

2023 Metropolitan Transportation Plan

Introduction

The Chittenden County Regional Planning Commission (CCRPC) serves as the region's federally designated Metropolitan Planning Organization (MPO) and is responsible for comprehensive and collaborative transportation planning involving municipalities, state and federal agencies and other key stakeholders in Chittenden County. The CCRPC works to ensure implementation of the regional transportation plan and provides technical and planning assistance to its member municipalities, and the Vermont Agency of Transportation (VTrans).

As a designated MPO, the CCRPC oversees transportation planning and programming of the Federal-aid Highway Funds dollars designated for the Chittenden County and is required to prepare and update the following planning documents that detail the investments and planning activities in the region. These include:

Metropolitan Transportation Plan (MTP): Updated every five years, the MTP sets out a vision for the development of the region's transportation infrastructure over the next twenty years. It includes goals and objectives, analysis of regional trends and planned improvement projects throughout the county in all modes of transportation. The MTP is the primary tool that the CCRPC uses to plan for transportation needs within the metropolitan area and recommend solutions based on anticipated funding availability over a minimum 20-year horizon.

Transportation Improvement Program (TIP): The TIP is a prioritized, fiscally constrained, and multi-year list of federally funded, multimodal transportation projects and operations in Chittenden County. The TIP must cover at least a four-year program of projects and be updated no less frequently than every four years. In addition, projects in the TIP must be prioritized at the regional level and have clearly identified funding sources. All transportation projects, programs, and operations receiving federal funds in Chittenden County must be authorized through the CCRPC TIP process. The exceptions are federal airport funds for Burlington International Airport, which are not subject to the CCRPC's prioritization process, but are listed in the TIP for information and coordination purposes.

Unified Planning Work Program (UPWP): Updated annually, the UPWP summarizes the transportation planning activities of the CCRPC Transportation planning staff, its member agencies and other transportation and planning agencies conducting work in the region.

Public Participation Plan (PPP): The PPP establishes a methodology for effective public involvement and lays out the steps the CCRPC will take to reach out and involve residents in decisions affecting land use and transportation policies and investments in Chittenden County. The latest PPP was adopted in 2014 and amended in 2017. The CCRPC is planning to update the plan in 2023/2024.

What is an MPO?

The U.S. Department of Transportation requires every metropolitan area with a population of over 50,000 to establish a designated Metropolitan Planning Organization (MPO) to qualify for the receipt of federal highway and transit funds.

ABOUT THE METROPOLITAN TRANSPORTATION PLAN

The MTP is the region's principal transportation planning document that sets regional transportation vision and goals. It includes strategies and projects that address transportation needs that lead to the development of an integrated, intermodal transportation system that facilitates the efficient movement of people and goods; and support livable, equitable, and healthy communities.

As mandated by federal regulations, the MTP must both articulate and work towards the region's comprehensive long-range land use plans, development objectives, and overall social, economic, environmental, system performance and energy conservation goals and objectives. It should also be consistent with the statewide transportation plan. The MTP looks out a minimum of 20 years into the future and is updated every five years. Development of the MTP requires extensive outreach and engagement with partners, interested parties, and the public.

Federal regulations per 23 CFR 450.324(f) mandate that the MTP includes, at a minimum, the following:

1. The current and projected transportation demand of persons and goods in the metropolitan planning area over the period of the transportation plan;
2. Existing and proposed transportation facilities (including major roadways, public transportation facilities, intercity bus facilities, multimodal and intermodal facilities, nonmotorized transportation facilities (e.g., pedestrian walkways and bicycle facilities), and intermodal connectors) that should function as an integrated metropolitan transportation system, giving emphasis to those facilities that serve important national and regional transportation functions over the period of the transportation plan.
3. A description of the performance measures and performance targets used in assessing the performance of the transportation system.
4. A system performance report and subsequent updates evaluating the condition and performance of the transportation system with respect to the performance targets.
5. Operational and management strategies to improve the performance of existing transportation facilities to relieve vehicular congestion and maximize the safety and mobility of people and goods;
6. Assessment of capital investment and other strategies to preserve the existing and projected future metropolitan transportation infrastructure, provide for multimodal capacity increases based on regional priorities and needs, and reduce the vulnerability of the existing transportation infrastructure to natural disasters.
7. Transportation and transit enhancement activities, including consideration of the role that intercity buses may play in reducing congestion, pollution, and energy consumption in a cost-effective manner and strategies and investments that preserve and enhance intercity bus systems, including systems that are privately owned and operated, and including transportation alternatives and associated transit improvements, as appropriate;
8. A discussion of types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the metropolitan transportation plan. The discussion may focus on policies, programs, or strategies, rather than at the project level. The MPO shall develop the discussion in consultation with applicable Federal, State, and Tribal land management, wildlife, and regulatory agencies. The MPO may establish reasonable timeframes for performing this consultation;

9. A financial plan that demonstrates how the adopted transportation plan can be implemented.
10. Pedestrian walkway and bicycle transportation facilities in accordance with [23 U.S.C. 217\(g\)](#).

The MTP is part of the overall metropolitan transportation planning process and therefore must provide for consideration and implementation of projects, strategies and services that will address the following factors:

1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
2. Increase the safety of the transportation system for motorized and non-motorized users;
3. Increase the security of the transportation system for motorized and non-motorized users;
4. Increase accessibility and mobility of people and freight;
5. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
7. Promote efficient system management and operation;
8. Emphasize the preservation of the existing transportation system;
9. Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation; and
10. Enhance travel and tourism.

The 2023 MTP incorporates by reference two plans that were adopted by the CCRPC Board. These are: 1) Regional Active Transportation Plan **adopted January 18, 2023** (<https://www.ccrpcvt.org/our-work/our-plans/regional-bikeped-plan/>); and 2) 2022 Regional Park and Ride Plan adopted October 19, 2022 (https://studiesandreports.ccrpcvt.org/wp-content/uploads/2022/09/Park_Ride_Plan_Update_2022_final-1.pdf).

Our Region at a Glance

Chittenden County is located in northwestern Vermont between Lake Champlain and the highest peaks of the Green Mountains. The County's nearly 350,000 total acres have a rich diversity of landscapes: forests, farms, water bodies, small cities, suburban areas, and villages. Founded in 1787, Chittenden County has about 168,000 residents living in 19 municipalities that range in size from 43 to almost 40,000 residents. The County is the heart of the Burlington – South Burlington Metropolitan Statistical Area (the economic engine of Vermont); home to the State's largest higher education institution, health care facility, and private sector employer; and nationally recognized as having an outstanding quality of life.



Population & Diversity: The total population in Chittenden County increased from 156,545 to 168,323; an increase of 11,778 or 7.5% from 2010 to 2020. While the population of people who identify as white alone remained the largest race or ethnicity group, this population increased by only 0.3% or 32 people. In aggregate, 99.7% of the population growth or 11,746 more people identified as Hispanic (of any race), Black/African American, Asian, American Indian, or Native Hawaiian in 2020 than in 2010, accounting for virtually 100% of the population growth over the last 10 years.



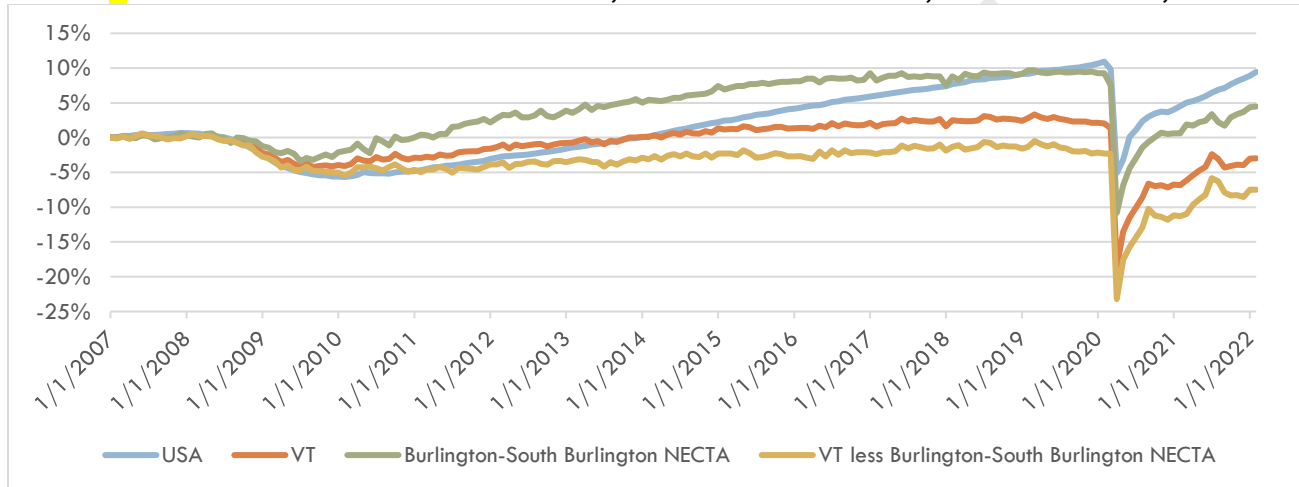
Smart Growth: While development in existing communities can be difficult, infill in the right places has positive benefits of increased inclusivity and economic strength. The most recent land use data (2016-2020) indicates that Chittenden County has exceeded its 2018 ECOS Plan goal of 80% of development occurring in planned growth areas with 87% of new development going into these areas.

Employment: There are fewer folks working in Chittenden County as of March 2022 than before the COVID-19 pandemic, and the labor pool is extremely tight. Employment is 92,572 employees compared to 98,208 prior to the pandemic in February 2020. The labor force is 94,094 individuals compared to 100,010 in Feb 2020. The number of unemployed individuals continues to decline. The unemployment rate is very low at 1.6%. These data

reflect what has been deemed nationally as the “great resignation” where people have left their jobs for different opportunities or left the workforce altogether for reasons including a lack of childcare.

The employment graph shows employment recovery from the lows of the pandemic, which is still not back to the level of employment pre-pandemic. Both the region, and more so the State, are lagging behind the national recovery.

FIGURE ? – CHANGE IN NON-FARM EMPLOYMENT, SEASONALLY ADJUSTED, SINCE JANUARY 1, 2007



Source: All Employees, Total Nonfarm, Thousands of Persons, Monthly, Seasonally Adjusted; Federal Reserve Economic Data

Natural and Cultural Resources: Chittenden County is known for its natural beauty, historic and cultural resources, and recreational opportunities. It lies between Lake Champlain to the west and the Green Mountains to the east. The terrain is characterized by lowlands in the west, including a few islands and bay inlets in Lake Champlain, and mountains in the east, most prominently Mount Mansfield, Vermont’s highest mountain.

As one of the most rural states in the country, the landscape is dotted with farmland, orchards, and forests. The natural environment offers many year-round recreational opportunities including bicycling, swimming, boating, hiking, skiing, and many other activities.



Transportation Vision and Goals

VISION:

A regional transportation system that is safe, efficient, reliable, and resilient; provides for interconnected and sustainable mobility choices in support of livable, equitable, and healthy communities; addresses the climate crisis; and supports the economy of the region.

GOALS & OBJECTIVES

Safety: Enhance safety for all users of the transportation system and reduce the number of fatalities and serious injuries.

- Address safety issues at high crash locations in the county
- Use a Safe System Approach to planning

Livable and Healthy Communities: Promote compact growth and invest in a multimodal transportation system that supports livable, equitable, vibrant, and healthy communities.

- Encourage smart growth with 90% of new housing built in areas planned for growth (see Map ?)
- Improve transit services in the county and encourage housing growth along transit trunk routes and commuter stops
- Improve public health by providing for a safe, interconnected, and efficient walking & biking network as well as viable and convenient transit options

Mobility & Efficiency: Improve the efficiency, reliability, and connectivity of the transportation system for users of all ages and abilities regardless of their mode of transportation.

- Create a safe and efficient multimodal network that supports mode shift from single occupancy vehicle travel to other modes, and overall reduction in vehicles miles traveled (VMT) in the county
- Expand walking and biking infrastructure and provide interconnection with the region's transit system
- Improve transit services in the county and beyond
- Support Transportation Demand Management (TDM) programs and partners
- Improve operational efficiency, manage recurring congestion, and maintain reliable travel times on our transportation system

Equity: Incorporate equity in all aspects of transportation planning and programming in the county.

- Prioritize transportation investments and land use policy changes that benefit rather than burden Title VI and Environmental Justice (EJ) communities
- Engage people from historically excluded and traditionally underserved populations in meaningful conversations and facilitate their participation in transportation planning processes
- Incorporate recommendations from VTrans' Transportation Equity Framework

Environment and Resilience: Establish a resilient transportation system that minimizes climate impacts resulting from the transportation sector.

- Reduce greenhouse gas emissions associated with fossil fuels used in transportation to meet state and regional targets by promoting a shift away from gas/diesel to electric vehicles or other low emission fuel options
- Minimize the effects of transportation on water quality
- Improve the ability of our transportation network to withstand and recover from extreme weather events

Economy: Improve the transportation network to promote economic vitality in the region.

- Invest in the transportation system to support anticipated economic growth in the county
- Accommodate freight and goods movement in identified freight hubs and intermodal facilities
- Consider economic equity when making investment decisions

Existing Transportation System: Preserve the condition and performance of the existing multimodal transportation network.

- Maintain the transportation system in a state of good repair

Land Use

Planning Areas

The Comprehensive Regional Plan (2018 ECOS Plan) uses the Planning Areas concept to identify places that share similar features and future planning goals and reflect current municipal zoning. The Planning Areas aim to describe the appropriate type of future growth expected in each area; however, the exact uses and densities allowable are determined by local zoning and local and state permitting. The six base Planning Areas are depicted on the Land Use Plan Map (see Map ?). They are Center, Metro, Suburban, Village, Rural, and Enterprise.

Center Planning Areas are intended to be regional centers or traditional downtowns that serve the County and beyond and contain a mix of jobs, housing, and community facilities. Center Planning Areas also contain the County's highest density and largest-scale developments and may contain a state designated New Town Center, Growth Center, Tax Increment Financing District, or high-density Village Center.

Metro Planning Areas are areas where local zoning authorizes places to accommodate jobs and housing in a compact development pattern that supports transit service and encourages pedestrian activity and are within the sewer service area. Commercial land uses found in the Metro Planning Area are intended to serve nearby residential areas.

Suburban Planning Areas are areas near a Center Planning Area, Metro Planning Area, Village Planning Area, or Enterprise Planning Area where local zoning authorizes future development to occur at scales, densities, and uses compatible with existing development and with generally low residential density.

Enterprise Planning Areas are areas where local zoning authorizes a future concentration of employment uses that attract workers from the County and multi-county region. Development in these Planning Areas should have adequate wastewater capacity and access to transit. Typically, this area encompasses major employers or a cluster of employers and has current or planned transit service.

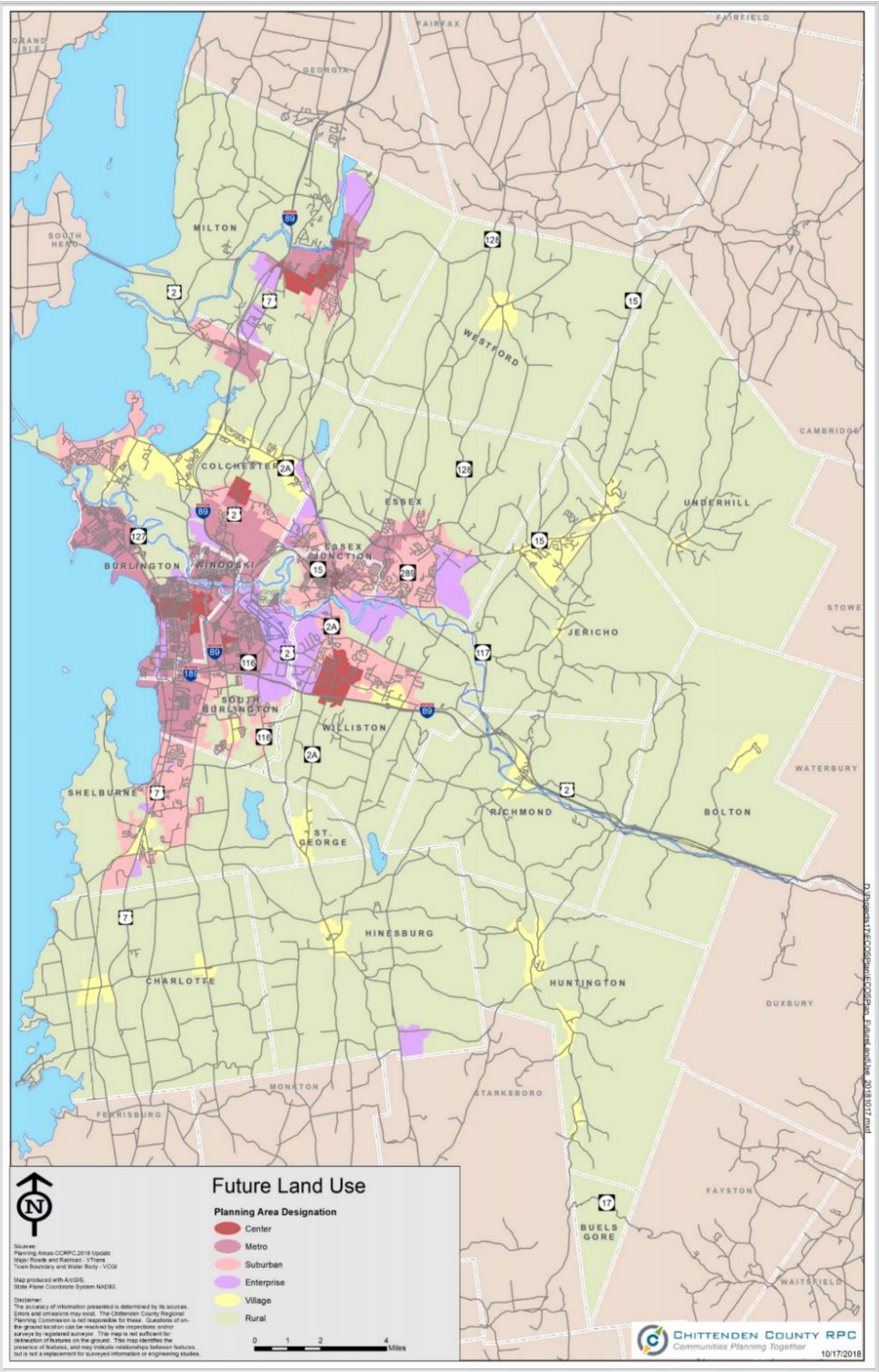
Village Planning Areas are areas where local zoning authorizes a variety of future residential and nonresidential development at densities and scales in keeping with the character of a Vermont village. This type of planning area is intended to serve its local surroundings as a place where people can live, work, shop and recreate.

Rural Planning Areas are areas that promote the preservation of Vermont's traditional working landscape and natural area features. The Rural Planning Area also provides for low density commercial, industrial, and residential development that is compatible with working lands and natural areas so that these places may continue to highlight the rural character and self-sustaining natural area systems. Development in the rural planning areas is typically outside the sewer service area.

Land Use Goal

The major land use goal of the 2018 ECOS Plan was to strive for 80% of new development in areas planned for growth, which amounts to 15% of Chittenden County's land area. The most recent land use data (2016-2020) indicates that we are meeting the target with 87% of new development going into areas planned for growth.

MAP 22: LAND USE MAP (2018 ECOS PLAN)



Metropolitan Transportation System

The Metropolitan Transportation System (MTS) in Chittenden County is a multimodal network that consists of highways, transit services, traffic signal systems, rail lines and stations, walk/bike facilities, park-and-ride facilities, the Burlington International Airport, and other intermodal facilities critical to the movement of people and goods in the region. It is also the system eligible for federal transportation funding investment. **Error! Reference source not found.**Map ?? depicts the existing Chittenden County MTS.

HIGHWAYS

Highways are classified as Interstate Highways, Principal Arterials, Minor Arterials, Major Collectors, and Minor Collectors. The classification system is organized as a hierarchy of facilities based on the degree to which the roadway facility serves mobility and access to adjacent land uses. Interstates and Arterials make up just under 19 percent of County road mileage yet carry 69 percent of all vehicle miles traveled (VTrans 2020 VMT data).

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

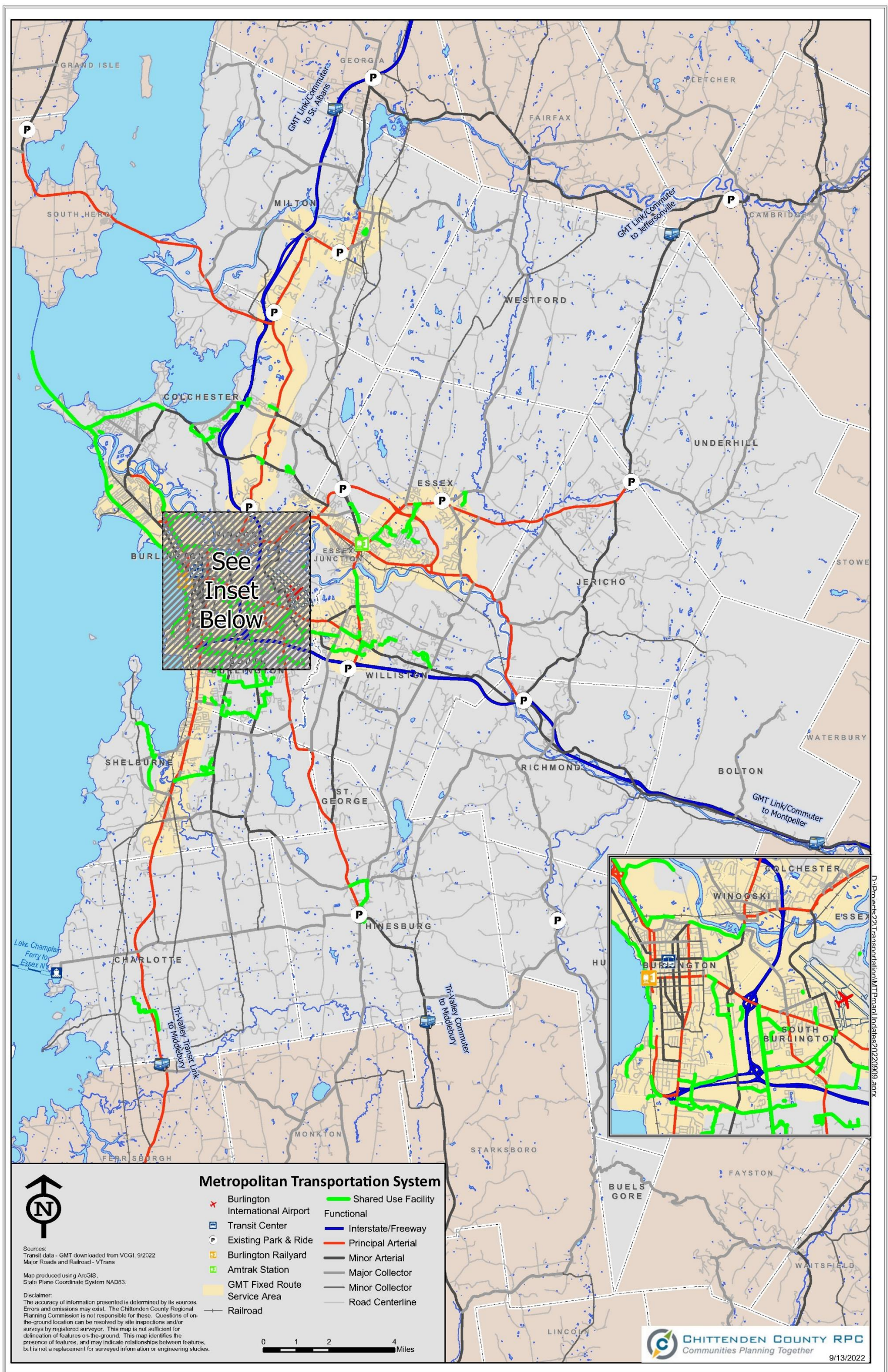
The overall pavement condition of the interstate and arterial highways in Chittenden County has improved significantly since 2013. In 2013, over 50% of Chittenden County arterials were rated poor or worse in terms of pavement condition; by 2021 that figure dropped to only 26% of arterials rated poor or worse.

