



City of Burlington
Department of Public Works

Technical Services Engineering Division
645 Pine Street, Suite A
Burlington, VT 05402
P 802-863-9094 / F 802-863-0466 / TTY 802-863-0450
www.burlingtonvt.gov/DPW

Memo

Date: December 2, 2016

To: Transportation, Energy, and Utilities Committee of City Council

From: Nicole Losch, Senior Planner

Subject: planBTV Walk Bike

Introduction to the Plan and the Adoption Process

In 2015 the City Council authorized creation of a Walk-Bike Master Plan. The vision: rapid transformation of Burlington into the best small city for walking and biking on the East Coast. With the collaboration of a Technical Committee and Advisory Committee and 18-months of community participation, *planBTV Walk Bike* has been drafted and available for public comment.

At their October 19, 2016 meeting, the Public Works Commission unanimously voted to recommend the Planning Commission and City Council adopt *planBTV Walk Bike* (with staff consideration for public and Commission comments prior to adoption). At their October 25, 2016 meeting, the Planning Commission considered public comments, provided additional comments, expressed support for the City's serious commitment to walking and biking through the messaging of *planBTV Walk Bike*, and requested the final plan be presented for consideration as a chapter of the Municipal Development Plan.

The draft plan is currently being revised in response to comments from the community, Public Works Commission, and Planning Commission. The updated plan will be re-printed and provided to the Planning Commission and all City Councilors. At their upcoming meetings, the Planning Commission and TEUC will then be asked to provide any final comments before advancing *planBTV Walk Bike* to City Council for adoption in the Municipal Development Plan.

Unbound hard-copies of the current draft plan can be made available at DPW, or an electronic copy of the plan can be downloaded at www.planbtvwalkbike.org.

About planBTV Walk Bike

This plan is about two things:

1. Creating safer streets for everyone, and
2. Making walking and biking a viable (and enjoyable) way to get around town.

Every new project, policy, and program will advance a vision where:

3. Burlington's streets are safe enough for children and older adults to walk or bike to school, to the park, to a friend's, to the store...
4. Walking, biking, and taking the bus are the preferred choice for young adults, year round...
5. Burlington's transportation network improves our local economy and quality of life, leading people to stay and invest in our community.

The end result? Traffic-related fatalities and serious injuries are eliminated and active transportation is the majority of commute trips in Burlington by 2026.

How will we do this?

This plan has a strong focus on engineering – the area in most need of improvement before more people will feel our streets are safe enough to choose to walk and bike regularly. A 12-month priority action list of projects will begin Burlington's transformation. These projects focus on street design for speed control, safety, connectivity, sustainability, and placemaking.

To implement projects quickly and keep our core vision and goals at the forefront of every decision, the City and the community will need to shift our approach to planning, designing, and constructing walk/bike projects in Burlington. Whether we call it "rapid implementation," "interim design," "pilot to permanent," "planning in action," or "all at once," the end result will be the same: streamline the design process, engage the community differently, and use flexible, attractive materials that can be installed quickly, distributed widely, and remain in place for years. Capital construction takes time to design and fund, but improvements can advance with little more than paint, signs, and planters in the interim. With this approach, change can happen quickly, the community can be engaged at every step, and project designs can be adjusted before permanent construction occurs.

Beyond infrastructure, *planBTV Walk Bike* recommends collaboration between the DPW and other City and regional agencies, Neighborhood Planning Assemblies, non-profit organizations, and local businesses and residents to advance policies and programs that will improve:

- Evaluation and planning (e.g. a Data Dashboard, additional staff capacity)
- Education (e.g. professional drivers' training programs, bike skills and lock/safety gear initiatives, expanded Safe Routes to Schools, safety outreach to drivers)
- Encouragement (e.g. play street events, commuter breakfasts, summits and events for women and seniors)
- Enforcement (e.g. revised crash reporting protocols, enforcement stings with equity safeguards, increased Safe Streets Collaborative work)
- Equity (e.g. deeper understanding of the needs and priorities of under-represented Burlingtonians, consider locations in programming events and projects)

The most immediate priorities will be pursuit of a “Vision Zero” policy – an important step for a collaborative approach to eliminating traffic-related fatalities and serious injuries – and a “Crash not Accident” pledge – an assertive voice to reframe the reality that traffic crashes are fixable problems caused by unsafe driving and dangerous streets.

planBTV Walk Bike balances the fundamentals of an ambitious plan with a pragmatic approach to funding and implementation. The project team carefully evaluated the 12-month, 5-year, and 15-year project list to ensure alignment with projected capital funding. These projects are great investments, retrofitting existing streets and providing low-stress alternatives to single-occupant driving.

Request

planBTV Walk Bike is currently being revised in response to comments from the community, Public Works Commission, and Planning Commission (attached). Additional comments and guidance on the schedule are welcome from the TEUC, as we prepare to provide the updated plan to the Planning Commission, revisit the TEUC, and advance to the full City Council.

Summary of Public Comment for PlanBTV Walk Bike July 01 draft

From: Peter Keating

Date: July 5, 2016 at 8:19:28 AM EDT

On page 30 we note Missoula MT as a “leading City” but the stats don’t make that case. Is there a reason to keep that pie chart here?

From: Jennifer Green

Sustainability Coordinator

City of Burlington Burlington Electric Department

Given the prospective growth in e-bike ridership, and BED’s possible role in supporting this effort, I’d like to encourage that the final plan make mention of the new and emerging role that e-bikes can play in Burlington’s bike scene.

There is no one spot in the draft where this language fits best – perhaps on page 149 (under the equity section) or otherwise in the Equity Action Plan? As you know, e-bikes can make long commutes possible for people who may want to bike but find that conventional biking – for any number of reasons – is not an option.

Feel free to draft language as you see fit. If it’s helpful, [Go Vermont](#) has a page about ebikes, with a link to the non-profit [VBike](#)....

Date: August 24, 2016 at 1:58:40 PM EDT

I am writing to express my support for the idea that the Burlington walk-bike master plan must include more new bike lanes on major streets in its first year.

Pine Street and Winooski Avenue are in need of particular attention.

Of course, all bike lanes should also, ideally, be "protected" bike lanes.

Thank you. Karl Haloj

Burlington resident and avid cyclist

From: Scheidt, Daniel

Date: Thu, Aug 25, 2016 at 10:56 AM

Hello,

I read through the draft plan. It’s a lot to digest and most of the ideas are pretty good. A few minor comments:

1. Ledge Rd for bikeway in South End- I live on Ledge Rd and I’m an avid biker, but it’s simply too steep to bike uphill (most people can’t bike up the hill and push their bikes up the hill on the sidewalk), and on the downhill, bikers are going the same speed as cars so sharrrows work well in this case. I think the lane would be better placed on a street that’s not so steep.

2. South Willard in South End: Right now, there is no southbound bike lane close to UVM on any street. If I read correct, a longer term plan would be to add a southbound lane to the existing northbound bike lane on South Willard, but I think the priority should be to do this now. It's too important to leave this to later, and a southbound lane would complement the existing northbound lane nicely. To not have any southbound bike lane close to UVM seems like it should be a higher priority.

Sent: Friday, August 26, 2016 10:47 AM

Cc: Karen Paul <kpaul@burlingtonvt.gov>; robinfawcett@burlingtontelecom.net

Dear Chapin Spencer,

It's great that the BTV Walk Bike Master Plan Draft is ready for public comment. There was clearly a lengthy, public process required to develop this comprehensive document. Thanks for your hard work. As both walkers and bikers we're excited to see expanded protected bikeways and safer walking spaces in Burlington.

Having lived on Saint Paul Street for the past 4 years, we have two specific concerns that aren't included in the plan.

First: Speeding on Saint Paul Street

We were a bit surprised that your data did not indicate the level of excessive speeding in the "Slow Zone" of Saint Paul Street, a major corridor into the city. Last week we had police surveillance and several traffic stops for speeding. The officers were quick to acknowledge that speeding is a problem, especially between the Howard Street light and Kilburn Street. The only speed limit sign posting (25 mph) is at Catherine Street. Perhaps some traffic calming measure, such as additional signage, might be an inexpensive deterrent.

Second: Pedestrian Crossing at Saint Paul Street and Kilburn Street

This crossing, which provides access to Smalley Park, is poorly marked and cars regularly fail to stop for pedestrians. With neighborhood families and children using the park it would seem that an improved crosswalk would be a priority. We noted in the Plan BTV Walk Bike that a much needed new crossing would be added at Howard Street and new sidewalks on Kilburn but no mention of an upgrade to this dangerous pedestrian crossing.

We have attended a couple of the public meetings on this plan to gather information and listen to opinions. In 2013 we wrote a letter expressing similar concerns to the Department of Public Works. (see attached) We received a brief note and information on Neighborhood Traffic Management encouraging us to seek our own neighborhood driven solutions and develop our own improvement plan. Thank you for allowing us an opportunity to comment on this new Plan BTV Walk Bike Draft.

Rod and Glenna Copeland
390 Saint Paul Street
Burlington, VT 05401

From: **Damon Lane**

Date: Wed, Sep 14, 2016 at 3:21 PM

Hi Julie, thank you for the opportunity to comment on the draft plan and for the good focus on these growing modes of transportation that are better in so many ways than the predominant one.

One specific comment I have is on the Sherman-Peru-Grant greenway. I like the idea a lot and live on Peru St. A potential issue that I'm sure you've thought of is at the intersections. While these three streets are relatively calm and quiet (though Grant and half of Peru is much busier than the rest), the greenway crosses major streets at offset intersections. Not only does this clash with the calm experience of the east-west streets, but requires confidence and bike skills to turn right, enter and cross traffic and take a left turn. Because North Champlain is one way, transiting the greenway West wouldn't even be legal. This issue affected my old commute to UVM; I would use Grant to Loomis on the way to work, but Pearl on the way home. Maybe short counter flow bike lanes are the answer? Or very wide intersections with lights that stop cars outside the crossing zones before a bike phase? I assume one reason to create the greenway is to encourage people who are not comfortable with the traffic on Pearl and North St, but we have to make sure the experience is really less harrowing. I use Grant St to and from work today and occasionally crossing Elmwood is worse than riding on S. Winooski.

My other thought is about bike parking. It is a pet peeve of mine that despite taking up a fraction of space per vehicle as cars, bikes are stuffed ridiculously close together. Almost never is a car blocked in or touches another car getting in or out. I'm not saying bikes can't ever touch each other or that is the same thing as cars doing it, but you certainly feel frustrated and second class wrestling your bike out of a tangle of bikes in a rack, and occasionally finding someone has accidentally locked yours to theirs or locked their bike in a such a way yours is blocked in. This is crazy when bikes are so space efficient! An extra 4-6" of width and they would have minimal interaction with each other.

From: **Lawrence Keyes**

Date: Fri, Aug 26, 2016 at 11:27 AM

Cc: campaigns@localmotion.org

College Street or Main Street, or Pearl Street....I.e. an easy and safe way to get to UVM from and to downtown.

Battery Street

S. Prospect Street

Make North Ave trial permanent. That has been a great improvement. However, the turn from N Ave to Plattsburgh Ave is really tough, both for bikes, and for cars.

Date: Wed, Aug 24, 2016 at 8:07 PM

Please consider more stripes on the street on Winooski Ave. and Maple Streets when working on the Master Plan.

Thank You for your consideration-
Aimee Wilson

Bike Commuter

From: **John Leddy**

Date: Wed, Aug 24, 2016 at 4:15 PM

Cc: campaigns@localmotion.org

First of all thanks for this solid plan that will serve Burlington well. There are a whole lot of great things in the plan. My major critique of the plan is that—at least in the first year—it is far too timid when it comes to improving conditions for biking, and new bike lanes are almost nowhere to be found in the first year. There are a number of streets in Burlington that can have bike lanes added to them at low cost, with little engineering or design, and with negligible impact on car traffic or on-street parking. Those streets can and should be restriped to add bike lanes without delay. I support moving forward quickly on these more promising candidates:

- Adding bike lanes in both directions on South Winooski between Maple and Main
- Extending the southbound bike lane on North Winooski all the way to Pearl
- Swapping the bike lane with the parking on Willard from North to Maple (such that the bike lane for this segment runs southbound)
- In addition, Local Motion has proposed that Burlington DPW paint bike lanes solid green whenever they cross an intersection or a side street. This treatment greatly increases visibility for people biking, and was recently adopted by the Vermont Agency of Transportation as Highway Safety & Design Engineering Instruction 16-100.
- Adding bike lanes and super-sharrows to portions of Pine Street north of Kilburn
- Upgrading to super-sharrows on Pine northbound between Locust and Kilburn
- Adding bike lanes and upgrading to super-sharrows at intersections on Pine between Locust and Flynn
- Adding bike lanes on Pine between Flynn and Home
- Adding sharrows on Pine south of Home

Thanks again for your thoughtful work.

