Appendix D
Alternatives Summary

The City of Montpelier

Montpelier in Motion

Plan Options

Submitted by:

Broadreach Planning & Design

In conjunction with

RSG Inc.

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A. INTRODUCTION

1. OVERVIEW

Montpelier in Motion is the pedestrian and bicycle plan for the City of Montpelier, Vermont. The City is developing this plan to serve as a guide for future actions to make bicycling and walking more visible, easier, and more widely undertaken by residents and employees. The plan covers future roadway and sidewalk improvements along with City policies regarding roadway and sidewalk maintenance, walking and bicycling education and encouragement, and local and state bicycling, walking and driving law enforcement. The plan contains overall walking and bicycling goals that the City hopes to reach as well as methods of evaluating progress towards attaining them.

To develop *Montpelier in Motion*, the City organized a Steering Committee of local elected officials, citizens, members of the City's Pedestrian and Bicycling Advisory Committees, and City and regional planning commission staff. After circulating a Request for Proposals, the City selected a consulting team consisting of Broadreach Planning & Design and RSG (the BRPD Team) to assist them with the project.

Figure B-1 shows the overall extent of the City and its bicycle and pedestrian resources.

This options analysis report is the second product of the Steering Committee. The summary describes the existing conditions in the City. It is formatted for double-sided printing; blank pages are intentional. The Steering Committee has used the terms "walkers" and "pedestrians" interchangeably.

2. CITY GOALS

The Montpelier City Council has set a goal of becoming a nationally recognized walking and bicycling city. The City Plan highlights another goal, to the number of Montpelier residents who commute by walking or bicycling by 40 percent by 2040. The Montpelier Bicycle Advisory Committee has established another goal of increasing the mileage of bike lanes and shared lanes by 20 percent by 2016.

3. PURPOSE AND NEED OF THE PLAN

The purpose of the *Montpelier in Motion* plan is to serve as a guide for future bicycling and walking improvements within the City. The city needs to responsibly allocate its limited resources. Having a walking and bicycling master plan will allow the City to do so in the most efficient manner. The *2010 City of Montpelier Master Plan* (*2010*

Master Plan) includes support for creating a Bicycle and Pedestrian Master Plan. Additional needs for *Montpelier in Motion* are numerous (listed in no particular order):

- Mounting congestion in the downtown can be reduced by increasing walking and bicycling as a means of transportation.
- Enhancing the aesthetic experience of walking can increase the number of walkers.
- Knowing what type of walking and bicycling hazards exist and where they are located can help the city eliminate as many of them as possible.
- Prioritizing bicycling and walking construction & repair activities is easier when there is a master plan.
- Walking and bicycling can improve the health of residents.
- Increasing non-motorized connections to popular destinations increases the likelihood that people will walk or bicycle there rather than drive a motor vehicle.
- Understanding where gaps in the current bicycling and walking networks helps fill them faster.
- Providing better bicycling and walking conditions afford transportation to a wider range of residents of all ages and abilities.
- Improving walking and bicycling conditions creates more livable cities.
- Increasing walking and bicycling activities in cities has a very positive economic development affect.
- Walking and bicycling creates less deterioration of City infrastructure than driving motor vehicles.
- Encouraging walking and bicycling activities typically results in more walkers and bicyclists.

4. PARTNERS

The City's efforts to create a better walking and bicycling environment will benefit greatly from the cooperation and help from other agencies, not-for-profits, State Government and businesses. The report assumes that they will participate in the instigation of the recommendations included in the final plan. Each of the recommendations is followed by a listing of the City departments or outside entities that would be best suited to undertake implementation. The list anticipates participation by:

- AARP
- Blue Cross Blue Shield of Vermont
- Center for Independent Living
- Central Vermont Regional Planning Commission
- Chamber of Commerce
- Council on Aging
- Disability Services

- Free Ride
- Green Mountain Transit Authority
- Kellogg Hubbard Library
- Local Motion
- Montpelier Area Mountain Bike Association
- Montpelier Bicycle Advisory Committee
- Montpelier Department of Planning & Economic Development
- Montpelier Department of Public Works
- Montpelier Downtown Businesses
- Montpelier Live
- Montpelier Parking Committee
- Montpelier Parks Department
- Montpelier Pedestrian Advisory Committee
- Montpelier Police Department
- Montpelier Public Schools
- Montpelier Recreation Department
- Montpelier Senior Activity Center
- Montpelier Traffic Committee
- National Life Insurance
- Onion River Sports
- Safe Routes to School
- State of Vermont Buildings and General Services
- Vermont Agency of Transportation
- Vermont Association for the Blind and Visually Impaired
- Vermont Coalition of Bicyclists and Pedestrians
- Vermont College of Fine Arts
- Vermont Community College
- Vermont Department of Health (VT State Employees Wellness Program)
- Vermont Department of Human Resources
- Vermont Mutual Insurance

5. OPTION DEVELOPMENT

Once the Steering Committee had examined the existing conditions, they held an initial public work session on June 2, 2014. After consideration of the comments received at that meeting, they held a work session with the BRPD Team to identify as many ideas and options that could be included in the final bicycling and walking master plan as possible. Subsequently, the BRPD Team refined the options combining several of them, but only eliminating a very few. The remaining actions and recommendation options that might be included in the final version of Montpelier in Motion are described in **Section II**.

II. PLAN OPTIONS

1 OVERVIEW

A pedestrian and bicyclist master plan can include a wide variety of recommendations and options, from general policies to very specific recommendations for physical changes to road segments or sidewalks. The Steering Committee wants Montpelier in Motion to be as comprehensive as possible, so that it can provide guidance to the City in the many different aspects of improving walking and bicycling.

This report presents various recommendation and ideas that could be included in the final version of *Montpelier in Motion*. These are options for public consideration and not alternatives. They are presented here in an abbreviated version to provide enough information for the public to consider which should be included in the final version of *Montpelier in Motion*. They might all eventually be included if they are all considered to be valuable to the City. This summary describes each option and evaluates each according to criteria the Steering Committee developed at the start of the project.

This summary organizes the different options into seven separate types of recommendation options:

- Policy Options,
- Engineering (or Physical Change) Options,
- Educational Options,
- Encouragement Options,
- Enforcement Options,
- Evaluation Options, and
- Additional Study Options.

Each option carries its own designation so that they can be easily referenced, described and discussed. Tables at the end of each section show how each option measures against the Steering Committee's evaluation criteria. There is not an intended ranking of importance in the numbering system of the options.

2. POLICY OPTIONS

A. WINTER MAINTENANCE PLAN UPDATE

The City's Winter Maintenance Plan, developed by the Department of Public Works, describes how the City undertakes winter maintenance of public facilities. There are more details on winter maintenance of sidewalks that might be expanded to provide even better winter maintenance actions, including descriptions of:

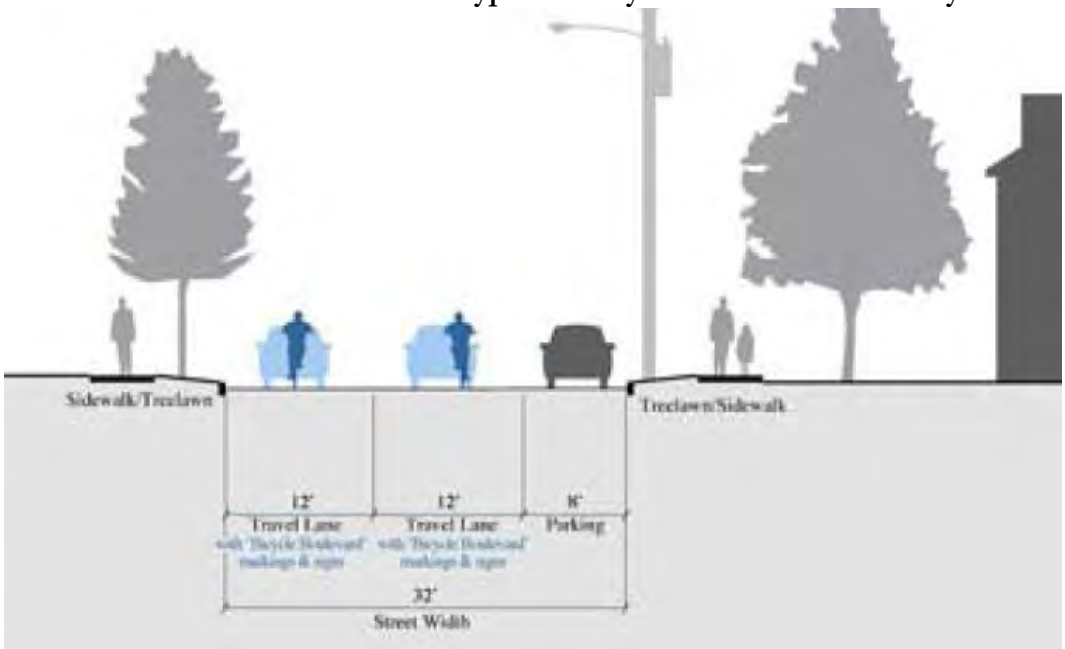
- Elimination of ice from sidewalks and at curbs where pedestrians are crossing the road;
- Clearing of snow where sidewalks cross roads that become blocked from subsequent street plowing, and
- On-going sidewalk plowing as snow melts from trees or adjacent areas.