There are 180 bridge structures greater than or equal to 20 feet in length in Chittenden County. Of these, 85 are owned by the State and the remaining 95 by local governments. Nearly all of the state-owned bridges over 20 feet long are located on major highways, i.e. principal arterials and major collectors. The majority of municipally owned bridges over 20 feet long are located on less heavily traveled highways, i.e. minor collectors and local roads. Note that many bridges and other structures less than 20 feet long are also owned and maintained by both the State and municipalities.

The condition of all bridges over 20 feet in length on public roadways are evaluated every two years by VTrans. The latest evaluation indicated that 3 percent (5 of 180) of Chittenden County bridges are in poor condition (sufficiency rating below 50) and nearly half (88 of 180) are in fair condition (sufficiency rating between 50 and 80) indicating that rehabilitation may be necessary. The remaining 87 bridges are deemed sufficient with ratings above 80. Since 2010, there has been a marked improvement in the number of bridges with a sufficiency rating below 50, down to 5 from 18, a 72 percent improvement.

While there has been a substantial improvement in the condition of pavements and bridges in the region in the past few years, there is still a concern that transportation funding is overly reliant on state and federal gas taxes, which are decreasing in value as inflation lowers purchasing power and revenues decline due to improved vehicle fuel efficiency and a growing number of electric and hybrid vehicles. Even with the substantial increase in transportation funding from the 2021 Infrastructure Investment and Jobs Act (IIJA), a more sustainable and dependable source is needed at the federal and state level to fund the preservation, improvement, and expansion of our multimodal transportation system.

MAP ?? – 2017 METROPOLITAN TRANSPORTATION SYSTEM



ACTIVE TRANSPORTATION FACILITIES

Active transportation facilities create opportunities to increase physical activity, support healthy communities, enhance economic development, and promote environmental sustainability. Furthermore, communities that support walking and biking provide transportation access to all residents regardless of age, gender, or socioeconomic status. Chittenden County has a range of dedicated transportation facilities to accommodate bicyclists, pedestrians, and other physically active forms of transportation. Facilities dedicated to non-motorized uses (such as sidewalks, bike lanes, and shared use paths) are concentrated in and around the metropolitan core. Non-dedicated facilities for non-motorized users are shared with motorized users and are located throughout the region. Dedicated and non-dedicated facilities can also be used by e-bikes and scooters, increasingly popular transportation options for all trip types.

According to ECOS Scorecard data (<https://app.resultsscorecard.com/Scorecard/Embed/8502>) since the last comprehensive inventory in 2008, there has been an increase in the shared use path mileage. Most shared use paths were recently built and are currently in good condition. There are also about 404 miles of existing sidewalks in Chittenden County. These mileage figures are expected to increase annually as planned bicycle and pedestrian projects continue to be implemented.

Since 2012, fourteen Chittenden County municipalities have received over \$21 million for planning, design, and/or construction of 58 new bicycle and pedestrian projects. Projects were primarily funded through two VTrans programs: Transportation Alternatives and the Bicycle & Pedestrian Program.

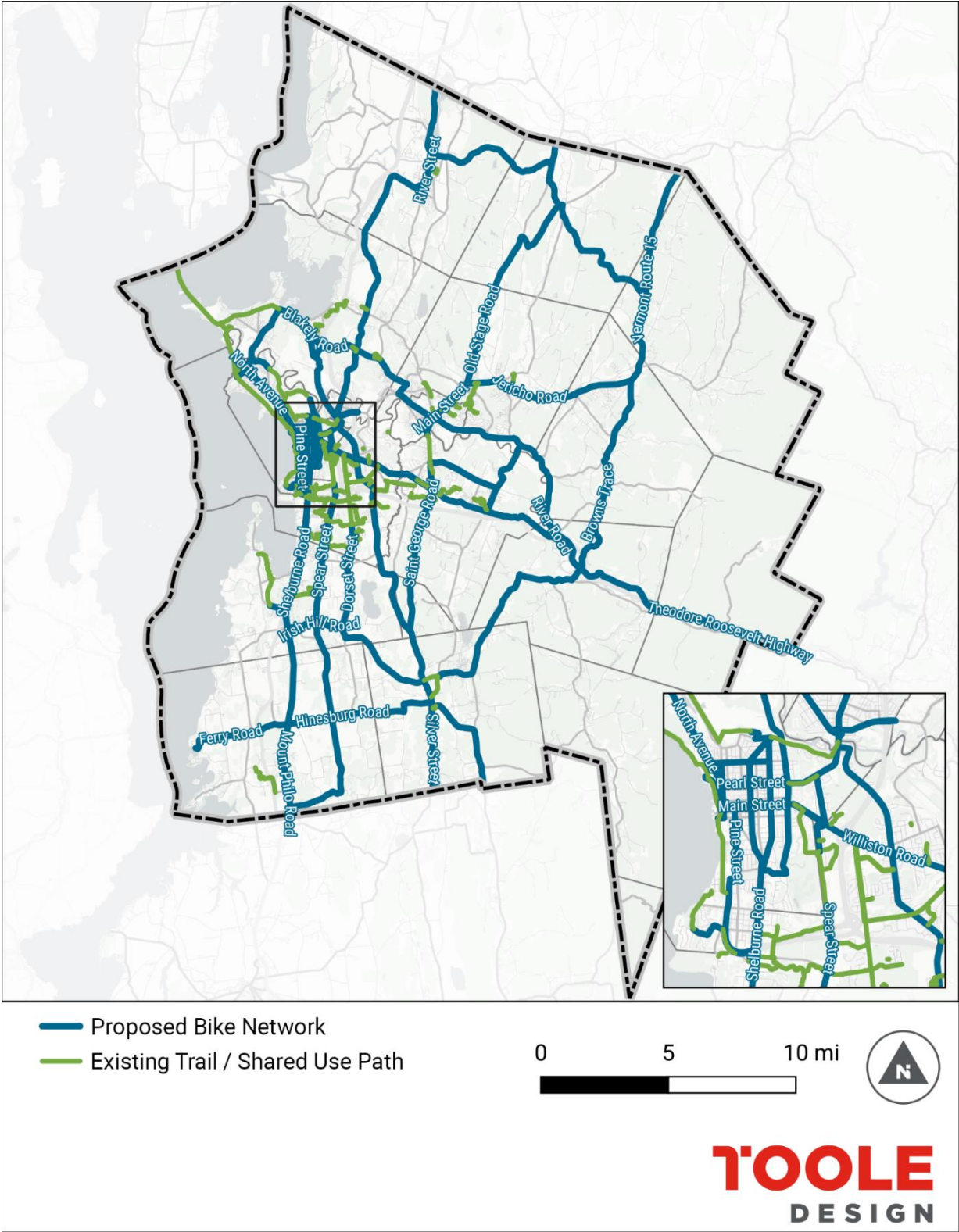
Community support for non-motorized facilities is substantial, as surveys in 2000, 2006, 2012, and 2018 revealed. These facilities have rated second highest (only following transportation system maintenance) on the list of transportation improvements the public desires. This survey is planned to be replicated again in 2023 to evaluate the transportation-related attitudes and opinions of Chittenden County residents.

The CCRPC has regularly updated its regional Active Transportation Plan; the most recent plan was adopted by the CCRPC Board at their October 2022 meeting – see: <http://www.ccrpcvt.org/our-work/our-plans/regional-bikeped-plan/>. The updated Chittenden County Active Transportation Plan (ATP) identifies its goal as creating a safe, comfortable, and connected regional network of pedestrian and bicycle routes that appeal to all ages and abilities. After a robust public input process, detailed existing conditions assessment, and a Level of Traffic Stress model analysis, the ATP outlines recommendations for both non-infrastructure and infrastructure improvements to enhance network connectivity for active transportation in Chittenden County. The ATP recommendations focus on priority corridors as opposed to defining detailed facility types in specific places.

The proposed countywide bicycle network in the 2022 ATP includes about 200 miles of streets that would allow users of all ages and abilities to traverse the County on comfortable bicycle facilities (See Map ??). It includes routes along specific roadways and regional trails that create a logical and convenient network to improve connectivity across the County.

Education and encouragement are also important in getting more people walking and biking. CCRPC supports the work of Local Motion (a non-profit organization) to host public events, workshops, and trainings, as well as provide technical assistance to businesses and municipalities to help support walking and biking as convenient, affordable transportation options.

MAP ?? – PROPOSED BICYCLE NETWORK (2022 ATP)



PUBLIC TRANSIT OVERVIEW

In Chittenden County, GMT offers fixed routes, local commuter routes, LINK Express routes, and ADA paratransit services. GMT currently serves the communities of Burlington, Essex, South Burlington, Shelburne, Williston, Winooski, Milton, Hinesburg, and a portion of Colchester. LINK Express routes serve Montpelier, Middlebury, and St. Albans commuters. GMT is considered a municipality and is also the first and only transit authority in Vermont; provides shuttles from senior housing complexes to local supermarkets and neighborhood specials for student transportation to Burlington schools; and also provides Americans with Disabilities Act (ADA) paratransit services for persons unable to use the GMT fixed route bus system because of a disability. These services are currently contracted out to the Special Services Transportation Agency (SSTA). Paratransit services are required to be provided for areas within three-quarters of a mile of each non-commuter fixed transit route. Following the development of GMT's 2017 NextGen Transit Development Plan, planning staff is working to update the Transit Strategic Plan (TSP). The update of the TSP will set the groundwork for potential changes to procedures and policies that will guide long-range transit planning efforts in our region. The TSP will address Service Excellence; Financial Stewardship and Cost-Effective Operations; Public Engagement and Improved Regional Quality of Life; Fairness and Inclusion; Environmental Sustainability; and High Performing Workforce.

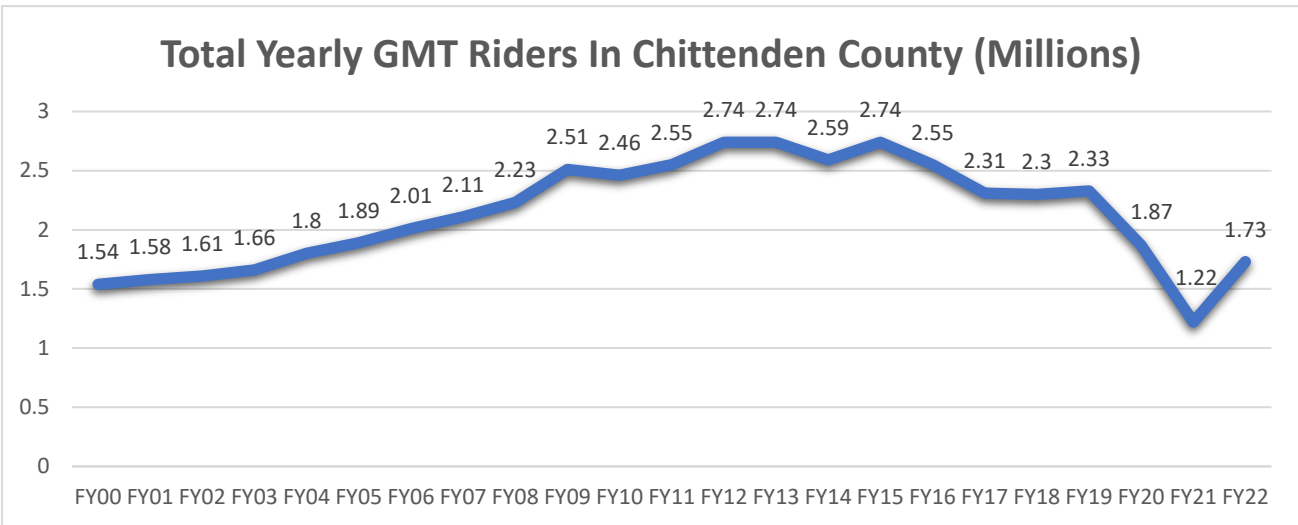
Public Transit Ridership

According to the 2020 VTrans Public Transit Route Performance Report, 46% of all public transit trips in Vermont originated in Chittenden County. While access to public transit has improved in the greater Burlington area, some suburban and most rural populations lack access to transit.

Figure ? illustrates the steady increase in GMT ridership from 2000 to 2015 and the downward trend starting in 2015, which matched the overall national trend due in large part to low gasoline prices. In the past, public transit service in Chittenden County had served mostly non-driving segments of the population (low income, zero vehicle households, seniors, and children) with a limited ability to attract people with access to cars. However, GMT has made significant strides to improve passenger amenities and services with onboard Wi-Fi, twenty-minute frequencies at peak times on select local routes (VT 15, US 2, North Ave and Shelburne Rd as of December 2022) and enhanced multimodal coordination. GMT's entire fleet is also equipped with bike racks to encourage this type of multimodal trip making.

As with most transit operations nationally, the COVID-19 pandemic had a dramatic impact on GMT's operations. At the peak of the pandemic, GMT provided 1.22 million trips in Chittenden County, a 48% decrease compared to the 2.33 million trips provided directly prior to the pandemic in 2019. In response to the pandemic, GMT began to offer fare-free transit service to help members of the public access essential services. With the support of state and federal funding, GMT will continue to operate fare-free transit through at least June 2023 while avoiding major service cuts. Beginning in 2022, GMT ridership bounced back from the pandemic lows, with 1.73 million trips provided in Chittenden County.

FIGURE ? – GMT RIDERSHIP IN CHITTENDEN COUNTY: FY2000 - FY2022 (MILLIONS)

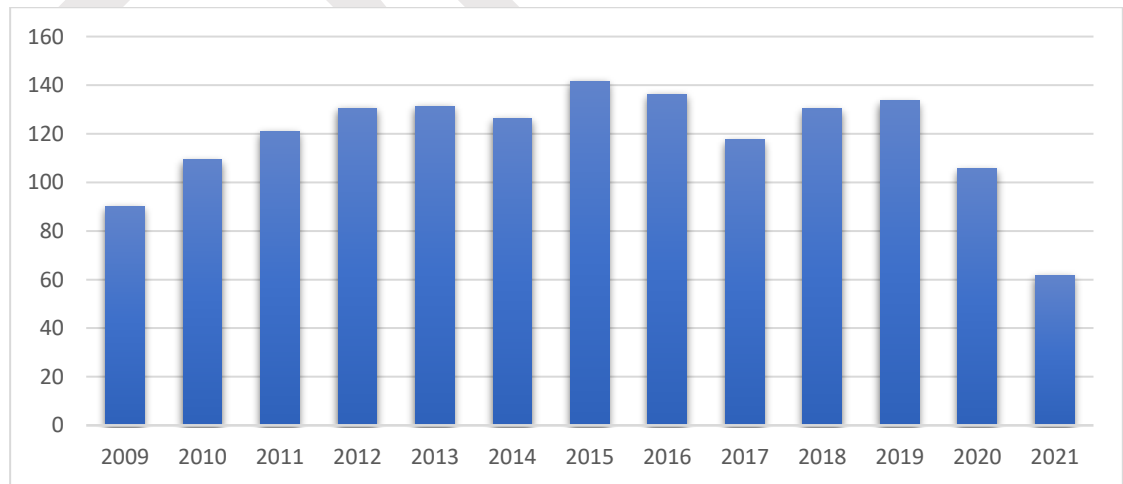


Source: GMT

Special Transit Services

The Special Services Transportation Agency is a private not-for-profit organization that provides Americans with Disabilities Act (ADA) paratransit services and Elders and Persons with Disabilities (E&D) transportation services for persons unable to use the GMT fixed route bus system. Many individuals have difficulty using conventional modes of transportation, such as cars and buses because of a physical or intellectual disability. This is a critical service that gives elders and persons with disabilities transportation needed for social interaction, job training and employment, medical services and therapy. SSTA also provides coordinated transportation service to many area human service agencies. A few examples are the Visiting Nurse Association's Adult Day Programs, Champlain Senior Center (an important meal site for many Burlington Elders), Howard Community Health Services, and Age Well.

FIGURE ? – NUMBER OF TRIPS PROVIDED BY THE SPECIAL SERVICES TRANSPORTATION AGENCY (THOUSANDS)



Source: SSTA

Intercity Bus

There are currently three carriers that provide intercity bus services in Chittenden County: Greyhound Lines, Megabus, and Vermont Translines. These services carry passengers on fixed routes and schedules. Greyhound runs two daily trips between Montreal and Boston with stops in White River Junction, Montpelier, Burlington International Airport and GMT’s Downtown Transit Center. Megabus connects Burlington (at Downtown Transit Center) to both Montpelier and Boston with one trip daily. Vermont Translines is the most recent addition to the intercity bus options available to Vermonters. Founded in 2013 by Premier Coach and funded in part by VTrans. Vermont Translines offers a service along the Route 7 corridor to Albany, New York and currently has three Chittenden County pickup and drop-off locations; in Colchester, Burlington, and South Burlington.

RAIL

Passenger Rail

Passenger rail service available in Chittenden County consists of Amtrak’s Vermonter train, with Vermont stops in Essex Junction, Brattleboro, White River Junction, Montpelier, Waterbury, Bellows falls, and St Albans. The Vermonter service runs daily between Washington, D.C., and St. Albans, with numerous stops including Baltimore, Philadelphia, and New York City. Table 3 provides the most recent history of ridership on this service. Amtrak ridership has increased steadily in the pre-pandemic years (with the exception of 2016). However, the Covid-19 pandemic resulted in a significant reduction in ridership with only 18,585 riders taking the Vermonter in 2021. It is expected that ridership will gradually return as the pandemic ends.

TABLE 3 – AMTRAK VERMONTER RIDERSHIP

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
77,783	82,086	84,109	89,640	92,699	89,318	96,000	97,909	99,280	N/A(service suspended)	18,585

In recent years, the State of Vermont has been pursuing multiple initiatives to expand passenger rail service. Planning has been under way for several years to extend Amtrak’s Vermonter service north to Montréal. There are still a number of obstacles to overcome to reestablish this service but officials in both Vermont and Quebec are optimistic that this service will be available in the next few years. The [2021 Vermont Rail Plan](#) detailed how the Amtrak connection to Montréal would have the largest potential positive impact on rail ridership of any of the passenger scenarios analyzed in the report. Moreover, this rail connection is highlighted as a First Tier Priority amongst the statewide passenger rail recommendations.

Another top priority for VTrans was to extend the Ethan Allen Express north to Burlington, which has operated between Rutland and New York City by way of Albany. Vermont leveraged more than \$115 million in state and federal funds to restore this Amtrak service to Burlington’s Union Station. The work to extend this rail connection was completed in 2022, with daily service first launched at the end of July. In addition to serving Burlington, the extended route also has stops in Middlebury and Vergennes.



Commuter Rail

There is no commuter rail service that currently operates within Vermont. However, over the past decade, a number of studies have evaluated the feasibility of commuter rail systems in our region and Vermont as a whole. The Northern New England Intercity Rail Initiative produced a study in 2016 examining a rail connection between Boston and Montreal via Springfield, MA. A summary of the study results is available here: (<https://www.mass.gov/doc/summary-document/download>). In 2017, VTrans conducted a commuter rail feasibility study for the corridor between St. Albans, Essex Junction, and Montpelier, which also included a study of connecting service to Burlington. The results of that study can be found here: (<https://vtrans.vermont.gov/sites/aot/files/Montpelier-St.%20Albans%20Commuter%20Rail%20Study%20Revised.pdf>). Subsequently, in 2019, the Vermont General Assembly commissioned a study of a rail connection between Barre and Montpelier to determine what the potential capital costs would be to upgrade the rail line for passenger service and construct stations. The results of that study are available here: (<https://legislature.vermont.gov/assets/Legislative-Reports/WACR-MB-Freight-Corridor-Commuter-Rail-Study.pdf>).

Furthermore, in 2022, the CCRPC was awarded a \$2.1 Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Grant to complete a multi-year planning study to evaluate to develop a comprehensive plan for transit-oriented development and explore the feasibility of commuter rail and/or new transit opportunities across Northwest Vermont.

PARK & RIDE FACILITIES

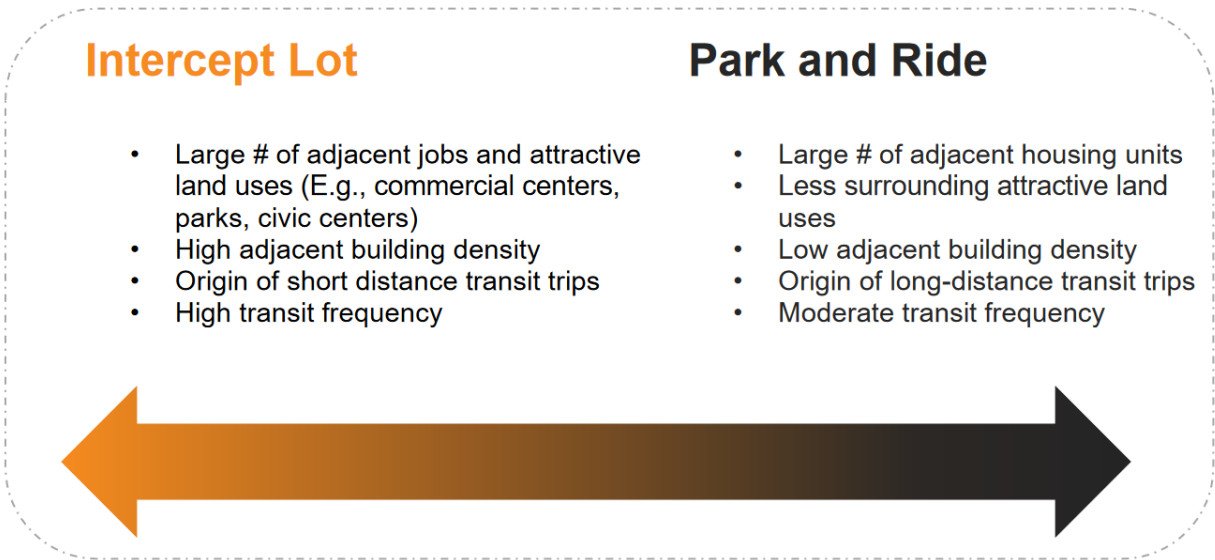
Beginning in 2021, the CCRPC embarked on an update of the Chittenden County Park & Ride Plan. This plan identifies opportunities for improvements to the existing facilities and evaluates the potential for new facilities that will benefit commuters and residents throughout Chittenden County and the adjacent communities. This updated plan developed a new vision and goals and proposed new park and rides facilities in the county taking into account the many changes in the demand for these facilities due to remote work, and general changes in travel behavior.

The vision statement of the 2022 plan calls for a comprehensive network of safe and accessible park and ride and intercept facilities that will allow for seamless, multimodal transportation connections for the benefit of residents, employees, and visitors of Chittenden County. The network will enhance

mobility for all users; support economic development; improve access to public transportation; and reduce single occupancy vehicle travel in support of transportation-related energy goals outlined in the 2018 ECOS Plan.

The plan considers facilities that are typically classified as park and rides or intercept facilities. Park and rides are typically located closer to the origin of a trip, such as a home, whereas intercept facilities are typically located close to the destination end of a trip, such as an employment center or other area of attraction such as shopping or recreation. Intercept lots are often located just outside an urban core where parking is often scarce, and users can leave their personal vehicle and shift to high frequency transit, bicycle, or perhaps even walking. At the same time, many facilities likely serve several different functions and users. Therefore, although intercept lot and park and ride are useful to explain facilities conceptually, each individual facility exists on a spectrum that contains elements of each type, shown in Figure 1.

