MEMORANDUM

November 30, 2022

To: Bryan Davis
Organization: Chittenden County Regional Planning Commission (CCRPC)
From: Jake Berman, Michael Blau
Project: Chittenden County Regional Planning Commission Active Transportation Plan Update

Re: Task 1: Materials Review – FINAL DRAFT

Overview

This memo includes a review of key documents related to the Active Transportation Plan (ATP) update for the Chittenden County Regional Planning Commission (CCRPC). The purpose of this review is to draw on the important work that has already been completed within the region, identify overlap in objectives across the region, and determine what gaps remain to be filled through the CCRPC ATP update. The documents reviewed in this memo include:

- 2017 ATP
- 2017 ATP Evaluation
- Transportation Improvement Program (TIP)
- Metropolitan Transportation Plan (MTP)

2017 CCRPC ATP

CCRPC and its consulting team led by Toole Design produced the 2017 ATP as an update to the 2008 Regional Bicycle and Pedestrian Plan. The purpose of the ATP was to guide projects related to walking and biking in the county.

Planning Context

Vision and Goals

The ATP's vision and goals were developed to define the project priorities and performance measures. The vision for the ATP is:

In the future, Chittenden County residents, employees, and visitors of all ages and abilities are safely connected to origins and destinations by a comprehensive active transportation network. Plentiful opportunities for active transportation make for a healthy community throughout Chittenden County. The network connects towns within Chittenden County and connects to the networks of neighboring counties. Active transportation is an important part of people's lives for transportation, recreation, and health. There are economic, environmental, health, and quality of life benefits that affect the entire population, even those

who do not walk or bike. Active transportation becomes the default mode of travel in support of the ECOS Plan and its goals.

A list of guiding principles supported the vision, which included an active transportation network that is safe, sustainable, accessible, resilient, viable, connected, convenient, attractive, thoughtfully designed, and equitable. The vision and guiding principles in turn fed into 12 goals:

1. Provide accessible, safe, efficient, interconnected, secure, equitable and sustainable mobility choices for our region's businesses, residents and visitors.
2. Conserve, protect, and improve the health of native species habitats, water quality and quantity, and air quality.
3. Reduce greenhouse gas (GHG) emissions contributing to climate change and adapt to become more resilient to a changing climate.
4. Provide opportunities for Chittenden County residents to be healthy through active transportation.
5. Improve the safety of the public including the loss of life and property from natural and man-made hazards.
6. Retain and support existing employers and job growth, grow target sector employers and entrepreneurs, and work to attract a greater diversity of employers and employees.
7. Effectively and efficiently use existing funding mechanisms to implement recommendations.
8. Install necessary support facilities, such as bike racks and/or bike lockers, at appropriate locations.
9. Strengthen partnerships with local, regional and state health organizations in an effort to increase physical activity through increased bicycling and walking.
10. Encourage walking and biking in local communities through work with towns, schools, businesses, and community walk-bike groups.
11. Expand walking and biking infrastructure to provide interconnection with the region's transit system.
12. Ensure driver speeds are slow and safe to reduce bicycle-pedestrian crashes.

These goals are tied to performance metrics in Chapter 8. The goals are organized into five categories to align with CCRPC's Long Range Plan:

1. Environmental Quality
2. Public Health
3. Safety
4. Economic Development
5. Transportation

Some performance measures include the type of value to be measured (i.e., the total number or percentage), but baseline figures and some measure types are missing. For example, "particulate matter" is listed as a metric for the Environmental Quality goal, but the type of matter is not specified. Additionally, while the ideal direction of the metric may be obvious to some, it is not explicitly listed in order to evaluate successes or improvements. In all, 25 performance measures are listed.

Public Process

Public process for the ATP consisted of two major components: an Advisory Committee and a public outreach campaign. The Advisory Committee met throughout the planning process and guided the plan's development. It consisted of 12 members from advocacy organizations; local, regional, and federal governmental organizations; and transportation agencies.

The ATP's public outreach campaign included an interactive online map using wikimap and in-person charrettes. Charrettes were held in Milton, Jericho, Essex, and Hinesburg in October 2015. Input from these events was combined with the data collected from the wikimap responses.

The wikimap allowed users to comment on where they bike, where they would like to bike, deterrents to walking and biking, and existing facilities. 385 people contributed roughly 2,750 comments, 930 of which were unique points or lines. The remaining comments were likes or dislikes on other drawn map features. Summaries of the input received on the map are shown on in Figures 3 to 6 of the ATP. Common responses to wikimap questions are also listed. The barriers to walking and biking that people noted on the webmap and at the charrettes were used to create the Active Transportation Network, as described below.