B. CITY ROAD STANDARDS

The City Plan includes descriptions of different types of roadway types and how they might be used to provide better bicycling and walking facilities in the City. The Subdivision regulations provide standards for new road construction, based on volume and location. The City could tie these and other recommendations or practices for how roadways are treated in a set of roadway standards that will identify how roads will be constructed, maintained and managed. The new roadway standards should define, among other things:

- Widths and marking for roadway segments, travel lanes and paved shoulders for different types of roads and streets;
- Methods for treating hazardous areas reported by the public;
- Striping and crosswalk material, installation schedules and types of on-going maintenance; and
- Methods for treating different types of intersection to improve bicycling and walking conditions.

Illustration B-1: Cross section of "typical" Bicycle Boulevard from City Plan.



C. STANDARD BICYCLING & WALKING POLICE POLICIES

As bicycling and walking activities expend, there will be a need for a consistent way to address bicycling and walking police issues and the number and size of walking and bicycling patrols. The Police Department, with input from the Montpelier Bicycle and Pedestrian Committees, should develop a clear set of policies relating to bicycling and walking. The policies should address such issues as:

- The number and use of foot and bicycle patrols;
- The amount and timing of training on bicycle and pedestrian issues;
- The types of monitoring appropriate for problem areas;
- The methods of gathering information about pedestrian and bicycle crashes, including use of the crash data card developed by the Vermont bicycle and Pedestrian Coalition
- Standards for determining who is at fault in a crash involving a pedestrian or bicyclist; and
- The methods of working with the community to promote safe walking and bicycling habits.

D. PARKING POLICIES

The City has been reviewing how to address parking problems during those times that the legislature is in session. Numerous different concepts have been proposed and reviewed over the last 15 years but no real changes had been undertaken. With the advancement of the transit center on Taylor Street and the push for greater bicycle facilities on the existing roads, the time may be right for the City Council to adopt a set of policies on how the City will address the parking issues. The policies could include decisions to:

- Add no more and actually reduce on street parking to create space for bicycle facilities;
- Initiate incentive programs to promote the use of outlying parking areas;
- Encourage greater use of walking or bicycling into the Downtown from outlying parking areas;
- Construct a parking facility in one of the downtown locations previously considered to replace parking spaces removed from downtown and nearby streets; and/or
- Developing pricing policies for parking that encourage the use of a new parking structure or outlying parking areas over on-street parking.

3. ENGINEERING OPTIONS

A. ENG-1: SIDEWALK GAP IDENTIFICATION & ELIMINATION

Partners: Department of Public Works; Pedestrian Advisory Committee; Department of Planning & ED; Center of Independent Living; Police Department

TABLE B-1: GAP REMEDIATION EFFORTS

Location	Length	Type	Effort/Issues	Priority
Bailey Street		New	West Side between State St. & Baldwin St.	Low
Berlin Street		Extension	Sidewalk in ROW in front yards with separation from road	Medium
Bingham Street		New	Steep slopes & trees south of Marvin create challenges	Low
City Hall Parking		Missing Link	ADA Compliance and easements might be a challenge	High
Clarendon Avenue		Extension	Could be adjacent to curb similar to existing sidewalk	High
College Street (Arsenal Dr. to Hinkley St.)		Missing Link	Might require relocating utility poles	Medium
College Street (Ridge St to State St)		Missing Link	Easy installation	Medium
Crestview Drive		New	Links Pinewood to Terrace Ave. Sidewalk	Low
Cross Street to Middle Sch.		New	Creates walking link to school	High
Dairy Lane		New	Links Clarendon Ave. & Terrace Ave.	Medium
Dog River Road		New	Links path to park	High
Elm Street (Birchgrove Bak. to Pearl St.)		Extension	No crosswalk at current end of sidewalk	High
Elm Street (N Park Dr. to CCV)		Extension	Currently funded for construction in 2015	High
Foster Street (Between College & Edward)		Missing Link	Steep side slope creates a problem	Low
Fuller Street		Missing Link	Narrow ROW, retaining wall and lilac hedge create challenges.	Low
Governer Aiken Ave.		Extension	Sidewalks needed on both sides of the street; will require using existing lawn	High
Governer Davis Ave.		New	Requires narrowing roadway to add sidewalk adjacent to retaining walls	High
Granite Street		Extension	Might require removing on-street parking	High
Hebert Street (to Isabel Cir.)		Extension		Medium
Hubbard Street (Park St. to Livbery St.)		Missing Link	On west side of street	Low
Hubbard Street (State St. to Park St.)		Missing Link	On east side of street	Medium
Kent Street (West end)		Missing Link	Steep side slope creates a problem	High
Lincoln Avenue		New	Revitalize & extend existing old sidewalk; Slopes	Low
Main Street (to Murray Hill Dr.)		Extension	Side slopes & trees might create grading issues	Medium
Mechanic Street		New	Steep slope; Narrow ROW create challenges to adding a sidewalk	High
Memorial Dr - National Life		New	ROW required; ADA ccompliance difficult	High
Route 302		Extension	Side slopes might create grading issues	Medium
Sherwood Drive		New	Sidewalk in ROW in front yards with separation from road	Medium
State Street (Hubbard St. to West St.)		Extension	South side	Low
State Street (Betsy's B&B to West St.)		Extension	North side	Medium
State Street (West Street to College St.)		Extension	North side	Low
Stone Cutters Way		Missing Link	Alignment challenges between RR and buildings	High
Summer Street		Extension	North end extension to Elm St.	Medium
Taylor Street		Extension	Might require removing on-street parking	High
Terrace Street (East of Bailey)		New	Sidewalk in ROW in front yards with separation from road	Medium
Town Hill Road		Extension	Relatively flat and open; Extend at least to Murray Road	High
Town Street to Cityside Drive		New	Easement needed	Medium
Vine Street (East of Elm St.)		Extension	Links sidewalk system to pedestrian bridge	Medium
Wilder St.		New	Tight ROW; Houses close to road	Medium
Wilson Streeet		New	Slope - Links neighborhood to Berlin St. sidewalk	Medium
Woodrow Avenue		Missing Link	Steep side slope creates a problem	Medium

Figure B-2 identifies gaps in the existing sidewalk system. Some gaps are simply open spaces between two existing sidewalks. Others are locations where the existing sidewalk does extend to logical destinations for walkers. The City recently received a grant to fill at least one of these gaps located at the northern end of the sidewalk on Elm Street. **Table B-1** on the next page provides an overview of the different gaps and the potential effort needed to fill them.

C. ENG-2: ON-ROAD & OFF ROAD BICYCLE NETWORK

Partners: Department of Public Works; Vermont Agency of Transportation, Bicycle Advisory Committee; Local Motion; Public Schools; Chamber of Commerce; Central Vermont Regional Planning Commission

From the first public meeting, as well as at the alternatives working session with the steering committee, there were overarching themes that the Montpelier community sought in a successful bicycle network:

- Links to the Park & Ride and the existing Montpelier Bike Path,
- Links to schools,
- Links to adjacent towns, and
- Links to downtown commercial establishments and major employers.

To serve the widest number of users, a comprehensive bicycle circulation system should include an on-road and an off-road component. This dual system allows advanced bicyclists to ride on roads that typically provide them with the most direct routes to their destinations, while still accommodating basic or beginner bicyclists with off-road facilities where they do not need to mix with motor vehicles.

An integrated system could contain a variety of facilities types, including:

- Cycle tracks - a paved area on one side of a roadway, separated from the roadway itself by some type of barrier, that provides two way travel exclusively for bicyclists;
- Shared use paths - independent hard-surface paths in their own right-of-way that accommodates both bicyclists and walkers;
- Bicycle lanes – delineated and striped travel lanes of at least four feet wide exclusively for bicycles, typically located at the outer edges of the pavement;
- Wide paved shoulders - the outer edges of the paved roadway that are three feet wide or wider and delineated by fog lines that are not marked or designated specifically as bicycle lanes; and
- Shared lanes - delineated travel lanes on the road that are shared by motorists and bicyclists, often marked by "Share the Road" signs, "Sharrows" pavement markings, or other notification.

Figure B-3 shows a conceptual short-term plan for a bicycle circulation system for Montpelier. Except for cycle tracks, it includes each of the elements described above. Its purpose is to provide guidance on how to work with the existing roadway system to create greater mobility for bicyclist.

Shared Use Paths - To expand the off-road network, the conceptual plan includes the extension of the existing Montpelier Bike Path east that is currently being planned. T also includes filling the critical link between Taylor Street and the Stone Cutters Way path. Additionally, it includes a recommendation for a north south path to complement the east west path. The north south route incorporates some existing paths already constructed and converts existing pedestrian bridges to be pedestrian & bicyclists bridges, with notifications that bicyclists should dismount and walk their bicycles across the bridge.

Bike Lanes - New bicycle lanes are proposed primarily in the downtown, where there is heavier traffic flow, and on popular links that have sufficient roadway capacity. In accordance with the VTrans design manual, the City would need to provide bike lanes that are a minimum of four feet wide if there is no on-street parking and five feet wide with street parking. In addition, the bike lanes would be designated by signage on posts as well as markings on the pavement to alert motorists and other travelers. The proposed bike lanes connect important dense commercial and retail corridors, such as Main Street and National Life Drive. The conceptual plan also proposes bike lanes for routes that lead to schools of for popular corridors, such as along Liberty and and Loomis Streets, where there is sufficient roadway width to add bike lanes adjacent to the vehicular travel lane, although it does involve the removal of on-street parking in these residential areas. **Table B-2** provides details on the streets proposed to have bike lanes.