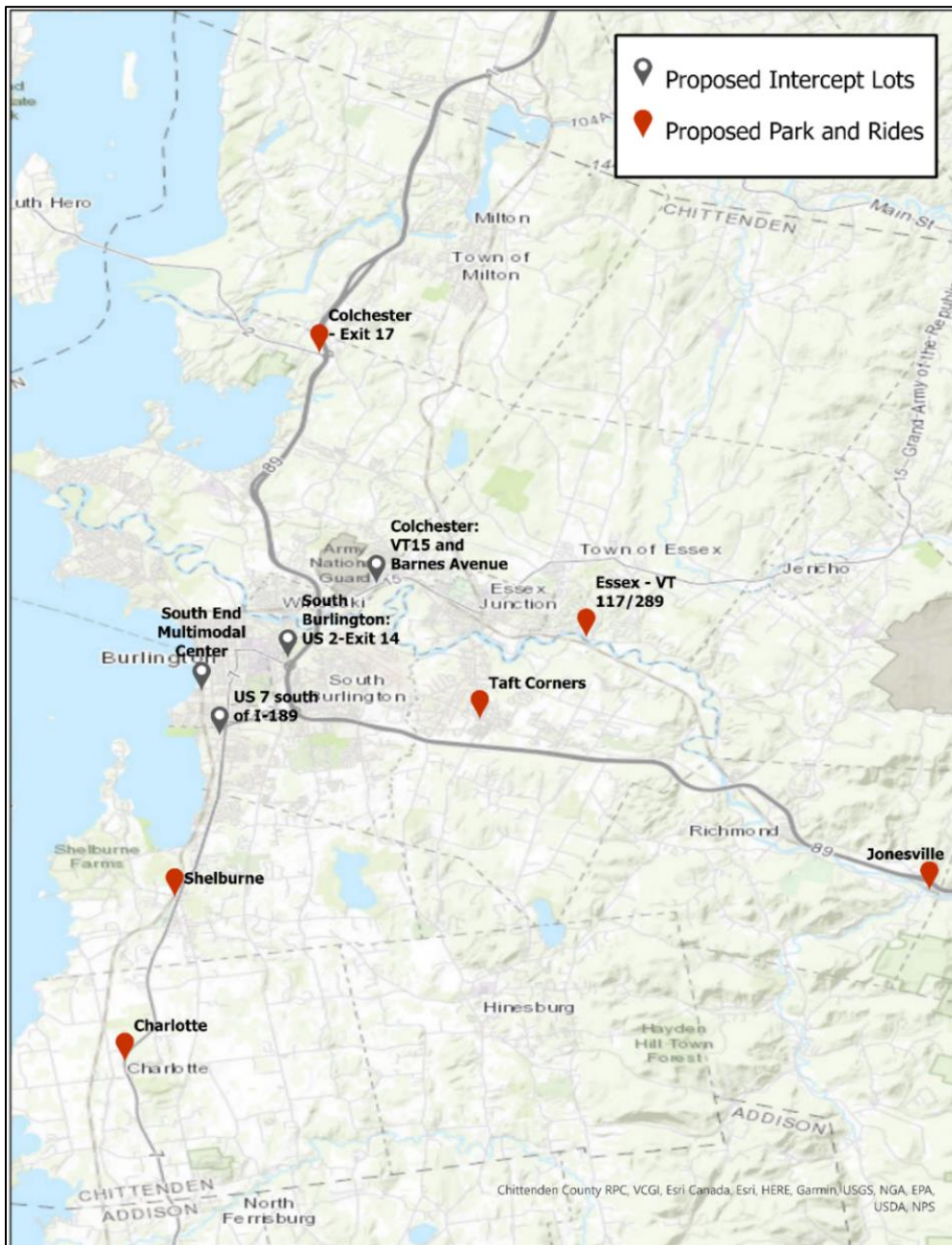
Figure 1 – Parking Facility Typology



A total of ten proposed facilities were identified in the plan and are presented in Map 1.

The 2022 Park & Ride Plan was adopted by the CCRPC Board at their October 19, 2022 meeting (https://studiesandreports.ccrpcvt.org/wp-content/uploads/2022/09/Park_Ride_Plan_Update_2022_final-1.pdf).

MAP 2 – PROPOSED PARK AND RIDE FACILITIES



AIR SERVICE FACILITIES

Burlington International Airport (BTV) is the largest airport in the state of Vermont. BTV is located in South Burlington and is owned by the City of Burlington. It is governed by an Airport Commission that oversees general airport operations and guides future development. The airport is accessed primarily from US 2 (Williston Road) and serves as a vital link to the national air transportation system for the residents and businesses of northwestern Vermont and northern New York State. According to the 2021 Airport Master Plan, six commercial airlines provided 31 daily departures directly serving 12

destinations from BTV. The airport is also serviced by UPS Air Cargo and FedEx Express commercial parcel carriers, two general aviation/fixed base operators, and two airframe and power plant maintenance facilities. The airport also serves as home to a unit of the Air National Guard fleet of F-35s, a National Guard Blackhawk helicopter air ambulance service and a maintenance and repair facility for Blackhawks and F-35s. There are 93 aircraft based at BTV, which includes both general aviation and military aircraft in 2022.

Since it saw a record high of 759,021 enplanements in 2008, BTV has experienced a steady decline in passenger volumes through 2015. However, since 2016 enplanements gradually increased, reaching a high of 705,165 in 2019. However, the Covid-19 pandemic has contributed to lower enplanement numbers with a total of 209,320 and 388,834 being recorded in 2020 and 2021, respectively. A full recovery of enplanement numbers is expected as the pandemic ends, and public health measures are relaxed.

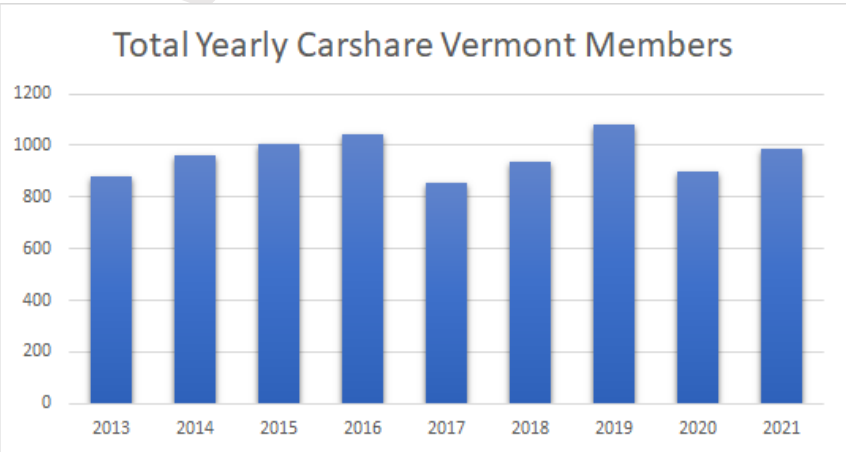
Landside connections to the airport are provided by private auto, taxi, rideshare services, a GMT fixed route service, and intercity bus via Greyhound Lines and Vermont Translines.

TRANSPORTATION DEMAND MANAGEMENT PROGRAMS

Transportation Demand Management, or TDM, refers to a set of strategies that inform and encourage travelers to maximize the efficiency of the transportation system, leading to improved mobility, reduced congestion, and lower vehicle emissions. TDM programs could use tools such as planning, programing, policies, marketing, communications, incentives, pricing, and technology. Two organizations in the region have notable programs generally fitting this category. These are 1) CarShare Vermont, and 2) the Chittenden Area Transportation Management Association (CATMA). In addition, the Go! Vermont statewide program offers bus, train, ridesharing, ferry and other information to Vermonters and visitors to plan their trips in a sustainable way using non-single occupancy vehicle.

CarShare Vermont, a non-profit organization founded in 2008, strives to provide an accessible and affordable carsharing service to reduce vehicle dependence and improve mobility. CarShare Vermont currently has a fleet of 22 vehicles at 22 unique locations throughout Burlington near where its members live and work; nearly half of its fleet consists of electric and plug-in hybrid vehicles.

Vehicles are available 24 hours a day, 7 days a week and can be used by the hour or day to go anywhere. CarShare Vermont members pay for their use based on how much they drive. The organization provides comprehensive insurance, routine maintenance, roadside assistance, car washes, fuel (gas and EV charging), and parking.



CarShare Vermont has helped hundreds of households reduce their vehicle ownership and vehicle miles traveled, saving money and improving the environment. For every vehicle CarShare Vermont

puts in service, 15 are removed from the road. In 2021, 76% of CarShare Vermont members reported shedding or avoiding purchasing a personal vehicle after joining. Carsharing is a mobility service that could benefit other Chittenden County communities; however, a lack of sustained funding to support its operations makes it difficult for CarShare Vermont to expand its service area beyond Burlington.

CATMA, also a non-profit membership-based organization, was formed in 1992 by Champlain College, University of Vermont and University of Vermont Medical Center to jointly address, plan and manage a viable, cost-effective and sustainable transportation and parking network in and around Burlington's medical-academic campus district. This structure provides coordinated land use planning, shared resources and efficient delivery of a comprehensive transportation demand management program. CATMA's TDM program includes bike-walk incentives, subsidized transit passes, membership discounts to shared mobility programs (e.g., CarShare Vermont), carpool and vanpool support, trip planning, guaranteed ride home (i.e., free taxi ride if needed), prize giveaways for participating in TDM programs, events and educational activities. In addition, CATMA conducts employee and student transportation surveys to monitor trends, program performance and identify opportunities. In 2015, CATMA expanded to a regional organization with a mission to work with members and community partners in planning safe, convenient and economical transportation and parking to minimize environmental impacts.

Go! Vermont, established in 2008 by VTrans, is a state-wide transportation demand management program that provides information about transit, carpooling, teleworking, bicycling, and walking. Go! Vermont has several programs designed to reduce single occupancy vehicle use through supporting other transportation options and coordinating their use. These include the ride match program, which allows Vermonters to easily find both rides and riders. The program had 7,350 members in mid-2022, up from 5,245 users in 2019. Commuters can also form groups and have a van or SUV provided by Go! Vermont for a small monthly fee. Additionally, the rides for veterans program specifically assists former service members in getting transportation and the volunteer driver program coordinates volunteer opportunities for all transit agencies in the state. The Go! Vermont website also provides access to the Go! Vermont trip planner (<https://www.connectingcommuters.org/>), which allows users to see routes to and from locations and see carpooling options alongside other types of transportation such as bus routes, bike paths and even walking paths¹.

In addition to reducing roadway congestion and providing multiple ways to get around, the impact of widespread TDM program implementation could significantly benefit Chittenden County municipalities by enhancing mobility, reducing dependence on fossil fuels, improving air quality, and supporting high levels of community livability. While only 9.2% of Chittenden County workers currently work from home (2016-2020 American Community Survey), the CCRPC's 2018 Transportation Survey revealed that over 36% of Chittenden County employees work for an employer that allows them to work from home. Employers need encouragement and support to implement an employee commute program that will assist in reducing congestion and parking demand, resulting in less strain on our existing roadways and influencing individual transportation behavior. There is an opportunity to focus on shifting transportation costs to a sustainable model and better integrating land use and transportation.

Travel Trends, System Performance, and Issues

REGIONAL TRAVEL CHARACTERISTICS

Residents of Chittenden County make hundreds of thousands of trips every day by various means of transportation (driving, biking, walking, or busing). Transportation planners often categorize travel as either peak or off-peak. Peak travel consists of the trips that coincide with the typical commute to work in the early morning (AM peak) and back home in the late afternoon (PM peak) while off-peak trips occur the remaining hours of the day. Peak and off-peak trips make different demands on the transportation network. Peak period travel places the greatest strain on the transportation system, because of high traffic volumes in shorter time periods, that consequently exhibits the worst congestion seen throughout the day. Even though it is important to evaluate peak hour conditions on our roadways it is equally important to understand off-peak conditions.

Chittenden County is the employment center of a larger area encompassing all northwestern Vermont. Its economic and cultural impacts spread well beyond the county boundaries. 2019 Data from the U.S. Census Bureau's Longitudinal Employer-Household Dynamics show that 33,711 residents from neighboring counties come to Chittenden County for work, while 69,370 Chittenden County residents are employed within Chittenden County. Proximity and easy highway access to Chittenden County have been determinants as to which towns in our neighboring counties have grown the fastest. Franklin County's fastest growing towns are those along the I-89 corridor and/or bordering our northern municipalities. The northern tier communities in Addison County have likewise grown at faster rates than other towns, and in Lamoille County, Cambridge and Stowe have been two of the fastest growing communities.

Figure ?? shows a slight increase over time in the number of people that work in Chittenden County but live outside the county. Even though this trend is based on various factors (housing affordability in Chittenden County, highway accessibility, and others) it directly impacts and exacerbates capacity issues on Interstate 89, especially between Exits 14 and 15, as well as other major highway arterials.

FIGURE ? – WHERE DO CHITTENDEN COUNTY EMPLOYEES LIVE?

SOURCE: LEHD

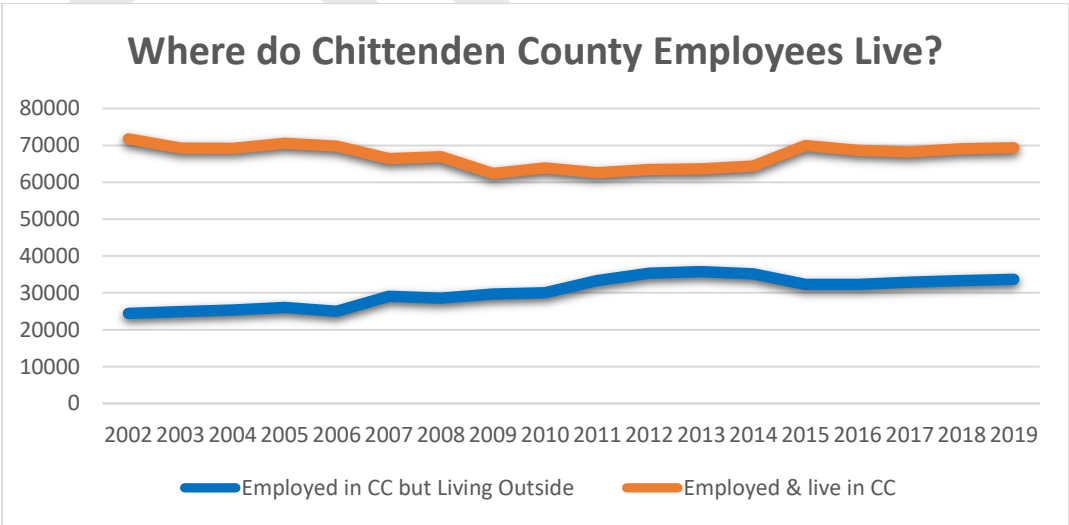
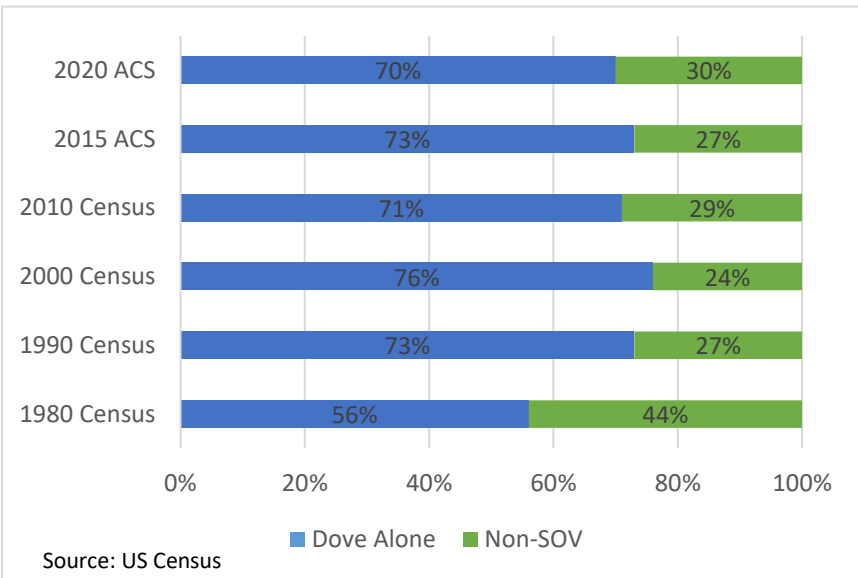


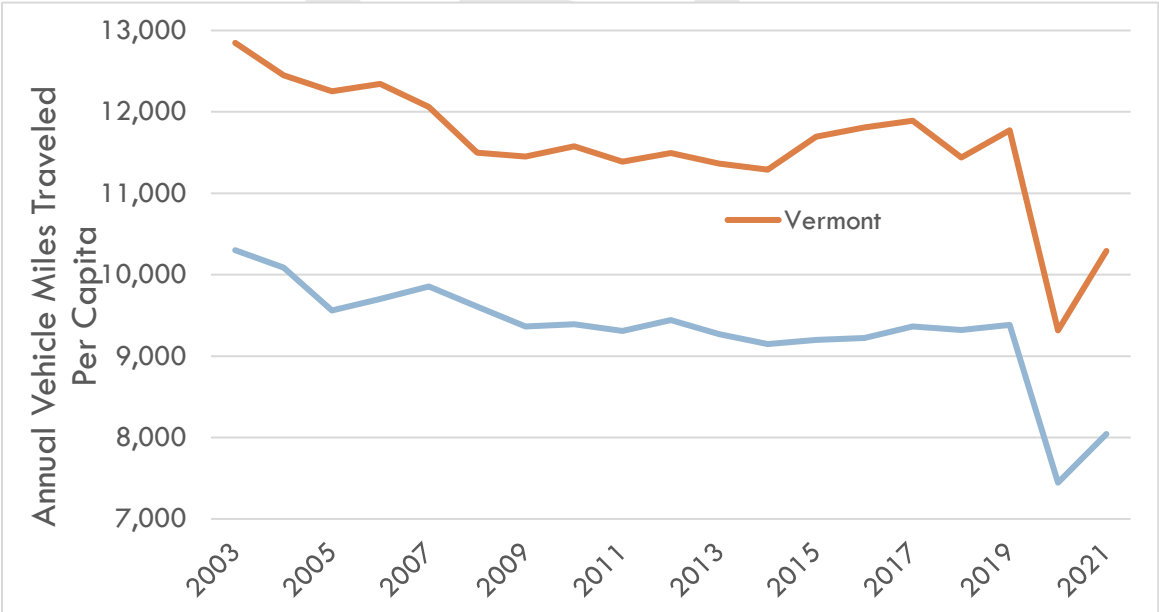
FIGURE 2 – PERCENT OF WORKERS COMMUTING BY SOV AND NON-SOV



In Chittenden County, our rate of driving alone to work (commuting in a single occupancy vehicle or SOV) increased from 56% in 1980 to 70% in 2020 according to the latest American Community Survey 5-Year Estimate. When comparing the 2015 ACS 5-year estimates data with the 2020 ACS 5-year estimates data, the percent of workers commuting alone fell from 73% to 70%, primarily due to the increase in teleworking because of the COVID-19 pandemic.

Vehicle Miles Travelled (VMT) per person in the county declined drastically from the early 2000s to 2009 and then it leveled off with minor fluctuations between 2010 and 2019. Factors that could have influenced the VMT decline in the early 2000s include increased in safe and connected bike facilities; improved sidewalks; expanded transit services; increase in compact, mixed use land use developments; and general economic conditions, including the 2008 – 2009 Great Recession. In 2020, VMT per capita collapsed as a result of the COVID-19 pandemic but since then we have seen a slow increase in VMT as employees return to work and the economy recovers.

FIGURE 2 – VERMONT AND CHITTENDEN COUNTY VMT PER CAPITA



SOURCE: VTRANS & US CENSUS BUREAU

SAFETY

Improving safety for all users of our transportation system is a fundamental goal of the CCRPC. Through VTrans programs such as the Highway Safety Improvement Program (HSIP), Systemic Local Road Safety (SLRS) and Road Safety Audits (RSA), the CCRPC is assisting member municipalities to improve safety for high crash locations as well as looking at systemic approaches to reducing hazards and improving safety.

VTrans collects crash data statewide and shares with their partners, regional planning commissions, municipalities, and the public. The historical crash data is helpful in identifying trends and risk factors to use in scoping and planning studies to develop alternatives that improve safety for all modes of transportation. Figure ?? shows the crashes resulting in death or serious injury in Chittenden County from 2015 to 2021. The dramatic increase in fatalities during the height of the pandemic (2020) follows national trends for reasons that are numerous and complex including (but not limited to) empty roads that encouraged speeding, limited enforcement, mental health issues, and many others. There is no discernible trend in the injury crash data over the last seven years, but the data indicates a significant increase during the COVID-19 pandemic between 2020 and 2021. Figure ?? shows the bicycle and pedestrian crashes in Chittenden County from 2015 to 2021. This data indicates no significant increases in fatal and injury crashes for vulnerable users during the pandemic. The biggest increase in serious pedestrian injury crashes occurred in 2019.