Date: Wed, Aug 24, 2016 at 3:39 PM

Cc: campaigns@localmotion.org

I'm writing to encourage you to consider quick action on additional bike lanes in Burlington. My own commute is most affected by the absence or discontinuousness of lanes on Pine street and S. Winooski street, but there are many locations detailed in the new PlanBTV walk/bike report that would benefit from rapid installation of lanes. I don't want to wait over a year to feel safe on my way to and from work.

Thanks!

Bill Morris
Scarff Ave

From: **David G. White**

Date: Wed, Aug 24, 2016 at 3:37 PM

Cc: campaigns@localmotion.org

I'm writing to add my voice to Local Motion's push for more bike lanes on Burlington streets within the next year. Some of these are "low hanging fruit" and should be no-brainers.

I'm an avid cyclist and live in the south end. For me personally Pine Street is significant. Having not evaluated the City as a whole, I can't say that Pine Street is most important overall, but it would be great to have clear & substantial bike lanes on both sides.

And other streets too!

From: **Mitch Krauss**
Date: Wed, Aug 24, 2016 at 2:12 PM
Cc: "campaigns@localmotion.org" <campaigns@localmotion.org>

Hi Lucy, Please include more new bike lanes on major streets in the first year the walk-bike master plan to. Pine Street, Winooski Avenue, Battery Street, and Shelburne Road would be a good start. Thanks, Mitch

Date: Wed, Aug 24, 2016 at 2:44 PM
Cc: campaigns@localmotion.org

I am a resident of the New North End, whom is particularly pleased with the bike pilot project on North Ave. In addition to my fervent desire for the North Ave lanes to stay, I also would like to see more bike lanes on other major streets; two that come to mind are S. Winooski Avenue through the downtown portion, and on Pine Street.

Thank you for your work,
Anna Kovaliv

Date: Sun, Oct 2, 2016 at 12:07 AM
To: julie@streetplans.org, lgibson@dubois-king.com, Nicole Losch <NLosch@burlingtonvt.gov>
Cc: Barbara Headrick <barbara.headrick@gmail.com>

Please consider these comments and let me know what you think.
Thank you!

Barbara Headrick

Page 25: Why is our 2026 vision for Mode Sharing so high for SOV (37%) and MOV (12%)? Boulder's 2026 goal is much lower for these same two mode : (20%) and (15%) respectively.

Page 25: Why not a larger increase in walk and biking? The bus mode increases more than walking and biking. Why? Walking and biking is better than busing.

Page 59: "Provide a shared use path, neighborhood greenway, or protected bike lane connection to **every school in Burlington** by 2026." In order to achieve this, the UVM Redstone bus that uses South Prospect Street, south of Main Street, needs to be eliminated or moved onto the internal campus road (University Heights Road runs from Main Street south to the Redstone Apartments). Please see my comments on the interactive map. The UVM Redstone bus squeezes bicyclists into parked cars on the west side of South Prospect Street, and into the curb on the east side of South Prospect Street. The UVM Redstone bus only

provides a **4 block** ride in each direction -- the distance between the main UVM green and the Redstone campus. Students should be walking or bicycling these 4 blocks or using the on-campus buses for this short distance. And the neighborhood street (South Prospect Street) should not have any UVM buses on it. We already have a CCTA bus providing public transportation along South Prospect Street. Moving the UVM Redstone bus onto campus, or eliminating the UVM Redstone bus route, would increase bicycle safety along South Prospect Street and reduce stress for bicyclists using South Prospect Street, south of Main Street, because the UVM bus is too frequent (it drives by every 3 minutes), too large (30,000 lb bus weight exceeds the 20,000 lb legal weight limit on South Prospect Street), and too polluting given that bicycling and walking 4 blocks is a viable option and buses are available on campus. If UVM wants to keep the same level of bus service, then UVM should move this bus onto its internal campus road (University Heights Road), where it already has bus service to stop at **the same exact bus stops** currently served by the UVM Redstone bus. Yes, the UVM Redstone bus is redundant with the on-campus buses. Bicyclists who are on campus can ride safely by using paths and not the internal campus road if they want to avoid the UVM buses. And on our city street, many more students and local residents would ride their bikes to campus and work if the UVM Redstone bus was taken off of South Prospect Street, south of Main Street. The city can achieve a **HUGE** increase in the number of students riding their bicycles to campus every day by requiring UVM to move its bus off of South Prospect Street, south of Main Street. After picking up passengers in front of Waterman Hall, the bus should turn west onto Main street, and then at the top of the hill take a right turn onto University Heights Road. From there it can use this internal campus road to drop passengers off at the UVM garages, UVM fitness center, and the UVM dorms and residences, including those at the Redstone campus and at the Redstone Lofts and Redstone Apartments. Students will learn that riding their bicycles is a fast way to get from Redstone Apartments to the main campus green. And they would happily ride their bikes if they feel safe riding along South Prospect Street. There are many UVM professors, staff and doctors who have homes along South Prospect Street. My spouse is one of the few that rides his bicycle to work everyday. Many more UVM professors, staff and doctors would ride their bikes to campus if the Redstone bus was removed from South Prospect Street because they would feel safer riding their bikes. More teens and youth would ride their bikes to Edmunds School and Mater Christi school if the Redstone bus was removed from South Prospect Street, south of Main Street. The UVM bus frequency and size causes university students and adults to ride their bikes on the sidewalks along South Prospect Street. This decreases safety for pedestrians. **Given the size of the UVM student population and what that represents for the potential increase in number of daily bicycle riders, you can exceed your bicycle mode target for 2026, and reach it much sooner than 2026, by insisting that UVM move its Redstone bus onto its internal campus road **when it is south of Main Street** or eliminate the Redstone bus route. Net result, take the UVM buses off of South Prospect Street, south of Main Street and increase bicycle safety and ridership.**

Page 63: Your map suggests two different speed limits for South Prospect Street south of Main Street. **All of South Prospect Street, south of Maple Street, should have a speed limit that does not exceed 20 mph.** There is no good reason to have cars and buses traveling 25 mph along South Prospect Street between Maple and Cliff Streets. **This section of South Prospect Street, between Cliff and Maple, is not a corridor.** South Prospect Street to the south is a max 20 mph zone. Cliff is not a corridor. "The 25 mph corridor" should be **north of the corner** of South Prospect Street and Maple Street. When buses and

cars along South Prospect Street go 25 or 30 mph, it scares bicyclists. A 25 mph speed limit means that a good % of drivers will speed to 30 mph. The section of South Prospect Street that is color coded pink is residential on both sides of the street. But all of South Prospect Street, south of Maple Street, is NO THRU TRUCK route. This flat residential street is an important bicycle route for students who live in dorms and for residents who live in the neighborhood so both can use bicycles to get to their classes and places of employment at the university, the K-8 schools and the hospital. Please change the pink coded section of South Prospect Street, between Cliff Street and Maple Street, to blue. This will increase bicycle ridership because it will reduce the stress caused by fast moving cars and buses.

Page 64: If you want to see a HUGE (off the charts) increase in daily bicycle ridership, please consider making South Prospect Street, between the Redstone Apartments and Main Street, a high priority corridor for bicycle safety and lower vehicle speeds. Once you get UVM students riding their bikes from their dorm to the main campus, they will also ride their bikes downtown. This will reduce car usage downtown. As bicycling use increases on campus, more students will opt to not bring their cars to Burlington.

page 66-67: There have been serious accidents between bicyclists and the UVM Redstone bus. In one recent accident, the bicyclist was not wearing her helmet and sustained serious head injuries when her bike and the bus collided.

page 69: It is extremely important for the proposed "fully connected network" to include the length of South Prospect Street that lies between the Redstone Apartments (500 South Prospect Street) and the beginning of the UVM bike path that winds behind the UVM Admissions building at 184 South Prospect Street. Right now, the bike path abruptly ends when it intersects the sidewalk in front of the Admissions Building. Bicyclists ride on the sidewalk for 4 blocks until they reach the Redstone campus because they don't want to compete with the UVM buses on South Prospect Street. Instead the UVM bus should be removed from South Prospect street and there should be bike paths on both the east and west side of S. Prospect street so bicyclists ride in the street instead of on the sidewalk. This suggestion would allow for a continuation of the bike path from its on-campus route to the student dorms at the far south end of South Prospect Street. IT would also allow UVM employees to bicycle home safely from work. ***The THOUSANDS of students living in the dorms south of Redstone would become daily bicycle riders if you make South Prospect Street a continuous and safe bicycle route to campus.*** All it takes is a shared use path (unmarked is fine), a 20 mph speed limit, and no UVM buses on South Prospect Street. This is a low cost and fast way to dramatically reach your bike ridership goals. Those who want to ride the bus, can use the on campus buses or the city bus. But most will choose to use their bikes because it will be safer (when the suggestions are implemented), faster, and better for our environment than a polluting bus. UVM can reduce "student fees" if they eliminate the Redstone bus. Less student debt is another advantage of eliminating the Redstone bus.

page 73: South Prospect Street is not low stress on a bicycle. Come here and ride your bike at 8am on a weekday during the school year. See the buses squeeze the bicyclists into the curb and parked cars. See cars and buses going too fast. We need to reduce stress along this street by implementing the suggestions

already described. Then you will see a HUGE increase in the number of UVM students and UVM employees using their bicycles to commute to school and work.

page 119: There should be more speed enforcement along South Prospect Street to calm traffic. I wouldn't object to license plate reading speed detection and enforcement devices as a pilot program on our street. Too many students are driving drunk at night time and speeding. Commuters are going too fast at rush hour. CCTA bus drivers are frequently speeding.

page 120: Please add South Prospect Street, between 500 South Prospect Street and 189 South Prospect Street, to this list of projects for the next 5 years.

page 121: Make the green line dashed for traffic calming along the entire length of South Prospect Street between Maple Street and Ledge Road. To get the thousands of UVM students who live near 500 South Prospect Street to ride their bikes along South Prospect Street to the bike path at 189 South Prospect Street, the traffic has to not exceed 20 mph and most of the drivers must not be speeding (and the Redstone bus **4 block circle route** has to be moved onto campus or eliminated -- what a waste this bus route is! Use the on-campus buses if you must ride).

Page 130: Proposing zoning changes to incorporate NACs in all residential neighborhoods, and have this change buried in the bike walk plan, is highly inappropriate. **Many people are not going to realize that this walk/bike plan is being used as a backhanded way to change building and construction and use zoning. This report is not the proper forum for institutionalizing NAC's into our city's municipal development plan and zoning. The city is not being transparent with city residents by recommending zoning changes to allow NAC's within the walk/bike plan since many residents are not going to read the walk bike plan before it is accepted by city council and embedded into the city's MDP. I understand that NAC's reduce car usage. But the wording in this section needs to be supportive of zoning that each neighborhood wants and not force NACs on neighborhoods. The wording in the walk bike plan should not dictate that NACs are to be adopted. Many residential neighborhoods do not want to be blighted by commercial uses.**

Page 165: Please add South Prospect Street, between 500 South Prospect Street and 189 South Prospect Street, to this list of projects to start now. (lower speed limit from 25 to 20, remove the UVM bus from South Prospect Street - it exceeds the city's street weight limit). This bike safety initiative will cost the city nothing except for a few new 20 mph speed limit signs. And UVM will reduce its expenses by eliminating the Redstone Bus route. OR it will maintain its operating expenses (no increase) by simply moving the Redstone bus onto the on-campus University Heights road. Bicycle riding to campus will increase because bicycle riding will be much safer with the UVM buses off of South Prospect Street, south of Main Street. Once people ride their bikes to work or class, they will start to ride bikes to do their errands. This leads to less car traffic in Burlington and fewer student cars in Burlington.

From: David E. White

Sent: Friday, October 07, 2016 1:59 PM

Cc: Meagan Tuttle <mtuttle@burlingtonvt.gov>; Chapin Spencer <cspencer@burlingtonvt.gov>

Hi Nicole

Below are some comments I've put together on the propose plan – overall this is a GREAT addition to our family of planBTV initiatives and I look forward to all of it happening ASAP!

planBTV Walk-Bike comments

Great educational piece overall and tons of great information and ideas

Recommendations seem to ramble on from section to section so it's hard to get a sense of the overall vision/objective and priorities - there's an "Action Plan" starting on p 57, then the sub-area plans, and then a Policy and Protocol Action Plan starting on P 127. Hopefully the Executive Summary will be able to put it all into a more easily digested form for the average reader.