TABLE B-2: STREETS TO HAVE BIKE LANES

STREET	LOCATION	NOTES
BAILEY AVE EXT.	Memorial Dr. to State St.	Maintain three lanes, add 4' bike lanes
BERLIN	School Ave. to River St.	
DERBY DR		10' travel lanes, 5' bike lanes
DOG RIVER RD	Park to Mont. Bike Path	Propose widening by 2' to allow for 4' bike lanes
E MONTPELIER RD		
GREEN MOUNTAIN DR	New Shared Use Path to Memorial Dr.	Narrow lanes; add 5' bike lanes
LOOMIS	School St. to Liberty St.	Remove on-street parking
MAIN	Memorial Drive to Fire Station	
MAIN	State St. to End of East Side Parking	
MOUNTAINVIEW		10' travel lanes, buffered 5' bike lanes
NATIONAL LIFE DR		10' travel lanes, buffered 5' bike lanes
NORTHFIELD	City Line to Prospect St	
RIVER		Remove center turn lane, add buffer bike lane
SIBLEY AV		10' travel lanes, 4' bike lanes
TAYLOR	Mont. Bike Path to State St.	5' bike lanes, 11' travel lanes, no left turn lane

Shared Lanes - The conceptual plan includes shared lanes in the downtown or links into the downtown where there is demand for bicycling facilities but insufficient

room to add bicycle lanes on existing roads or expand the roadway to provide room for bicycle lanes or wide paved shoulders. Shared lanes are appropriate for these streets where there are low traffic volumes and low vehicular speeds and are ideal for the transition between widened shoulders on peripheral roads to striped bike lanes in the downtown area. These routes would be marked with sharrow pavement markings every 250 feet and share the road signs to give bicyclists an idea as to where they should be riding and to alert motorists to the presence of bicyclists. **Table B-3** provides information on the streets that are proposed to have shared lanes.

TABLE B-3: STREETS TO HAVE SHARED LANES

STREET	LOCATION	NOTES
BARRE ST		Add Sharrows; Keep on-street parking
COURT ST		Add Sharrows; Keep on-street parking
ELM ST	Main St. to Pearl St.	Add Sharrows; Keep on-street parking
EMMONS ST		Add Sharrows
GOV DAVIS AV		Add Sharrows; Keep on-street parking
GRANITE ST		Add Sharrows
JAY ST		
LIBERTY ST		Add Sharrows; Keep on-street parking
MAIN ST	Fire Station to State St.	Add Sharrows; Keep on-street parking
MAIN ST	End of East Side Parking to Roundabout	Add Sharrows
MAIN ST	North of Towne Hill Road	
NORTH ST	Mechanic St. to City Line	
NORTHFIELD ST.		
PROSPECT ST		
SCHOOL ST		Add Sharrows; Keep on-street parking
SPRING ST		Add Sharrows; Keep on-street parking
TERRACE ST		
TOWNE HILL RD		10 foot travel lanes and 1.5- foot shoulders
WOODROW AVE	Emmons St. to College St.	Add Sharrows

Wide Paved Shoulders - Paved widened shoulders are recommended for popular bicycle routes on the outer edges of the City that link to adjacent municipalities where bicycle lanes are not possible or necessary. The wide paved shoulder should be a minimum of three feet wide, in addition to a ten- or eleven-foot wide travel lane. There should be signage approximately every 800 feet to alert drivers that the corridor is part of a designated bike route. **Table B-4** provides details on the streets that are proposed to have wide paved shoulders.

TABLE B-4: STREETS TO HAVE WIDE PAVED SHOULDERS

STREET	LOCATION	NOTES
BERLIN STREET	Main St. to River St.	Restripe to reduce travel lanes and add bike lanes
NORTH ST	Main St. to Mechanic St.	
TOWNE HILL RD		10 foot travel lanes and 1.5- foot shoulders

D: ENG-3: INDEPENDENT CROSSWALK SIGNALS

Partners: Department of Public Works; Vermont Agency of Transportation; Central Vermont Regional Planning Commission

Most of the crosswalks in Montpelier are well marked and occur at intersections that have either traffic signals or stop signs. There are a few suggested crosswalk locations associated with the filling of the sidewalk gaps or the expansion of the off-road shared use path system that are located on roads with high traffic volumes and no existing traffic signal or stop sign. These proposed crosswalks are candidate sites for pedestrian crosswalk enhanced signage or pedestrian signals.

The City might the use of an enhanced crosswalk sign that has perimeter lighting that illuminates when a pedestrian is in the crosswalk. The sign could be activated by either a push button at the side of the road or a radar detector that activates the sign when a pedestrian uses the crosswalk. The City might also consider two types of crosswalk signals for these crosswalks locations - a rapid flashing beacon or a HAWK signal. **Illustration B-2** provides images of these two types of signals. Each is a signal that is activated by the walker or bicyclist walking their bicycle or by radar that detects pedestrians in the crosswalk.

Illustration B-2: A Rapid Flashing Beacon (left) & HAWK Signal (right)

The rapid flashing beacon quickly flashes alternating white beacons underneath the crosswalk sign at the side of the road when the activating button is pushed. The HAWK signal activates a yellow and then a red traffic signal for motor vehicles on the road when the activating button is pushed. Both signals revert to an inactive state after the person has crossed the road.

The City should consider such signals for the proposed crosswalks on Memorial Drive at Green Mountain Drive, the two existing crosswalks on Northfield Street; The bike path crossing on Taylor Street, Elm Street at the entrance to North Branch Park and/or the Community College of Vermont and other places where there are crosswalk on Elm Street north of Spring Street. **Figure B-4** shows these locations.

E. ENG-4: PARKLETS

Partners: Department of Public Works; Montpelier Alive; Local Motion; Local Businesses; Parks Department; Recreation Department; Chamber of Commerce; Parking Committee

The Montpelier City Council recently authorized the creation of the first "parklet" in the downtown - the removal of a parallel parking space on State Street and replacement with a temporary small park. Initial reactions to the parklet appear to be positive. The City could consider continuing the practice, either in the same parking space or another one either on Main Street or State Street, when the first one reaches the end of its "lease." The City could also consider adding more than one at the same time, so that different parts of the downtown all receive a parklet.

Parklets help create a more inviting walking and bicycling experience by adding to the open space realm and providing space to sit and "park" and thus have value to pedestrians and bicyclists. The City should encourage adding seating and bike racks at future proposed parklet locations.

F. ENG-5: BICYCLE PARKING

Partners: Department of Public Works; Department of Planning & Economic Development; Local Businesses; Vermont Agency of Transportation; Vermont Buildings & General Services; Bicycle Advisory Committee; Parking Committee

There are a growing number of publicly available bicycle parking spaces in Montpelier, but there is the need for much more. The City can address this need in two ways - adding more publicly available short- and long-term bicycle parking and adding bicycle parking requirements to its Zoning Code.

Short-term bicycle parking is generally for two hours or less, is usually unprotected and does not have special surveillance. These spaces can be located in appropriate places along the street, in front of buildings or even in a a larger group in a converted automobile parking spaces. Long-term bicycle parking is for more than two hours, is often protected from the weather and sometimes also has some form of security surveillance. The location of these spaces can be planned so that they are distributed around the downtown and other areas in the City were public bicycle parking would be beneficial. The City should refer to Bicycle Parking Guidelines 2nd Edition published by the Association of Pedestrian and Bicycle Professionals (APBP) for

help in determining where and how additional bicycle parking can be added to the downtown.

Requiring bicycle parking with development proposals will also help to not only increase the overall number of bicycle parking spaces in Montpelier, but it will highlight the importance of bicycling in the overall Montpelier transportation system.

G: ENG-6: SIDEWALK UPGRADING & REPAIR

Partners: Department of Public Works; Council on Aging; Disability Services; Local Motion; Pedestrian Advisory Committee; VT Association for the Blind & Visually Impaired

The Department of Public Works has identified locations where the sidewalk system needs upgrading or repairs to address problems areas, accessibility concerns or damaged sections. The efforts to identify these areas should be ongoing and could involve other organizations that represent special needs populations. The Department has been working steadily each year to address these difficult areas. It should continue these efforts and accelerate them as possible.

4. EDUCATION OPTIONS

A. EDU-1: BIKE SMART AND BIKE WALK PROGRAMS

Partners: Public Schools; Private Schools; Bicycle and Pedestrian Advisory Committees; Blue Cross Blue Shield of VT; Recreation Department; Safe Routes to School; Local Motion

The Montpelier schools currently include Bike Smart and Walk Smart in their school curricula. The schools should continue to provide these programs so that each student that goes through the school is educated on safe walking and bicycling techniques.

B. EDU-2: ADULT BICYCLING AND WALKING EDUCATION

Partners: Public Schools; Private Schools; Bicycle and Pedestrian Advisory Committees; Blue Cross Blue Shield of VT; Recreation Department; AARP; Local Business; Kellogg Hubbard Library; Vermont Agency of Transportation; Senior Activity Center; Coalition of Bicyclists and Pedestrians; Local Motion

The Vermont Bicycle and Pedestrian Coalition has started offering bicycling classes with both classroom and on-road components at the Montpelier Senior Activity Center. The City should participate in offering these classes, basically an adult version of Bike Smart and Walk Smart, to all of its non-school age residents. These sessions could be regularly offered every few months or in conjunction with encouragement events recommended in **Section B-4** below. The programs should include information on safe walking and bicycling techniques as well as an overview of state laws that apply to bicycling and walking in Vermont, including those that

apply to motorists when they interact with walkers or bicyclists. The promotion for these programs should emphasize that everyone could benefit from them because everyone walks at least a little as well as drives a car, which most likely brings them in contact with walkers or bicyclists at some time.