FIGURE ?? – CHITTENDEN COUNTY DEATHS AND INJURIES DUE TO CRASHES

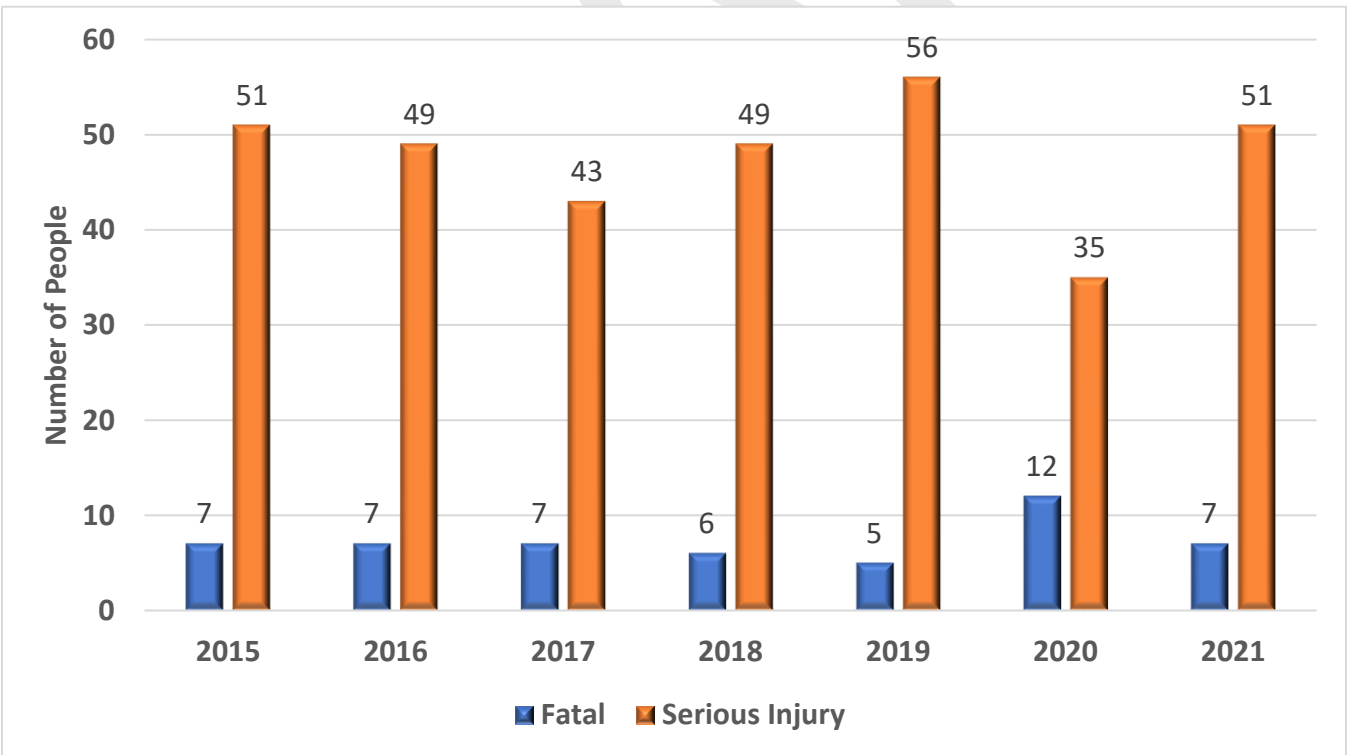
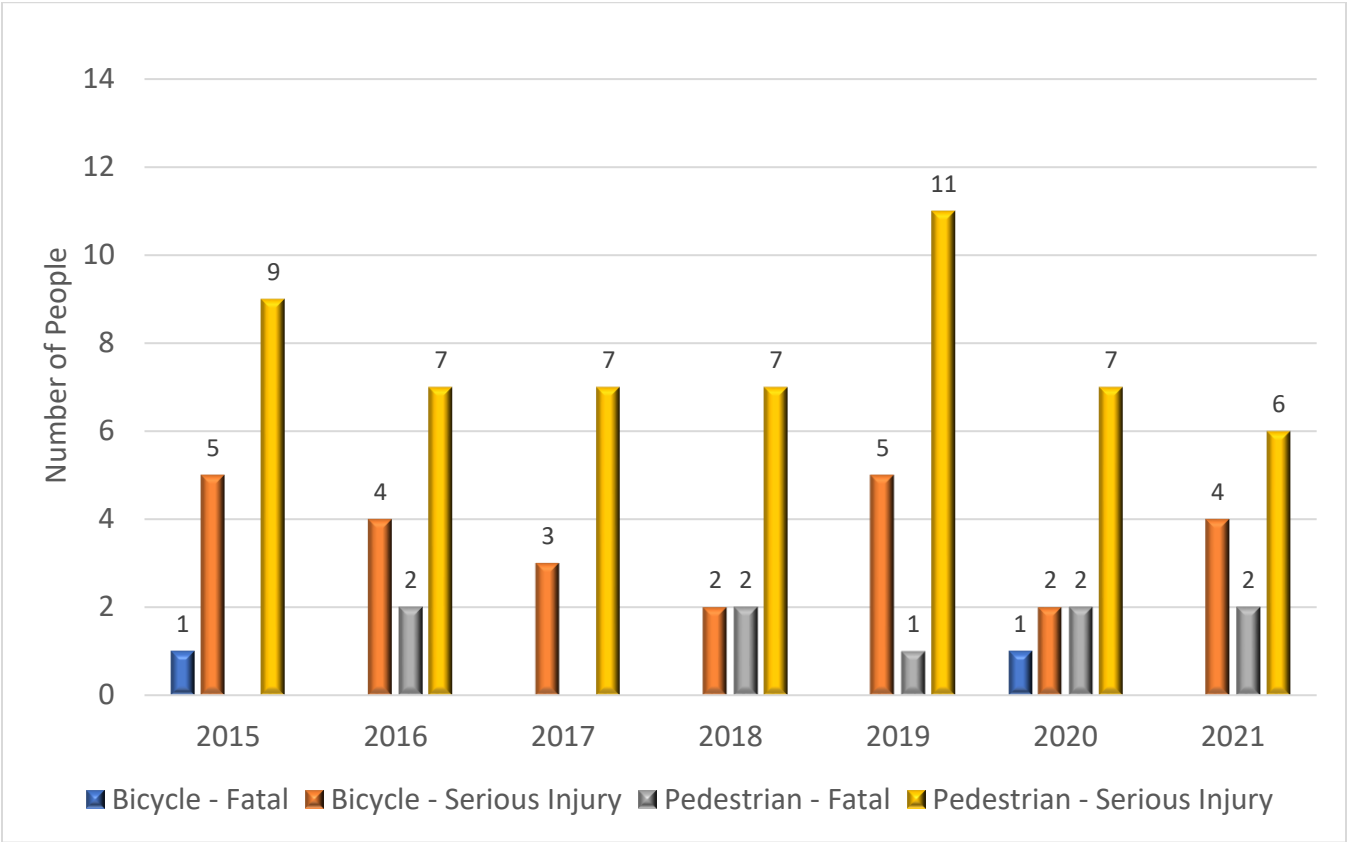


FIGURE ?? – CHITTENDEN COUNTY BICYCLE & PEDESTRIAN DEATHS AND INJURIES DUE TO CRASHES

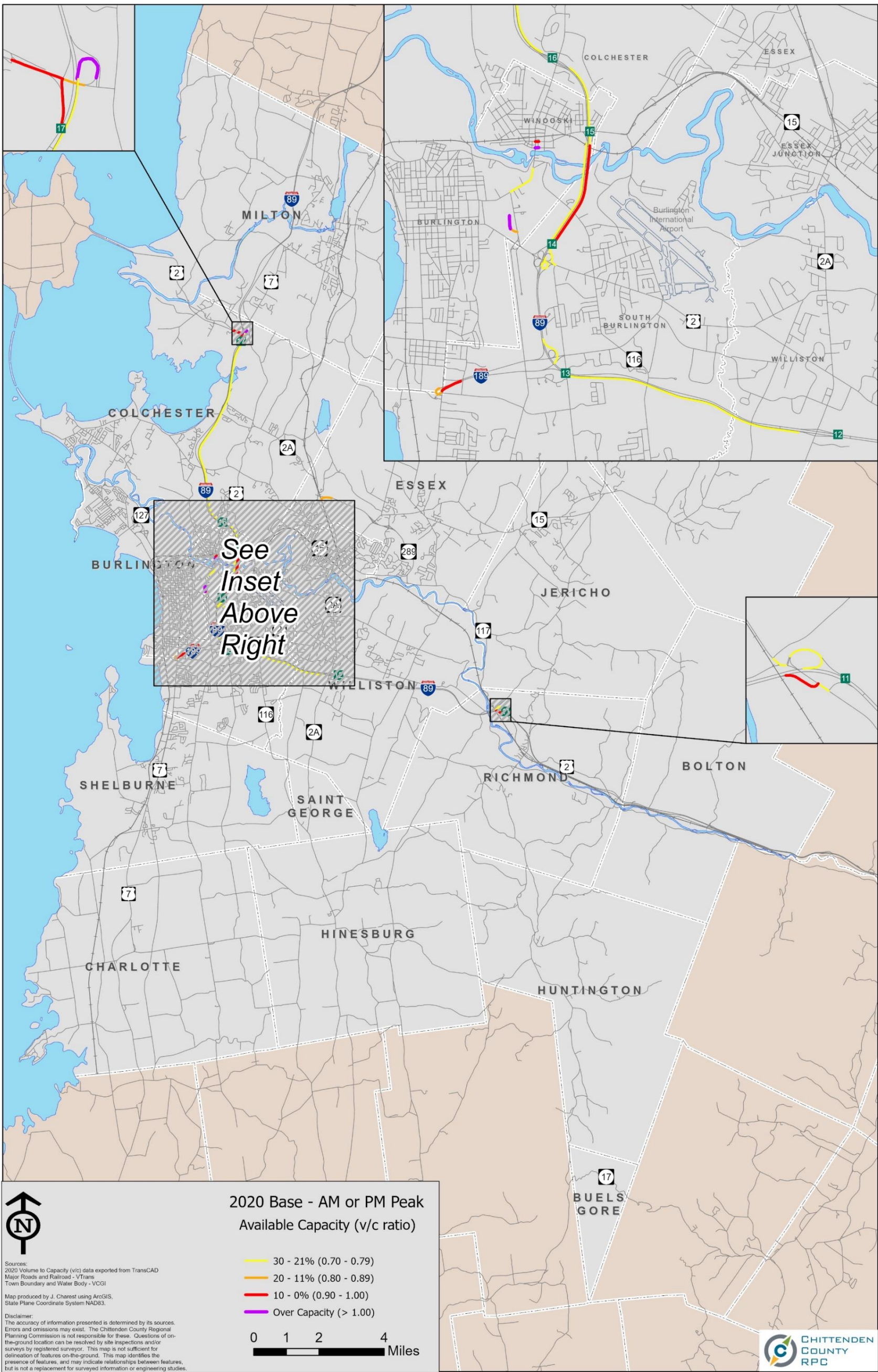


ROADWAY CAPACITY & CONGESTION

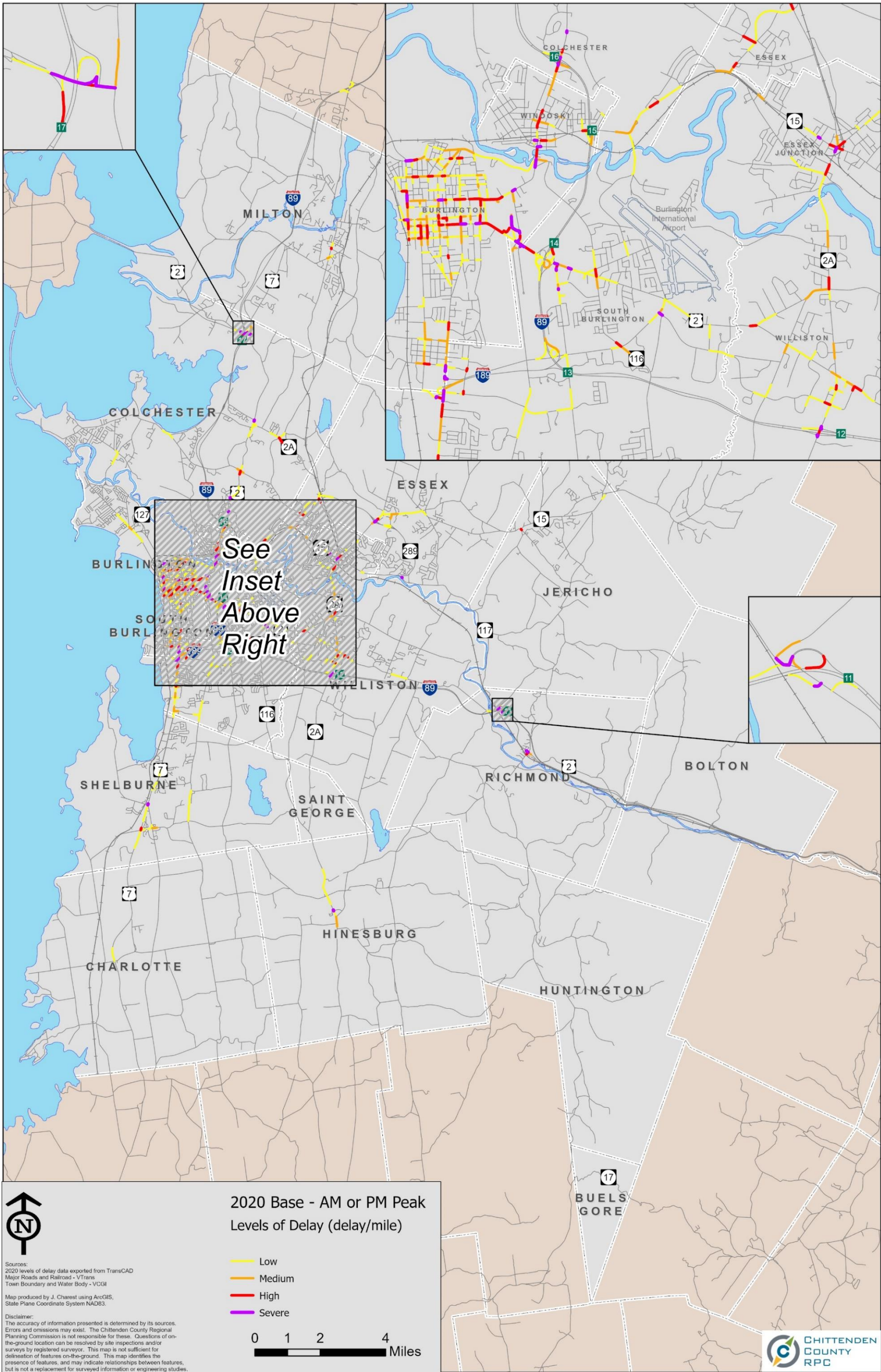
In general, the roadway system in Chittenden County has enough capacity to handle the current traffic demand, except for specific segments of the interstate and arterial system during peak hours of travel (see Map ??). Even with enough capacity, congestion still exists on our roadways in mainly urban/suburban areas during the AM and PM peak hours. Like many successful metropolitan areas, the urban core of our county has significant congestion, mainly at intersections, during the morning and evening commute (peak) hours (see Map ??). This phenomenon has been worsened by the gradual increase of people living outside and commuting into Chittenden County for work (see Figure ??) and it is also correlated with the increased cost and lack of available and affordable housing in the county. Traffic volumes that dropped drastically during the height of the COVID-19 pandemic, have been slowly increasing on most major roads and localized congestion issues have returned.

Interstate 89 was the subject of a recent Chittenden County I-89 2050 Study (<https://envision89.com/>) that assessed the safety and capacity of I-89, identified existing and future multimodal needs, developed and evaluated improvements, examined transportation and land use impacts of new and expanded interchanges, determined asset management /maintenance needs and developed a multiyear, multimodal implementation plan for making recommended improvements.

MAP 22: 2020 ROADWAY CAPACITY (VOLUME/CAPACITY) FOR AM OR PM PEAK



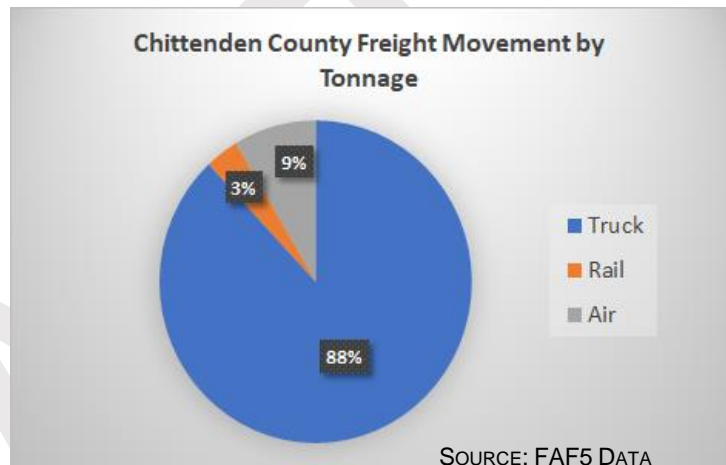
MAP ??: 2020 ROADWAY LEVELS OF DELAY (DELAY/MILE) FOR AM OR PM PEAK



FREIGHT: RAIL AND TRUCK FACILITIES

Economic competitiveness is inextricably linked to the strength of a region's transportation network. Moreover, public and private sectors play a role in freight movement and coordination is necessary at the regional, statewide and national level across many freight modes including rail, air, water and highways. Freight plays a large role in Chittenden County's economy, and the performance of Chittenden County's economy influences freight demand and output. Growth in population and consumer spending fuel demand for durable goods and other consumer products and construction materials to build or improve homes. Growth in consumer demand contributes to growth in manufacturing, wholesale, retail, and other industry sectors that produce and distribute those goods.

According to Freight Analysis Framework (FAF5) data, about 8.2 million tons of freight flow into, out of, through, or within Chittenden County each year. This is a 1.9-million-ton increase when compared to Chittenden County freight data reported in the 2012 Vermont Freight Plan. Vermont as a whole, had approximately 46.7 million tons of freight moved into, out of, through, or within the state in 2018. By 2045, the volume of freight (when measured by weight) is expected to increase 68% to 78.7 million tons.



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

In recent years, the County's freight distribution system has had to adapt to a changing and more competitive marketplace. Rapidly changing technology and increased consumer demand is starting to transform the way goods are delivered. The freight sector is typically among the first to embrace changes in technology. Companies with goods to move have already begun to experiment with autonomous delivery vehicles, utilizing drones for front door delivery and self-driving trucks for long haul shipments on the interstate. As the economy and demand for e-commerce grows, so does the volume and value of freight that moves into, out of and within the region.

The COVID-19 pandemic introduced several challenges to supply chain systems and freight logistics. Problems with production and shifts in demand during the pandemic resulted in logistics challenges and major delivery delays of certain products. The pandemic also resulted in a decline in business for many goods-producing and freight companies in Vermont. Moreover, the economic recovery from the pandemic has been uneven, and transportation costs are high and are impacting the cost of goods businesses and consumers pay.

TRANSPORTATION AND CLIMATE CHANGE

In Vermont, the largest contributor of greenhouse gas (GHG) emissions is the transportation sector – mostly carbon dioxide (CO₂) coming from the combustion of petroleum-based fuels, like gasoline and diesel in internal combustion engines. Transportation's 40% statewide contribution to GHG emissions is closely mirrored by our 48% Chittenden County estimate (<https://www.ccrpcvt.org/wp-content/uploads/2016/01/Chittenden-County-Climate-Action-Guide-2014.pdf>) and is substantially higher than the nationwide share of 27% from transportation according to the 2020 EPA Greenhouse Gas Emissions data. Transportation's higher contribution is mainly due to the rural nature of Vermont and the higher annual Vehicles Miles Traveled (VMT) per Capita in the state (11,680,000) compared to the nationwide VMT per Capita (9,630,000) according to the 2017 Vermont Transportation Energy Profile.

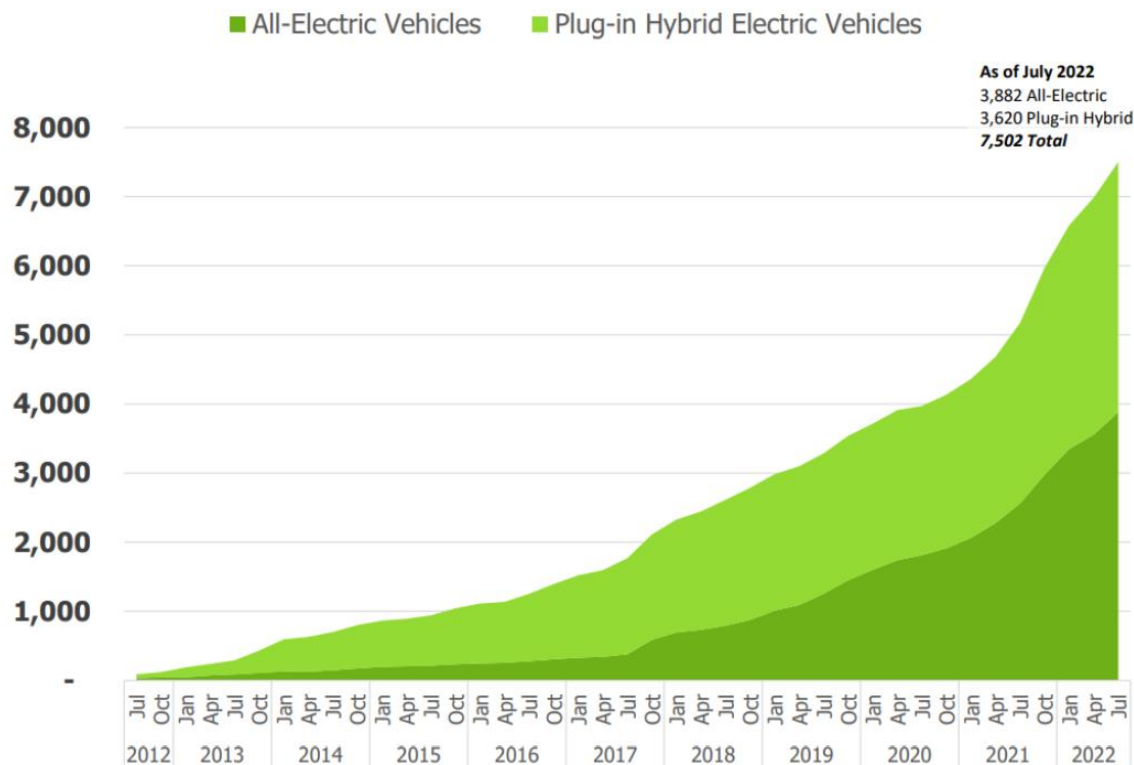
In 2020 the Vermont Legislature passed the Global Warming Solutions Act which requires Vermont to reduce GHGs to 26% below 2005 levels by 2025; 40% below 1990 levels by 2030 and 80% by 2050. In addition, the Vermont Comprehensive Energy Plan has a goal to meet 10% of transportation energy needs from renewable energy by 2025. To meet these climate goals there is a need to reduce the number of vehicle miles traveled (VMT), increase investment in alternative forms of transportation, and electrify vehicles, are strategies that could be implemented to achieve this goal. Transportation planning looks at the problem from two perspectives: 1) How to mitigate climate changes through policies, programs, and technologies, and 2) How to adapt transportation infrastructure and services to the coming climate changes.

Climate change is only one of many factors to consider as we plan the region's future transportation investments, but we need to carefully monitor its potential impacts while implementing programs that will slow its progress. For more information go to the air quality and climate sections of the CCRPC website: (<https://www.ccrpcvt.org/our-work/environment-natural-resources/energy/>).

Electrification of the Fleet

As discussed previously, increasing the number of electric vehicles is key to reducing the use of fossil fuels for transportation and to reducing transportation energy use. Currently, electric vehicles make up a very small part of Chittenden County's vehicles. In 2015, there were 106,936 vehicles registered in Chittenden County. As of July 2022, there were 2,404 electric/plug-in hybrid vehicles registered in Chittenden County.

FIGURE 2 – CHITTENDEN COUNTY ELECTRIC VEHICLE & PLUG-IN HYBRID REGISTRATIONS



Source: VTrans

TRANSPORTATION AND PUBLIC HEALTH

The impact of transportation on health is well established, particularly with regard to safety/injury, air quality, physical activity, equitable access to opportunities and noise.

The degree to which individuals in a community are physically active is directly dependent on transportation opportunities, infrastructure and community design. The health benefits of physical activity and its role in reducing the risk for chronic disease has numerous positive societal impacts. Most risk factors for chronic disease do not occur randomly but are closely linked to the characteristics of neighborhoods in which people live, work, and play.

Walkable communities with a reliable transit network generally have a lower dependence on automobiles and encourage physical activity. Hybrid commutes, that is, trips completed using several modes are an effective option when distance and areas not served by transit are barriers to a more active commute, such as walking or biking. With few exceptions, proximity to public transit stops is linked to higher transit use and higher levels of physical activity among adults.

Chittenden County has a very low percentage of days per year when the surface ozone level and concentration of ambient particulate matter register above National Ambient Air Quality Standards (NAAQS). As the population of Chittenden County increases over the coming decades, bolstering the transit system, creating a contiguous infrastructure for active modes of transportation, and focusing on

dense development patterns that encourage non-motorized trips will help to preserve the air quality in the county.

TRANSPORTATION EQUITY

Public housing and highway construction were the twin cornerstones of the racially motivated urban renewal that swept the country from the 1940s to 1970s, resulting in a devastating loss of urban housing stock and the creation of hyper-segregated communities. Population loss was less severe in Burlington and surrounding Chittenden County, due in part to a large influx of counterculture and politically radical newcomers from other states in the 1970s, but it's important to recognize the significant and lasting impacts of transportation projects on people and neighborhoods.

The lack of safe and convenient alternatives to automobile travel disproportionately affects vulnerable populations and limits an individual's options forcing trade-offs in money or time thereby compromising equitable choice. Some population segments such as youth, the elderly, low-income, and traditionally underserved and excluded populations lack access to viable public and private transportation options. Access to education, healthy food, healthcare, recreation, social interactions and employment all contribute to health and quality of life.

The high costs of owning and operating a personal vehicle also disproportionately affect low-income and rural Vermonters that rely on their vehicles to get to work, shopping, medical appointments, and social gatherings. Even though high fuel prices have a number of positive impacts on transportation behavior and choices, we should be cognizant that as fuel prices rise, some vulnerable populations are disproportionately impacted by increases in household transportation costs.

Recognizing that nationwide investments (including transportation) have been traditionally unequal in their distribution, application, benefits, and burdens, the Federal Government introduced the Justice40 Initiative (<https://www.whitehouse.gov/environmentaljustice/justice40/>). The major goal of the initiative is to direct 40% of overall benefits of certain Federal investments to communities that have been marginalized, underserved and overburden by pollution. The US Department of Transportation (DOT) has also introduced an Equity Action Plan (<https://www.transportation.gov/priorities/equity/equity-action-plan>) that outlines specific actions to advance equity.