One of the most important strategies is to design streets for a target speed - I don't think most readers will understand what this really is/means, and wonder if there's enough data to map current speeds with the target speeds shown on the map on p63 to help identify where this is an important issue.

Sub area maps generally - 1-mile/5-min walk rings are too faint to see clearly on the maps

Shore Road Neighborhood Greenway - highlight this on the map of proposed improvements or include an inset so the reader can more easily find where this is. Also should note that while the variety of improvements suggested are specific to this location, they are also examples of treatments that might be considered for any of the other suggested Neighborhood Greenways. One way to better make this point is for p 83 to lead off with a description of the "Neighborhood Greenway", and then use Shore Road as an example of this as applied to a specific location. Same thing with the "Two-way Protected Bike Lane - describe what it is and where it's best suited as a treatment, and then illustrate it as applied to Plattsburg Ave. Otherwise, why doesn't the plan go into detail about the other places where either a neighborhood greenway (e.g. Farrington Pkwy or Gosse Ct) or protected bike lane are also recommended.

Downtown Sub area map (p90-91) - Battery from Cherry to College should be identified as a significant gap in crossing, and also along Pine south of Maple. I'm surprised that the Pearl and Cherry intersections at Battery aren't identified as difficult crossings (at least thru public feedback). Same with S Champlain and Main.

Downtown Action Plan (p96-99) -I don't see anything here regarding:

- Waterfront pedestrian connection at the bottom of Cherry (and Pearl?) to connect to Lake St down the escarpment
- Relocation of waterfront bike path to west of railroad between King and College
- Downtown Alley Walk (discussed on p 61)

- St. Paul and Pine St connections between Cherry and Bank - they are impossible to see on the map and blend in as if they are existing. They need to be highlighted in some way.
- UVM's Catamount Promenade - a prominent ped/bike thoroughfare connecting Redstone/Athletic campus with Trinity across Main Campus

Bike Parking Ratios (p 140) suggests a payment-in-lieu for on-site bike parking into a "Public Bicycle Parking Fund" Does this actually exist or is it specifically being recommended to be created (if so it should be part of the next section on funding). We are happy to incorporate such a thing, but the "pot" needs to be in-place first.

Bike Parking Ratio Specific Updates: need some details here. Give us a number or a range to work with, and some specific source materials and/or references to existing regulations to model. Just saying to "increase" isn't helpful enough to be able to act on this quickly.

Sent: Tuesday, October 18, 2016 4:47 AM
To: paulfin@sover.net; Chapin Spencer <cspencer@burlingtonvt.gov>
Subject: S. Prospect south of Maple

In regard to City Walk Bike plan:

The section of S. Prospect St. south of Maple that is proposed to be a 25 mph speed limit is also a point where multiple types of pedestrian and bike traffic converge. Further, it is a common commuter route for school children and a mix of housing similar to the section further south to Cliff St. Therefore, it is my opinion that the section should have the same speed limit as section further south to Cliff and be proposed at 20 mph.

Thanks you for your time.

Thomas Weicht

Sent: Monday, October 17, 2016 8:58 PM
To: Chapin Spencer <cspencer@burlingtonvt.gov>
Cc: paulfin@sover.net

In connection with proposed speed limits in the Walk/Bike Plan, it does seem more appropriate to impose a 20 mph limit on South Prospect between Maple and Cliff. In a residential area with children encouraged to walk to school, why allow a higher 25 mph? We have lots of bike and skateboards on this block at all hours, many UVM students.

Please consider a lower speed limit. Our nine year old son joins us in this request

Regards,
Peter and Amy Young

343 South Prospect St.

From: Barbara Headrick

Sent: Monday, October 17, 2016 6:15 PM

To: Chapin Spencer <cspencer@burlingtonvt.gov>; Karen Paul <kpaul@burlingtonvt.gov>

Subject: Letter about page 63 of the walk bike plan

Chapin and Karen,

This is the letter I distributed to my neighbors today. The letter and emails are regarding page 63 of the City's proposed walk bike plan. I also provided folks with a copy of page 63, which is a map with the proposed speed limits.

In the city's proposed walk/bike plan, the speed limit for South Prospect Street, south of Cliff, is proposed to drop to from 25 mph to 20 mph. But the report recommends keeping the speed limit at 25mph between Maple and Cliff.

We would like the speed limit to drop to 20mph on this section of South Prospect street. The attached letter explains why. Thank you for considering this letter and neighbor's comments on the same topic. Thank you in advance for your assistance and time.

From: Karen Paul

Sent: Tuesday, October 18, 2016 7:04 PM

Cc: Chapin Spencer <cspencer@burlingtonvt.gov>; Nicole Losch <NLosch@burlingtonvt.gov>; Joan Shannon <jshannon@burlingtonvt.gov>

To the esteemed members of the Commission, thank you for your service and for listening intently to many residents all over the City who come before you expressing their perspective on many issues. I have heard from several residents on and around South Prospect Street by email and by text. I am out of town this week until late Thursday; otherwise I would be at the meeting in person to express my support on behalf of these constituents for lowering the speed limit on this street. I hope you will agree that there are only positives that can come of this change. We all benefit from slower driving. Drivers, passengers, cyclists and pedestrians all benefit.

I hope you will support this change.

Thanks, Chapin and Nicole, for your efforts and for all you both do for Burlington. Your work is too often unsung but it is certainly appreciated.

My best,
Karen

Comments by Erik Brown Brotz, October 16, 2016

Overall this is an excellent plan for improving the conditions for walking and biking in Burlington. The following comments are primarily intended to improve the clarity and consistency of the plan document. I have also included a few suggestions for more substantive changes and additions to the plan. Thank you for your work on this plan, and I look forward to its passage and implementation in the near future.

1) Improve design and readability

a) Pages 64-7 Walk-Bike Priorities

- i) Please make the color for "Priority corridors for safety only" more distinguishable from the other types
- ii) Please number the intersections on the map and/or put the list in a more logical order (e.g., north-south) – it's hard to tell what is what.

b) Pages 80, 96, 119 Sub-Area 5-year Action Plans (and other maps also)

- i) Please label roads that are named in the recommendations on the maps.
- ii) Please number recommendations and add the labels to the maps. It would help if the recommendations were in some logical order as well.

2) Improve map accuracy

a) Page 69 – Bike Network plus subsequent bike maps

- i) Please modify the paths through Ethan Allen Park to make them more accurate. They currently show connections that don't exist and miss others that do. Some of these paths are dirt paths for walking only, and are unofficial. Some are too steep to be bike paths. See the Burlington Area Walk-Bike Map recently published by Local Motion for a more accurate depiction.
- ii) Please modify the path through Battery Park and along Battery St. to be more accurate – there is only one path parallel to Battery St., and only one real official bike route through the park (I think the rest are arguably sidewalks).

b) Pages 76-7 Sub-Area 1 Existing Conditions

i) The following are all missing from the map

- (1) The path through the North Beach camping area, connecting the bike path with BHS and Institute Rd. This is a critical connection for BHS students. See the Walk-Bike Map from Local Motion.
- (2) The existing dirt path between Ethan Allen Homestead and Intervale Rd.
- (3) The connection between the bike path and Leddy Park Rd.
- (4) The existing informal path from the bike path to North Ave. in the region of the former Burlington College property, which will hopefully be upgraded to official status soon.
- (5) The informal connection between the bike path and the end of Killarney Dr.

ii) The supposed Neighborhood Center centered on a spot between Ethan Allen Parkway and North Ave. is puzzling and does not make sense. I suggest it be removed. Perhaps one could be added around Hunt Middle School, but I'm not sure whether that meets the definition of a Neighborhood Center. To be honest it's not clear what these are supposed to represent or if they are valuable at all.

c) Page 80 Sub-Area 1 – 5 Year Action plan

- i) An informal path between the bike path and North Ave. at Saratoga Ave. is shown as already existing, but I don't think it is (it's not on pages 76-77). A slightly different path is shown on page 82. Are these proposed for addition? If so it's not on in the text.

d) Pages 90-91 Sub-Area 2: Existing Conditions

- i) The map is missing the existing dirt path between Ethan Allen Homestead and Intervale Rd.

- ii) The neighborhood centers on these maps seem a little arbitrary; why include the Winooski bridge area but nothing from downtown, the Hill, the near south end (King/Maple), etc. What is their purpose? What is the definition? Please either clarify and apply consistently or get rid of them.
- iii) Bike lanes on S. Winooski go both directions.
- iv) Bike lane on Pine St. only goes south; sharrows north.
- v) Depot St. should be shown as existing shared path or something.

e) Pages 114-115 Sub-Area 3 Existing Conditions

- i) Here too the neighborhood centers seem a little random. What is the basis of these? No one would consider the corner of Flynn and Shelburne St. a neighborhood center, although there are some destinations there, notably the post office.
- ii) Not a huge deal but the S. Burlington path system is incompletely shown here. Particularly notable in its absence is the path through Farrell Park and beyond. I think there is also a path on Queen City Park Rd. and Central Ave. (into Queen City Park).
- iii) Also missing is the existing path alongside the abandoned road (future possible location of the Champlain Parkway) between Queen City Park Rd. and Home Ave.
- iv) It's mostly on Area 2, but the bike path on S. Winooski Ave should be shown as two-way.

3) Improve consistency between maps and text, and clarify text

a) Pages 76-81

- i) On maps 76-77 a shared use path is already shown as existing across from Woodbury and connecting to Gosse Court, but it is listed as proposed new project 4 on page 79. Which is it?
- ii) Shown on map p. 80 but not on the list of recommendations on pages 79 and 81:
 - (1) advisory bike lane on Woodbury Rd.
 - (2) informal path between the bike path and North Ave. at Saratoga Ave
 - (3) bike lane and sharrows on Ethan Allen Parkway
 - (4) bike lane on North Ave. north of pilot area
 - (5) shared use path parallel to North Ave. near Starr Farm Rd.
 - (6) connector between West Rd. and Gray Meadow Dr.
 - (7) new sidewalk on Poirier Pl.

b) Page 96-98

- i) Shown on map p. 96 but not on the list of recommendations on pages 93-5 or 97-98
 - (1) Bike lane and sharrows on Pine St. between Maple and Bank St.
 - (2) Sharrows on lower College Street and Lake St.
 - (3) Protected bike lanes from lower Main St. along Lake St. to the very bottom of College St.

c) Page 117-120

- i) Please clarify P. 117 #2 ""as soon as traffic patterns allow the adjustments" – what does this mean?
- ii) Shown on map p. 119 but not on the list of recommendations on pages 117-118 or 120
 - (1) New sidewalks on Kilburn and Pine Pl. (not in Area 2 recommendations either; Kilburn sidewalk is in long-term recommendations)
- iii) In recommendations but not on the map
 - (1) New bike lane northbound on Pine St. between Lakeside Ave. and Flynn (#10 pg 118). Currently there is only a southbound lane.
 - (2) Sharrows northbound on Pine St. between Kilburn and Lakeside (and bike lane southbound). I would much prefer an actual bike lane northbound, but the map should accurately reflect the plan.

d) Appendix of projects pages 165-172:

i) I did not check these lists, in particular the long-term list, to ensure that they are complete and accurate, but that should be done given the number of discrepancies I found in the lists of 5-year recommendations.

e) Text editing/proofreading needed:

i) Page 135, #5.

ii) Page 146, #3 Success Metrics first bullet

4) Proposed additions/changes

a) Page 64-7 Walk-Bike Priorities

i) I propose adding the intersection of N. Winooski/N. Union/Decatur St. to this list. This intersection is poorly designed, with a barely visible stop sign that is routinely ignored heading south, and a north-bound turn from Union that is like a slip lane, along with lots of pedestrian traffic. This intersection needs some attention to improve crossing conditions for pedestrians.

b) Pages 79-81

i) I propose adding a sidewalk to Leddy Park Road to improve pedestrian access to the park.

ii) I think that protected bike lanes on North Ave. from Washington St. to 127 should be part of the 5-year plan; half of that already exists in the pilot. If the much-more-controversial unprotected lanes north of 127 can be included, I don't see why these can't also. Note: this comment was originally written before the survey on North Ave. came out, apparently leading to a plan to remove the pilot protection. I still think this is a good idea and that perhaps a different implementation would improve its public acceptance.