D. EDU-3: PUBLIC RELATIONS CAMPAIGN ABOUT SAFE BICYCLING & WALKING

Partners: Department of Public Works; Bicycle & Pedestrian Advisory Committees; Department of Planning & ED; Recreation Department; Central Vermont Regional Planning Commission; Local Motion; Montpelier Alive; Chamber of Commerce; Police Department;

In order to reach a wide audience, the City should periodically undertake a campaign that includes radio advertisements, posters in public locations and flyers delivered to home as part of other City mailings that highlights safe walking and bicycling behavior. It could be done a yearly basis every spring as bicycling and walking activity increases after the winter. The information would include:

- The safe way to walk along side a road where there are no sidewalks,
- The applicability of Rules of the Roads to bicyclists,
- How to use a crosswalk, What sharrows are,
- Three-foot passing rule,
- Stopping for walkers in a crosswalk,
- Upcoming bicycling or walking events,
- Bicycles should be walked, not ridden, on crosswalks, or
- Other similar topics.

Once the City has initially developed the information, they could reuse it in subsequent years after verifying that nothing has changed since it was last used.

E. EDU-4: CAUGHT DOING SOMETHING RIGHT

Partners: Police Department; Bicycle and Pedestrian Advisory Committees; Chamber of Commerce; Local Businesses; Local Motion;
Montpelier Alive

The City Police Department and/or other organizations can initiate a project that provide rewards to walkers and bicyclists that are noticed walking or bicycling safely and obeying relevant laws. The rewards could be for a free coffee or tea at local coffee shops or diners, a free cookie from local bakeries; a free ice cream cone from stores that sell them; a discount on a purchase at a local sports, book, grocery or other store; or some other similar type of reward.

The program would help to emphasize good walking and bicycling habits on the part of residents and employees in Montpelier

F. EDU-5: BICYCLING AND WALKING WEBSITE

Partners: Recreation Department; Pedestrian and Bicycle Advisory Committees; Chamber of Commerce; Montpelier Alive; Green Mountain Transit Authority; Local Motion; Police Department; Public Schools; AARP; Blue Cross Blue Shield of Vermont; Department of Human Services

Montpelier should develop a one-stop go-to website and corresponding smartphone app for all information related to walking and bicycling in Montpelier. Residents, businesses, and visitors would benefit from such a website where they can find information on bicycle and pedestrian infrastructure, as well as participate in active feedback. To make the website useful, the City would need to keep it and the corresponding app simple and user-friendly so that people of all ages and ability can easily navigate and understand the material on the site. The website would provide not only education but encouragement as well.

Elements that would be important to feature on this one-stop website include:

- News, including:
  Events - Information and links to past and upcoming events related to biking and walking in Montpelier, such as Bike and Pedestrian Workshops, Street Festivals, or Walking Tours;
  News Blog - Short articles or information prepared and posted by guest writers on any aspect of biking and walking in Montpelier and Vermont, such as highlighting safety issues, announcing new bike facilities, or profiling city staff who help with the planning and maintenance of infrastructure; and
  Twitter Feed - A running feed on the website that features tweets on events, road closures, or other bike and pedestrian activity around Montpelier.

- Resources, including:
  *Maps and Route*s - Create links to the Montpelier Bike Map and Walking Guide that illustrates where there are designated bike and pedestrian facilities (e.g. bike lanes, shared use paths, sidewalks) and points out interesting destinations and fun facts about resources around Montpelier. The map may also include information on specific scenic or family loops and distances. It could also eventually including a routing option that helps users find the best walking or bicycling route from where they are to where they want to go. This could initially be a link to Local Motion's Route Finder.
  Bicycle Law - Inform cyclists on how to bike safely and legally in Montpelier and in Vermont, as well as a checklist
  Bicycle Parking & Locking - Inform cyclists on where they can park their bike throughout Montpelier, how to properly secure their bike, and also what to do if their bike gets stolen.
  What to Bike and Wear - Inform cyclists, particularly those who are new to bicycling, on the different types of bikes, gears, and helpful bike accessories

(e.g. reflective gear at night, proper lighting, helmets) and pointing them to where they can be purchased and/or rented.

- Feedback
  Issues & Improvements: Have an online map portal that allows users to geographically report any unsafe street conditions or request improvements such as adding a bike rack or a bike lane.
  Crash Reporting - Provide clear instructions on what to do if there is an crash or other incident and have a place on the website to actually record the information.
  Sign Up: Allow for users to opt-in or sign-up on the website to receive news and updates by email.

4. ENCOURAGEMENT OPTIONS

B. ENC-1: MAPS AND SIGNS FOR TRAILS, ROUTES AND DESTINATIONS

Partners: Recreation Department; Pedestrian and Bicycle Advisory Committees; Department of Public Works; Vermont Agency of Transportation; Chamber of Commerce; Montpelier Alive; Green Mountain Transit Authority; Local Businesses; Police Department; Central Vermont Regional Planning Commission

As a complement to the Bicycling and Walking Website, wayfinding signs around the City can assist those actually using the special routes. These signs can be accompanied by markers providing background information on special destinations and historical sites in the City along the routes. The actual routes might also be noted by special emblems or other features in the pavement that provides guidance on following the route.

Paper copies of the route maps can also be available at various locations around the City where information is available.

C. ENC-2: BICYCLING AND WALKING EVENTS

Partners: Montpelier Alive; Chamber of Commerce; Local Businesses; Blue Cross Blue Shield of VT; Local Motion; MAMBA; Bicycle and Pedestrian Advisory Committees; Recreation Department; Public Schools; VT College of Fine Arts; VCC; VT Department of Health; AARP; Onion River Sports; Senior Activity Center

The City has sponsored and participated in bicycling and walking events in the past, such as Way to Go Week or the Bicycle Summit. To encourage even more bicycling and walking the City should sponsor more such events, such as:

- Bicycle & Walking Summits - A meeting or workshop that brings inspiring speakers and good examples of bicycling and walking improvements or actions from other cities will help draw more awareness to the benefits of establishing a more friendly bike and pedestrian atmosphere in Montpelier;
- Way to Go Week/Month - Participating in this Statewide event helps encourage people to actually try alternate modes of commuting to work and school;
- Governor's Fitness Program - The City could work with the State to expand the number of walking and bicycling events that this program sponsors in Montpelier;
- Walk & Roll Month - The City could expand this School program to include City employees and State employees; and
- Bicycle and/or Walking Festivals - Creating an outdoor event that celebrates walking and/or bicycling in the City through tours, prizes, educational session, games and other special events helps bring attention to the benefits of walking and bicycling to both individuals and the City.

State agencies and private sponsors would most likely be interested in co-sponsoring some of these events, which would help spread both their cost and the benefits over a wider base.

D. ENC-3: TRANSPORTATION DEMAND MANAGEMENT

Partners: Department of Planning and ED; Vermont Agency of Transportation; Department of Public Works; Local Businesses; State of Vermont; Police Department; National Life; VT College of Fine Arts; VCC;

There are numerous management techniques that the City could initiate or expand that would help increase bicycling and walking activities while reducing the number of motor vehicles on City roads. Many of these techniques would need the participation of State and regional agencies or private businesses in the City to make them successful, but this would also help expand the awareness of the City's efforts to increase bicycling and walking activity. Some transportation Demand Management techniques the City should consider initiating or expanding include:

- Financial incentives to stop driving, which could take the form of paying for transit passes, or proving a cash payment instead of paying for parking passes;
- Incentives for State employees to use transit year round, such as providing free or subsidized transit passes, or making the Montpelier circulator a year round bus route;
- Bicycle Benefits program, which features discounts at local retailers if the patron bicycles or walks to the store;
- Business and State Transportation Management Association, which would be modeled after Campus Area Transportation Management Agency or

CATMA, in Burlington that coordinates transportation efforts in the Downtown area between the City, Business and the University of Vermont;

- Incentives like purchase discounts or free reusable bags to walk or bicycle to local events such as the farmers market;
- A public relations effort to encourage commuters to park on the outskirts of the downtown area, and walk from their car to their workplace;
- Bike lockers or some other secure 24 hour bike parking at the Dog River Road park & ride lot to encourage commuters to park there and ride their bicycle to in-town destination;
- Bans on the creation of additional on-street parking;
- Incentives for parking on the outskirts, such as integrating this strategy into wellness/incentive programs at larger employers; and
- Direct actions, such as organizing an bicycle train for adults and children from downtown to the North Branch Park ball field on days or nights that there are games, to limit the number of cars heading to the Park.

E. ENC-4: FREE BICYCLES

Partners: Local Motion; Local Businesses; Recreation Department; Center for Independent Living; AARP; Free Rides

Either the City, not-for profit organization, or private business would work with volunteer organizations to provide free bicycles to individuals after they have put in so many volunteer hours relating to bicycling or walking. One model in Burlington is a not-for-profit organization that repairs old bicycles and sells them at reduced prices to those in need of a bicycle for transportation. They use volunteers to help them repair the bicycles and after putting in so many hours of volunteer repair time, the volunteers get a free bicycle themselves.

F. ENC-5: ADOPT A FACILITY

Partners: Local Businesses; Chamber of Commerce, Department of Public Works; Department of Planning & ED; Montpelier Alive; Vermont Agency of Transportation

Local business, organizations, groups, or individuals can be valuable allies in increasing bicycling and walking activities in the City by taking on responsibilities to, at the least, keep a section of trail or sidewalk clean and, at the most, help fund its development or upkeep in exchange for naming rights. The City can use the appropriate level of private support and involvement for its existing and proposed shared use paths, trails and even sidewalk segments. Acknowledgement of the contributions could vary depending on what type of facility is being supported, how much area is involved and what the financial value of the support is.