In Vermont, the State Legislature directed VTTrans in 2021 to undertake a comprehensive analysis of the Agency's existing transportation practices and develop an equity framework to guide all future activities. Section 41 of Act 55 (2021) states: *"The Agency of Transportation, in consultation with the State's 11 Regional Planning Commissions (RPCs), shall undertake a comprehensive analysis of the State's existing transportation programs and develop a recommendation on a transportation equity framework through which the annual Transportation Program (the Agency Capital Program), and the Agency's Annual Project Prioritization Process, can be evaluated so as to advance mobility equity, which is a transportation system that increases access to mobility options, reduces air pollution, and enhances economic opportunity for Vermonters in communities that have been underserved by the State's transportation system."*

The Transportation Equity Framework is currently under development and will provide a tool to help decision makers plan for and prioritize projects, ensure accurate representation in decision making, and enhance the equitable delivery of services.

2018 CHITTENDEN COUNTY TRANSPORTATION SURVEY

In 2018 CCRPC released an updated version of its Transportation Survey Report conducted in cooperation with Steadman Hill Consulting and WBA Research which the organization uses to guide both short-term and long-term planning. Data was gathered through mailing over 8,000 Chittenden County residences a letter requesting they participate in a survey online. Data created by the survey was then grouped into four key areas: strengths, weaknesses, opportunities and obstacles.

In total, 500 Chittenden County residents completed the survey. 71% answered yes when asked if they were satisfied with Chittenden County's transportation system but approval varied when asked about specific aspects. Residents were most satisfied with opportunities the county has for walking with 81% approving, although residents also said they wanted more investments in infrastructure supporting walking such as sidewalks. Approval of the driving conditions was significantly lower at 61% with many residents citing issues like road quality, traffic congestion and deteriorating bridges – since 2018 there has been a significant improvement in the condition of pavements and bridges on the federal-aid system in the county. Satisfaction with public transit opportunities (in the pre-COVID environment) was significantly higher with 70% approving but residents still indicated interest in minor improvements like providing live information on bus locations and building more bus shelters. Finally, biking had the lowest satisfaction at 59% with residents, with common complaints being a perceived lack of supportive infrastructure such as bike lanes, separate bike paths, and bike racks.

This survey is planned to be replicated again in 2023 to evaluate the transportation-related attitudes and opinions of Chittenden County residents.

Performance Management

At the national level, Performance Management has become part of the Federal Highway Administration's (FHWA) Transportation Performance Management (TPM) program. The TPM program is a strategic initiative implemented to achieve national transportation performance goals. The intent is to measure progress against the national goals through a reliable data-driven process. FHWA has established measures in the following areas:

- Safety
- Infrastructure Condition
- Congestion
- System Reliability
- Freight
- Greenhouse Gas (GHG) Emissions

The established performance measures under each of these categories are:

- Safety
 1. Number of Fatalities
 2. Rate of Fatalities per 100 million Vehicle Miles Traveled (VMT)
 3. Number of Serious Injuries
 4. Rate of Serious Injuries per 100 million VMT
 5. Number of Non-Motorized Fatalities and Non-Motorized Serious Injuries
- Infrastructure Condition
 - Pavement
 1. Percentage of pavement on the Interstate in good condition
 2. Percentage of pavement on the Interstate in poor condition
 3. Percentage of pavement on the non-Interstate National Highway System (NHS) in good condition
 4. Percentage of pavement on the non-Interstate National Highway System (NHS) in poor condition
 - Bridges
 1. Percentage of NHS bridges in good condition
 2. Percentage of NHS bridges in poor condition
- Congestion – Not required in Vermont because we don't exceed national air quality standards
- National Highway System Reliability
 1. Interstate travel time reliability
 2. Non-Interstate NHS travel time reliability
 3. Freight reliability measure (truck travel time)
- Greenhouse Gas (GHG) Emissions – Tailpipe CO₂ Emissions on the NHS

Having established the measures, it's up to state DOTs and MPOs to set quantifiable targets to gauge progress toward national goals. The schedule to establish targets, varies by measure. Federal regulations generally have state DOTs set performance targets in the various categories and then give MPOs another 180 days to either adopt the State targets or establish their own.

In addition to the FHWA, the Federal Transit Administration (FTA) has a performance management program as well. Their program establishes a system to monitor and manage public transportation assets for improved safety, reliability and performance with the goal of maintaining transit assets in a State of Good Repair (SGR). Green Mountain Transit (GMT formerly CCTA), under this program, is tasked with developing a Transit Asset Management (TAM) Plan to include the following elements:

- An inventory of their capital assets.
- Condition assessment of these assets
- Description of the analytic or support tool used to prioritize investments
- Investment prioritization

Lastly, the CCRPC has an agreement with VTrans and GMT dated May 18, 2016 (<https://www.ccrpcvt.org/wp-content/uploads/2016/02/CCTA-CCRPC-VTrans-Agreement-May-2016.pdf>) that describes our intent to work collaboratively in carrying out the performance based planning as outlined in the discussion above.

CCRPC'S TRANSPORTATION PERFORMANCE TARGETS

- Will add latest targets for all relevant measures.

Financial Plan

INTRODUCTION

The CCRPC's long range transportation plan must incorporate a financial section that estimates how much funding over the life of the plan will be needed, how much will be available for the recommended transportation investments, and the costs to maintain and operate the existing system. The financial section must outline how the CCRPC can reasonably expect to fund all included projects and programs within a fiscally constrained environment, drawing on all anticipated revenues from the federal and state governments, regional or local sources, the private sector and user charges.

Federal regulations establish the requirement for the financial plan in 23 CFR 450.324(g)(11)¹. The operative requirements of that regulation are summarized here. The adopted MTP shall include:

- (11) *A financial plan that demonstrates how the adopted transportation plan can be implemented. Key components of this plan to include:*
- (i) *System-level estimates of costs and revenues reasonably expected to be available to adequately operate and maintain Federal-aid highways and public transportation.*
 - (ii) *Agreed upon estimates of funds that will be available to support plan implementation.*
 - (iii) *Recommendations on any additional financing strategies to fund projects and programs with strategies for ensuring their continued availability.*
 - (iv) *Funding to include all federally funded projects, both highway and transit. Projected funds to reflect "Year of Expenditure dollars." (YoE)*
 - (v) *For the outer years of the plan (i.e., beyond the first 10 years), the financial plan may reflect aggregate cost ranges/cost bands, as long as the future funding source(s) is reasonably expected to be available to support the projected cost ranges/cost bands.*
 - (vi) *For illustrative purposes, the financial plan may include additional projects that would be included in the adopted transportation plan if additional resources beyond those identified in the financial plan were to become available.*

The financial projections extend to the MTP planning horizon of 2050. The completed financial plan contains three parts:

1. The overall fiscal constraint amount including projection of future transportation funding in Chittenden County and factors that are anticipated to affect this.
2. The base level of investment required for system operations and maintenance as called for under 23 CFR 450.324(g)(11)(i).

¹ For more details on federal regulations regarding MPO long range planning, see <https://www.ecfr.gov/cgi-bin/text-idx?c=ecfr;sid=e2662fc63c225d496d1fa6ce22ea6cb8;rgn=div5;view=text;node=23%3A1.0.1.5.11;idno=23;cc=ecfr#sp23.1.450.c>

3. An estimate of the costs associated with MTP recommended improvements.

FINANCIAL PLAN PART 1: OVERALL CONSTRAINT

CCRPC MTP funds are limited to federal transportation funds allocated to the Chittenden County metropolitan area under federal transportation acts. The Chittenden County region does not currently access other sources of transportation funding such as tolls or private contributions. The primary funding source for transportation projects eligible for federal aid is expected to be federal funds plus state and local match.

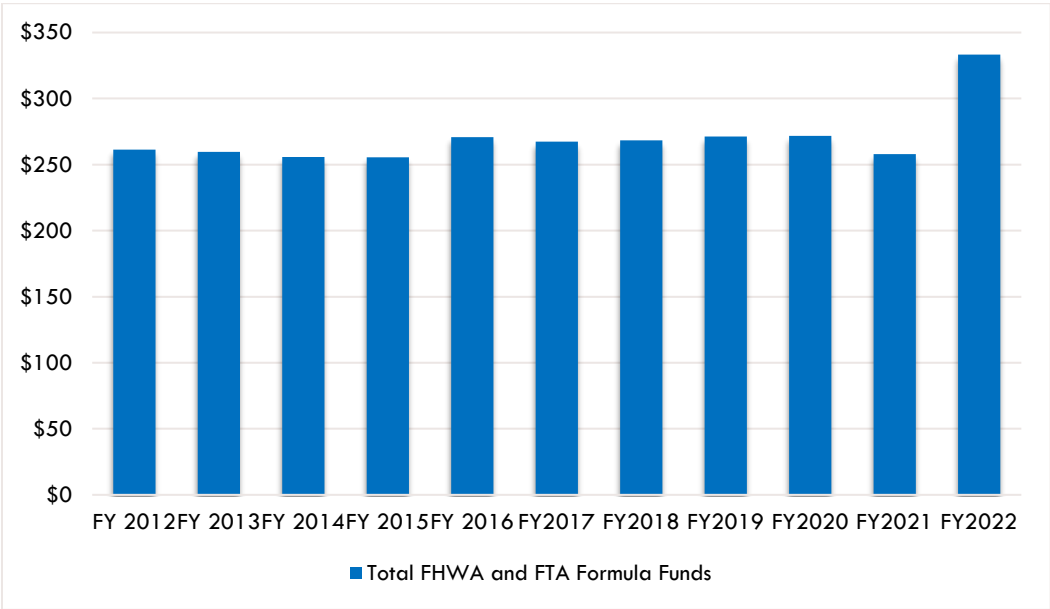
The Infrastructure Investment and Jobs Act (IIJA) (Public Law 117-58, also known as the “Bipartisan Infrastructure Law”) is the current law governing the use of federal transportation funds. The IIJA was signed into law on November 15, 2021 and is the largest long-term investment in our infrastructure in our Nation’s history.

The single most critical issue for establishing how much MTP funding will be available between 2023 and 2050 is the future availability of federal funds. For the purposes of this plan, an estimate of available future funding has been developed, as shown below, based on funds expected to be allocated to Vermont under the IIJA (FY2023 - FY2026), a conservative estimate of funding to be allocated to the state after the IIJA under future transportation laws (FY2027 - FY2050), and the estimated percentage of statewide funding to be allocated to Chittenden County.

Funding Allocation under IIJA: FY2023-2026 – The IIJA is expected to bring an average of \$348.6 million dollars per year to Vermont in federal fiscal years 2023, 2024, 2025 and 2026.

Future Funding Allocation: FY2027–FY2050 – Over the ten years prior to the IIJA there was no discernable increasing or decreasing trend in constant dollar funding to Vermont as shown in Figure 2. The average statewide FHWA and FTA funding from FY2012 to FY2021, in constant 2022 dollars, was \$264 million per year. As a conservative estimate of future funding for this plan, CCRPC is assuming funding will return to the pre-IIJA average of \$264 million, adjusted for inflation, per year from FY2027 to FY2050. Using the historical average funding amount beyond FY2026 acknowledges that the IIJA provides significantly more funding over the life of the bill and continued funding at this level may not be realistic.

FIGURE ? – VERMONT FEDERAL TRANSPORTATION FUNDING HISTORY: FY2012 TO FY2022 (IN MILLIONS – CURRENT YEAR DOLLARS)



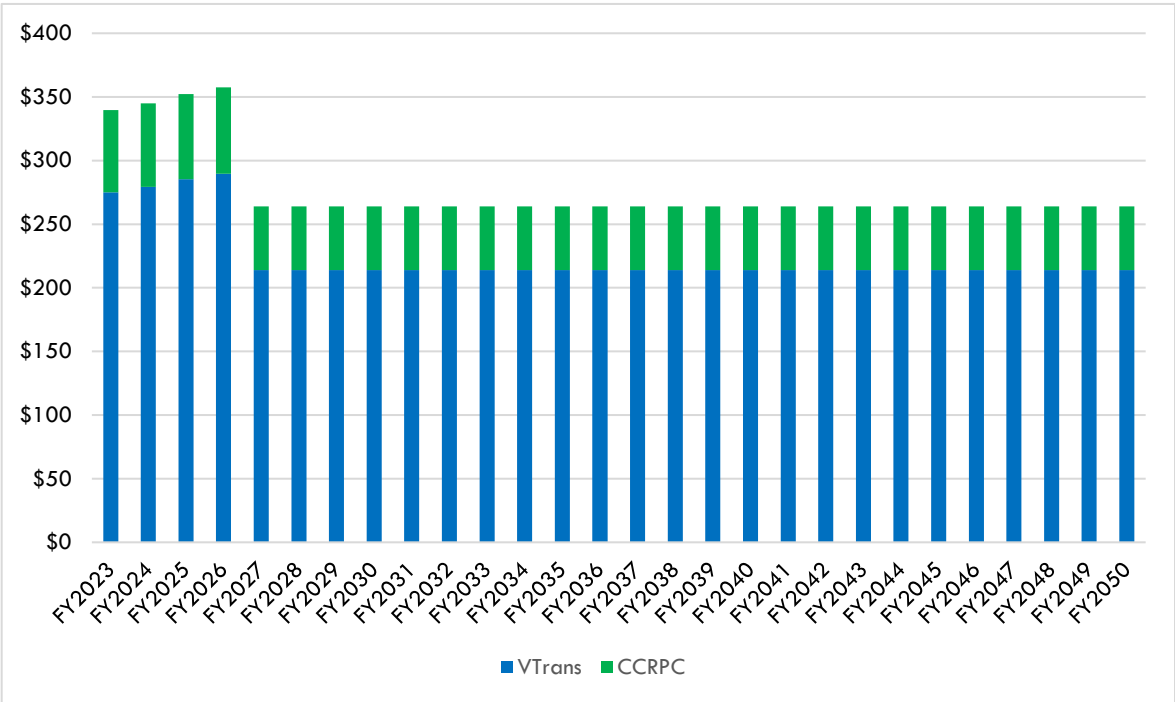
Source: FHWA and FTA Formula Fund amounts provided by FHWA, FTA and VTrans and adjusted to 2022 dollars using US Inflation Calculator

Funding Allocation to Chittenden County – The federal funds allocation to Chittenden County each year is based on projects in the VTrans Transportation Capital Program that are ready to advance to design and construction. The federal amount has fluctuated year to year from a low of 7.5% in FY2014 to a high of 40.6% in FY2005. The average proportion of statewide federal funding that went to CCRPC projects over the FY1999 – FY2021 period was 19%². This is a bit lower than Chittenden County’s proportion of statewide population at 26.2% (US Census, 2021 estimate) and Vehicle Miles of Travel (VMT) at 20.5% (VTrans, 2021) and represents a reasonable estimator of available funding in the County. As a result, CCRPC’s annual funding is estimated to be 19% of the total FHWA and FTA formula funds coming to Vermont.

Summary – Figure ?? presents the estimated Federal and CCRPC’s annual funding beginning in FY2023 and extending to FY2050. This is based on IIJA funding amounts for FY2023 to FY2026 and a flat statewide funding from FY2027 to FY2050 that is based on the average funding level for the ten years prior to the IIJA. CCRPC’s funding is estimated to be 19% of the statewide funding based on the historic share of statewide funds.

² This percentage is intended to represent a best estimate of available funding and is in no way intended to be construed as a CCRPC “entitlement” or “rightful share” of statewide funds.

**FIGURE ? - FEDERAL FUNDS ESTIMATED TO BE ALLOCATED TO VERMONT AND CHITTENDEN COUNTY:
FY2023 – 2050 (IN MILLIONS -- CURRENT YEAR DOLLARS)**

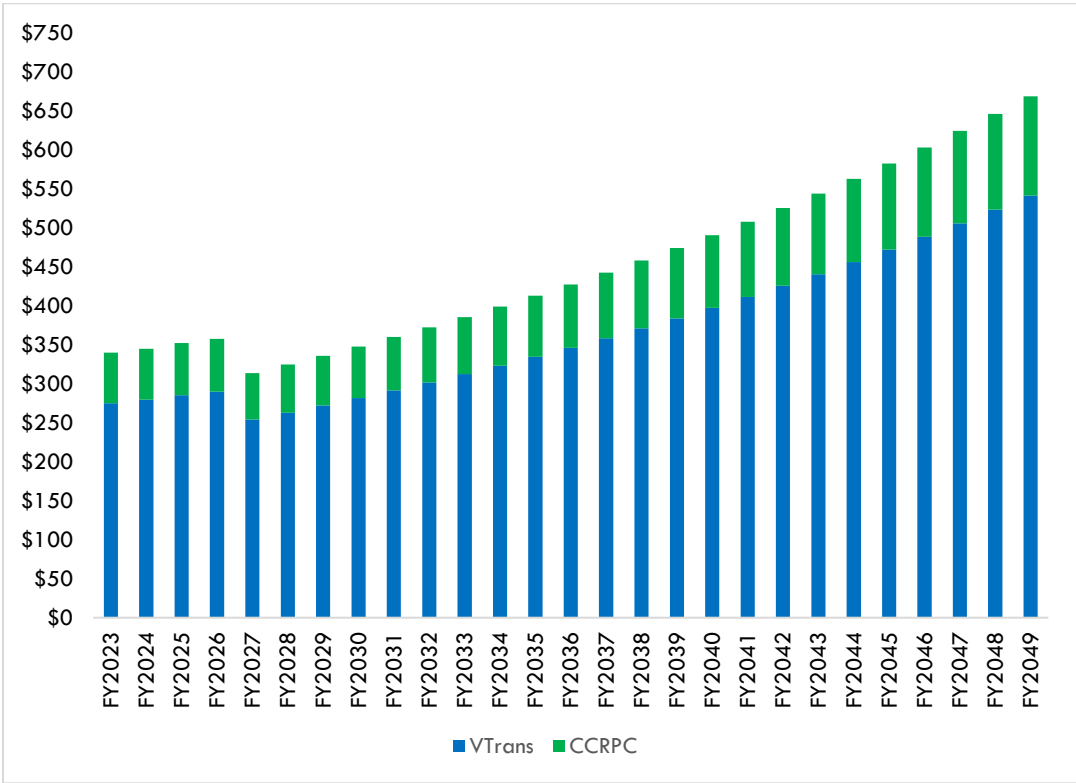


Source: IIJA amounts provided by FHWA, FTA and VTrans. Future funding levels calculated based on historic averages.

The MTP is also required to adjust future funding levels for inflation. CCRPC used the average inflation rate over the past 10 years of 3.5%³ to escalate future funding amounts between FY2027 and FY2050. Funding amounts during the IIJA years were not escalated since those amounts have already been established. Adjusting for inflation, and compounding over 28 years, results in significantly higher annual amounts – particularly closer to 2050 when the compounding effect is more pronounced.

³ 3.3% is the most recent 10-year average inflation construction cost increase from the US Inflation Calculator

FIGURE ? - FEDERAL FUNDS ESTIMATED TO BE ALLOCATED TO VERMONT AND CHITTENDEN COUNTY: FY2023 - 2050 (IN MILLIONS – 3.5% ANNUAL INFLATION RATE)



Source: IIJA amounts provided by FHWA, FTA and VTrans. Future funding levels calculated based on historic averages. Inflation rate of 3.5% is the 10-year average from US Inflation Calculator.

Potential Adjustments to Projected Funding

While there are a number of factors that could change the projected level of funding, the likelihood of significant changes is low. Looking back over the past 20 years, there have been efforts, discussions, and other initiatives to increase the funding for transportation. These have occurred on the regional, state, and national levels. The Vermont Legislature has also made adjustments to transportation funding by allowing limited bonding and modest fuel tax increases and while these funding sources could lead to an increase in funding for the MPO region, they are too small or inconsistent to reliably count on for a 28-year planning horizon.

At the federal level, given the passing of the IIJA in 2021, it appears that funding from this source should remain stable for the near future. However, future federal funding levels are determined by the federal government and may change over time.

In general, the above factors related to funding adjustments and potential uncertainty are too questionable or short lived to significantly impact the quantitative estimates of future transportation funding for Chittenden County.

The discussion is intended to highlight some of the uncertainties which may affect CCRPC’s ability to fund transportation projects into the future.

Overall Funding Constraint Conclusion

Funding for CCRPC transportation projects is presently dependent on federal funding, which is generally matched on an 80% federal / 20% non-federal basis at the state and local levels. Historically, CCRPC has accounted for 19% of the annual federal transportation funds available statewide. For the duration of the IIJA Vermont is expected to receive an average of \$282.6 million per year. For the funding level after FY2026 the pre-IIJA ten-year average of \$264 million per year was applied. The total funding to Chittenden County between FY2023 and FY2025 in constant 2022 dollars is estimated to be \$1.469 billion. Adjusting funding levels for an estimated 3.5% inflation results in \$2.449 billion being available for Chittenden County over the coming 28 years.

FIGURE ? – PROJECT ANNUAL AND CUMULATIVE FUNDING FOR VERMONT AND CHITTENDEN COUNTY PROJECTS

	2022 Constant Dollars		Year of Expenditure -- 3.5% Annual Inflation (FY27-FY50)	
	FHWA and FTA Formula Funds to Vermont	Federal Funds to Chittenden County (19%)	FHWA and FTA Formula Funds to Vermont	Federal Funds to Chittenden County (19%)
FY2023	\$339.7	\$64.5	\$339.7	\$64.5
FY2024	\$344.8	\$65.5	\$344.8	\$65.5
FY2025	\$352.2	\$66.9	\$352.2	\$66.9
FY2026	\$357.6	\$67.9	\$357.6	\$67.9
FY2027	\$264.0	\$50.2	\$313.5	\$59.6
FY2028	\$264.0	\$50.2	\$324.5	\$61.7
FY2029	\$264.0	\$50.2	\$335.9	\$63.8
FY2030	\$264.0	\$50.2	\$347.6	\$66.1
FY2031 - FY2035	\$1,320.0	\$250.8	\$1,929.4	\$366.6
FY2036 - FY2040	\$1,320.0	\$250.8	\$2,291.6	\$435.4
FY2041 - FY2045	\$1,320.0	\$250.8	\$2,721.7	\$517.1
FY2046 - FY2050	\$1,320.0	\$250.8	\$3,232.5	\$614.2
FY23-50 Total	\$7,730.3	\$1,468.8	\$12,891.1	\$2,449.3

Source: IIJA amounts provided by FHWA, FTA and VTrans. Future funding levels calculated based on historic averages. Inflation rate of 3.5% is the 10-year average from US Inflation Calculator.

FINANCIAL PLAN PART 2: SYSTEM OPERATIONS & MAINTENANCE ELEMENT

The operations and maintenance element is a fundamental component of the MTP financial plan. As directed by federal regulations, the estimate of funds available to implement new plan initiatives is the total constraint amount as detailed in Part 1 minus the funds necessary to operate and maintain the existing investment in transportation infrastructure to an acceptable standard of service. Defining the funding needed to operate and maintain facilities and services is the purpose of this element of the financial plan.

To calculate anticipated future maintenance and operations funding for the existing system, we have looked at historical expenditures in the relevant funding categories from annual Transportation Improvement Programs (TIPs). When reviewing the TIP funding history over the past 10 years (FY2012–FY2021) and using the categories of Bridge, Paving, Slope and Ledge Improvements, and Transit, the average percent of the overall funding to those categories is just under 70%.