c) Page 92

i) North St. should be shown as a neighborhood slow zone in the area of the Sustainability Academy.

ii) I'm not sure why the short section of Pine Place is being singled out for a slow zone; I don't object but it seems unnecessary and/or incomplete. I see that a greenway is proposed for the whole street on page 117.

d) Page 93-98

i) In the 12-month plan, please include adding a south-bound bike lane to Pine St. from just below Main St. (Ski Rack driveway) to Maple St. There is room for the bike lane currently; it just needs striping. The only reason not to do this is if parking is going to be moved to the opposite side, in accordance with the 2-5-year plan sooner rather than later, so that a northbound climbing lane can be added instead.

ii) As I mentioned above, I think the intersection of N. Winooski, N. Union, and Decatur St. should receive an intersection upgrade, focused especially on safe pedestrian crossing. This could include curb extensions, a mid-block pedestrian island, more visible stop sign, raised pavement, and other treatments. I don't know if there's room, but perhaps the end of Union St. could be straightened out and converted from a semi-slip lane to a clearer right turn.

iii) I think Maple St. should have a climbing (east-bound) bike lane and downhill sharrows, not just sharrows. Parking should only be on the north side of the street.

iv) The bike lane on Willard St. should be southbound between Riverside and Cliff St., to complement the northbound lane on Union St. Willard St. is also slightly uphill in this direction. Parking and the sharrows should be moved to the east/northbound side.

v) Consider an eastbound climbing bike lane on College St. from Lake St. to Pine St.

vi) (Not sure if this is Area 1 or 2) Add wayfinding and trail improvements for the existing dirt path from Ethan Allen Homestead to Intervale Road in the 2-5 year plan rather than the 15-year plan.

e) Page 99 (and 169-172)

i) Include a connection between Pine St. and Battery St. through the Railyard, in accordance with other proposals and plans.

f) Page 116

- i) Extend the slow zone on Locust St. all the way east to Shelburne St. There's a school and church there, and this is also where people build up speed going downhill, making it less likely for them to slow down in front of the park.
- ii) I am not sure that Home Ave. is appropriate as a 20 mph slow zone –not that I really object myself, but it doesn't seem like a prime candidate to me.

g) Page 119-120

- i) Extend the northbound bike lane on Pine St. to include Lakeside to Locust St. at least. I know there may be a pinch point at the Lakeside intersection but hopefully a solution can be found, even if it means supersharrows through the intersection.
- ii) The northbound sharrows on Pine St. between Locust St. and Kilburn represent a major gap in infrastructure on a major corridor. Consider Local Motion's proposal to move parking to the west side and have bike lanes northbound.

h) Page 121 (and 171)

- i) Pine St. between Lakeside and Flynn should have protected lanes on both sides, and no sharrows.

i) Pages 129-131

- i) Include new item "Advocate for and ensure passage of new state law allowing 20 mph speed limits." Or something along those lines. And then change the speed limit on non-corridor neighborhood streets to 20. This would help reinforce some of the traffic calming and slow street work elsewhere in the plan.
- ii) On #5 –also ensure that pushing the pedestrian signal actually results in the light changing sooner on non-core intersections where pedestrian traffic is less common.

j) Page 146

- i) #4 Add some specific proposed actions for schools to take beyond creating a committee.

k) Pages 150-151 Enforcement

- i) #1 Include training for police officers on unbiased investigation and filing of crash reports involving bicycles and pedestrians. You may have left this out for political reasons, but having heard a number of stories regarding police reports on crashes it's clear this is necessary.

5) Glossary comments

a) Only a few of the Illustrated Glossary photos are local; please use local photos wherever possible. Some good examples available include the following (and there may be more):

- i) ADVANCE CROSSING SIGNAL (Pearl/Winooski?)
- ii) BUFFERED BICYCLE LANE (although our local ones might not have the cross-striping which is an essential part of the design)
- iii) CONTRA-FLOW BICYCLE LANE (S. Winooski)
- iv) CONVENTIONAL BICYCLE LANE (Pearl/Colchester, others)
- v) GARDEN WALKS (not sure about this one)
- vi) RAISED INTERSECTION (Church St. and Bank, etc.?)
- vii) RIGHT-TURN-ON-RED BAN (several, although admittedly most are not at street level like this one is)
- viii) SHARED USE LANE MARKING (OR "SHARROW") (although maybe this is Burlington and I just don't recognize it)
- ix) SHARED USE PATH (waterfront bike path)
- x) THROUGH BICYCLE LANE (Pine and Lakeside)

b) Some of the photos do not seem appropriate for our community, for a variety of reasons.

- i) COMBINED BIKE LANE/TURN LANE ("MIXING ZONE") This is confusing and doesn't look like anything that we'd want. Is there a better example of this? If this only applies for left turn lanes on one-way roads with a bike lane on the left, then I don't think this is relevant to us.

- ii) CONVENTIONAL BICYCLE LANE – it would be better to have one that is not in the door zone.
- iii) NEIGHBORHOOD + CORRIDOR SLOW ZONES – this looks like a big city, and not very neighborhood-like; please find one that looks more like Burlington
- iv) PROTECTED BICYCLE LANES – this too doesn't look like Burlington
- v) PROTECTED INTERSECTION – same issue
- vi) RAISED CROSSWALKS – this doesn't seem like a good example – I can't really tell that this is even raised
- vii) THROUGH BICYCLE LANE – even if Pine and Lakeside isn't a good example, it would be nice to find one that looks more like Burlington

c) Roundabout list

- i) Pearl and Winooski is listed twice
- ii) I suggest making the listing a little more logical; for example list all intersections with the same road together where possible (e.g., Pine St., N. Willard, etc.)
- iii) I suggest adding the following locations:
 - (1) Pine St. intersections with Locust and Howard
 - (2) Battery St. intersections with Pearl, Main, and College
 - (3) Riverside/N. Winooski/N. Willard

Local Motion Final Feedback on PlanBTV Walk Bike

November 2016

Local Motion is pleased to submit the following feedback on the draft of PlanBTV Walk Bike that was released in fall 2016 for community review. Our feedback takes the form of a series of maps of current and proposed bike infrastructure in the “center city” area (downtown, waterfront, ONE, Hill Section west of UVM, and South End north of Howard), as follows:

- Phase Zero: 2016. Existing conditions for biking in the center city.
- Phase One: 2017. A basic network of high-visibility, low-stress bike facilities in the center city.
- Phase Two: 2018. More direct (and in some cases, more protected) options for bike travel.
- Phase Three: 2019-21. More complex projects to complete the center city network.
- Detail map: St. Paul & Howard intersection improvements.
- Detail map: Union & North Winooski intersection improvements.
- Detail map: Park-Sherman-North bike connection.

[All of the above maps are in a Google folder that is accessible at this link.](#)

We would like to start by acknowledging and appreciating the hard work that has gone into this plan. In general, we find it to be quite thorough and very well done. It will serve as an excellent basis for action for at least the next five years and beyond.

In previous rounds of review, our primary concern was with the “12 month action plan” sections of the document: specifically, that the plan for the first year did not include enough new bike lanes. We suggested a number of additions, and are pleased to see many of them included in the current draft. We appreciate the willingness of the City and the consultant team to build more high-impact projects into the first year.

Over the last couple of months, we have given a great deal of thought not only to *what* the plan should include, but also to *how* the overall goals of the plan can most effectively be implemented. What has emerged is a clear conviction that—rather than scattering a first round of improvements across the city, as is called for in the current draft—Burlington should focus intensively on the “center city” area for the first couple of years of the plan. (By “center city,” we mean the densely settled portions of Burlington, including the entire Old North End, all of downtown, the western portion of the Hill Section, and the northern portion of the South End.) We are more than ever convinced that the best way to build momentum for walk- and (particularly) bike-related improvements is to start with high-visibility, high-impact improvements that are relatively easy to implement, and to concentrate them in the parts of the city where people bike and walk most.

To this end, Local Motion recommends that Burlington focus on creating a basic “center city” network in year one of PlanBTV Walk Bike, then expand and fill in the network in year two and beyond. The four phases of our proposal (three of which are accompanied by the abovementioned maps) are as follows:

1. **PHASE ONE: 2017.** In the first year, Local Motion recommends that Burlington focus on creating a basic network of high-visibility, low-stress bike facilities in the center city area. The goal is to connect the center city in a single year by focusing first on a network of facilities

that present the fewest barriers to implementation, either political or technical. As a result, some facilities follow an indirect path, jogging from one side street to another to avoid major arterials; others rely on a pair of parallel streets, one with a bike lane in one direction and the other with a bike lane in the other. The idea is *not* that this is the final network; rather, it is the best center-city network that can be completed in a single year. It is characterized by extensive use of green paint, which serves three purposes: to improve bicyclist navigation by making it obvious where to bike; to improve bicyclist safety by highlighting for motorists where to expect bicyclists; and to create a sense of momentum and excitement through highly visible on-street change.

2. **PHASE TWO: 2018. In the second year, Local Motion recommends that Burlington fill major gaps in this initial network to create more direct (and in some cases, more protected) options for bike travel.** It is important to note that *none of the recommended additions to the network in this second year require major construction*, as all fit within existing curb-to-curb widths. They differ from those in Phase One primarily in terms of the planning and public process that will be required to implement them. Some are more technically complex than Phase One projects; others require removal of a substantial amount of on-street parking and will therefore require significant political leadership and community support. Completing Phase Two in a single year will be a major undertaking, but if the indicated projects are planned and implemented as a single body of work rather than as a dozen discrete projects, it can be done. And when the Phase Two additions are completed, Burlington will have built a solid, functional city center network—*in just two years*.
3. **PHASE THREE: 2019-2021. In the third through fifth years, Local Motion recommends that Burlington tackle the more complex projects that will complete the center city network.** Some of these projects require major street reconstruction in order to incorporate desired bike facilities (such as the Main Street protected lanes). Others are part of much larger projects whose current schedule indicates that they are likely to be completed in this timeframe (such as the Champlain Parkway and the BTC redevelopment). Still others are streets that are important to a center-city network but do not rise to the level of “must-do” in the first two years (such as South Prospect and University Place). In addition, this phase includes various smaller connections that are important to complete but can wait until the streets they are part of are repaved.
4. **PHASE FOUR: 2022-2026 (no map created by Local Motion). In the sixth through tenth years, Local Motion recommends that Burlington build out connections to adjacent communities.** These will include Shelburne Road, Main Street/Williston Road across Exit 14, and others. Such projects will require close collaboration with neighboring municipalities. Also during this phase, Burlington will of course continue to build out the various minor connections in the network that were not completed in Phase Three.

In addition to the maps that correspond with the phases above, Local Motion has prepared detailed conceptual designs for three year-one bike facility improvements at several of the more complex intersections in the “center city” area: Howard & St. Paul, North Winooski & Union, and Park/Sherman/North. We are confident that all three can be implemented in 2017 using only paint and bollards. The first two need no further planning and can be implemented based on the design sketches provided, combined with the in-field expertise of DPW’s crews. The third is more complex and would benefit from a more detailed look and a to-scale drawing.

The above recommendations are largely consistent with the network as proposed in the current draft of PlanBTV Walk Bike. There are two areas where change in the draft plan is needed to implement these recommendations: extensive use of green paint (in the form of green intersection crossings and super-sharrows), and alterations to and/or acceleration of implementation of specific facilities in the Downtown-ONE sub-area (as well as delay of selected facilities in other parts of the city). Here is a list of the most significant changes to the 12-month action plans and 2-5 year plans that would be needed to make the overall plan consistent with this proposal.