Existing Conditions

In addition to the public process, the ATP analyzed the existing active transportation conditions in Chittenden County. The existing conditions section is divided into several categories:

- An inventory of existing infrastructure – The project team conducted fieldwork to identify existing sidewalks, bicycle lanes, shared lane markings, paved shoulders, and multi-use paths.
- Traffic safety – Traffic safety data focused on incidents of crashes and crash severity for active transportation users.
- Transit access – Transit access included a review of Green Mountain Transit (GMT) routes and the number of bikes transported on each route.
- Public health – Public health data included obesity rates, air quality issues, disability rates, and mental health in adults and students.
- Level of traffic stress (LTS) – The level of stress bicycle riders are expected to experience was analyzed by quantifying the vehicle traffic speeds and volumes, physical separation between bicycles and cars, street width, and number of driveway entrances. Streets were then categorized into one of three levels: LTS 1 streets are suitable for any rider, LTS 2 streets are expected to be comfortable for more confident or interested riders, and LTS 3 streets are only suitable for the most experienced and confident riders.

The ATP also included a regional network analysis that supported network recommendations. The three inputs to the network analysis included public input on barriers, origins and destinations, and previous plans and studies. Origins and destinations were identified by mapping the density of residential (origin) and office, retail, and public (destination) addresses together. Network segments without low-stress connections in areas with high origin and destination density were identified as candidates for the Active Transportation Network in this analysis. The origin and destination analysis was overlaid with barrier density identified in the public outreach process and planned projects identified in the existing conditions to create the Active Transportation Network.

Recommendations and Implementation

Proposed Active Transportation Network

The primary component of the Infrastructure and Engineering recommendations was the Active Transportation Network. This network consisted of proposed street segments and other rights-of-way where high-comfort facilities for people walking and biking should be built. The network was developed based on three main components: public input, origins and destinations, and previous plans and studies, from the "Putting It All Together" section. The network is shown in the ATP in Figure 18.

The ATP does not specify the facility type that is recommended for each corridor. Instead, the plan notes that individual local planning efforts will be needed to determine the facility type for each of the network segments. The ATP also notes that the network is biased towards longer trip types more likely to be taken by people riding bikes

than people walking. The network therefore is more oriented towards bicycle infrastructure, while pedestrian infrastructure is more related to program-based recommendations.

These recommendations were prioritized by identifying projects with high need (priority) and high feasibility. The six projects with the highest scores in both categories are listed in Table 3 and shown in Figure 22 of the ATP. These six projects contain more detail than the rest of the active transportation network and are shown in the following table:

Project Name	Municipality(ies)	Facility Type(s)
Colchester Ave, VT15 (E. Allen St/College Pkwy/Pearl St) and VT117 (River Rd)	Burlington/Winooski/Colchester/Essex/Essex Junction/Jericho	Shared use path and on-street bike lanes
US2 (Williston Rd)	South Burlington/Williston/Richmond/Bolton	Evaluate separated path alternatives
Governor Chittenden Rd/Mountain View Rd/ Industrial Ave	Williston	Shoulder improvements
VT15 (Center Rd)	Essex	Sidewalk
US7 (River St)	Milton	Scoping study for bicycle facility improvements
US7(Shelburne Rd), Bostwick Road to Teddy Bear Factory	Shelburne	On-street bike lane or other bicycle facility

Other Infrastructure Recommendations

In addition to the Active Transportation Network, the ATP included short-term and long-term infrastructure recommendations. The short-term recommendations were general actions CCRPC or municipalities can take to improve bicycle and pedestrian infrastructure, such as:

- Developing a wayfinding plan
- Separating bike lanes and marking contraflow bike lanes when possible
- Ensuring new bus stops have comfort and accessibility features
- Continuing bike lanes through intersections
- Including bike detection at signals
- Pilot an advisory bike lane

While these recommendations were not prioritized, next steps are noted in the Implementation chapter.

Long-term recommendations included ideas on how certain barriers that were commonly noted in the feedback can be upgraded. The ATP identified five of these barriers, with a "general idea" for addressing each of them:

1. Exit 14 ramps on US 2/Williston Road in South Burlington
2. Jughandle west of the Exit 14 ramps on US 2/Williston Road in Burlington/South Burlington
3. Winooski-Burlington Bridge
4. Winooski Circulator
5. Exit 16 ramps on US 7 in Colchester

Additionally, long-term recommendations focused on separated facilities, a recreational path along the Circ Highway right-of-way, and using LTS analysis to inform future decision-making. Specific information on implementing these recommendations was not included in the Implementation chapter. A map of these locations is shown in Figure 19 in the ATP.

Eleven engineering recommendations were also listed in this section. These recommendations mostly included programs to maintain or upgrade existing infrastructure, such as reviewing municipal regulations related to bike parking, reviewing speed limits, developing pedestrian maintenance toolkits, and organizing volunteer path maintenance events. Like the long-term recommendations, methods on implementing these recommendations were not included.

Non-Infrastructure Recommendations

Recommendations for non-infrastructure measures are grouped into categories based on the remaining "Five E's": Education, Encouragement, Enforcement, and Evaluation. Like the Engineering recommendations, non-infrastructure strategies were based on programs or policies related to their respective category and listed without specific implementation methods or tools. The lists include six Education, 10 Encouragement, six Enforcement, and 16 Evaluation recommendations.