TABLE ? – CHITTENDEN COUNTY FEDERAL FUNDING HISTORY BY PROJECT USE CATEGORIES: FY2012 TO FY2021 (IN MILLIONS)

Project Use Category	FY2012 - FY2021 Obligations – (excludes earmarks) in millions	Percent of Total
Paving	\$96.0	28.1%
Bridge	\$67.1	19.7%
Slope and Ledge Improvements	\$1.4	0.4%
Transit Operations & Maintenance	\$69.4	20.3%
Preservation Total	\$233.9	68.6%
Roadway Corridor Improvements	\$18.7	5.5%
Safety/ Traffic Operations/ ITS	\$41.0	12.0%
New Facility/Major Roadway Upgrades	\$17.4	5.1%
Bike & Pedestrian/ Enhancement	\$16.5	4.8%
Intermodal	\$6.8	2.0%
Stormwater/ Environmental	\$3.6	1.1%
Rail Crossings	\$3.2	0.9%
Other Total	\$107.3	31.4%

Source: Obligation amounts reported by VTrans and GMT.

Operations and maintenance funding comes from a variety of sources depending on the type of facility. Interstate highways and bridges receive federal funds through special programs, state highways receive funding through both federal and state programs, and local highways and bridges on the federal aid system receive maintenance funding through local, state, and federal programs. Transit purchases of new and replacement rolling stock are often supported with federal funds through the Federal Transit Administration (FTA) and FHWA Congestion Mitigation & Air Quality (CMAQ) funds and, in past years, earmarks. Municipal contributions and farebox revenues are also important sources of ongoing transit operations and maintenance costs.

Future funding for operations and maintenance was assumed to be 70% of the total funding anticipated to be allocated to Chittenden County. For the duration of IJJA the average annual funding for system operation and maintenance is \$46.4M in 2022 dollars. For the period 2027 to 2050 the annual amount to operation and maintenance is \$35.1 in 2022 dollars.

After accounting for system maintenance and operations the remaining funds expected to come to Chittenden County would be available for new projects. The estimated total for new projects would average \$19.9 million per year for the duration of the IJJA and is estimated to be \$15 million from FY2027 to FY2050 (in 2022 dollars). The total funding available for new and already committed TIP projects is shown in below. The estimated funding available for planned improvements and current TIP projects in the MTP is estimated at \$440.6 million in 2022 constant dollars.

FIGURE – PROJECTED ANNUAL FUNDING TO VTRANS AND CCRPC SYSTEM PRESERVATION AND FOR NEW AND COMMITTED PROJECT (MILLIONS)

	2022 Constant Dollars (millions)				Year of Expenditure (millions) 3.5% Annual Inflation (FY27-FY50)			
	FHWA and FTA Formula Funds to Vermont	Federal Funds to Chittenden County (19%)	System Preservation (70%)	New Projects (30%)	FHWA and FTA Formula Funds to Vermont	Federal Funds to Chittenden County (19%)	System Preservation (70%)	New Projects (30%)
FY23	\$339.7	\$64.5	\$45.2	\$19.4	\$339.7	\$64.5	\$45.2	\$19.4
FY24	\$344.8	\$65.5	\$45.9	\$19.7	\$344.8	\$65.5	\$45.9	\$19.7
FY25	\$352.2	\$66.9	\$46.8	\$20.1	\$352.2	\$66.9	\$46.8	\$20.1
FY26	\$357.6	\$67.9	\$47.6	\$20.4	\$357.6	\$67.9	\$47.6	\$20.4
FY27	\$264.0	\$50.2	\$35.1	\$15.0	\$313.5	\$59.6	\$41.7	\$17.9
FY28	\$264.0	\$50.2	\$35.1	\$15.0	\$324.5	\$61.7	\$43.2	\$18.5
FY29	\$264.0	\$50.2	\$35.1	\$15.0	\$335.9	\$63.8	\$44.7	\$19.1
FY30	\$264.0	\$50.2	\$35.1	\$15.0	\$347.6	\$66.1	\$46.2	\$19.8
FY31-35	\$1,320.0	\$250.8	\$175.6	\$75.2	\$1,929.4	\$366.6	\$256.6	\$110.0
FY36-40	\$1,320.0	\$250.8	\$175.6	\$75.2	\$2,291.6	\$435.4	\$304.8	\$130.6

FY41-45	\$1,320.0	\$250.8	\$175.6	\$75.2	\$2,721.7	\$517.1	\$362.0	\$155.1
FY46-50	\$1,320.0	\$250.8	\$175.6	\$75.2	\$3,232.5	\$614.2	\$429.9	\$184.3
TOTAL	\$7,730.3	\$1,468.8	\$1,028.1	\$440.6	\$12,891.1	\$2,449.3	\$1,714.5	\$734.8

CONCLUSION AND PROPOSED FUTURE ALLOCATIONS

This financial plan concludes that Chittenden County will have a total of \$440.6 million in federal funds, in constant 2022 dollars, for current TIP projects and new transportation investments between 2023 and 2050. When factoring inflation into the calculation the total cumulative funding amount is \$734.8 million in year of expenditure dollars.

Maintaining and operating the existing transportation system is a critically important task and it has been estimated that \$1.028 billion will be required to accomplish this – nearly three quarters of the total. The plan also identifies \$168.2 million for projects listed in the current Transportation Improvement Program (TIP). The remaining funding available for new transportation needs is estimated at a little over \$272.4 million.

Future Land Use & Transportation Scenarios

During the update of the 2018 ECOS Plan, the CCRPC worked with consultants to prepare a 2050 demographic and employment forecast which estimates future household, population, and employment conditions for the county. The forecast was used in the development of both the Energy Plan and the MTP. To prepare for the 2023 plan update, staff has compared current (Year 2020 and Year 2019) Census, American Community Survey, and Bureau of Economic Analysis data to the forecast to determine whether an update of the forecast is needed. Currently, the number of households and population for the county is 2% more than the 2020 population and household forecast. Additionally, current total employment is 6% less than the 2020 estimate for employment.

Given the minimal difference between the current demographic and employment data and the forecast, staff determined that the forecast is still valid and recommended to the Board that the 2018 ECOS Plan forecast be utilized for the 2023 ECOS Plan, including the MTP. The CCRPC Board approved this recommendation at their November 17, 2021, meeting. Table 2 tabulates the 2050 forecasts for population, employment and households in the county.

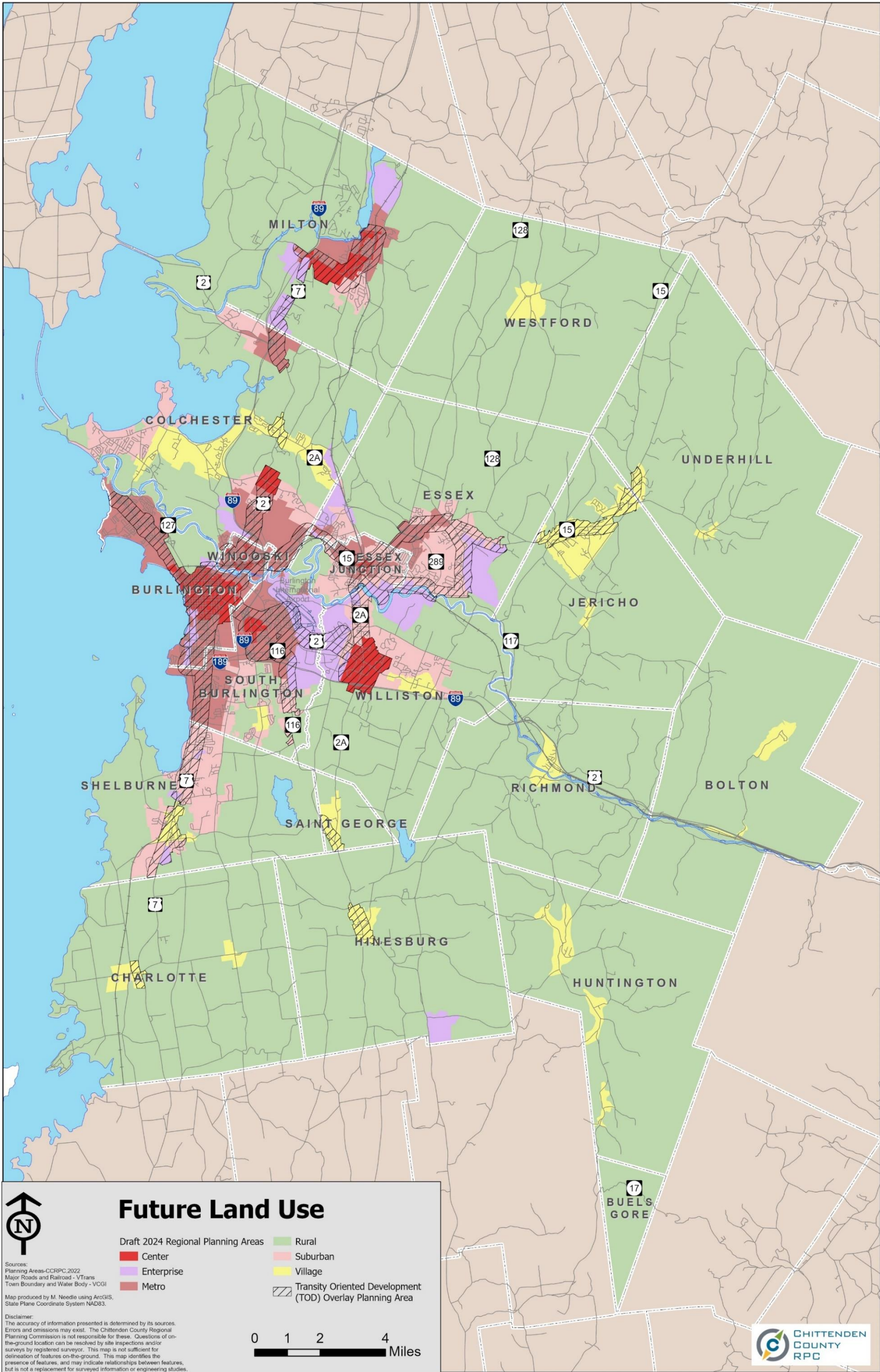
TABLE 2 – CHITTENDEN COUNTY DEMOGRAPHICS

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

FUTURE LAND USE

The 2018 MTP strived to increase the viability of walking, biking, and transit by concentrating land use in all areas planned for growth with increased density in the urban centers and villages (90% of new households). The 2023 MTP is adding a Transit Oriented Development Overlay (TOD) to the future land use map (see Map 2) to reinforce the need for more dense development around existing (primary) transit routes. A definition of the TOD Planning Areas is presented below:

TOD Planning Areas are generally within a quarter mile from Green Mountain Transit's primary and commuter routes that are also located in areas within the County's areas planned for growth. While the base planning areas reflect local zoning, the TOD Overlay Planning Areas are meant to emphasize the importance of locating new development in locations within walking distance to existing public transit routes. Residential uses within the TOD Overlay Planning Areas are encouraged to be constructed at higher densities than in areas outside TOD Overlay Planning Areas. Commercial and industrial uses within the TOD Overlay Planning Areas are encouraged to be designed in a manner that promotes walkability from public transit and creates a safe, pedestrian-oriented environment. The TOD Overlay Planning Area will not be used in regulatory proceedings (Act 250 and Section 248).

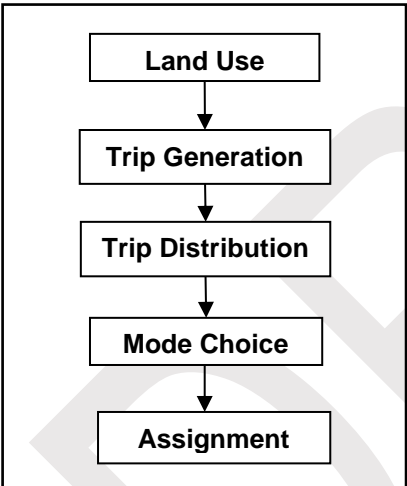


REGIONAL TRANSPORTATION MODEL

Transportation models have been used in Chittenden County since the mid-1980's. The current model framework was developed in 1994 and was updated and enhanced in 1998, 2011, and 2017. It uses custom designed computer software to examine travel impacts on roadway capacity and congestion in the county based on various land use, demographic, mode share, highway network, and other scenarios.

The model is a sophisticated tool that simulates the interaction of trips generated by households and employment and evaluates their impact on the transportation system. It is also sensitive to how congestion impacts trip making decisions and can analyze morning (AM) and afternoon (PM) peak hour, as well as daily conditions. For the current MTP analyses, daily results of specific metrics were used to gauge county-wide performance of each scenario relative to one another. The AM or PM peak hour results highlight specific network issues for each scenario. The AM or PM peak hour results are used for this purpose since they represent the time in which the network exhibits the greatest levels of congestion. It is important to look at both AM and PM peak hours to ensure potential future problems are not overlooked.

The model follows a five-step process as shown at the diagram on the left. This process is built first to replicate existing travel conditions and then adapted to simulate future scenarios.



The five model steps break-down the relationship between the land use, economic activity, and travel behavior. Trip generation estimates the total number of trips produced and trip distribution estimates where these trips will go. Both of these steps are based on where the households and employment are located. Mode choice evaluates how people will travel (i.e. drive, bike, walk, or bus) and trip assignment estimates which route travelers will use. For more information on the regional model visit <https://www.ccrpcvt.org/our-work/transportation/transportation-resources/modeling/>.

The Chittenden County Transportation Model is a powerful and important analytical tool, but it is just that – a tool for helping us to better understand transportation issues. The model does not make decisions but is one of numerous resources the CCRPC calls upon

to make more informed choices about how to invest limited resources to improve the region's transportation system.

SCENARIOS EVALUATED

The four scenarios evaluated for the development of the 2050 MTP scenario are described in Table ?? and results from the evaluations are presented in Figures ?? to ??.

TABLE 2: SCENARIOS EVALUATED

Scenario Name	Scenario Elements/Assumptions /Description
2020 Base with Planned Transportation Projects	<ul style="list-style-type: none"> • 2025 housing and employment growth • 90% of households in existing areas planned for growth with concentration in the urban center and village planning areas.
2050 Base with Planned Transportation Projects	<ul style="list-style-type: none"> • 2050 housing and employment growth • 90% of households in existing areas planned for growth with concentration in the urban center and village planning areas. • 2023 – 2026 TIP projects that are also front of the book in VTrans' Transportation Capital Program
2050 MTP (2018 Plan)	<ul style="list-style-type: none"> • 2050 housing and employment growth • 90% of households in existing areas planned for growth with concentration in the urban center and village planning areas. • Substantial increase in walk/bike infrastructure in Villages and City/Town Centers. • Safety improvements at High Crash Locations. • 15-minute headways all day for the existing trunk routes in the county (US2, US7, VT15, and North Avenue); 20 min headways for all other routes; and a new <i>VT-127 to Colchester</i> transit loop service. • 2023 – 2026 TIP and Local projects identified by municipalities and the CCRPC through various planning studies and plans (see 2018 MTP project list). • Intelligent Transportation System investments and signal upgrades for major arterials in the county
I-89 2050 Study	<ul style="list-style-type: none"> • 2050 housing and employment growth • 90% of households in existing areas planned for growth with concentration in the urban center and village planning areas. • New Exit 14 Interchange (preferred alternative from the FY24 Scoping Study) • Safety improvements at High Crash Locations.

- 2023 – 2026 TIP and Local projects identified by municipalities and the CCRPC through various planning studies and plans (see 2023 MTP project list).
- Mileage-based fee (5 cents/mile)
- Significant Transportation Demand Management Investments (will be further explored in a FY24 study to understand the feasibility and efficacy of these proposed investments)
 - Increase teleworking by 50%
 - Double trips made by bike
 - Triple transit services and improve frequencies
 - Double participation in TDM programs
 - Increase cost of parking

SCENARIO RESULTS

The following figures showcase how the four scenarios compare to each other against some key metrics. Daily delay and VMT per capita follow a similar pattern in that they increase in the 2050 Base and 2018 MTP scenario future and are substantially reduced in the 2023 MTP scenario. Figure ?? show that even though there were some modest gains in the non-auto mode share in the 2018 MTP, these gains increased significantly in the I-89 2050 Study scenario due to significant investments in TDM and non-auto transportation options in this scenario. The increase share of non-auto modes coupled with a reduction in vehicle trips (Figure ??) due to teleworking and carpooling, explain the significant reductions in delay and VMT for the I-89 2050 Study scenario.

FIGURE ? – COUNTYWIDE DAILY DELAY PER CAPITA

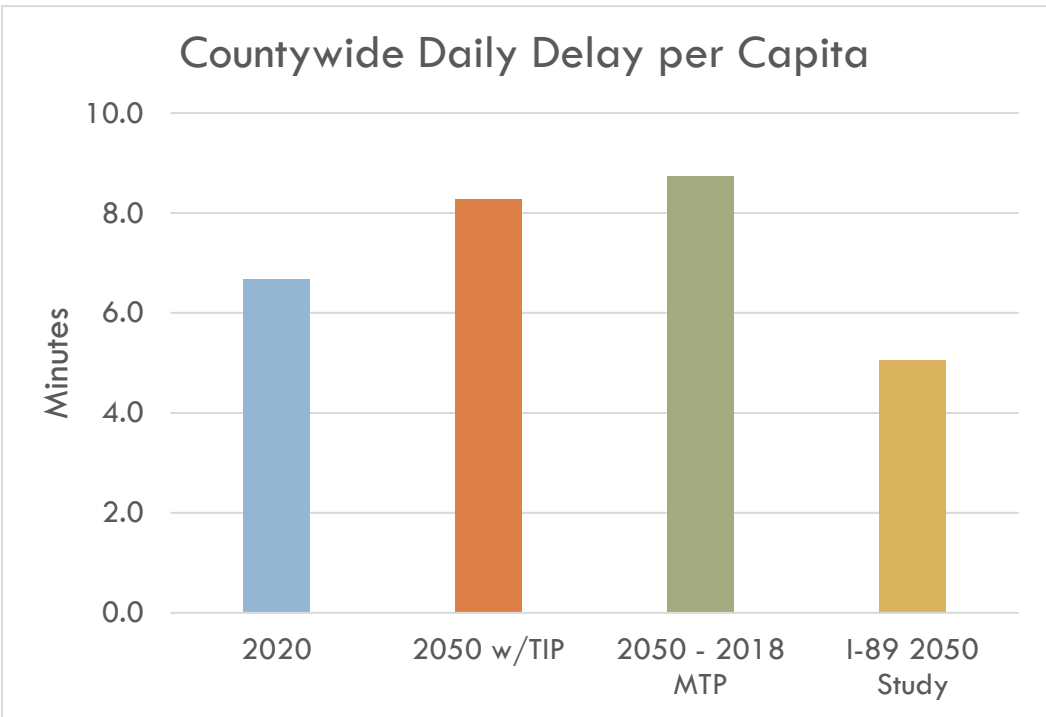


FIGURE ? - COUNTYWIDE DAILY VEHICLE MILES TRAVELED (VMT) PER CAPITA

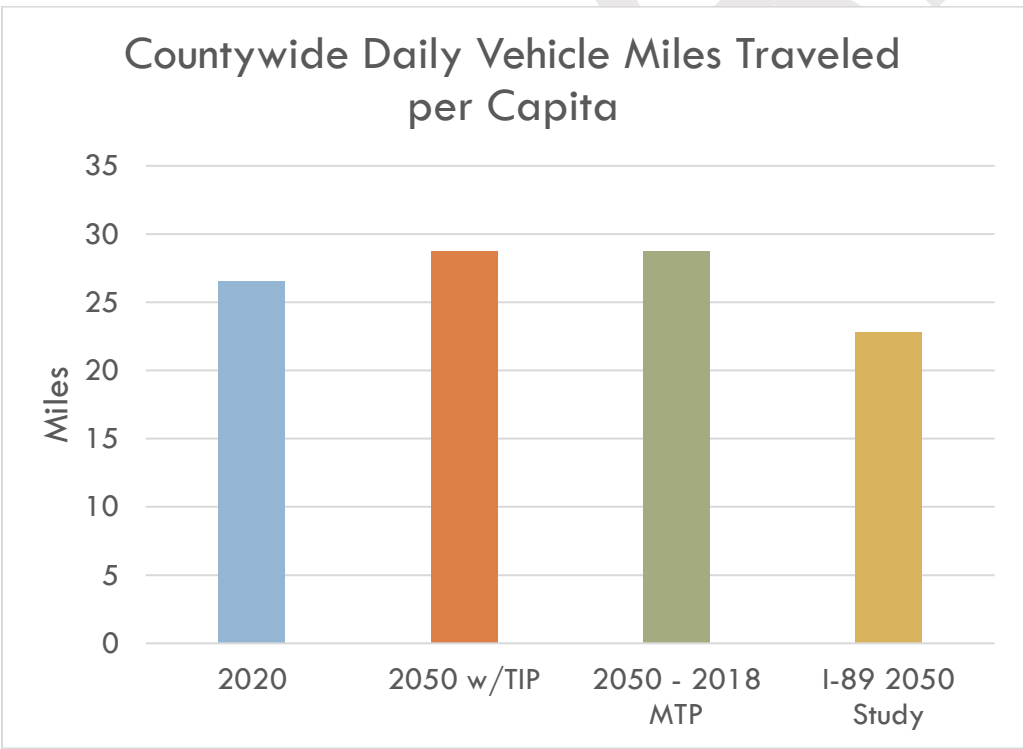


FIGURE 21 - COUNTYWIDE DAILY TRANSIT, WALKING, AND BIKING MODE SPLIT

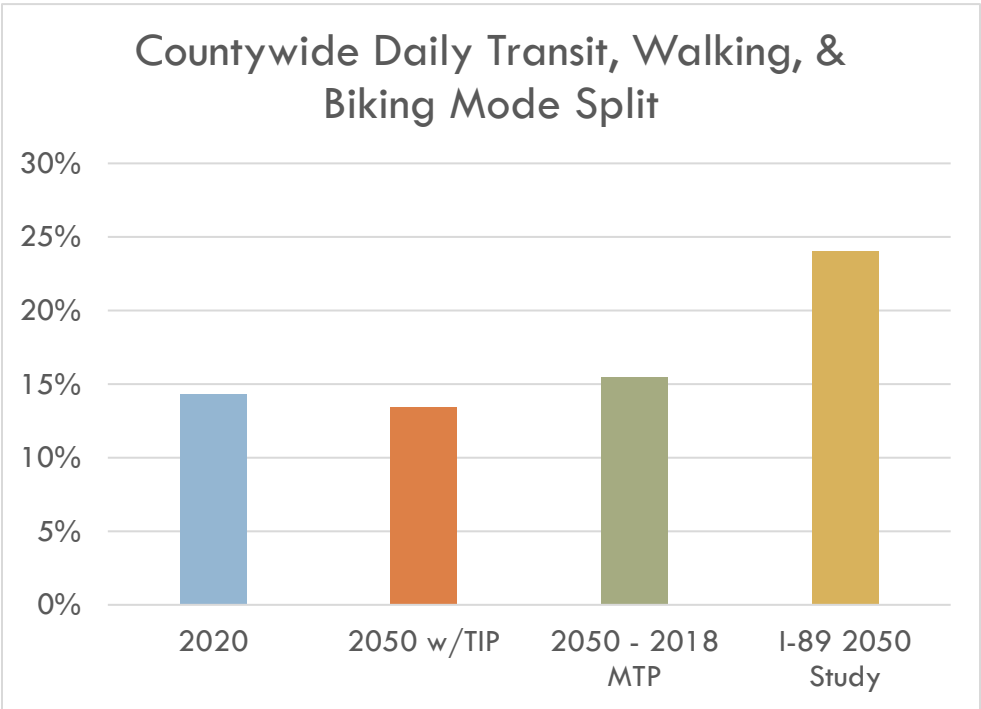
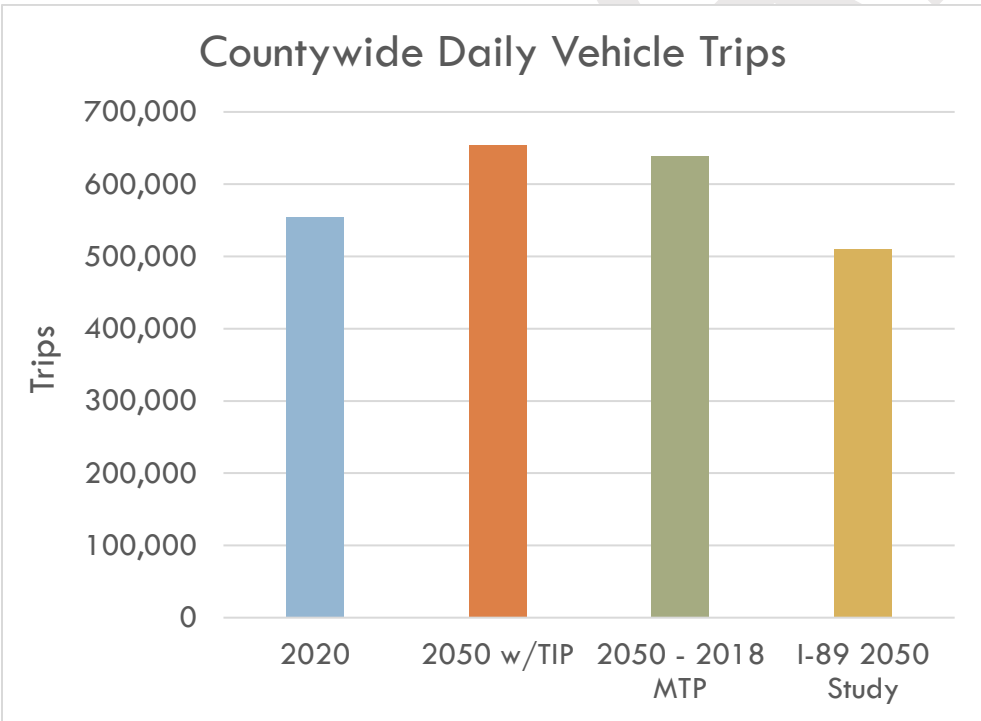


FIGURE 22 - COUNTYWIDE DAILY VEHICLE TRIPS



2023 MTP SCENARIO FOR 2050 CONDITIONS

Meeting the state and regional transportation and climate goals will require a multipronged approach that includes major shifts in transportation investments and policies to facilitate significant increases in people walking, biking, taking transit and other non-auto modes thus reducing VMT and GHGs; supporting compact developments (90% of new growth) in areas planned for growth; electrification of the fleet (90% by 2050); instituting a mileage-based fee for all vehicles; and increasing the cost of parking in downtown and village areas.