ENC-6: EXPANDED THE BIKES ON BUS PROGRAM

Partners: *Green Mountain Transportation Authority*

The current bus system has bike racks on many, but not all, of its busses. The City can work with Green Mountain Transportation Authority (GMTA) to equip all of the buses that operate in Montpelier with bike racks. Additionally, it can work with GMTA to provides routes that could allow people to ride their bikes primarily downhill in the morning to work and take the bus back up the hills in the evening on their way back home.

ENC-7: MOUNTAIN BIKE TRAILS FOR TRANSPORTATION

Partners: MAMBA; Parks Department; Department of Public Works; Recreation Department

There is only a limited number of mountain bike trails in Montpelier at the moment but there are plans and suggestions for more. Some of these trails are located in ideal locations for use as transportation links in addition to their original purpose of recreation. The City should consider assisting with the expansion of the mountain bike trail system for transportation reason in addition to other reasons they might have for participation in the expansion efforts. The decision of the Recreation Committee to open some trails in Hubbard Park to mountain bikes on certain days for a trail period is a good first step and exploring how mountain bikes on trails can become a part of the transportation system.

5. ENFORCEMENT OPTIONS

A. ENF-1: SPEED ENFORCEMENT

Partners: Police Department

Using more police presence on streets, as well as using more speed radar feedback signs, will help to calm traffic, creating, among other things, better bicycling conditions.

B. ENF-2: CROSSWALK ENFORCEMENT

Partners: Police Department; Pedestrian Advisory Committee

State laws require motorists to stop for pedestrians in a crosswalk. While compliance with this law is good in Montpelier, it could be better. The City Police could conduct periodic enforcement operations at crosswalks targeting motorists that don't stop for pedestrians as well as pedestrians that don't use the crosswalk.

6. EVALUATION OPTIONS

A. OVERVIEW

The City should track several factors to monitor its progress in fulfilling the recommendations of this plan. These evaluations or performance measures need to provide meaningful information and yet should not be difficult to obtain. Unless the factors are easy to collect and measure, it is likely that the City will not have the time or budget to actually undertake them. The following performance measures should meet both criteria.

B. EVA-1: BICYCLE AND PEDESTRIAN COUNTS

Partners: Vermont Agency of Transportation, Central Vermont Regional Planning Commission; Department of Public Works; Department of Planning & ED

The automatic counting of pedestrians that VTrans has been doing for the last several years should continue and expanded if possible to other locations. Additionally, the City should work with the Central Vermont Regional Planning Commission to take yearly pedestrian and bicyclists counts at other locations. Some of the counts should be conducted in the same location every year; other counts should be done for a rotating series of locations that get repeated only every few years, so that counts can be taken in a wider variety of locations.

These counts will help the City understand if its encouragement efforts are having an effect and whether it is making progress on the goal of a 40 percent increase in bicycling and walking. It will also help in locating those portions of the walking and bicycling network that are getting the most and least amount of use.

C. EVA-2: ANNUAL SURVEY

Partners: Central Vermont Regional Planning Commission; Bicycle and Pedestrian Advisory Committees; Chamber of Commerce; Kellogg Memorial Library; Local Businesses; Department of Planning

The City could undertake an annual, informal survey of its citizens to gauge their interest in, understanding of, support for and participation in bicycling and walking in Montpelier. The survey would provide an ongoing measurement of attitudes in the City that can be used to update and refine Montpelier in Motion as needed in the years to come.

D. EVA-3: CRASH ANALYSIS

Partners: Department of Planning & ED; Central Vermont Regional Planning Commission; Vermont Agency of Transportation; Police Department

A yearly analysis of the number, location and circumstances of the previous year's crashes in the City involving bicyclists and walkers would help in the ongoing improvements of the bicycling and walking facilities. The analysis will highlight if there are any particular locations that are dangerous for bicyclists or walkers. It can also identify if there are certain types of crashes that occur more than others do, which might point to the need for better education or other action on the part of the City.

E. EVA-4: LENGTH, NUMBER AND/OR QUALITY OF FACILITIES

Partners: Department of Planning & EDE

A standard measure of progress is the length or number of bicycle and pedestrian facilities. This number would be simple to track, since the City knows the current length of sidewalks, shared use paths and bicycle lanes. The City would increase the numbers yearly by the lengths of new facilities added that year. This measurement would show the progress the City is making towards its goal of increasing the length of on-road facilities.

F. EVA-5: NUMBER OF PROBLEM AREAS CORRECTED

Partners: Bicycle and Pedestrian Advisory Committees; Department of Public Works

The number of problem areas in both the bicycling and walking facilities that the City is able to correct in a year could serve as a basic measure of progress. It could be measured as simply the number of improvements made or it could be measured as a percentage of the number of problem areas reported that were able to be corrected.

G. EVA-6: NUMBER OF GAPS FILLED

Partners: Pedestrian Advisory Committee; Department of Public Work

The number of gaps in the sidewalk system that are filled every year is a measure that provides a basic overview of improvements to the sidewalk system. Other factors such as the length of the gaps, the difficulty in filling them, and other work completed by the Department of Public Works are factors that could affect the number of bathrooms available.

H. EVA-7: NUMBER OF BICYCLES PARKED IN THE DOWNTOWN

Partners: Bicycle Advisory Committee; Department of Public Works

Noting the number of bicycles that are parked in the downtown area provides a measure of the number of people using bicycling as a means of transportation. The This measure is labor intensive and to be meaningful, should be done either several

times during the year or at least once a years on roughly the same day. This will allow the City to gather a record of the change over time. The more times the bicycle are counted, the more the more information the data can provide, such as the difference between summer and winter bicycling and the influenced of different weather factors in the amount of bicycling.

7. ADDITIONAL STUDY OPTIONS

A. OVERVIEW

This master plan will not be able to address all of the issues that the City is currently addressing or considering. Time and budget constraints dictate that some of these issues be addressed in future studies. The following options examine the relevant studies that the City should begin to undertake after it completes this master plan.

B. ADD-1: REGIONAL BICYCLE AND PEDESTRIAN PLAN

Partners: Central Vermont Regional Planning Commission; Department of Planning and ED; Pedestrian & Bicycle Advisory Committees

The Central Vermont Regional Transportation Plan highlights the importance of bicycling and walking within each of its participating municipalities as well as in the region. The Regional Transportation focuses its recommendations on completing the Central Vermont Regional Path and the Cross Vermont Trail. Both of these are very important bicycling and walking facilities but inter-municipal, non-motorized travel not addressed by these two projects has been growing in importance.

Montpelier should work with CVRPC and its adjoining municipalities in creating regional bicycling and walking plans that link the facilities being developed individually in each community. Such regional plans will bring even more value to the individual municipal plans and facilities.

C. ADD-2: STREETSCAPE STANDARDS AND PLAN

Partners: Department of Public Works; Pedestrian & Bicycle Advisory Committees; Montpelier Alive; Chamber of Commerce; Business; Local Motion; Department of Planning & ED;

Streetscape improvements would create a more inviting walking and bicycling environment by adding street trees, benches, understandable signage, bicycle racks, appropriate lighting and other types of "street furniture." These elements could be considered as a form of encouragement, but because they involve physical changes to the street and right-of-way, the report places them here in the engineering category.

Significant streetscape improvements are typically most effective in more commercial, downtown areas. Lesser levels of improvements, typically only involving street trees and benches, are used in more residential areas. **Figure B-4** shows where more detailed streetscape improvements might be considered:

- State Street from Bailey Avenue to Main Street,
- East State Street from Main Street to College Street,
- Main Street from the roundabout to Memorial Drive,
- Elm Street from Court Street to State Street,
- Langdon Street,
- School Street,
- Barre Street from Main Street to Hubbard Street,
- Berlin Street from Main Street to Granit Street,
- Granit Street,
- Stone Cutters Way, and
- Taylor Street.

The specific types and levels of streetscaping that might be appropriate can be based on the type of street, the amount of right-of-way, the adjacent land use, and the amount of pedestrian traffic. To provide guidance and continuity, the City should develop a set of streetscape standards that would guide the implementation of streetscaping projects developed on a street by street or block by block basis. The guide should include the types of facilities to add for various types of sidewalk widths and conditions. Such guidelines and plans would allow the City to proceed with projects in whatever order might be most advantageous with the assurance then when fully implemented, they will all work together to create a unified whole.

D. ADD-3: LONG-TERM BICYCLE NETWORK PLAN

The Short-Term Bicycle Plan recommended in ENG-2 focuses on what might be possible to do now with little to no changes to existing roadways or facilities. There are other facilities that could be created that would greatly enhance bicycle mobility around Montpelier, but they would require changes to the existing roadway system. Changes could be in the form of road widening, additional removal of parking spaces, or new paved shared use paths in new alignments not already used as a trail.

Potential modifications would be the addition of bicycle lanes to many existing roadways that are now too narrow to accommodate them, such as Northfield Street, Elm Street closer to the downtown, Terrace Street heading towards Middlesex, State Street or Memorial Drive. It might convert streets with parking to streets without parking but with bicycle lanes, such as Liberty, Loomis or Barre Streets. It might also include new shared use paths linking Cummings Street with Franklin Street and/or North Street across wetlands, slopes or both.