New North End 12-month plan

Add the following: None

Remove the following: None

South End 12-month plan

Add the following: None

Remove the following: Austin Drive protected bike lanes (delay to 2-5 year plan)
Ledge Road climbing lane & sharrows (delay to 2-5 year plan)
Pine Street curb extensions (delay to 2-5 year plan)
Pine Street bike lanes from Lakeside to QCP Road (delay to 2-5 year plan)
Queen City Park road bike lanes (delay to 2-5 year plan)

Downtown-ONE 12-month plan

Add the following: ONE Wiggle Greenway (accelerated)
Park-Sherman-North Ave connector (accelerated/modified)
College Street sharrows through downtown (accelerated)
Southbound bike lane on Pine from Maple to Main (accelerated)
Maple Street sharrows & lane segment (accelerated/modified)
Pine Street Greenway around parking garage to Pearl (new)
ONE Schools Greenway (new)
Reversal of bike lane on Willard (new)

Remove the following: Colchester/East Ave safety improvements (delay to 2-5 year plan)
Depot Street improvements (delay to 2-5 year plan)
Main & South Champlain crossing improvements (delay to 2-5 year plan)

Downtown-ONE 2-5 year plan

Add the following: Connection between 127 path and Riverside path (accelerated)
Battery Street protected bike lanes (accelerated)
Pearl Street conventional lanes from Union to Prospect (accelerated/modified)
Pine Street bike lanes thru BTC to Pearl (accelerated/modified)
South Prospect protected bike lanes rather than path (accelerated/modified)
College Street climbing bike lane from waterfront to Pine (new)
Elmwood Ave contraflow lane and super-sharrows (new)

NOTES:

1. *Since the focus of this proposal is primarily on creating a complete center-city network in the first few years, we did not complete a comprehensive review of proposed projects beyond year one outside of the Downtown-ONE sub-area. Some additional changes may be needed in other sub-areas in order to achieve the goals of this proposal.*
2. *Some of the projects that are proposed to be delayed to the 2-5 year plan are proposed for year two; others are proposed for years 3 through 5. The distinction is important and should be reflected in the detailed version of the plan. See the attached maps for details.*

Finally, Local Motion would like to emphasize in the strongest possible terms that this proposal is feasible only if DPW makes significant changes to how it plans for and implements bike infrastructure projects. In the broadest sense, DPW (and the Administration as a whole) must be willing to take a [“Ready, Fire, Aim” approach](#) to all but the most complex of these projects, following the model outlined in a new People for Bikes publication titled [Quick Builds for Better Streets](#). This approach has several key features, among them the following:

1. **A “light touch” approach to planning and design for simple projects.** Instead of preparing a to-scale engineering design for every single on-the-ground change, develop quick “near-scale” sketches (similar to the three created by Local Motion as part of this proposal), ensure that field crews have the training to work effectively from those sketches and accompanying written instructions, and monitor and correct installations in real time based on actual performance.
2. **A “bundled” approach to a year’s worth of bike infrastructure work.** Instead of leading a separate public engagement and (where needed) contractor bidding process for every single street, prepare a package of all improvements, engage in unified community outreach for the entire package, and then implement it as a single body of work with both in-house and contracted components.

Absent these changes in process, it will be impossible to implement a city-center network in two years. In fact, it may well be impossible to implement it at all. The reason is that *opposition* to these changes will emerge no matter what, as there will always be people who are opposed to change. But *support* for these changes will be strong and sustained only if people can see—on the ground and in the space of a year or two—real change that makes biking safe and accessible across the city.

The bottom line: we have to move fast on building a complete network if we want people to be inspired to turn out in support of change. Local Motion is ready and eager to support the City of Burlington in building a world-class network.

LONG MEADOW RESOURCE MANAGEMENT

Natural Resource Planning, Inventory and Management



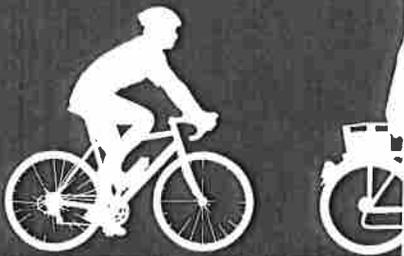
Harris L. Roen, Consulting Forester

9/30/16

Great plan! I am very impressed with the comprehensive nature of it, and its specificity. I've written in some comments, see the inside back cover for pages that I have commented on.

Thanks,
Harris Roen
Planning Commissioner

46 Scarff Avenue • Burlington, VT 05401
lm@roen.net • (802) 658-2368 phone/fax



WA
BU

DRAFT FOR PUBLIC REVIEW: JULY 1, 2016



DuBois & King
inc.

STREETPLANS
MIAMI SAN FRANCISCO NEW YORK

GPI
Greenman-Pedersen, Inc.

Comments on pages: 5, 22, 31, 45, 51, 52, 55, 58, 91, 95, 98,
111, 114, 118, 122, 125, 185

Burlington's first comprehensive plan focused on walking and biking.

Welcome to Burlington's first comprehensive plan focus on walking and biking. In the pages ahead, this document will provide background information about the planning process, examine existing conditions, and make recommendations for how Burlington can improve pedestrian and bicycle conditions. While this plan is specifically focused on walking and biking, it serves as a compliment to past and ongoing planning efforts in Burlington, and throughout the region, including:

- Ongoing planBTV South End process (Draft plan released June 2015)
- 2016 Chittenden County Regional Planning Commission (CCRPC) Regional Bicycle and Pedestrian Plan
- 2016 Vermont Comprehensive Energy Plan
- 2015 planBTV Parks, Recreation & Waterfront Master Plan
- 2014 Burlington Bike Path Intersections Scoping Study
- 2014 North Avenue Corridor Study
- 2013 planBTV: Downtown and Waterfront Master Plan
- 2011 Comprehensive Transportation Plan for the City of Burlington
- 2011 Chittenden County Bike Share Feasibility Study
- 2011 Colchester Avenue Corridor Plan
- 2011 North Winooski Avenue & Archibald Street Intersection: Pedestrian Safety & Mobility Evaluation
- 2010 Final Report of the Waterfront South Access Project
- 2010 Chittenden County Transportation Authority Transit Development Plan
- Ongoing advancement of the Shelburne Road Rotary Redesign Project

For additional information on these related planning efforts, please visit: www.burlingtonvt.gov

CREATING SAFER STREETS FOR EVERYONE...

We will eliminate traffic-related fatalities and serious injuries by 2026.

hard to read (obscure) ↓

Traffic-related deaths and serious injuries are a significant public safety concern. Most traffic-related deaths and serious injuries are the result of factors that we can change, such as unforgiving roadway design and poor behavior.

To achieve the ambitious goal above, Burlington must approach the issue of street safety from multiple angles, creating infrastructure that emphasizes safety, predictability, and the potential for human error, along with targeted programs related to education, enforcement, and more.

This safety goal has been developed in the spirit of Vision Zero principles. For more information about Vision Zero and what it means, see the Policy and Protocol Action Plan in Chapter 3.

...BECAUSE BURLINGTON'S INFRASTRUCTURE ISN'T KEEPING UP WITH DEMAND

Recent projects are building momentum, but as the data below and on the previous page illustrates, Burlington's infrastructure still isn't good enough to making walking and biking a viable way to get around town.

95 miles of city streets

130 miles of sidewalk

12.2 miles of shared use paths

0

12%

3%

present the likely potential of increased car traffic in the decades ahead:
 - population growth due to increased development
 - smaller, cheaper cars that will likely increase vehicle densities

"Gold Level" Bike-Friendly cities are doing much better, typically featuring

65% of arterial streets with bike lanes.

To achieve the recognition and high levels of walk/bike mode share that other leading cities benefit from, Burlington will have to do better.

Of course, it isn't *only* about infrastructure. Burlington has a rich landscape of events, programs, and policies that support a culture of walking and biking. For more on these non-infrastructure elements, see Chapter X.

Other limiting factors:
 - steep hills
 - winter

WHAT WE LEARNED

The demonstration projects represented an unprecedented collaboration between Burlington's government agencies, advocates, local businesses, and residents, and they helped our team gather input for the plan. They also allowed a broad base of people not normally involved with the technical planning process to experience new and unfamiliar street design types. If this were the only outcome, then the projects could be considered a success!

Yet, beyond raising awareness and gathering input, our team learned what didn't work. Some aspects of the designs tested were imperfect. For example, the number of parking spaces moved off the curb on N. Winooski Ave. limited visibility for motorists turning into driveways located along the west side the street. Such conflict points between people driving and cycling could be ameliorated by changing the design approach, which underscores the value of testing design in the first place.

That said, the conversations we had with people during the demonstrations helped us deepen our understanding of what people like about protected bikeways, and what their interests and concerns are for more permanent infrastructure. Of course, there are many ways to design protected bike lanes besides the parking and planter-protected types shown in the demonstrations. Public input during the demonstration underscored that adding protected facilities remains a high priority for people in Burlington.

In addition to sparking important community conversations, the demonstrations allowed our team to gather some hard data. The Chittenden County Regional Planning Commission (CCRPC) collected vehicle speed and volume data on North Winooski Ave. and North Union St. from Friday, September 11 through Wednesday, September 23. The data allowed us to see how vehicle traffic was affected with and without the demonstration projects. Here is what we learned:*

- Volumes of vehicles did not change significantly; in fact volumes on both Union and Winooski were slightly higher during the pilot than on the following weekend, possibly due to re-routing of traffic during the Open Streets BTV event.
- Vehicle speeds were significantly lower during the demonstrations, as shown in the graphs to the right.

Thus, the two demonstrations showed that each of the primary corridors has additional capacity for motoring, and that redesigning the street with protected bikeways could lead to a much higher percentage of drivers observing the speed limit!

*Speed data (right) was collected in partnership with CCRPC. Data is limited to between the hours of 10:00 a.m. on Saturday through 4:00 p.m. on Sunday. Demonstration project data was collected during these hours September 12 to 13. Normal Conditions data was collected during these same hours on September 19-20.

IDENTIFYING PRIORITY LOCATIONS FOR PROTECTED BIKES LANES

During the Demonstrations, Local Motion surveyed over 330 people to determine their top priorities for the location of protected bike lanes. As you'll see in Chapter 2, this plan recommends protected bike lanes at all of the Top 5 priority locations:

- ✓ Main St.
- ✓ Pearl St./Colchester Ave.
- ✓ Winooski Ave./Union St.
- ✓ North Ave.
- ✓ Battery St.

THE DEMONSTRATION PROJECTS RESULTED IN A MUCH HIGHER PERCENTAGE OF DRIVERS OBSERVING THE SPEED LIMIT.*

SPEEDING ON N. WINOOSKI AVE.

NORMAL CONDITIONS

■ 4 out of 10 (40%) did not observe the speed limit



WITH THE DEMO IN PLACE

■ 1 out of 10 (10%) did not observe the speed limit



SPEEDING ON N. UNION ST.

NORMAL CONDITIONS

■ 11 out of 14 (79%) did not observe the speed limit



WITH THE DEMO IN PLACE

■ Speeding dropped to 6% of vehicles counted



at 40-45 mph
WHY? • Chapter 2 • Public Input, Public Action
45

DESIGNING SAFER STREETS

Streets are often the most vital yet underutilized public spaces.

Infrastructure that accommodates the needs of all road users is perhaps the most tangible characteristic of a walk- or bike-friendly community. The presence (or absence) of safe streets and crossings is a key factor in people's decision to walk or ride a bike when they run errands or travel to work or school. Engineering is also a key determinant of people's behavior when they drive – a posted speed limit of 25mph or a "Pedestrian Crossing" sign will not be enough to encourage slow, careful driving if the street is designed like a drag strip.

The streets of the most advanced walk- and bike-friendly communities provide well-connected walking and bicycling networks that feature safe pedestrian crossings, bikeway facilities of varying types, and shared use paths. These facilities are supported by amenities such as benches, street trees, water fountains, and secure and convenient bicycle parking. Finally, these communities benefit from proactive policies that help them maintain existing infrastructure.

To realize the plan vision and achieve Burlington's mode share and safety goals, Engineering will be a critical focus area. Infrastructure for walking and biking emerged as the biggest area of needed improvement in Burlington's 2013 "Go for Gold" Blueprint. It also stood out as a major priority at public workshops and in the PlanBTV Walk Bike survey. (For more details on how public input helped shape the plan, see Chapter 2).

Chapter 3 of the plan presents recommendations for infrastructure projects that will increase safety for all people, whether they are driving, biking or walking. In addition to responding to issues and concerns we heard throughout the planning process, the recommendations in this chapter are guided by existing conditions analysis and current research and best practices, both of which are described further in the pages ahead.

WE ARE HERE



ENGINEERING



EVALUATION & PLANNING



EDUCATION



ENCOURAGEMENT



ENFORCEMENT



EQUITY

good directional signage

XX →
OOO

?

?

?

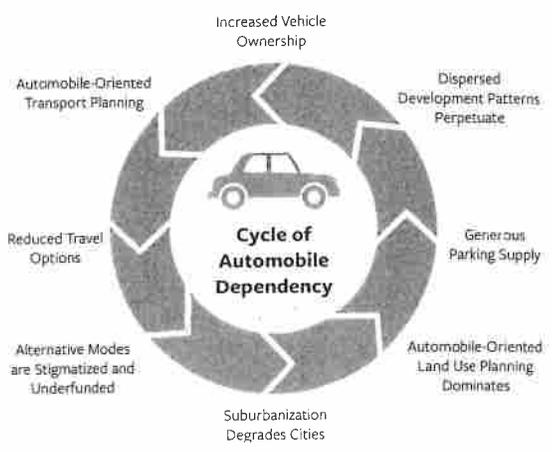
?