Key Takeaways
- The ATP's structure builds the case for recommendations while explaining active transportation benefits, outreach process, and existing conditions.
- The Infrastructure recommendations, including the Active Transportation Network, Short-Term/Immediate recommendations, and Long-Term recommendations, represent a strong vision for a connected regional network but lack specificity for intervention types.
- Engineering and Non-Infrastructure recommendations vary in detail, and most lack a discreet end goal that can be evaluated.

CCRPC ATP Evaluation

In 2021, the University of Vermont (UVM) Transportation Research Center (TRC) published the CCRPC Active Transportation Plan Evaluation ("Evaluation"). The Evaluation looked at the Active Transportation Network, other infrastructure recommendations, and non-infrastructure recommendations separately, and analyzed the implementation status of each recommendation, as well as the planning process. The Evaluation then set out its own recommendations for implementing the remaining projects.

Active Transportation Network Evaluation

Implementation Evaluation

UVM evaluated the implementation status of the Active Transportation Network, determining whether bicycle facilities were present on the street segments recommended for improvements in the 2017 ATP. The Evaluation noted a few challenges to this method, which involved using Google Maps aerials, Google Street View, and site visits. Notably, a lack of project detail in the 2017 ATP made it difficult to determine whether bicycle facilities indicated a project was undertaken or had existed prior to 2017. Additionally, intersection treatments were not considered in this analysis, even though they represent a large barrier to low stress bicycling for many riders.

The review found that about 20 percent of the ATP was implemented, which consisted of 50.2 miles of bicycle facilities that were largely concentrated in urban areas. A map of these facilities can be found in Figure 3 of the Evaluation. Additionally, a list of the ATP projects with their implementation status can be found in Appendix A – Infrastructure Project Status.

Planning Process Evaluation

The evaluation of the process for developing the Active Transportation Network found significant flaws in the project development and priority processes. The project team identified two of the three steps for developing the network in the 2017 ATP – barriers and origin-destination density – as having large limitations.

The 2017 ATP relied on the wikimap survey and in-person charettes to identify key barriers. The Evaluation notes that this method could be biased towards people who are likely to engage in active travel and may have confidence in walking and biking places where the general population may not. A more equitable outreach would solicit feedback from a wider range of Chittenden County residents, and notably would include potential active transportation users to help encourage greater active transportation access potential. The Evaluation also notes that data to determine the demographic representativeness of wikimaps respondents were not available. Other methods of determining accessibility beyond the barriers analysis were not used, such as LTS or other data analyses.

The project team also found the origin-destination analysis to have limitations. The 2017 ATP used a list of addresses to generate an origin and destination density, but this method did not account for differences between single-family and multifamily residences, and also assumes every address has an equal importance for active transportation trip access. It also does not weight more heavily for destinations like healthcare services or government services; nor does it account for trip distances. Active transportation trips are generally distance-limited, and more advanced data analyses, such as the Bicycle Network Analysis (BNA), can account for trip distances between origins and destinations.

Prioritizing projects in the 2017 ATP included the priority/importance and the feasibility of a project. Priorities were determined by three binary criteria: serving a population in need, addressing bicycle and pedestrian crash locations, and closing a bicycle and pedestrian network gap. In general, the Evaluation focuses on accessibility as the most significant measure of project importance and evaluates the 2017 ATP's priorities based on this metric.

A project meets the first priority metric, serving a population in need, if it fulfills one of the following criteria:

- Located in an area of very low to moderate opportunity (based on Census Tract-level HUD Opportunity Index)
- Within 100 feet of a bus stop
- Within half a mile of a school (including colleges)

This metric is based on the location of the project itself, rather than considering nearby populations whose access would be improved by the project. The Evaluation cites this approach as a major limitation. This metric also does not account for the existing accessibility needs that under-resourced populations experience. It prioritizes projects in communities that already have good active transportation access just as much as it prioritizes projects in communities that lack good access. The Opportunity Index used as part of this metric is based on the Census Tract level, which is a large and inconsistently sized geographic unit. The disparity in size between urban and rural tracts is a limitation, and disadvantaged populations within large tracts can easily be missed.

The Evaluation also notes that bicycle and pedestrian crashes are a potentially unreliable metric to use in prioritization given current gaps in data. There is a small sample size of these crashes in Chittenden County, especially relative to all crash types, so this metric does not account for unsafe areas where a crash has not happened or been reported in the dataset. Additionally, crashes generally occur where people are bicycling and walking; roads that people avoid because they are unsafe are not accounted for by using crash metrics. The Evaluation suggests increasing data collection efforts to account for safety, and Toole Design has developed a systemic safety tool called the Safe Streets Priority Finder that accounts for road characteristics to find unsafe street segments where crash data is limited.