The long-range Bicycle Plan would require more detailed review of the options. The overall goal of the plan would be the creation of a full on road and off road system that included continuous open or protected bicycle lanes along major roadways as well as shared use paths aligned north south and east west across the City.

TABLE B-5: ENGINEERING OPTION ANALYSIS

Criteria /Option	EVA-1 COUNTS	EVA-2 SURVEY	EVA-3 CRASH AN	EVA-4 3 OP PAC	EVA-5 CORRECTIONS	EVA-6 GAPS	EVA-7 BICYCLE PARK
Will the project be feasible with timely implementation?	YES	YES	YES	YES	YES	YES	YES
Will the project have a reasonable budget?	YES	YES	YES	YES	YES	YES	YES
Will the project take an acceptable amount of work to implement?	YES	YES	YES	YES	YES	YES	YES
Will the project affect a large part of the population	NA	NA	NA	NA	NA	NA	NA
Will the project be safe?	NA	NA	NA	NA	NA	NA	NA
Will the project be usable year round?	NA	NA	NA	NA	NA	NA	NA
Will the project require acceptable amounts of maintenance?	NA	NA	NA	NA	NA	NA	NA
Will the project advance the City's goals for bicycling and walking in the Master Plan?	YES	YES	YES	YES	YES	YES	YES
Will the project advance the Region's goals for bicycling and walking?	YES	YES	YES	YES	YES	YES	YES
Will the project improve the aesthetics of the City?	NA	NA	NA	NA	NA	YES	NA
Will the project increase the enjoyment of bicyclists and walkers?	NA	NA	NA	NA	NA	YES	NA
Will the project be sustainable over time?	YES	YES	YES	YES	YES	YES	YES
Will the project still be valuable 25 years from now?	YES	YES	YES	YES	YES	YES	YES
Will the project help leverage other benefits for bicyclist, walkers or the City?	NA	NA	NA	NA	NA	NA	NA
Will the project have a positive impact on the City's economy?	NA	NA	NA	NA	NA	NA	NA
Will there be interest from the public for the project?	NA	NA	NA	NA	NA	YES	NA
Will the existing bicycle and walking community and committees support the project?	YES	YES	YES	YES	YES	YES	YES

TABLE B-6: EDUCATION OPTION ANALYSIS

Criteria/Option	EDU-1 SCHOOL ED	EDU-2 ADULT ED	EDU-3: PR CAMPAIGN	EDU-4 CAUGHT	EDU-5 WEBSITE
Will the project be feasible with timely implementation?	YES	YES	YES	YES	YES
Will the project have a reasonable budget?	YES	YES	UNCERTAIN	UNCERTAIN	UNCERTAIN
Will the project take an acceptable amount of work to implement?	YES	YES	YES	UNCERTAIN	UNCERTAIN
Will the project affect a large part of the population	YES	YES	YES	YES	YES
Will the project be safe?	YES	YES	YES	YES	YES
Will the project be usable year round?	YES	YES	YES	YES	YES
Will the project require acceptable amounts of maintenance?	YES	YES	YES	YES	UNCERTAIN
Will the project advance the City's goals for bicycling and walking in the Master Plan?	YES	YES	YES	YES	YES
Will the project advance the Region's goals for bicycling and walking?	YES	YES	YES	YES	YES
Will the project improve the aesthetics of the City?	NA	NA	NA	UNCERTAIN	NA
Will the project increase the enjoyment of bicyclists and walkers?	YES	YES	YES	YES	YES
Will the project be sustainable over time?	YES	YES	YES	UNCERTAIN	UNCERTAIN
Will the project still be valuable 25 years from now?	YES	YES	YES	YES	UNCERTAIN
Will the project help leverage other benefits for bicyclist, walkers or the City?	YES	YES	YES	UNCERTAIN	UNCERTAIN
Will the project have a positive impact on the City's economy?	YES	YES	YES	UNCERTAIN	UNCERTAIN
Will there be interest from the public for the project?	YES	YES	YES	YES	YES
Will the existing bicycle and walking community and committees support the project?	YES	YES	YES	YES	YES

TABLE B-7: EDUCATION OPTION ANALYSIS

Criteria/Option	EDU-1 B/W SMART	EDU-2 ADULT ED.	EDU-3 INFO SIGN	EDU-4 PR CAMPAIGN	EDU-5 CAUGHT	EDU-6 WEBSITE
Will the project be feasible with timely implementation?	YES	YES	NO	YES	YES	YES
Will the project have a reasonable budget?	YES	YES	UNCERTAIN	UNCERTAIN	YES	UNCERTAIN
Will the project take an acceptable amount of work to implement?	YES	YES	YES	YES	UNCERTAIN	UNCERTAIN
Will the project affect a large part of the population	YES	YES	YES	UNCERTAIN	UNCERTAIN	YES
Will the project be safe?	YES	YES	YES	YES	YES	YES
Will the project be usable year round?	YES	YES	YES	YES	YES	YES
Will the project require acceptable amounts of maintenance?	NA	NA	YES	NA	NA	YES
Will the project advance the City's goals for bicycling and walking in the Master Plan?	YES	YES	YES	YES	YES	YES
Will the project advance the Region's goals for bicycling and walking?	YES	YES	YES	YES	YES	YES
Will the project improve the aesthetics of the City?	NA	NA	YES	NA	NA	NA
Will the project increase the enjoyment of bicyclists and walkers?	YES	YES	UNCERTAIN	UNCERTAIN	UNCERTAIN	YES
Will the project be sustainable over time?	YES	YES	YES	YES	YES	YES
Will the project still be valuable 25 years from now?	YES	YES	UNCERTAIN	UNCERTAIN	YES	UNCERTAIN
Will the project help leverage other benefits for bicyclist, walkers or the City?	YES	YES	UNCERTAIN	UNCERTAIN	UNCERTAIN	YES
Will the project have a positive impact on the City's economy?	UNCERTAIN	UNCERTAIN	NA	UNCERTAIN	NA	YES
Will there be interest from the public for the project?	YES	YES	UNCERTAIN	UNCERTAIN	UNCERTAIN	YES
Will the existing bicycle and walking community and committees support the project?	YES	YES	YES	YES	UNCERTAIN	YES

TABLE B-8: ENCOURAGEMENT OPTION ANALYSIS

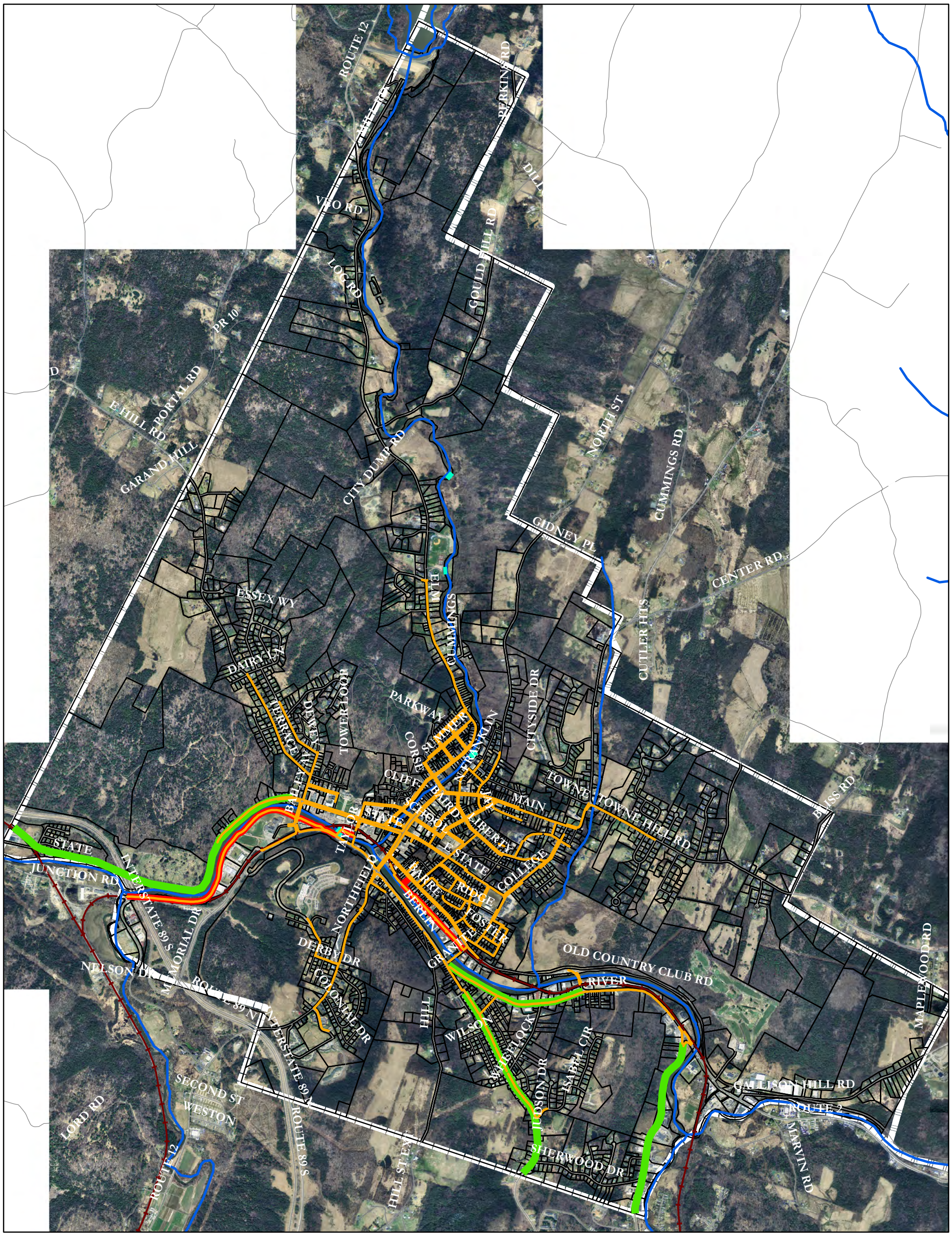
Criteria/Option	EDU-1 B/W SMART	EDU-2 ADULT ED.	EDU-3 INFO SIGN	EDU-4 PR CAMPAIGN	EDU-5 CAUGHT	EDU-6 WEBSITE
Will the project be feasible with timely implementation?	YES	YES	NO	YES	YES	YES
Will the project have a reasonable budget?	YES	YES	UNCERTAIN	UNCERTAIN	YES	UNCERTAIN
Will the project take an acceptable amount of work to implement?	YES	YES	YES	YES	UNCERTAIN	UNCERTAIN
Will the project affect a large part of the population	YES	YES	YES	UNCERTAIN	UNCERTAIN	YES
Will the project be safe?	YES	YES	YES	YES	YES	YES
Will the project be usable year round?	YES	YES	YES	YES	YES	YES
Will the project require acceptable amounts of maintenance?	NA	NA	YES	NA	NA	YES
Will the project advance the City's goals for bicycling and walking in the Master Plan?	YES	YES	YES	YES	YES	YES
Will the project advance the Region's goals for bicycling and walking?	YES	YES	YES	YES	YES	YES
Will the project improve the aesthetics of the City?	NA	NA	YES	NA	NA	NA
Will the project increase the enjoyment of bicyclists and walkers?	YES	YES	UNCERTAIN	UNCERTAIN	UNCERTAIN	YES
Will the project be sustainable over time?	YES	YES	YES	YES	YES	YES
Will the project still be valuable 25 years from now?	YES	YES	UNCERTAIN	UNCERTAIN	YES	UNCERTAIN
Will the project help leverage other benefits for bicyclist, walkers or the City?	YES	YES	UNCERTAIN	UNCERTAIN	UNCERTAIN	YES
Will the project have a positive impact on the City's economy?	UNCERTAIN	UNCERTAIN	NA	UNCERTAIN	NA	YES
Will there be interest from the public for the project?	YES	YES	UNCERTAIN	UNCERTAIN	UNCERTAIN	YES
Will the existing bicycle and walking community and committees support the project?	YES	YES	YES	YES	UNCERTAIN	YES