To meet these goals, the CCRPC is proposing to adopt an aspirational 2023 MTP Scenario for future year 2050 that incorporates major transportation policies and investments from the recently completed Chittenden County I-89 2050 Study (<https://envision89.com/>) that has yielded a suite of options that reduce vehicle miles traveled and also improve the efficiency of our transportation system.

Specifically, the proposed 2023 MTP Scenario was developed during the Strategic Model ([link to the report](#)) effort that the CCRPC undertook as part of the I-89 2050 Study. This effort was focused on the development of a comprehensive package of improvements and policies (TDM, pricing, fees, etc.) that would help decrease VMT and SOV travel in Chittenden County to meet the regional climate goals and avoid expensive Interstate capacity upgrades. By shifting the focus to managing congestion via flexible work schedules, increased transit and non-auto investments, addressing bottlenecks, and other means of managing transportation demand, rather than attempting to reduce congestion via large highway expansions, the region's finite funding can go further towards achieving our goals. The proposed 2023 MTP scenario also includes localized intersection and interchange improvements, specifically when it concerns safety for all modes, acute congestion, and improving mobility for non-auto modes.

The CCRPC recognizes that the proposed 2023 MTP Scenario represents an aspirational future that will require major shifts in transportation policies and investments and changes in the structure used to finance maintenance, improvements and expansion of the transportation system. It will require actions from the state (executive and legislative branches), our municipalities, and behavioral changes from residents, employees, employers and visitors in our county.

MTP Elements

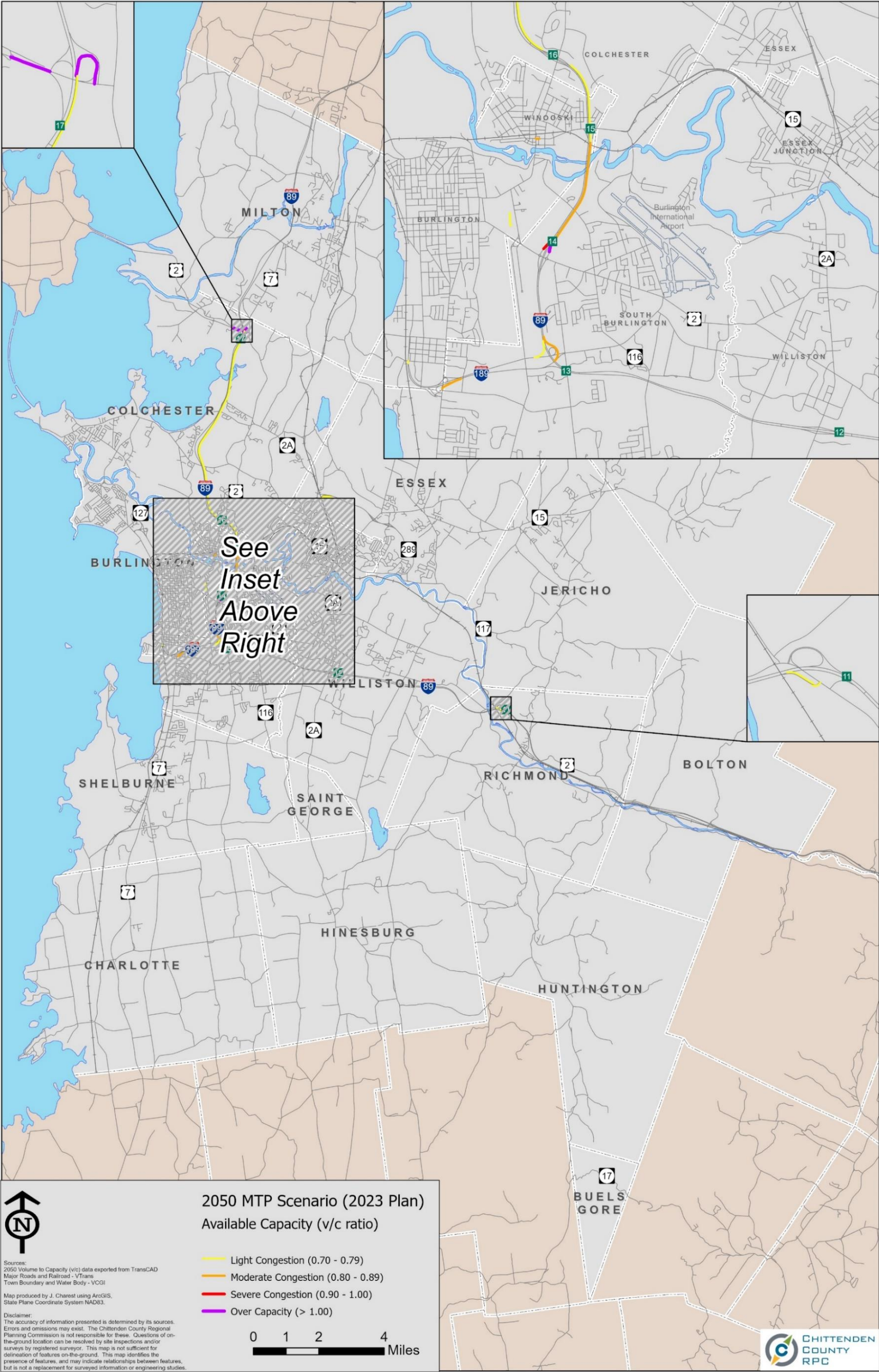
- 90% of households in existing areas planned for growth with concentration in the urban center/ village planning areas and higher density along major transit routes
- New Exit 14 Interchange (Preferred alternative from a FY24 scoping study)
- Safety improvements at High Crash Locations
- TIP and Local projects identified by municipalities and the CCRPC through various planning studies and plans (see 2023 MTP project list)
- Mileage-based fee (5 cents/mile)
- New Exit 14 Interchange (preferred alternative from the FY24 Scoping Study)
- Safety improvements at High Crash Locations
- 2023 – 2026 TIP and Local projects identified by municipalities and the CCRPC through various planning studies and plans (see 2023 MTP project list).

- Significant Transportation Demand Management Investments will be further explored in a FY24 study to understand the feasibility and efficacy of these proposed investments. These include:
 - increase teleworking by 50%;
 - double trips made by bike;
 - triple transit services and improve frequencies;
 - double participation in TDM and carsharing programs; and
 - increase cost of parking in villages and downtowns.

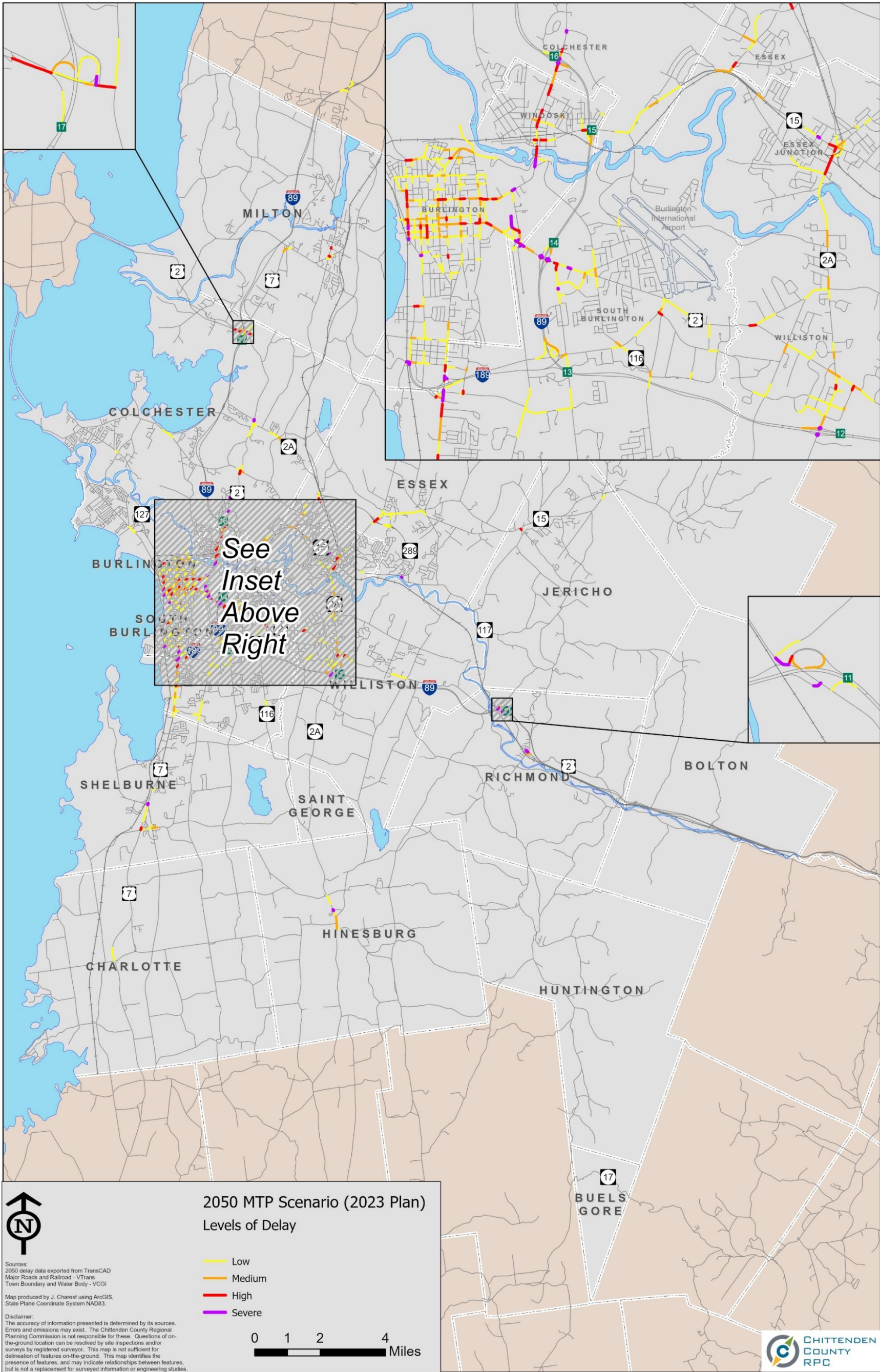
2023 MTP Scenario Results

As previously shown in Figures ?? through ??, the 2023 MTP scenario has significant potential to reduce delay, VMT, and increase non-auto modes of transportation. Maps ?? through ?? showcase the 2023 MTP performance throughout Chittenden County. All maps are hybrids of the greatest congestion or delay in the AM or PM peak hour conditions. Map ?? shows that segments of the Interstate 89 should be monitored for potential capacity issues, especially the Exit 17 area that might be over capacity in 2050. Map ?? illustrates where we expect people to encounter recurring congestion during AM or PM conditions in 2050; mainly in the downtown areas, villages, and major arterials. Map ?? highlights the extent and location where the 2023 MTP scenario improves delay throughout the transportation network in the county compared to the 2050 Base.

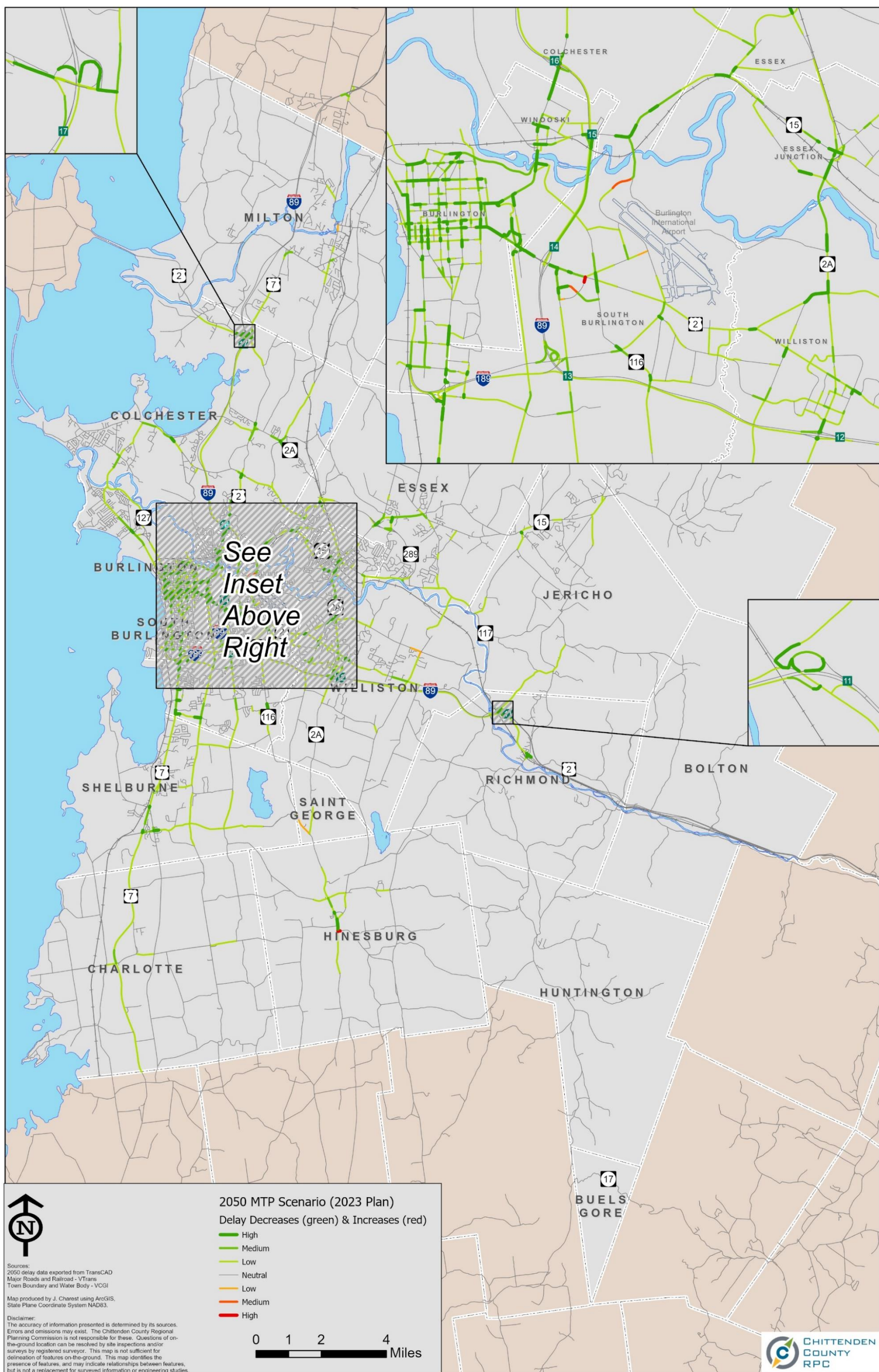
MAP 2 – 2023 MTP SCENARIO AVAILABLE ROADWAY CAPACITY AM OR PM PEAK (VOLUME/CAPACITY)



MAP 2 – 2023 MTP SCENARIO LEVELS OF DELAY AM OR PM PEAK (DELAY/MILE)



MAP ? – 2023 MTP SCENARIO DELAY CHANGES AM OR PM PEAK VS 2050 BASE



2023 MTP SCENARIO GREENHOUSE GAS EMISSIONS

FIGURE ?? – COUNTYWIDE DAILY GREENHOUSE GAS EMISSIONS

Results will be shared late January/early February

DRAFT

Metropolitan Transportation Plan Investments, Policies and Projects

To meet the Vision and Goals articulated earlier in this report and achieve the aspirational 2023 MTP scenario, a number of major investments and policies are necessary that over the years would help support a balanced, achievable and sustainable transportation future for Chittenden County. These investments and policies are discussed below.

MAJOR INVESTMENTS & POLICIES

- Adequately maintain and improve our existing transportation system including roads, bridges, culverts, rail, transit, walking/biking, park-and-ride facilities, and transportation demand management (TDM) programs.
- Invest in our transportation system by addressing safety and localized congestion issues on our roadways.
- Work with federal, state, and local partners to find new sources for transportation funding; shift from gas tax to more sustainable sources such as a mileage-based fee.
- Expand the deployment of Intelligent Transportation Systems (ITS) to facilitate efficient flow of traffic on the roadway system which will improve safety, reduce delays and congestion, decrease transportation energy use, and minimize the need for major roadway expansion projects.
- Implement the identified MTP Projects. Transportation Improvement Program (TIP) projects are expected to be implemented within the next seven years.
- Encourage higher density and mixed-use land development, as proposed by the MTP (90% of households in areas planned for growth and higher density along major transit routes) to improve the efficiency of transportation investments.
- Future transportation investments will support our areas planned for growth by facilitating a shift away from Single Occupancy Vehicle (SOV) trips by focusing on the following areas and programs:
 - a) Triple transit use by 2050 – feasibility of this strategy will be explored in a FY24 Study
 - Increase investment in GMT transit services in the county and explore Microtransit opportunities in the county.
 - Identify new, sustainable, and stable sources to finance public transit.
 - Work with GMT to identify opportunities for transit expansion. Integrate park-and-ride facilities with transit routes.
 - Invest in transit signal priority technology in partnership with GMT, VTTrans and municipalities.
 - Maximize ridership for public school buses and minimize use of private vehicles for student transport.
 - b) Expand walking and biking infrastructure to support active transportation and improve interconnection with the region's transit system
 - Implement the strategies, projects and priorities identified in the 2022 Chittenden County Active Transportation Plan to provide safe and efficient facilities to connect common origins and destinations.

- Work with municipalities to update municipal road standards to reflect complete streets principles.
- Review state and municipal transportation projects to ensure that complete streets principles are implemented.
- Ensure that site plans include adequate bike and pedestrian infrastructure and safety measures, through participation in the Act 250 hearing process.
- Assist municipalities with scoping of future bike and pedestrian facilities to improve safety, accessibility, and continuity of the system. Municipalities could use the outcomes of the scoping studies to apply for various VTrans implementation grants.
- c) Promote Transportation Demand Management and Car Sharing programs
 - Promote and support the Go! Vermont program that links travelers to a variety of transportation resources and choices.
 - Support the continued development and expansion of Chittenden County Park-and-Ride facilities as recommended in the 2022 Regional Park-and-Ride Plan.
 - Work with the Chittenden Area Transportation Management Association (CATMA) to support employer programs to encourage telecommuting, carpooling, vanpooling, walking, and biking for employee commute trips.
 - Support CarShare Vermont's programs.
- Promote a shift away from gas/diesel vehicles to electric/other non-fossil fuel transportation options (electrify 90% of the vehicle fleet by 2050) – **This section will be updated by Melanie and Ann**
 - a) Work with the Clean Cities Coalition to encourage municipal fleets to switch to biodiesel for heavy-duty vehicles.
 - b) Work with local employers and nonprofit partners such as the Vermont Energy and Climate Action Network and Vermont League of Cities and Towns to encourage broader implementation of EV incentives, such as free or reduced parking costs for EV and fuel-efficient vehicle owners and preferential access to parking spaces limited in supply.
 - c) Promote the Drive Electric Vermont webpage, which connects users to financial incentives dealers, and recharging stations for EVs.
 - d) In partnership with Drive Electric Vermont, Vermont Clean Cities Coalitions and other entities, increase awareness of the benefits of and access to EVs and alternative-fuel vehicles.
 - Organize high-visibility events where people can see and test drive EVs, such as county fairs, energy fairs, and summer festivals. Events should also leverage local newspaper and public access coverage to showcase local residents and organizations that are helping to propel the transition to EVs.
 - Assist with deploying EV Infrastructure at workplaces and key public locations.
 - Encourage electric utilities to invest in charging infrastructure, offer incentives to increase EV ownership, and build awareness of charging opportunities as part of their strategy for complying with the state's Renewable Energy Portfolio Standard.
 - Seek grants to fund the installation of DC fast-charging infrastructure at strategic locations along major travel corridors and in transit hubs and along the Interstate 89 Alternative Fuels Corridor (I-89 from New Hampshire to the Canadian border).

- Educate municipalities and provide technical assistance on amending zoning regulations to include electric vehicle charging infrastructure.
- Support and enhance our rail infrastructure for both passenger and freight and promote the upgrade of the Essex Junction to Burlington line (Winooski branch). Where needed, provide additional rail infrastructure for the support of more efficient and safe movement, handling, and storage of goods.

IMPLEMENTATION OF 2018 MTP

Since the completion of the 2018 MTP, several investments, policies and projects included in the plan have been accomplished with over 150 transportation projects completed throughout Chittenden County using \$215 million federal transportation funds. The 2018 ECOS goal of 80% of households going into the areas planned for growth has been exceeded with 87% of new growth being located in these areas. Electrification of the fleet has accelerated in the last five years even though the pace of this shift needs to increase substantially to meet our climate goals.

Some specific investments are listed below:

- The 2018 MTP called for 70 percent of the available federal funds to be spent on system preservation. Actual spending in the categories of Paving, Bridge, and Transit – which are critical to maintaining the existing transportation system in a state of good repair – accounted for 60 percent of the total funding. Another important aspect of system preservation is maintaining traffic signals and rail grade crossing equipment. In the past five years improvements have been made at 24 intersections and 5 rail crossings accounting for 17.5 percent of the funding total;
- Three Capacity Expansion projects – Champlain Parkway, Burlington; Crescent Connector, Essex Junction; and Market Street, South Burlington – accounted for just 7.4 percent of funding;
- Two Roadway Corridor projects (US7 Reconstruction, Charlotte; and Pearl Street Improvements, Essex Junction) accounted for 4.9 percent of the total funds;
- Upgrades are underway at three interstate interchange locations, Exit 12, Exit 16 and Exit 17 to address safety, capacity and asset condition issues;
- Two Park and Ride facilities included in the 2011 plan were completed or are nearing completion at Exit 16 and Exit 12, respectively;
- Sidewalks, crosswalks, and multiuse path projects were constructed in 36 locations throughout the county accounting for 4.4 percent of the total funds; and
- Stormwater upgrades have been made in 23 locations throughout the county.