The criteria for closing a bicycle and pedestrian gap is met if a project addresses both bicycle and pedestrian infrastructure. The Evaluation notes that it does not account for the existing network, so it is agnostic on projects that expand the active transportation network. This metric would disqualify any projects added where sidewalks exist, though this does not appear to have been the case.

In addition to prioritization metrics, feasibility was also accounted for in the 2017 ATP's project evaluation. It is noted that the purpose of feasibility in the plan is unclear; costly and complex projects may have the ability to have a larger impact while a low-cost project may offer few improvements in accessibility. The Evaluation recommends using a cost-benefit approach instead.

Other Infrastructure Recommendations Evaluation

Other infrastructure recommendations were evaluated using a survey sent to municipalities. Of the 18 that received surveys, eight responded, including Bolton, Burlington, Charlotte, Milton, South Burlington, Underhill, Westford, and Williston.

A review of the survey responses found that all but one of the short-term recommendations had partial or limited implementation. Full implementation was difficult to gauge given a lack of specific targets in the 2017 ATP. The one recommendation not implemented was "Develop wayfinding plan." A table of the short-term recommendations with their implementation status can be found in Table 1 in the Evaluation.

Long-term recommendations were more specific than short-term ones, and the review was better able to determine implementation, as summarized in Table 2. The report noted two recommendations for which implementation status was less clear. "Focus on separated facilities" was not linked to a specific entity, though the project team did note that there are a number of shared use paths in the study area. The other recommendation, to use LTS to guide planning and design, also lacks a specific entity or organization tasked with using the analysis, as well as lacking information on how to use the analysis.

The 2017 ATP included 16 engineering recommendations. The Evaluation notes that the distinction between infrastructure and engineering recommendations was unclear, and this category included some recommendations unrelated to engineering such as maintenance and bicycle registration. The recommendations also lacked specificity on the entity in charge of implementing the changes and where they are applicable, similar to the other infrastructure recommendations. The list of recommendations and their implementation status can be found in Table 3.

Non-Infrastructure Recommendations Evaluation

The other recommendations included education, encouragement, enforcement, and evaluation, and were grouped together in the Evaluation. The project team searched websites of municipal, regional, and state government agencies and other organizations that partner with CCRPC to find information on the implementation of these recommendations, and a table listing their status can be found in Tables 4-7 of the Evaluation. Of these categories, two of six Education, four of nine Encouragement, and one of 15 Evaluation Recommendations were fully implemented.

None of the non-network recommendations were prioritized or evaluated for feasibility in the 2017 ATP. The Evaluation instead looked at how performance measures could be used to ensure the recommendations are implemented and can be evaluated in the future. Of the 12 plan goals, half have performance measures associated with them. However, many of these metrics address secondary or indirect outcomes that have weak links to the ATP recommendations themselves, such as a decrease in greenhouse gas emissions in the County. The metrics also tended to lack detailed information for tracking purposes, as well as baseline quantities to measure progress.

Recommendations for Implementing the ATP

The Evaluation listed five major categories of recommendations for an update to the 2017 ATP. Implementing these recommendations would lead to a more equitable network that better accounts for accessibility, recommendations that are clearer and more straightforward to implement, and a product that makes future evaluation easier. These recommendations are listed below.

1. *Use an accessibility focused framework to prioritize infrastructure projects.*
   - Create a routable network dataset of bicycle and pedestrian infrastructure.
   - Estimate LTS for each link.
   - Create networks for biking and walking that represent the paths users can travel on low-stress, accessible streets.
   - Identify important destinations.
   - Determine pedestrian and bicycle service areas.
   - Calculate accessibility metrics for each analysis zone.

The recommended method described in the Evaluation is similar to the Bicycle Network Analysis (BNA) that Toole Design completed for the ATP update. BNA assesses the existing bicycle network connectivity including local/neighborhood facilities, park and recreation trails, and transportation trails, as well as points of interest, such as public facilities, commercial retail centers, and employment centers. In addition to being used to analyze the existing network purposes, it was also used to evaluate the impact of network improvements through several scenarios. Refer to the BNA memo for more details.

2. *Evaluate and prioritize other infrastructure, policy, and programmatic recommendations.*
   - Evaluate the priority and feasibility of all recommendations.
   - Infrastructure recommendations should be included as projects instead of in a separate list.
     - » Discuss where to include infrastructure/engineering recommendations, like roundabouts, separated bike lanes, bicycle detection, etc.
     - » Prioritize recommendations that are required, like accessible pedestrian infrastructure.
     - » Recommendations should align with best practices.
   - Remaining non-infrastructure recommendations can be grouped as "policy and program" recommendations.
     - » May not need to be prioritized if the list is smaller.

The ATP update groups projects into either Infrastructure or Policy and Program Recommendations, with Infrastructure Recommendations representing an active transportation network. The network also underwent a prioritization process, which is described in the Project Prioritization Memo.

3. *Use consistent, outcome focused, performance measures.*
   - Clearly define performance measures.
   - Use baseline metrics for outcome-based measures.
   - Consider defining performance targets.
   - Include accessibility performance measures, i.e., access to destinations by walking and biking
   - Focus on primary outcomes.