TABLE B-9: ENFORCEMENT OPTION ANALYSIS

Criteria/Option	ENF-2 SPEED ENF.	ENF- CROSSWALK
Will the project be feasible with timely implementation?	YES	YES
Will the project have a reasonable budget?	YES	YES
Will the project take an acceptable amount of work to implement?	YES	YES
Will the project affect a large part of the population	YES	YES
Will the project be safe?	YES	YES
Will the project be usable year round?	YES	YES
Will the project require acceptable amounts of maintenance?	YES	NA
Will the project advance the City's goals for bicycling and walking in the Master Plan?	YES	YES
Will the project advance the Region's goals for bicycling and walking?	YES	YES
Will the project improve the aesthetics of the City?	NA	NA
Will the project increase the enjoyment of bicyclists and walkers?	YES	YES
Will the project be sustainable over time?	YES	YES
Will the project still be valuable 25 years from now?	YES	YES
Will the project help leverage other benefits for bicyclist, walkers or the City?	YES	YES
Will the project have a positive impact on the City's economy?	UNCERTAIN	UNCERTAIN
Will there be interest from the public for the project?	YES	YES
Will the existing bicycle and walking community and committees support the project?	YES	YES

TABLE B-10: EVALUATION OPTIONS ANALYSIS

Criteria /Option	EVA-1 COUNTS	EVA-2 SURVEY	EVA-3 CRASH AN.	EVA-4 3 OF PAC	EVA-5 CORRECTIONS	EVA-6 GAPS	EVA-7 BICYCLE PARK
Will the project be feasible with timely implementation?	YES	YES	YES	YES	YES	YES	YES
Will the project have a reasonable budget?	YES	YES	YES	YES	YES	YES	YES
Will the project take an acceptable amount of work to implement?	YES	YES	YES	YES	YES	YES	YES
Will the project affect a large part of the population	NA	NA	NA	NA	NA	NA	NA
Will the project be safe?	NA	NA	NA	NA	NA	NA	NA
Will the project be usable year round?	NA	NA	NA	NA	NA	NA	NA
Will the project require acceptable amounts of maintenance?	NA	NA	NA	NA	NA	NA	NA
Will the project advance the City's goals for bicycling and walking in the Master Plan?	YES	YES	YES	YES	YES	YES	YES
Will the project advance the Region's goals for bicycling and walking?	YES	YES	YES	YES	YES	YES	YES
Will the project improve the aesthetics of the City?	NA	NA	NA	NA	NA	YES	NA
Will the project increase the enjoyment of bicyclists and walkers?	NA	NA	NA	NA	NA	YES	NA
Will the project be sustainable over time?	YES	YES	YES	YES	YES	YES	YES
Will the project still be valuable 25 years from now?	YES	YES	YES	YES	YES	YES	YES
Will the project help leverage other benefits for bicyclists, walkers or the City?	NA	NA	NA	NA	NA	NA	NA
Will the project have a positive impact on the City's economy?	NA	NA	NA	NA	NA	NA	NA
Will there be interest from the public for the project?	NA	NA	NA	NA	NA	YES	NA
Will the existing bicycle and walking community and committees support the project?	YES	YES	YES	YES	YES	YES	YES



Legend

Railroad		Sidewalk	
Water courses		Shared Use Path	
Parcel Lines		Bicycle & Pedestrian Bridge	
City Boundary		Bicycle Lane	

Montpelier in Motion

City of Montpelier, Vermont

BROADREACH Planning & Design

RSG the science of insight

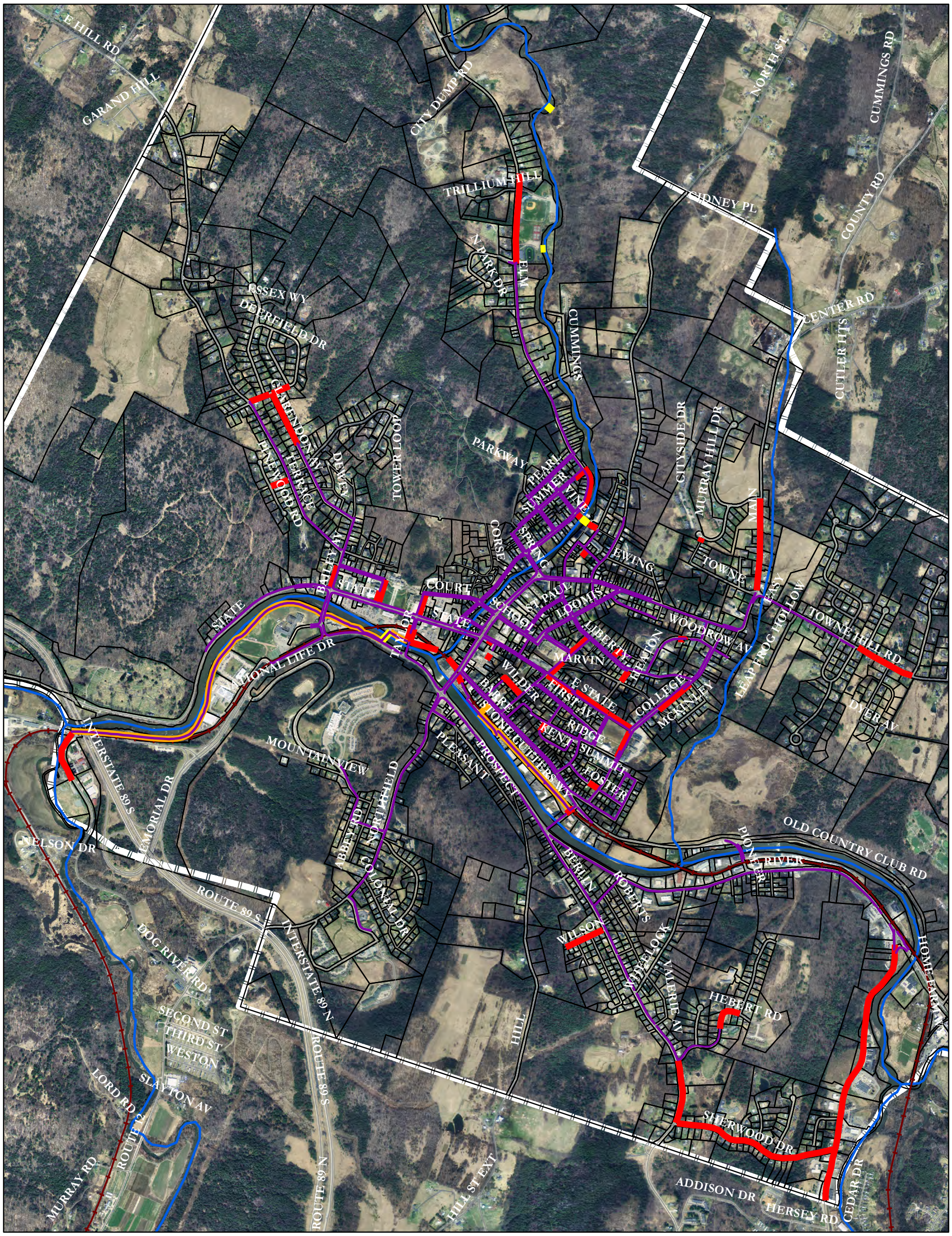
Bicycle Facilities

Feet

0 1,000 2,000 4,000 6,000 8,000

September 4, 2014

Figure B-1



Legend

Railroad		Gaps in the Sidewalk System	
Water courses		Public Sidewalk	
Parcel Lines		Bicycle & Pedestrian Bridges	
City Boundary		Shared Use Paths	

