dr area for projected future development		0	N	M	Federal, State	In Progress
191	3.2.2		South Burlington	Chamerlin Neighborhood / Airport area Plan	Develop short-and long term land use and transpotation plan for neighborhood adjancent to BIA	$150,000	0	Y	H	Local, State, CCRPC	In Progress
192	3.2.2		South Burlington	City Center Affordable Housing	Advance public-private partnerships to develop affordable housing in City Center			N	H	Federal, State, Private Sector, Local	In Progress
193	3.2.2		South Burlington	SB Landfill Solar Array	Public-Private partnership to install solar array on City-owned capped landfill			N	M	Local, Private Sector, housing non-profits	In Progress
194	3.2.4		South Burlington	Strategic land conservation	Acquire and/or conserve land in identified priority conservation areas			N	M	Local, State	In Progress
195	3.2.5		South Burlington	City Parks and Recreation Path upgrades	Improve ADA accessibility of existing parks; develop park amenities in undeveloped parks, fill gaps in city's recreation path network			N	M	Local, State, Federal	In Progress
196	3.2.7		South Burlington	City Center Affordable Housing	Advance public-private partnerships to develop affordable housing in City Center					Local, private sector, non-profits	In Progress
197	3.2.7		South Burlington	South Burlington TIF implementation	Complete TIF Financing plan, initiate project development					Local, State, Federal, Private sector	In Progress
198	3.2.7		South Burlington	Review statewide education financing	Review and implement improvements to state system for financing education					State	In Progress
	3.2.2	4.2.5.8.ii	Municipalities, CCRPC, State	Brownfield eligible projects	state and federally eligible brownfield projects	TBD		N	H	local, state, federal	Ongoing
199	3.2.3		Burlington	Burlington Riverside/East WWTP upgrade*	Possible upgrade needed to meet TMDL targets. This plant is currently at 90% of the proposed TMDL phosphorus load.	$3,540,220		N			TBD
200	3.2.3		Burlington	Burlington North WWTP Upgrage*	Possible upgrade needed to meet TMDL targets. This plant is currently at 59% of the proposed TMDL phosphorus load. North Plant began optimizing in August 2015, thus 2015 load for those plants is reduced from previous years.	$3,540,220		N			TBD

2015 ECOS/CEDS Project List

#	ECOS Strategy	EDA goal	Municipality/ Sponsor	Project Name (Champion or Partners)	Description/Comments	Estimated Cost	Expected Job Creation (post construction)	Fully Funded Y/N	Priority VITAL/ H/M/L	50% Local Match Source(s)	Possible Start Date
201	3.2.3		Burlington	Burlington Main WWTP Upgrage*	Possible upgrade needed to meet TMDL targets. This plant is currently at 110% of the proposed TMDL phosphorus load. Main Plant began implementing additional chemically based phosphorus removal in June 2015.	$24,030,227		N			TBD
202	3.2.3		Essex Junction	Essex Junction WWTP Upgrade*	Additional capacity may be needed over the long term to meet TMDL phosphorus reduction requirements. The WWTP is currently at 25% of its phosphorus load after a $15 million refurbishment. Over the long term, $1,200,000 may need to be invested to maintain the TMDL.	$1,200,000					TBD
203	3.2.3		Global Foundaries	Global Foundaries WWTP upgrade*	Possible upgrade needed to meet TMDL targets, though currently at 30% of phosphorus load on TMDL list. TMDL still lists a potentiallong-term cost.	$4,110,000					TBD
204	3.2.3		Richmond	Richmond WWTP upgrade*	Possible upgrade needed to meet TMDL targets, though currently at 17% of phosphorus load on TMDL list. TMDL still lists a potential long-term cost.	$1,620,150					TBD
205	3.2.3		South Burlington/A	South Burlington Airport Park*	Possible upgrade needed to meet TMDL targets. TMDL lists currently at 93% of phosphorus load, though no cost estimate included.	?		N			TBD
206	3.2.3		Winooski	Winooski WWTP upgrade*	Possible upgrade needed to meet TMDL targets. TMDL lists currently at 130% of phosphorus load.	$7,052,897		N			TBD
207	3.2.3		Hinesburg	Hinesburg WWTP upgrade*	Possible upgrade needed to meet TMDL targets, though currently at 78% of phosphorus load on TMDL list. TMDL lists a potential long-term cost.	$7,800,000		N			TBD
208	3.2.3		Shelburne	Shelburne #1 WWTP upgrade*	Possible upgrade needed to meet TMDL targets. TMDL lists currently at 78% of phosphorus load, though no cost estimate included.	?		N			TBD
209	3.2.3		Shelburne	Shelburne #2 WWTP upgrade*	Possible upgrade needed to meet TMDL targets. TMDL lists currently at 79% of phosphorus load, though no cost estimate included.	?		N			TBD
210	3.2.3		South Burlington Ba	South Burlington Bartlett Bay WWTP upgrade*	Possible upgrade needed to meet TMDL targets. TMDL lists currently at 80% of phosphorus load, though no cost estimate included.	?		N			TBD

* = As identified in Table 9 of EPA's *Draft* Phosphorus TMDLs for Vermont Segments of Lake Champlain, dated August 14, 2015. Current loads updated from Essex Junction and Burlington.