Due to CCRPC's resource and capacity limitations, a comprehensive list of performance measures is not included in the ATP update. Furthermore, as the designated planning commission for Chittenden County, CCRPC does not have the ability to implement the changes necessary to meet such performance measures, which would be municipalities' responsibility. This topic may be revisited and included the update, contingent upon additional funding for FY23.

4. *Provide more detailed information to guide implementation of specific recommendations.*
   - Include guidance on design options that could be implemented for the project network.
   - Wide shoulders on roads with speeds above 35mph are not high comfort.
   - Provide guidance on where different types of infrastructure or engineering recommendations apply.
   - Provide resources needed to implement recommendations, like funding sources, if they can be included as parts of other projects, and implementation requirements.
   - Identify the responsible entity for implementing recommendations.

More detailed information is included in the recommendations memos and ATP update. The Policy and Program Recommendations Memo includes responsible entities where applicable. The Bicycle Network Recommendation Memo includes guidance on appropriate facility selection.

5. *Additional*
   - Land-use factors should be considered.
   - Public participation process should solicit input from those who are not current active transportation users.
   - Recommendations should consider maintenance needs.

Toole Design completed a trip potential analysis to replace the 2017 ATP's origin-destination analysis. This task analyzes trip potential between origins and destinations, taking land use into account. CCRPC and the project team also undertook a public participation process that included listening sessions to create dialogues with people in underserved communities who do not necessarily use active transportation.

Key Takeaways
- The Evaluation was framed by a focus on accessibility as the key metric for recommendations.
- The Evaluation found that progress on many of the recommendations was difficult to assess. The network recommendations lacked specific facility types for the street segments, making it difficult for the project team to determine whether the facility met the ATP project goals at the time of their review. Many of the other recommendations lacked a clear and achievable end goal that would allow the project team to determine if the recommendation was fully implemented or not, leading to many of these recommendations listed as partially implemented.
- Many of the recommendations for implementing/updating the ATP are addressed in the scope for the ATP Update.

Transportation Improvement Program & Metropolitan Transportation Plan

The project team reviewed bicycle and pedestrian related projects in CCRPC's adopted Transportation Improvement Program (TIP) and Metropolitan Transportation Plan (MTP). These projects are slated to be funded and implemented in the coming years throughout the region. The current adopted TIP reflects projects funded through the 2025 fiscal year. The TIP is typically adopted annually and amended as needed. CCRPC adopted the most recent MTP in 2018 and is currently working on an updated. The MTP includes short- and long-term strategies to consider for transportation improvements up to 20 years in the future.

Transportation Improvement Program Projects
Projects listed in the 2022-2025 CCRPC TIP that relate to bicycle and pedestrian improvements are listed below. Most of these projects are categorized as "Bike/Pedestrian" projects, though others are included in this review if the Remarks field indicated improvements for people walking and biking.

Project Name	Municipality	Total Cost	Project Type	Federal Funding Source
Regional Recreational Trails	Regional		Bike/Pedestrian	Rec Trails
GMT Capital - Buses, Facilities and Equipment	Transit		Transit	FTA Sec. 5339
Lake Street Sidewalk and Stormwater Management	Burlington	$389,343	Bike/Pedestrian	STP
Schifilliti Park Shared Use Path	Burlington	$373,160	Bike/Pedestrian	STP
VT15 Multiuse Path	Colchester-Essex	$1,916,704	Bike/Pedestrian	STP
Pinecrest Drive Sidewalk	Essex	$357,770	Bike/Pedestrian	STP
VT15 Sidewalk - Old Stage Road to Essex Way	Essex	$160,000	Bike/Pedestrian	STP
Village South Sidewalk	Hinesburg	$338,625	Bike/Pedestrian	STP
Lee River Road Sidewalk	Jericho	$428,000	Bike/Pedestrian	STP
Irish Hill Road Pedestrian Bridge and Sidewalk	Shelburne	$724,000	Bike/Pedestrian	STP
Dorset Street Path - Old Cross Road to Sadie Lane	South Burlington	$835,000	Bike/Pedestrian	STP
Kimball/Marshall Avenue Bicycle & Pedestrian Facilities over Muddy Brook	South Burlington	$385,000	Bike/Pedestrian	STP
Spear Street Bike/Ped Connector	South Burlington	$604,229	Bike/Pedestrian	STP
Williston Road Bicycle and Pedestrian Improvements	South Burlington	$2,412,697	Bike/Pedestrian	STP
VT15/Underhill Flats Sidewalks	Underhill	$480,850	Bike/Pedestrian	STP
Blair Park Road Sidewalk Loop Connection	Williston	$291,532	Bike/Pedestrian	STP