Montpelier in Motion

City of Montpelier, Vermont

BROADREACH Planning & Design

RSG the science of insight

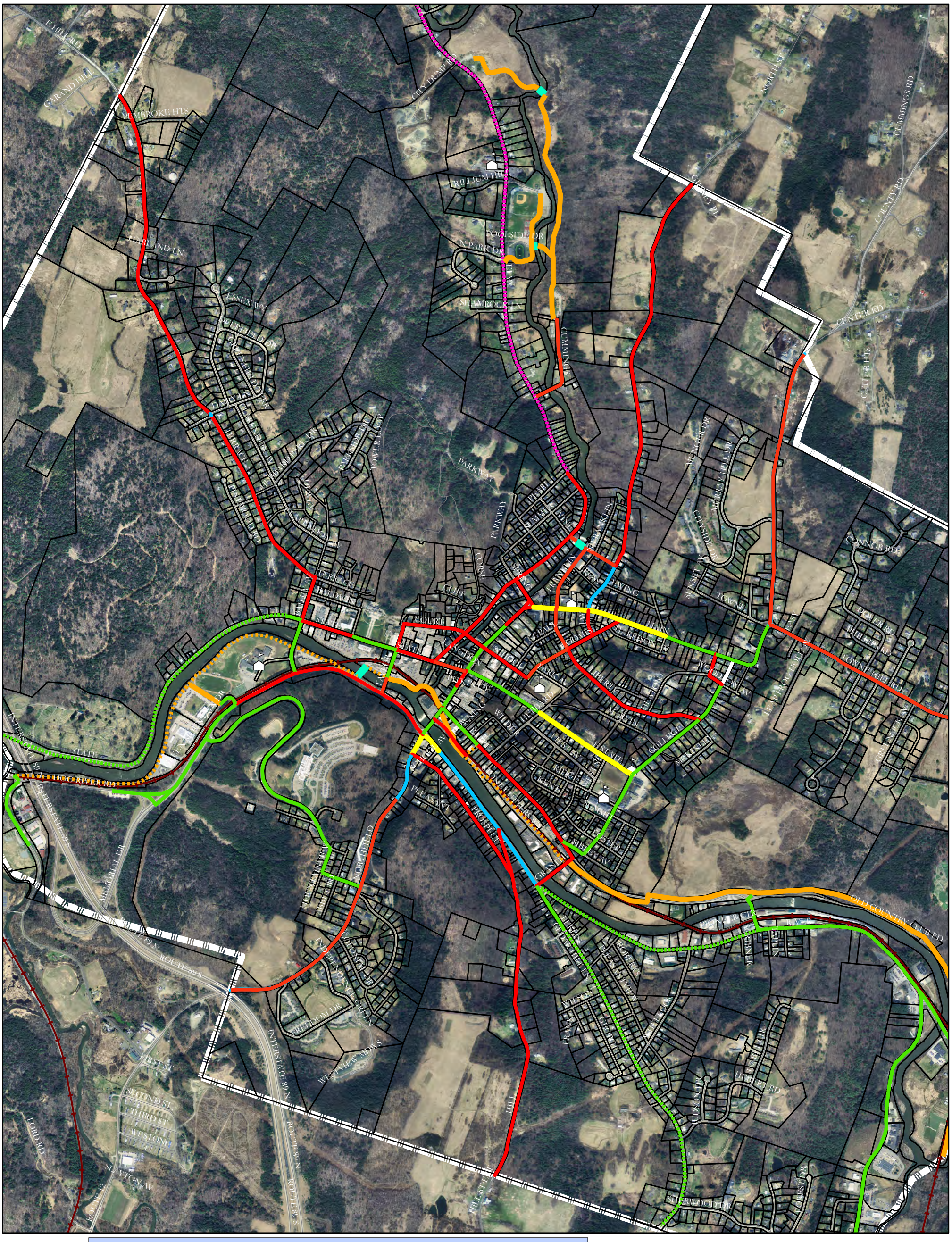
Walking System Gaps

Feet

0 500 1,000 2,000 3,000 4,000

October 1, 2014

Figure B-2



Legend

Bicycle & Pedestrian Bridge	Proposed Contra Flow Lane
Existing Shared Use Path	Proposed Wide Shoulder
Existing Bicycle Lane	Proposed Bike Lane
Railroad	Proposed Shared Lane
School	Proposed Shared/Bike Lane Mix
Parcel Lines	Proposed Shared Use Path
City Boundary	Existing Wide Paved Shoulder

Montpelier in Motion

City of Montpelier, Vermont

BROADREACH Planning & Design

RSG the science of insight

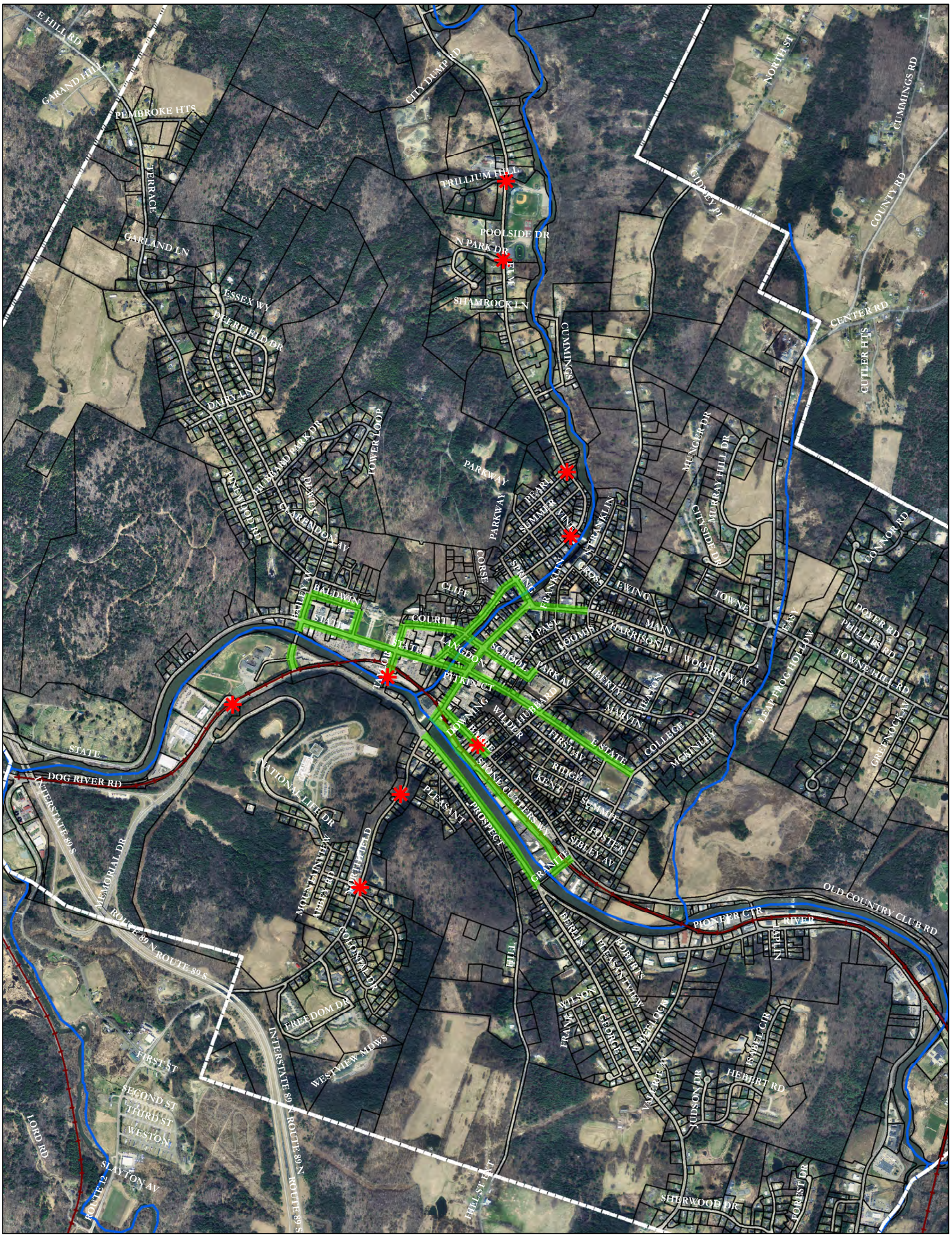
Proposed Bicycle Facilities

Feet

0 600 1,200 2,400 3,600 4,800

October 1, 2014

Figure B-3



Legend

- City Boundary
- Water courses
- Parcel Lines
- Railroad
- Signalized Crosswalks
- Streetscape

Montpelier in Motion

City of Montpelier, Vermont

Sidewalk Improvement

BROADREACH Planning & Design

RSG the science of insight

Feet

0 600 1,200 2,400 3,600 4,800

October 1, 2014

Figure B-4