Project Category	Number of Projects	Funding Amount in Millions	Percent of Total
Paving	20	\$60.80	28.3%
Transit Capital and Service		\$38.38	17.9%
Intersections, traffic signals,	29	\$37.60	17.5%

and rail grade crossing improvements			
Bridge Projects	28	\$29.71	13.8%
Capacity Expansion Projects	3	\$15.80	7.4%
Roadway Corridor Improvements	2	\$10.46	4.9%
Sidewalks, Crosswalks and Multiuse Paths	36	\$9.41	4.4%
Interstate Interchange Improvements	3	\$4.17	1.9%
Stormwater	23	\$3.44	1.6%
Other	6	\$3.04	1.4%
Park and Ride Lots	2	\$2.09	1.0%
TOTAL	152	\$214.92	100.0%

2023 MTP PROJECT LIST

The MTP project list (See Table ??) includes projects identified through the various CCRPC and municipal planning processes in coordination with VTrans, Chittenden County municipalities, GMT, and other partners, as appropriate. Through the planning process, the CCRPC and municipalities identify, evaluate, and develop alternatives to address transportation needs in various categories including safety, bike and pedestrian, transit, multimodal connectivity, roadway congestion and capacity deficiencies, rail, and others.

The MTP project list proposes how federal transportation funds might be spent in Chittenden County over the next 27 years. However, almost all federal transportation funds received by Vermont flow through VTrans, and how those funds are spent is detailed in the VTrans Transportation Capital Program which is approved by the Vermont Legislature. The CCRPC and VTrans work closely on transportation planning in Chittenden County and VTrans support is necessary to advance any future transportation projects.

The MTP project list identifies projects that are in the current Chittenden County Transportation Improvement Program (TIP) and on the VTrans Transportation Capital Program. These projects have had funding programmed and are considered committed projects. The MTP project list also identifies projects that are on the VTrans Development and Evaluation List and Candidate List. These projects have been identified as future needs by VTrans and may have some project development studies completed or underway. Finally, the MTP list includes projects that municipalities identified as future needs to improve the transportation system and address multimodal needs in their communities and are not currently on any VTrans program.

The MTP project list includes a time frame (e.g., short, medium, long) which represents a preliminary estimate of when the project may be ready for construction. In addition, the short-medium time frame indicates that some elements of a project could move towards implementation in the short-term (by 2030), but the bulk of the project will probably be implemented in the medium-term (2030 to 2040).

The MTP Financial Plan calculates funding availability beginning in Federal Fiscal Year 2023, which begins on October 1, 2022. To be consistent with this approach the MTP Project List includes projects expected to spend funds beginning on October 1, 2022 and does include projects constructed in 2022. The Estimated Project Cost is the cost estimate as of October 2022 and excludes any funds spent prior to FY23 -- before October 1, 2022.

Table 2: 2023 MTP Projects

Draft 2023 MTP Project List
November 30, 2022

Project		Time Frame	Total TIP Committed (federal) (does not include funds already expended)	Federal Amount (Assume 80% of cost)	Category
Burlington					
Capital Program - Front of the Book and on CCRPC TIP					
Burlington	Champlain Parkway	Short	\$56,612,998		New Facility
Burlington	Intervale Road Rail Crossing Improvements	Short	\$624,038		Rail Crossing
Burlington	Intervale Road Shared Use Path	Short	\$1,108,200		Bike/ Pedestrian
Burlington	Lake Street Sidewalk and Stormwater Management	Short	\$300,000		Bike/ Pedestrian
Burlington	Railyard Enterprise Project	Short-Medium	\$15,297,160		New Facility
Burlington	Schiffli Park Shared Use Path	Short	\$258,528		Bike/ Pedestrian
Burlington	Shelburne Street Roundabout	Short	\$3,628,011		Safety/ Traffic Operations/ ITS
Burlington	Austin Drive Bicycle and Pedestrian Improvements	Medium		\$830,400	Bike/ Pedestrian
Burlington	Queen City Park Road Sidepath	Short	\$828,000		Bike/ Pedestrian
Capital Program - Development & Evaluation and on CCRPC TIP					
Burlington	Colchester Avenue/Prospect Street Intersection Improvements (VPSP2 Regionally Driven)	Short		\$936,496	Safety/ Traffic Operations/ ITS
Burlington	Colchester Avenue/ Barret Street/ Mill Street/ Riverside Avenue Intersection Improvements (VPSP2 Regionally Driven)	Medium		\$3,191,760	Safety/ Traffic Operations/ ITS
Need Identified in a Scoping or Planning Study, Not in Capital Program or on TIP					
Burlington	Battery Street Improvements (\$3.5m funded at 50% federal)	Medium		\$1,750,000	Roadway Corridor Improvements
Burlington	Cherry Street Complete Street	Short		Federal Earmark	Roadway Corridor Improvements
Burlington	Colchester Avenue Bicycle Improvements	Medium		\$6,400,000	Bike/ Pedestrian
Burlington	Depot Street Improvements (Bike/Ped)(\$1.1m funded at 50% federal)	Short		\$550,000	Bike/ Pedestrian
Burlington	Main Street Complete Street - US2 Section	Medium		Further Planning Needed	Roadway Corridor Improvements
Burlington	North Avenue Improvements (\$16.35m funded at 50%)	Short-Medium		\$8,175,000	Roadway Corridor Improvements
Burlington	Pearl Street Complete Street (\$3.3m funded at 50% federal)	Short		\$1,650,000	Roadway Corridor Improvements
Burlington	Shelburne Street Improvements - Complete Streets	Medium		\$12,900,000	Roadway Corridor Improvements
Burlington	Sherman Street Connection to Depot Street - Stairway Street (0.775m funded at 50% federal)	Short		\$387,850	Bike/ Pedestrian
Burlington	South End Multimodal Cener			Further Planning Needed	Park&Ride/ Intermodal
Burlington	Winooski Avenue Improvements (\$12.9m funded at 50% federal)	Short		\$6,450,000	Roadway Corridor Improvements
Burlington/ Winooski					
Need Identified in a Scoping or Planning Study, Not in Capital Program or on TIP					
Burlington / Winooski	Bike/Ped Bridge Crossing of the Winooski River in the vicinity of the "Blue Bridge"	Long		Further Planning Needed	Bike/ Pedestrian
Charlotte					
Need Identified in a Scoping or Planning Study, Not in Capital Program or on TIP					
Charlotte	Charlotte Village Parking	Medium		\$160,000	Park&Ride/ Intermodal
Charlotte	Town Link Trail - Phase 2 and 3	Medium		\$400,000	Bike/ Pedestrian
Colchester					
Capital Program - Front of the Book and on CCRPC TIP					
Colchester	Exit 16 Improvements - CIRC ALT PHASE I	Short	\$19,191,000		Interstate/ Interchange
Colchester	Exit 17/US2/US7 Interchange Improvements	Medium	\$25,188,272		Interstate/ Interchange

Draft 2023 MTP Project List
November 30, 2022

Project		Time Frame	Total TIP Committed (federal) (does not include funds already expended)	Federal Amount (Assume 80% of cost)	Category
Colchester	Severance Corners Improvements - CIRC ALT PHASE II	Short	\$5,215,778		Safety/ Traffic Operations/ ITS
Colchester	W Lakeshore Drive / Prim Road Intersection Improvements - CIRC ALT PHASE III	Short	\$2,697,400		Safety/ Traffic Operations/ ITS
Capital Program - Development & Evaluation and on CCRPC TIP					
Colchester	Bayside Intersection Roundabout and Stormwater Improvements (VPSP2 Asset Driven)	Medium		\$3,201,432	Safety/ Traffic Operations/ ITS
Colchester	VT2A Colchester Village and Mill Pond Road/East Road Intersection -CIRC ALT PHASE III	Medium		\$4,360,000	Roadway Corridor Improvement
Need Identified in a Scoping or Planning Study, Not in Capital Program or on TIP					
Colchester	Mill Pond Road/Severance Road Intersection Improvements	Long		\$272,686	Safety/ Traffic Operations/ ITS
Colchester	Severance Road Shared Use Path	Long		\$1,832,052	Bike/ Pedestrian
Colchester	VT127 Roadway, Bicycle/Pedestrian, and Intersection Improvements	Long		Further planning needed	Roadway Corridor Improvements
Colchester	Exit 17 Park & Ride	Medium		\$1,000,000	Park&Ride/ Intermodal
Colchester	VT15 and Barnes Avenue Intercept Facility	Medium		Further planning needed	Park&Ride/ Intermodal
Colchester	VT15/Lime Kiln Road Intersection Improvements	Medium		\$972,320	Safety/ Traffic Operations/ ITS
Colchester	West Lakeshore Drive Path - Prim Road to Blakely Road.	Medium		\$5,232,552	Bike/ Pedestrian
Colchester	West Lakeshore Pedestrian Tunnel at Bayside park	Long		\$1,888,000	Bike/ Pedestrian
Colchester/Essex/ Essex Junction					
Need Identified in a Scoping or Planning Study, Not in Capital Program or on TIP					
Colchester / Essex	VT15 Multi-use Path - Phase 2, I-89 Exit 15 to Lime Kiln Road	Long		\$295,104	Bike/ Pedestrian
Essex / Essex Junction	VT15 Multi-use Path - Phase 3, Susie Wilson Road to West Street Extension	Long		\$2,133,440	Bike/ Pedestrian
Essex					
Capital Program - Front of the Book and on CCRPC TIP					
Essex	VT15/Sand Hill Road Signal - CIRC ALT PHASE II	Short	\$1,141,340		Safety/ Traffic Operations/ ITS
Essex	Susie Wilson Road Improvements and Intersections including VT15 and Kellogg - CIRC ALT PHASE III	Short-Medium	\$1,451,122		Roadway Corridor Improvement
Essex	VT117/North Williston Road Intersection Improvements - CIRC ALT PHASE III	Medium	\$2,053,919		Safety/ Traffic Operations/ ITS
Capital Program - Candidate and on CCRPC TIP					
Essex	North Williston Road Flood Plain Elevation Improvements - CIRC ALT PHASE III	Medium		\$663,660	Roadway Corridor Improvements
Essex	VT15 Sidewalk - Old Stage Road to Essex Way - CIRC ALT PHASE III	Medium		\$256,209	Bike/ Pedestrian
Need Identified in a Scoping or Planning Study, Not in Capital Program or on TIP					
Essex	VT15 Bike/Ped Improvements, Athens Drive to VT289	Medium		\$1,293,280	Bike/ Pedestrian
Essex	VT117/ VT289 Park & Ride	Medium		Further Planning Needed	Park&Ride/ Intermodal
Essex	Allen Martin Drive/ VT15 Intersection	Long		\$1,586,208	Safety/ Traffic Operations/ ITS
Essex Junction					
Capital Program - Front of the Book and on CCRPC TIP					
Essex Junction	Crescent Connector Road - VT2A to VT15 - CIRC ALT PHASE I	Short	\$8,000,000		New Facility
Need Identified in a Scoping or Planning Study, Not in Capital Program or on TIP					
Essex Junction	VT15/ West Street Extension Intersection - Additional NB lane on West Street Ext.	Long		\$194,464	Safety/ Traffic Operations/ ITS
Hinesburg					
Capital Program - Front of the Book and on CCRPC TIP					
Hinesburg	Village South Sidewalk	Short	\$205,300		Bike/ Pedestrian

Draft 2023 MTP Project List
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Project		Time Frame	Total TIP Committed (federal) (does not include funds already expended)	Federal Amount (Assume 80% of cost)	Category
Hinesburg	VT116/ Charlotte Road Improvements to Facilitate Concurrent Signal Phasing	Short	\$90,460		Safety/ Traffic Operations/ ITS
Need Identified in a Scoping or Planning Study, Not in Capital Program or on TIP					
Hinesburg	Mechanicsville Road Sidewalk, West of Village Heights Road	Medium		\$140,224	Bike/ Pedestrian
Hinesburg	Richmond Road Shared Use Path, CVU Road to North Street	Long		\$2,782,400	Bike/ Pedestrian
Hinesburg	Richmond Road/North Road/Texas Hill Road Intersection Improvements	Medium		\$230,832	Safety/ Traffic Operations/ ITS
Hinesburg	Route 116 East Sidewalk - Commerce Street to Mechanicsville Road	Medium		\$220,352	Bike/ Pedestrian
Huntington					
Need Identified in a Scoping or Planning Study, Not in Capital Program or on TIP					
Huntington	Huntington Lower Village Traffic Calming and Bike/Ped Improvements	Medium		\$844,030	Bike/ Pedestrian
Jericho					
Capital Program - Front of the Book and on CCRPC TIP					
Jericho	Lee River Road Sidewalk	Short	\$264,000		Bike/ Pedestrian
Jericho	Riverside Village Sidewalk	Short	\$600,000		Bike/ Pedestrian
Capital Program - Development & Evaluation and on CCRPC TIP					
Jericho	VT117/Skunk Hollow Road Improvements (VPSP2 Asset Driven)	Medium		\$1,038,400	Safety/ Traffic Operations/ ITS
Need Identified in a Scoping or Planning Study, Not in Capital Program or on TIP					
Jericho	Browns Trace Multimodal Connection - MMU to Lee River Road/Ethan Allen Road	Medium		\$493,085	Bike/ Pedestrian
Jericho	VT15/Dickinson Street Modifications	Medium		\$842,520	Safety/ Traffic Operations/ ITS
Milton					
Capital Program - Front of the Book and on CCRPC TIP					
Milton	US7/Middle Road/Railroad Street Safety Improvements	Short	\$6,091,392	\$5,581,084	Safety/ Traffic Operations/ ITS
Capital Program - Development & Evaluation and on CCRPC TIP					
Milton	US7/Racine/Legion/Bartlett/West Milton Road Improvements (VPSP2 Regionally Driven)	Medium		\$1,200,000	Safety/ Traffic Operations/ ITS
Need Identified in a Scoping or Planning Study, Not in Capital Program or on TIP					
Milton	US7/Main Street Intersection Improvements	Long		\$972,320	Safety/ Traffic Operations/ ITS
Richmond					
Need Identified in a Scoping or Planning Study, Not in Capital Program or on TIP					
Richmond	US2 Path - VT117 to Richmond Village	Long		\$5,920,000	Bike/ Pedestrian
Richmond	Jonesville Park & Ride	Medium		Further Planning Needed	Park&Ride/ Intermodal
Richmond	Cochran Road Improvements and Shared Use Path	Medium/ Long		\$4,476,312	Bike/ Pedestrian
Richmond	VT117 Shared Use Path	Long		\$1,520,000	Bike/ Pedestrian
Richmond	US2 Bike Lanes and Shoulder Widening to Consistent 5 ft Width - Park & Ride to Richmond Village	Medium		Further Planning Needed	Safety/ Traffic Operations/ ITS
Shelburne					
Capital Program - Front of the Book and on CCRPC TIP					
Shelburne	Irish Hill Road Pedestrian Bridge and Sidewalk	Medium	\$466,678		Bike/ Pedestrian
Capital Program - Development & Evaluation and on CCRPC TIP					
Shelburne	US7/Harbor Road Improvements (VPSP2 Asset Driven Project)	Medium		\$1,402,240	Safety/ Traffic Operations/ ITS
Need Identified in a Scoping or Planning Study, Not in Capital Program or on TIP					
Shelburne	Bay Road Pedestrian Bike Safety Improvements	Medium		\$1,934,400	Bike/ Pedestrian
Shelburne	Shelburne Southern Gateway (South of Bostwick/Marsett)	Medium		\$2,460,844	Roadway Corridor Improvements
Shelburne	Shelburne Village Park & Ride	Medium		Further Planning Needed	Park&Ride/ Intermodal

Draft 2023 MTP Project List
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Project	Time Frame	Total TIP Committed (federal) (does not include funds already expended)	Federal Amount (Assume 80% of cost)	Category
South Burlington				
Capital Program - Front of the Book and on CCRPC TIP				
South Burlington	Bike/Ped Bridge over I-89 in the vicinity of Exit 14	Short	RAISE Grant	Bike/ Pedestrian
South Burlington	Dorset Street Shared Use Path, Old Cross Road to Sadie Lane	Short	\$564,000	Bike/ Pedestrian
South Burlington	Exit 14 Area Signal Upgrades	Short	Grant	Safety/ Traffic Operations/ ITS
South Burlington	Spear Street Bike/Ped Improvements - Swift Street to US Forest Service	Short	\$236,000	Bike/ Pedestrian
South Burlington	Williston Road Bicycle and Pedestrian Improvements - Dorset Street to Midland Drive (\$2,412,670 50% TIF funding)	Short	\$512,000	Bike/ Pedestrian
Capital Program - Development & Evaluation				
South Burlington	VT116-Cheesefactory Road (VPSP2 Asset Driven Project)	Medium	\$571,600	Safety/ Traffic Operations/ ITS
Capital Program - VPSP2 Selected Project -- not yet added to Capital Program				
South Burlington	Williston Road Intersection and Roadway Improvements - Dorset Street to VT116	Medium	\$6,383,520	Roadway Corridor Improvements
Need Identified in a Scoping or Planning Study, Not in Capital Program or on TIP				
South Burlington	Airport Drive Extension to Airport Parkway	Long	Further Planning Needed	Roadway Corridor Improvements
South Burlington	Airport Parkway Sidewalk, Kirby Road to Lime Kiln Road	Medium	\$2,514,720	Bike/ Pedestrian
South Burlington	Airport Parkway/ Lime Kiln Road Intersection Improvements	Medium	\$725,400	Safety/ Traffic Operations/ ITS
South Burlington	Allen Road Shared Use Path - US7 to Existing Facility	Short	\$188,800	Bike/ Pedestrian
South Burlington	I-89 Exit 14 Intercept Park & Ride Facility	Long	Further Planning Needed	Park&Ride/ Intermodal
South Burlington	I-89 Exit 14 Reconstruction	Medium	\$29,600,000	Interstate/ Interchange
South Burlington	Queen City Park Road Bicycle and Pedestrian Connections - US7 to Central Avenue		\$1,052,800	Bike/ Pedestrian
South Burlington	Spear Street Bike/Ped Improvements - Allen Road to Swift Street	Long	TBD	Bike/ Pedestrian
South Burlington	Spear Street Shared Use Path, Davis Road to Jughandle	Short	\$473,928	Bike/ Pedestrian
South Burlington	Swift Street/Spear Street Intersection Improvements	Medium	\$2,186,000	Safety/ Traffic Operations/ ITS
South Burlington	US7/I-189 Intercept Park & Ride	Long	\$5,268	Park&Ride/ Intermodal
South Burlington	Boardwalk/Path Connection to City Center Park	Short	\$800,000	Bike/ Pedestrian
South Burlington	Exit 14 Mobility Connections	Medium		Bike/ Pedestrian
South Burlington	VT116 Bike Path - US2 to Kennedy Drive	Long	\$472,000	Bike/ Pedestrian
St. George				
Capital Program - Development & Evaluation and on CCRPC TIP				
St. George	VT116/VT2A Intersection Improvements (VSPS2 Asset Driven)	Long	TBD	Safety/ Traffic Operations/ ITS
Westford				
Need Identified in a Scoping or Planning Study, Not in Capital Program or on TIP				
Westford	Browns River Path Common to School	Short	Further Planning Needed	Bike/ Pedestrian
Williston				
Capital Program - Front of the Book and on CCRPC TIP				
Williston	Park & Ride South of I-89	Short	\$2,693,993	Park&Ride/ Intermodal
Williston	US2/Industrial Avenue Intersection	Short	\$2,343,434	Safety/ Traffic Operations/ ITS
Williston	US2/Trader Lane Signal - CIRC ALT PHASE II	Short	No Federal	Safety/ Traffic Operations/ ITS
Williston	VT2A/Industrial Avenue Improvements and Improvements to VT2A to James Brown Drive - CIRC ALT PHASE III	Short	\$8,081,919	Roadway Corridor Improvement

Draft 2023 MTP Project List
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Project		Time Frame	Total TIP Committed (federal) (does not include funds already expended)	Federal Amount (Assume 80% of cost)	Category
Williston	VT2A Connector Path - Beaudry Lane to VSECU		\$244,000		Bike/ Pedestrian
Williston	Exit 12 Stage 1 - Shared Use Path and VT2A lane from Marshall to VT2A - CIRC ALT PHASE III	Medium	\$1,183,900		Interstate/ Interchange
Capital Program - Development & Evaluation and on CCRPC TIP					
Williston	Exit 12 Stage 3 - Diverging Diamond Interchange (VPSP2 Asset Driven)	Medium		\$22,936,640	Interstate/ Interchange
Capital Program - Candidate					
Williston	Mountain View Road Multimodal Improvements: Old Stage Road to VT2A -- CIRC ALT PHASE III	Long		\$3,723,720	Roadway Corridor Improvements
Williston	Exit 12 Stage 2 - New Grid Streets and VT2A Intersection	Medium		\$9,314,880	New Facility
Williston	Exit 12 Stage 4 - VT2A Boulevard	Long		\$11,518,400	Roadway Corridor Improvement
Williston	US2 - Taft Corners to Williston Village - Shared Use Path - CIRC ALT PHASE III	Medium		\$2,798,220	Bike/ Pedestrian
Need Identified in a Scoping or Planning Study, Not in Capital Program or on TIP					
Williston	Taft Corners Park & Ride	Long		\$252,864	Park&Ride/ Intermodal
Williston	North Williston Road Improvements	Long		\$261,148	Roadway Corridor Improvements
Williston	US2/North Williston Road/Oak Hill Road Intersection	Long		\$1,060,608	Safety/ Traffic Operations/ ITS
Williston	Industrial Avenue Sidewalks	Long		\$413,960	Bike/ Pedestrian
Williston	Marshall Avenue Shared Use Path - Muddy Brook to South Brownell			\$1,563,612	Bike/ Pedestrian
Winooski					
Capital Program - Front of the Book and on CCRPC TIP					
Winooski	Gateways Crosswalk Enhancements	Short	\$259,600		Bike/ Pedestrian
Winooski	Main Street Sidewalks and Bicycle Improvements		\$380,000		Bike/ Pedestrian
Winooski	Malletts Bay Rail Crossing Improvements		\$380,880		Rail Crossing
Capital Program - VPSP2 Selected Project -- not yet added to Capital Program					
Winooski	East Allen Street (VT15) Improvements, Weaver to Florida Avenue			\$3,991,596	Roadway Corridor Improvements
Need Identified in a Scoping or Planning Study, Not in Capital Program or on TIP					
Winooski	Riverwalk East	Long		\$2,035,200	Bike/ Pedestrian
Winooski	Main Street (US7) Revitalization - Transportation, Utility, Stormwater	Short-Medium		Earmark	Roadway Corridor Improvements
Regional Stormwater					
Need Identified in a Scoping or Planning Study, Not in Capital Program or on TIP					
Regional	Regional Stormwater Projects	Ongoing		TBD	Stormwater/ Environmental
Regional Sidewalks					
Need Identified in a Scoping or Planning Study, Not in Capital Program or on TIP					
Regional	Sidewalks/Path in Areas Planned for Growth	Ongoing		TBD	Bike/ Pedestrian
Regional Transportation Demand Management					
Need Identified in a Scoping or Planning Study, Not in Capital Program or on TIP					
Regional	TDM Projects to Support Goals of Reducing Vehicle Miles Traveled and Greenhouse Gases	Ongoing		TBD	TDM
Regional Transit					
On CCRPC TIP Projects					
Regional	Transit Projects in CCRPC TIP		Included in System Preservation Cost		Transit
Need Identified in a Scoping or Planning Study, Not in Capital Program or on TIP					
Regional	Transit Expansion			TBD	Transit
Total Project Costs			\$168,193,322	\$205,866,840	

To BE INSERTED

DRAFT

Environmental Consultation and Mitigation

We will be meeting with Resource and other State Agencies in February to complete this section of the MTP.

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