Project Name	Municipality	Total Cost	Project Type	Federal Funding Source
Mountain View Road Shoulder Improvements	Williston	$3,500,000	Roadway Corridor Improvement	STP
US2 Shared Use Path - Taft Corners to Williston Village	Williston	$2,800,000	Bike/Pedestrian	STP
VT2A Connector Path - Beaudry Lane to VSECU	Williston	$392,445		STP
VT2A Taft Corners Area Sidewalk/Shared Use Path	Williston	$450,000	Bike/Pedestrian	
VT2A/James Brown Drive Traffic Signal	Williston	$3,534,000	Safety/Traffic Operations/ITS	STP
Gateways Crosswalk Enhancements	Winooksi	$369,500	Bike/Pedestrian	STP
Main Street Sidewalk and Bicycle Improvements	Winooksi	$500,000	Bike/Pedestrian	STP

Metropolitan Transportation Plan

Projects listed in "Table 24: MTP Project List by Municipality and VTrans Capital Program Status – Federal Fiscal Years 2017 – 2050" that are listed as "Bicycle & Pedestrian" or "Multimodal Rodway Improvements" projects are listed below. While many of the "Multimodal Roadway Improvements" projects may not involve improvements for people walking or biking, there was not enough information to determine whether this was the case.

Project Name	Municipality	Total Cost	Project Type
Shelburne Street Roundabout	Burlington	$2,460,000	Multimodal Roadway Improvements
Champlain Parkway	Burlington	$25,000,000	Multimodal Roadway Improvements
Railyard Enterprise Project	Burlington	$6,285,000	Multimodal Roadway Improvements
Burlington Bike Path Rehabilitation	Burlington	$10,000,000	Bike/Pedestrian
Depot Street Improvements	Burlington	$1,100,000	Bike/Pedestrian

Project Name	Municipality	Total Cost	Project Type
Sherman Street Connection to Depot Street - Stairway Street	Burlington	$775,000	Bike/Pedestrian
Intervale Road Access Improvements	Burlington		Bike/Pedestrian
Champlain Elementary Safe Routes to School - Phase II	Burlington	$85,000	Bike/Pedestrian
Main Street Great Street	Burlington	$10,300,000	Multimodal Roadway Improvements
Cherry Street Complete Street	Burlington	$500,000	Multimodal Roadway Improvements
Pearl Street Complete Street	Burlington	$1,650,000	Multimodal Roadway Improvements
Winooski Avenue Improvements	Burlington	$12,900,000	Multimodal Roadway Improvements
Colchester Avenue/Prospect Street Intersection Improvements	Burlington	$1,000,000	Multimodal Roadway Improvements
North Avenue Improvements	Burlington	$8,175,000	Multimodal Roadway Improvements
Winooski River Bicycle/Pedestrian Bridge	Burlington/Winooski	$1,680,500	Bike/Pedestrian
Main Street Complete Street	Burlington	$400,000	Multimodal Roadway Improvements
Battery Street Improvements	Burlington	$3,500,000	Multimodal Roadway Improvements
Shelburne Street Improvements	Burlington	$12,900,000	Multimodal Roadway Improvements
Colchester Avenue/Riverside Avenue Intersection Improvements	Burlington	$3,400,000	Multimodal Roadway Improvements

Project Name	Municipality	Total Cost	Project Type
Colchester Avenue/East Avenue Intersection Improvements	Burlington	$780,000	Multimodal Roadway Improvements
Bike/Ped Bridge Crossing of the Winooski River	Burlington/Winooski	further planning needed	Bike/Pedestrian
US7 Reconstruction	Charlotte	$2,500,000	Multimodal Roadway Improvements
US7/Ferry Road Intersection Improvements	Charlotte	$535,000	Multimodal Roadway Improvements
Town Link Trail	Charlotte		Bike/Pedestrian
Ft Ethan Allan Sidewalks	Colchester		Bike/Pedestrian
Mountain View Drive Sidewalk	Colchester	$370,000	Bike/Pedestrian
VT15 Multi-use Path - Phase 1	Colchester	$1,430,066	Bike/Pedestrian
VT2A/US7/Creek Road/Bay Road Intersection	Colchester	$5,754,281	Multimodal Roadway Improvements
Exit 16 Improvements - CIRC ALT Phase I	Colchester	$8,050,000	Multimodal Roadway Improvements
Severance Corners Improvements - CIRC ALT Phase II	Colchester	$3,848,257	Multimodal Roadway Improvements
W Lakeshore Drive/Prim Road Intersection Improvements - CIRC ALT Phase III	Colchester	$1,900,000	Multimodal Roadway Improvements
Blakely Road/Laker Lane Intersection Improvements - CIRC ALT Phase III	Colchester	$425,000	Multimodal Roadway Improvements