For definitions of the "6 E's" framework guiding this plan, please see page 49.

Sarahow this ignores the fact that people use cars because they are usually more convenient, comfortable and time efficient. The right question maybe "how do we make other modes more convenient, comfortable and time efficient."

Vicious Cycle

Creating a Cycle of Sustainable Transportation Investments



PEAK TRAFFIC

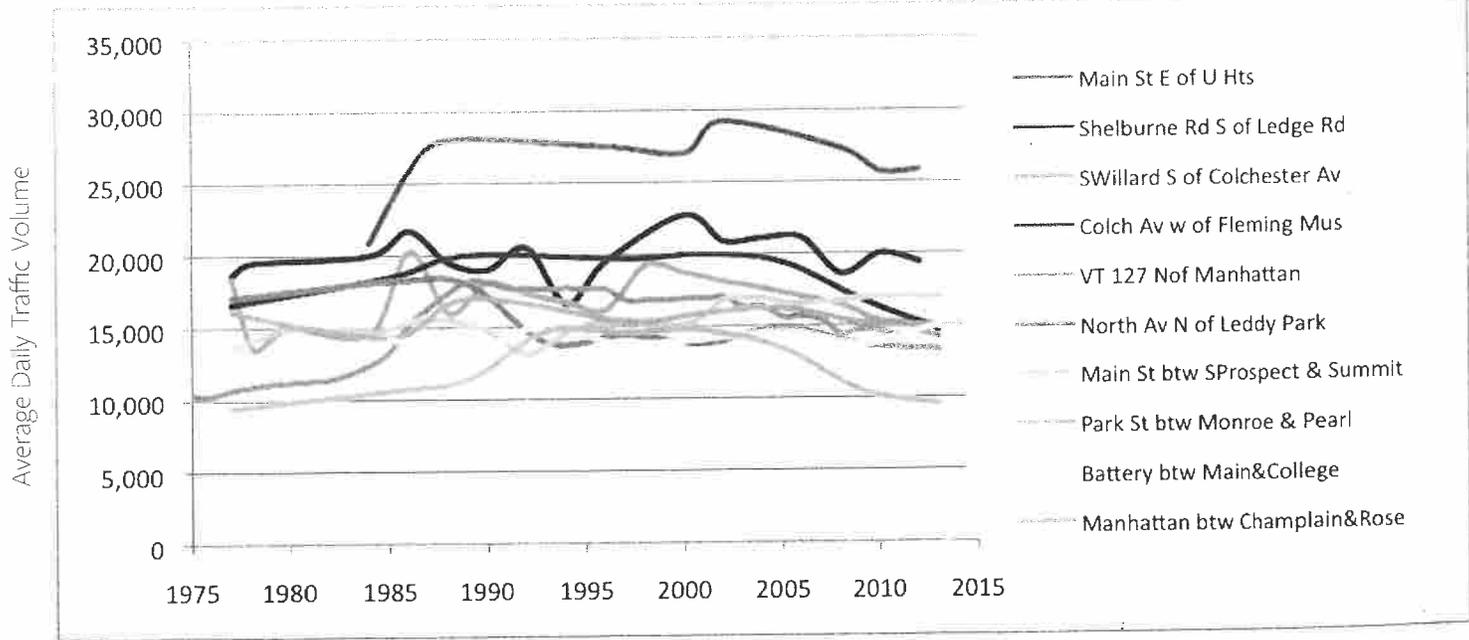
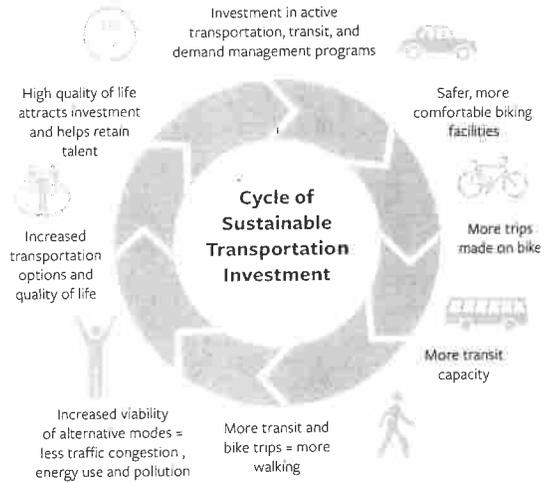
Based on a long history (since 1975) of consistent data collection on vehicular traffic volumes, it is clear that Burlington hit "peak traffic" in most locations between 1995 and 2000. Since then, traffic volumes have declined on ALL of the city's streets for which data is available. (See graph at the bottom of the page.) After a 50+ year period of transportation planning where it was always a baseline assumption that vehicular traffic would grow, our planning of the street network should respond to this change, and consider the right design of our streets and intersections given these well documented trends.

ASKING THE RIGHT QUESTIONS

In looking at projects that may change the balance of space allocated to vehicles and people walking or biking, the question to ask should not be limited to "What will happen to the traffic?" We should also ask: "What will happen if we provide an attractive, low stress bikeway in this corridor? What will happen if we make safe and accessible street crossings for people walking or taking the bus? What are the outcomes for transportation access and choice? Will these changes reduce need for peak hour traffic capacity or parking?"

Designing safe streets for all modes will help make walking and biking a viable (and enjoyable) way to get around town. When coupled with other land use and urban design policies, walk/bike improvements can help communities instigate a sustainable cycle of investments that reinforce a safe, low-cost, and healthy transportation system.

Sustainable Cycle



LAND USE CONTEXT

Street design should both respond to and influence the character of neighborhoods, advancing the community vision for the future. Street design is inherently connected to land use - compact land use patterns and connected multi-modal streets support transportation options. Options reduce demand for drive-alone trips, easing parking pressure and traffic congestion. In Burlington, this can be seen in many Neighborhood Activity Centers that provide essential services within walking distances of people's home and/or place of employment.



CLIMATE CONSIDERATIONS

Street design should respond to local environmental factors such as climate. Recommendations for improving walking and biking conditions in Burlington must embrace the city's winter climate and integrate best practices for providing safe walking and biking options year-round.

Image at right by Annie Follett, via Local Motion Facebook Page Winter Bicycle Commuter Photo Contest.



COMFORT

When creating new walk and bike infrastructure, comfort is an important consideration. For example, sidewalks should be made as wide as practical and retrofitted to be fully ADA accessible. They should feature amenities such as benches and shade elements. Bikeways should allow people on bikes to be separated from the sidewalk. They should be designed to allow people on bikes to pass each other safely and ride two abreast wherever possible. These are just a few examples of how consideration for comfort can inform design.

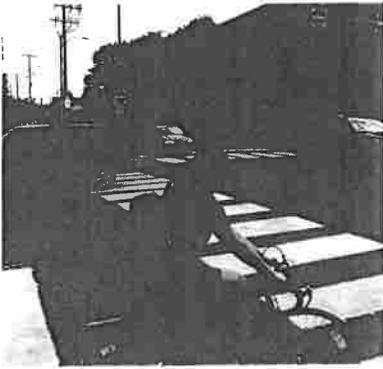


Image by People for Bikes: peopleforbikes.org

CONNECTIVITY

A dense, connected street network helps make walking and biking viable modes of transportation. Intersection density is one of the most important ways to create slower, safer streets - high ratios of intersections are associated with fewer fatalities. Cul-de-sacs and dead-end streets should be avoided; they create indirect routes that cause people to drive longer distances and discourage walking and biking. Where existing cul-de-sacs cannot be connected to the street grid, multi-use paths should be used to at least improve connectivity for people walking and biking. Connectivity also matters for the network of walk/bike facilities within the street grid. For example, bike lanes or sidewalks that suddenly drop off discourage people from biking or walking.





#2: Improve safety at all 20 priority intersections.

Focus investments on all 20 priority intersections identified in the Citywide Walk Plan Priorities at the start of this chapter, detailed in the Chart on page 65. Use the interim and permanent infrastructure treatments outlined in the Illustrated Glossary of Safe Streets Treatments found in the Appendix of this plan.

Success Metric: All 20 of the Burlington's most dangerous intersections are improved by 2026, or two per year for the next 10 years.

Responsibility: City of Burlington Department of Public Works; VTrans



#3: Provide a connected network of sidewalks and safe intersections.

This action can be implemented with the following approach:

- Provide a sidewalk on at least one side of every street in Burlington.
- For new development, do not allow cul-de-sacs to be built except where natural features or linear rights of way (river, wetlands, rail line etc.) exist.
- New development should achieve, at a minimum, an intersection density of 140 intersections per square mile.
- Automate all pedestrian signals in downtown Burlington.
- Retrofit existing parking lot driveway curb cuts so that pedestrians and bicyclists are clearly visible and have the right-of-way at conflict points; limit the number and width of proposed curb cuts and driveway access points to maximize safety by giving priority to pedestrians.
- Where paths do not currently exist, disconnected streets and cul-de-sacs should be retrofitted to include bicycle and pedestrian access, with a priority where such connection would provide access to a low-stress facility, such as a protected bikeway or shared use path.
- Upgrade key intersections to include ADA accessible ramps and crosswalk and signal activators.

Success Metrics:

- [XX] miles of new sidewalk miles implemented by 2026
- Ensure that all crosswalks are provided no more than 500 feet apart, except where unique land use or topographic conditions dictate fewer crossings
- Walking mode share increase to 20.5% by 2021, 22% by 2026

Responsible Parties: Burlington Department of Public Works; Burlington Planning Department; Burlington Community and Economic Development Office; CCRPC; VTrans; and property owners, including major institutions (UVM, Champlain College etc.)

- Create cut-throughs, such as exists between Colleton Park + Linden Terrace, that create pedestrian ways that are more attractive and have less vehicles than busier roads. In other words, it's much more pleasant, and safer, to bike or walk along that route than it is to take Shelburne Rd.

Sub-Area 2: Existing Conditions

Major Community Destinations

-  Public School
- University Area
- Park
- 1 Mile Area Around Neighborhood Center

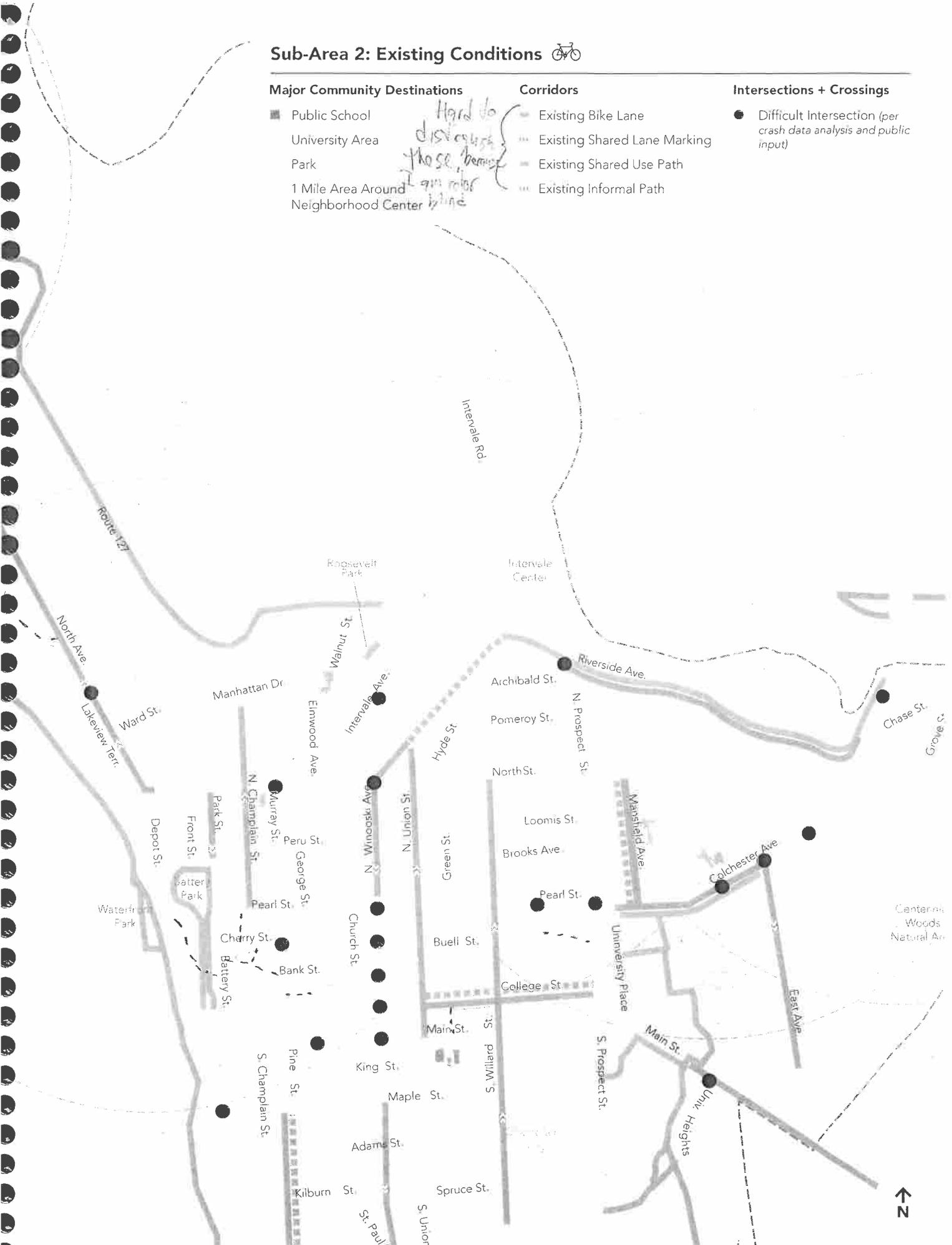
Hard to distinguish these because I am not a bicyclist