Project Name	Municipality	Total Cost	Project Type
VT2A Colchester Village and Mill Pond Road/East Road Intersection and Multimodal Improvements - CIRC ALT Phase III	Colchester	$3,900,000	Multimodal Roadway Improvements
I-89 Exit 17/US2/US7 Interchange Improvements	Colchester	$17,238,000	Multimodal Roadway Improvements
VT15 Multi-Use Path - Phase 2	Colchester/Essex/Essex Junction	$305,700	Bike/Pedestrian
VT 15 Multi-Use Path - Phase 3	Colchester/Essex/Essex Junction	$537,500	Bike/Pedestrian
West Lakeshore Drive Path Phase II	Colchester	$900,000	Bike/Pedestrian
VT15/Lime Kiln Road Intersection Improvements	Colchester	$1,030,000	Multimodal Roadway Improvements
Roundabout at Bayside Park Intersection	Colchester	$3,310,000	Multimodal Roadway Improvements
Intelligent Transportation System Improvements - Signal and Communications - US7	Colchester/Winooski	$600,000	Multimodal Roadway Improvements
Severance Road Shared Use Path - CIRC ALT Phase III	Colchester	$2,086,500	Bike/Pedestrian
West Lakeshore Pedestrian Tunnel at Bayside Park	Colchester	$2,000,000	Bike/Pedestrian
VT127 Roadway and Intersection Improvements	Colchester	$24,000,000	Multimodal Roadway Improvements
Mill Pond/Severance Road Intersection Improvements	Colchester	$277,000	Multimodal Roadway Improvements
Heinberg-Blakely Bypass and Shared Use Path	Colchester	$18,952,000	Multimodal Roadway Improvements

Project Name	Municipality	Total Cost	Project Type
VT2A/VT289 Interchange Improvements - CIRC ALT Phase II	Essex	$1,467,400	Multimodal Roadway Improvements
VT15/Sand Hill Road Signal - CIRC ALT Phase II	Essex	$1,140,453	Multimodal Roadway Improvements
Signal Upgrades on VT2A and VT15	Essex/Williston	$3,100,000	Multimodal Roadway Improvements
Susie Wilson Road Improvements and Intersections - CIRC ALT Phase III	Essex	$5,800,000	Multimodal Roadway Improvements
VT117/North Williston Road Intersection Improvements - CIRC ALT Phase III	Essex	$3,175,000	Multimodal Roadway Improvements
North Williston Road Flood Plain Notification Improvements - CIRC ALT Phase III	Essex	$405,000	Multimodal Roadway Improvements
VT15 Improvements - Post Office Square to Five Corners Improvements - CIRC ALT Phase II	Essex Junction	$2,750,000	Multimodal Roadway Improvements
Crescent Connector Road - CIRC ALT Phase I	Essex Junction	$6,000,000	Multimodal Roadway Improvements
VT15/West Street Extension Intersection - Additional NB lane on West Street Extension	Essex Junction	$206,000	Multimodal Roadway Improvements
VT116/CVU Road Improvements	Hinesburg	$2,872,760	Multimodal Roadway Improvements
VT116/Charlotte Road Improvements to facilitate Concurrent Signal Phasing	Hinesburg	$150,000	Multimodal Roadway Improvements

Project Name	Municipality	Total Cost	Project Type
Route 116 East Sidewalk - Commerce Street to Mechanicsville Road	Hinesburg	$365,500	Bike/Pedestrian
Mechanicsville Road Sidewalk	Hinesburg	$142,000	Bike/Pedestrian
Richmond Road Sidewalk	Hinesburg	$2,485,000	Bike/Pedestrian
Huntington Lower Village Traffic Calming and Bike/Ped Improvements	Huntington	$894,100	Bike/Pedestrian
VT15/Browns Trace Intersection	Jericho	$2,004,190	Multimodal Roadway Improvements
Browns River Middle School and Union ID School Crossing Improvements	Jericho	$193,200	Bike/Pedestrian
Browns Trace Multimodal Connection	Jericho	$471,300	Bike/Pedestrian
VT15/Dickinson Street Modifications	Jericho	$1,600,000	Multimodal Roadway Improvements
VT117/Skunk Hollow Road Improvements	Jericho		Multimodal Roadway Improvements
US7/Middle Road/Railroad Street Safety Improvements	Milton	$3,650,000	Multimodal Roadway Improvements
Cherry Street Railroad Crossing	Milton	$65,500	Bike/Pedestrian
US7/Racine/Legion/Bartlett/West Milton Road Improvements	Milton	$515,000	Multimodal Roadway Improvements
US7/Main Street Intersection Improvements	Milton	$1,030,000	Multimodal Roadway Improvements
I-89/West Milton Road New Interchange	Milton	$30,000,000	Multimodal Roadway Improvements
US2 Path - Park and Ride to Richmond Village	Richmond	$3,388,000	Bike/Pedestrian
Village Sidewalks and Crosswalks	Shelburne	$137,971	Bike/Pedestrian