Corridors

-  Existing Bike Lane
-  Existing Shared Lane Marking
-  Existing Shared Use Path
-  Existing Informal Path

Intersections + Crossings

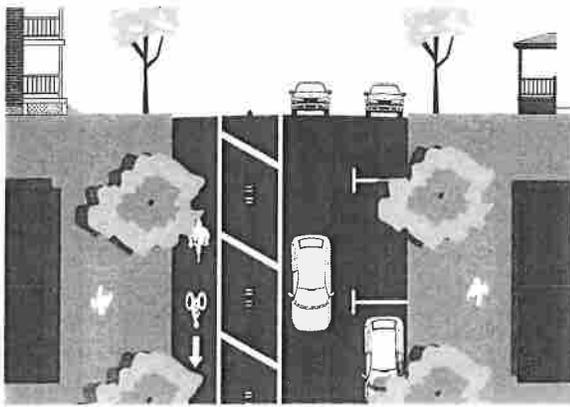
-  Difficult Intersection (per crash data analysis and public input)



Note: Dotted white street lines indicate conceptual street connections that have been discussed in other city or regional plans



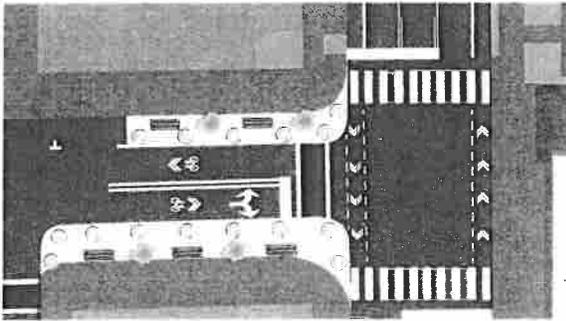
17



ADD A PROTECTED BIKE LANE TO N. WINOOSKI AVE., BETWEEN NORTH UNION ST. AND PEARL ST.

Remove on-street parking along the west side of North Winooski, between North Union Street and Pearl Street. Replace with a southbound protected bike lane created using flex posts; use lane reassignment or a thru/advisory/mixing zone bike lane treatment and bicycle box for the Pearl Street intersection approach; ban right turn on red.

18



PILOT TEST IMPROVEMENTS AT THE INTERSECTION OF S. WINOOSKI AVENUE AND BANK STREET

Use paint or epoxy-gravel mix and planters to extend the north and south side sidewalk at the intersection of Bank Street and South Winooski; Ban right turn on red and provide a lead pedestrian interval.

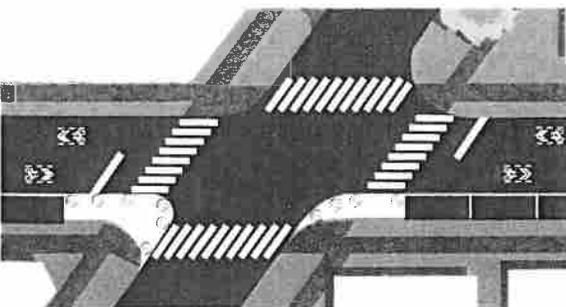
19



IMPROVE SAFETY ALONG RIVERSIDE SHARED USE PATH

Conflict points in parking lots and at driveway crossings create unsafe conditions for people walking or biking along Riverside. In the short term, add pavement markings at conflict points, and pilot intersection improvements at Intervale and Hillside in particular. Pavement markings might include high-visibility chevron markings, green paint or similar treatments. Markings should extend the bike lanes in both directions to and across each intersection using thru/advisory lane or sharrow treatments and crossing markings. Sharrows can be used to close the gap between the end of the eastbound bike lane and the intersection of Colchester Avenue/Barrett Street. As properties are redeveloped in the long-term, public realm enhancements should be required, including raised crossings for bicyclists and pedestrians at all driveway curb cuts.

20



PILOT TEST BIKEWAY UPGRADES AND SLOW ZONE TREATMENTS ON ARCHIBALD

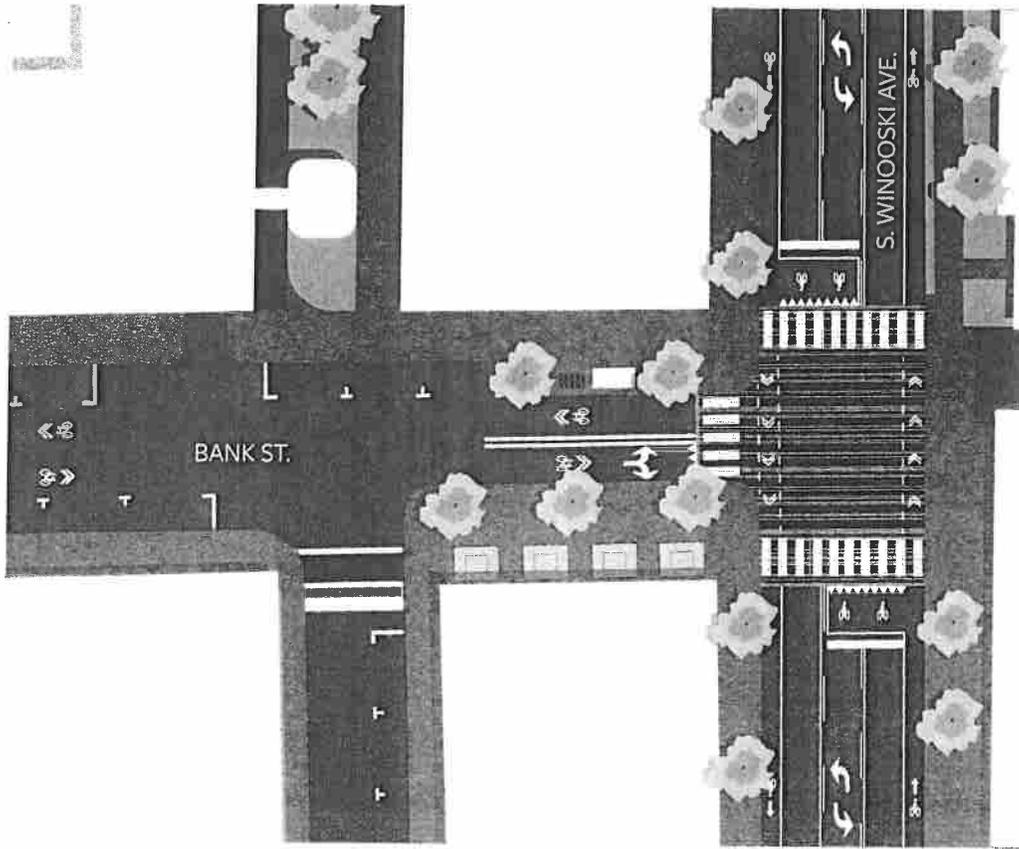
Pilot test and evaluate bicycle priority shared lanes ("super sharrows") on Archibald Street; install interim design curb extensions using paint or epoxy-gravel treatment where appropriate, such as the intersection of Archibald and Intervale Avenue.

**LIST OF RECOMMENDED PROJECTS TO BE IMPLEMENTED IN THE NEXT 2-5 YEARS
(CONTINUED...)**

Are not those in sub-green 3? This is confusing.

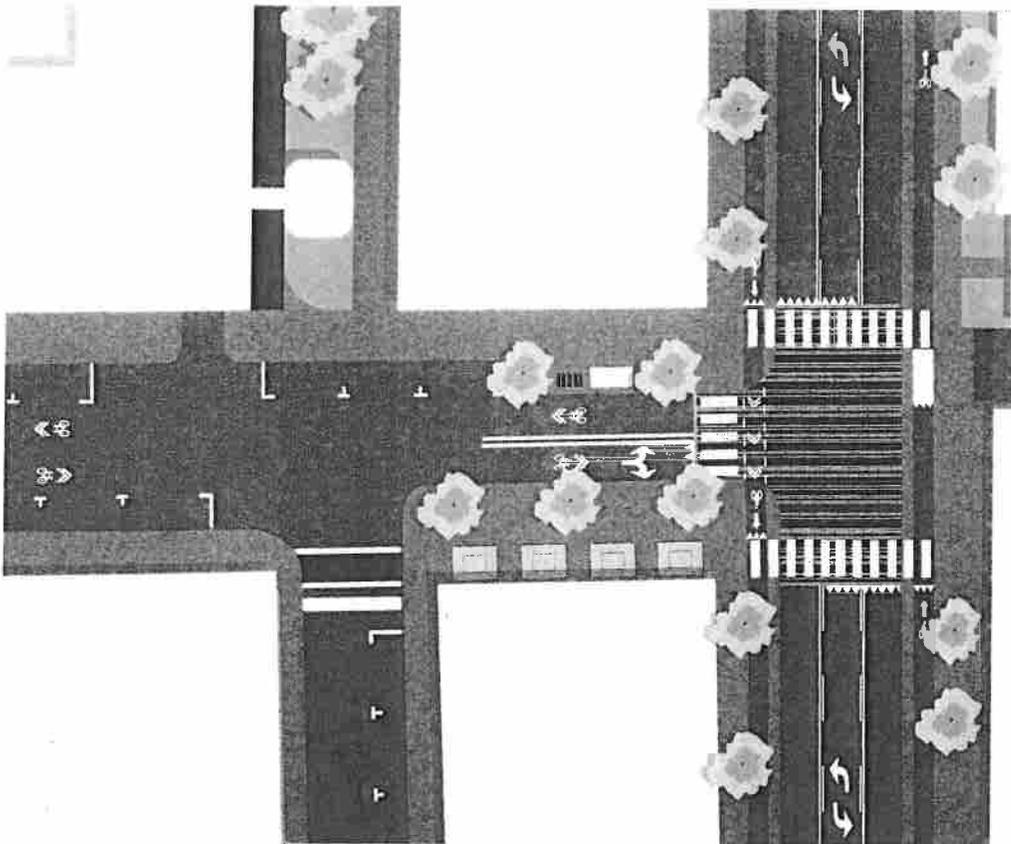
Please see 5-year project map for additional details.

Shelburne Rotary Upgrade	Implement pilot project to clarify traffic patterns and improve safety by narrowing vehicular lanes and adding curb extensions.
Shelburne and Home Street Intersection Improvements	Pilot recommendations from planned corridor study (not programmed yet) - aim to reduce speeds, reduce crossing distances.
S/N Union Bikeway (Main to N. Winooski)	Complete protected bicycle lanes with preferred rapid implementation treatment (flexposts or armadillos, etc.)
S. Union Bikeway (Shelburne to Main)	Establish protected bicycle lanes with flexposts or armadillos; consider lane reassignment with one-way street for vehicles
S. Union/Main Intersection	Consider mini-roundabout; high visibility crosswalks, curb extensions with creative materials
S. Willard St Bikeway (Cliff to Hyde)	Extend northbound bicycle lane from North Street to Hyde, add shared lane markings southbound
S. Willard/Main Intersection	High visibility crosswalks, curb extensions with creative materials
S. Willard/Pearl Intersection	High visibility crosswalks, curb extensions with creative materials
S. Winooski Ave/College St Intersection	Consider mini-roundabout; high visibility crosswalks, curb extensions with creative materials
S. Winooski Bikeway-Main to Pearl	Mark and sign bicycle lanes in both directions; reassignment of vehicle lanes



OPTION 1

The first option for a permanent upgrade features shared lane markings and expanded pedestrian space on Bank. The intersection is raised and uses special pavers to indicate priority for people walking or biking. This option assumes that W. Winooski features a conventional bike lane, with bike boxes at Bank.