Project Name	Municipality	Total Cost	Project Type
Falls Road Bike/Ped Bridge	Shelburne	$838,800	Bike/Pedestrian
Bay Road Pedestrian Bike Safety Improvements	Shelburne	$20,000	Bike/Pedestrian
US7/Harbor Road Improvements	Shelburne	$1,420,000	Multimodal Roadway Improvements
Shelburne Southern Gateway	Shelburne	$2,500,000	Bike/Pedestrian
Market Street	South Burlington	$5,000,000	Multimodal Roadway Improvements
VT116 Sidewalk to Tilley Drive	South Burlington	$173,000	Bike/Pedestrian
Airport Drive Extension to Airport Parkway	South Burlington	$12,167,000	Multimodal Roadway Improvements
I-89 Interstate Access Improvement	South Burlington	$37,302,000	Multimodal Roadway Improvements
Bike/Ped Bridge over I-89 in the vicinity of Exit 14	South Burlington	$7,000,000	Bike/Pedestrian
Airport Parkway Bike/Ped Facility	South Burlington	$1,647,400	Bike/Pedestrian
Spear Street Shared Use Path	South Burlington	$452,400	Bike/Pedestrian
Lindenwood Drive Path and Crossing Improvements	South Burlington	$360,000	Bike/Pedestrian
Dorset Street Path - Nowland Farm Road South 3,500 Feet	South Burlington	$610,000	Bike/Pedestrian
Allen Road Shared Use Path West of Spear Street - 800-foot gap	South Burlington	$283,600	Bike/Pedestrian
Allen Road Shared Use Path - US7 to Existing Facility	South Burlington	$200,000	Bike/Pedestrian
Shared Use Path Connection over Muddy Brook	South Burlington/Williston	$3,639,200	Bike/Pedestrian

Project Name	Municipality	Total Cost	Project Type
Williston Road Intersection and Roadway Improvements	South Burlington	$3,300,000	Multimodal Roadway Improvements
Implement Signal Control and Pedestrian Upgrades, Shelburne Road between IDX Drive and I-189	South Burlington	$1,236,000	Multimodal Roadway Improvements
Spear Street Bike/Ped Improvements - Allen Road to US Forest Service/I-89	South Burlington	$4,000,000	Bike/Pedestrian
Shelburne Road Streetscape and Bike/Ped Improvements - IDX Drive to Queen City Park Road	South Burlington	$5,000,000	Multimodal Roadway Improvements
Exit 14 Area Signal Upgrades	South Burlington		Multimodal Roadway Improvements
Swift Street/Spear Street Intersection Improvements	South Burlington	$572,000	Multimodal Roadway Improvements
VT116 Bike Path	South Burlington	$500,000	Bike/Pedestrian
I-89 Widening, Exit 14, South Burlington to Exit 15, Winooski	South Burlington	$37,000,000	Multimodal Roadway Improvements
VT116/VT2A Intersection Improvements	St. George		Multimodal Roadway Improvements
Underhill Flats Sidewalk	Underhill	$360,000	Bike/Pedestrian
Browns River Path Common to School	Westford		Bike/Pedestrian
US2/Trader Lane Signal - CIRC ALT Phase II	Williston		Multimodal Roadway Improvements
US2/Industrial Avenue Intersection	Williston	$576,000	Multimodal Roadway Improvements
VT2A/James Brown Drive - CIRC Alt Phase I	Williston	$1,889,189	Multimodal Roadway Improvements

Project Name	Municipality	Total Cost	Project Type
VT2A Industrial Avenue Improvements and Improvements to CT2A to James Brown Drive - CIRC ALT Phase III	Williston	$4,550,000	Multimodal Roadway Improvements
VT2A Infill Sidewalks	Williston	$86,083	Bike/Pedestrian
Exit 12 Stage 1 - Shared Use Path and VT2A lane, Marshall to I-89 - CIRC ALT Phase III	Williston	$2,000,000	Multimodal Roadway Improvements
Exit 12 Stage 2 - New Grid Streets and VT2A Intersection - CIRC ALT Phase III	Williston	$9,300,000	Multimodal Roadway Improvements
Exit 12 Stage 3 - Diverging Diamond Interchange - CIRC ALT Phase III	Williston	$22,900,000	Multimodal Roadway Improvements
Exit 12 Stage 4 - VT2A Boulevard - CIRC ALT Phase III	Williston	$11,400,000	Multimodal Roadway Improvements
US2 - Taft Corners to Williston Village - Shared Use Path - CIRC ALT Phase III	Williston	$2,900,000	Bike/Pedestrian
Mountain View Road Multimodal Improvements: Old Stage Road to VT2A - CIRC ALT Phase III	Williston	$3,853,000	Multimodal Roadway Improvements
US2/North Williston Road/Oak Hill Road Intersection	Williston	$989,000	Multimodal Roadway Improvements
Industrial Avenue Sidewalks	Williston	$421,600	Bike/Pedestrian
North Williston Road Improvements	Williston		Multimodal Roadway Improvements
Main Street (US7) Revitalization - Transportation, Utility, Stormwater	Winooksi		Multimodal Roadway Improvements

Project Name	Municipality	Total Cost	Project Type
Riverwalk East - Access to Casavant Park	Winooksi	$1,800,000	Bike/Pedestrian