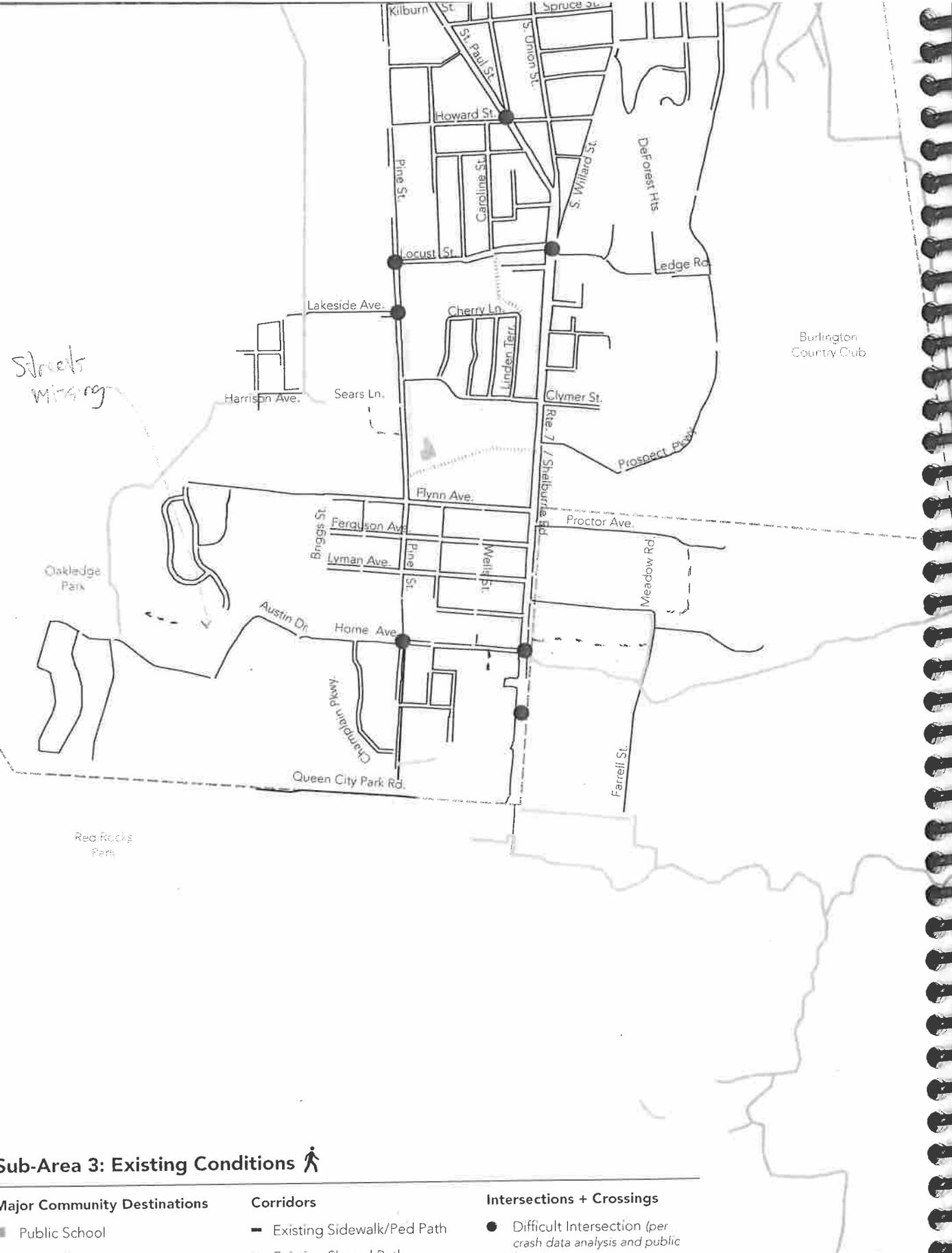


OPTION 2

In option 2, S. Winooski Avenue features a protected bike lane. Conflict points (such as the City Market driveway) are marked with green paint so that people driving know to expect bike traffic ahead.

I like the concepts here, but I believe this intersection is too busy for a shared turning lane. There are currently great conflicts with cars turning left onto City Market, and cars turning left onto Bank. I think a shared lane could make the problem worse.

Streets missing



Sub-Area 3: Existing Conditions

Major Community Destinations

-  Public School
-  University Area
-  Park
-  Area within 5-min. walk of Neighborhood Center

Corridors

-  Existing Sidewalk/Ped Path
-  Existing Shared Path
-  Existing Informal Footpath
-  Significant Gap in Crossings

Intersections + Crossings

-  Difficult Intersection (per crash data analysis and public input)

Note: Dotted white street lines indicate conceptual street connections that have been discussed in other city or regional plans.

12-Month Priority Action List

**START
NOW!**

New projects:

5 AUSTIN DRIVE BIKEWAY
Restripe Austin Drive to add a 2-way protected bike lanes on north side of street.

*13 Add crosswalks
on both Vlyan Ave and
Hanne Ave at Wells St.*

6 BIRCHCLIFF PARKWAY GREENWAY
Add shared or advisory bike lane markings to Birchcliff Parkway create a greenway, leveraging planned traffic calming treatments.

7 LEDGE ROAD SHARROW/BIKE LANES
Stripe an eastbound bike lane and westbound sharrow on Ledge Road from Shelburne to Prospect. Add traffic calming features to slow vehicle speeds.

8 ADD INTERIM DESIGN CURB EXTENSIONS ALONG PINE STREET
Using temporary paint/epoxy gravel treatment and planters add interim design curb extensions along Pine Street at Kilburn Street, Marble Avenue, Howard Street, Locust Street, and Flynn Avenue.

9 ADD SIGNAGE ALONG PINE STREET
Add "Bikes May Use Full Lane" signs on the east side of Pine Street, north of Flynn Ave.

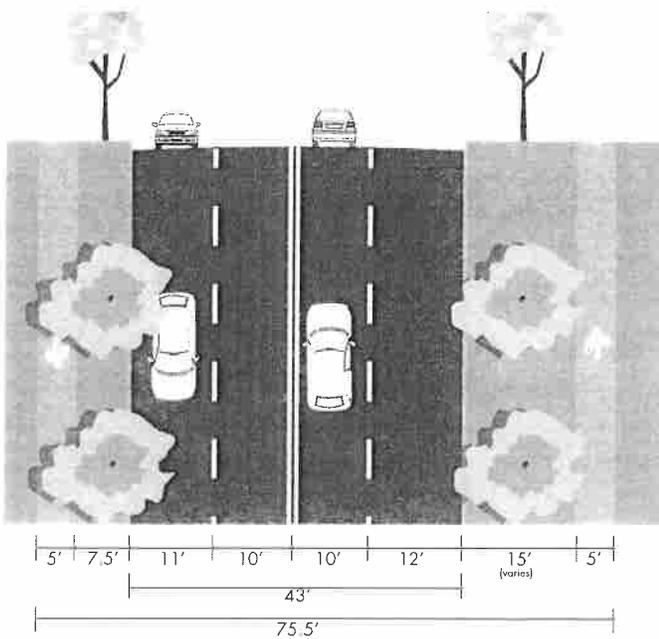
10 IMPROVE BICYCLE CONNECTIVITY ALONG PINE ST.
Eliminate parking to stripe conventional bicycle lanes along Pine Street, south of Lakeside Avenue to the end of Pine.

11 ADD BIKEWAY MARKINGS AND SIGNAGE TO QUEEN CITY PARK ROAD
Working with South Burlington, add 5 ft. bike lanes or sharrows on Queen City Park Road as space allows.

12 IMPROVE SAFETY AT THE PINE STREET AND LAKESIDE INTERSECTION
Where the existing southbound bike lane on Pine Street crosses Lakeside, add markings to reinforce bike lane along Lakeside and the Cumberland Farms driveway.

Shelburne Road Bikeway

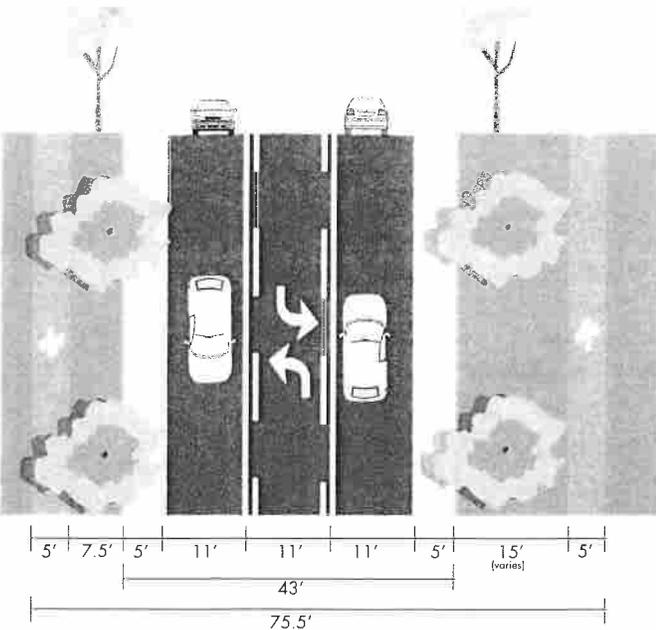
Shelburne Road is a major north-south spine connecting the City's south end with the downtown core and the commercial centers and highway entrances at the southern edge of the city. Public input and crash data analysis have identified Shelburne Road as an unsafe and uncomfortable place for people biking and walking. The proposals below assume that traffic demand on Shelburne Road is lessened when the Champlain Parkway is opened. These are just a few ideas for Shelburne Road. Existing plans such as the draft PlanBTV South End Plan and the 2011 Comprehensive Transportation Plan for the City of Burlington call for a dedicated multi-modal corridor and land use study for Shelburne. This study should be used to generate more detailed strategies for making Shelburne a more walkable, bikeable, and crossable roadway.



EXISTING CONDITIONS

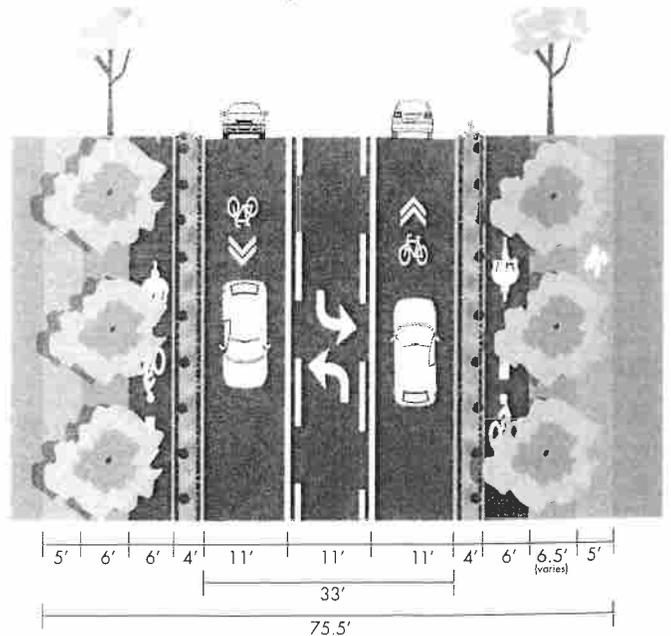
Shelburne Road features two travel lanes of moderate width in either direction and no dedicated bike facility. Sidewalks are narrow, but are protected by a generous greenbelt and mature street trees. Driveway curb-cuts do create conflict points for people walking on the sidewalk. And, because most people do not feel comfortable riding their bikes in the Shelburne travel lane, sidewalk riding is another threat to pedestrian safety and comfort. Shelburne also features sections of roadways that greatly exceed the maximum recommended spacing between pedestrian crossings.

The signs on Shelburne Rd. that say "Bikes can take full lane" should be removed. It is way too dangerous to be riding bikes on Shelburne Rd. now, it should not be encouraged.



OPTION 1

Option 1 illustrates the option of providing only one travel lane in each direction, with a center turn lane. Such a shift would allow for a narrow, conventional bike lane in each direction.

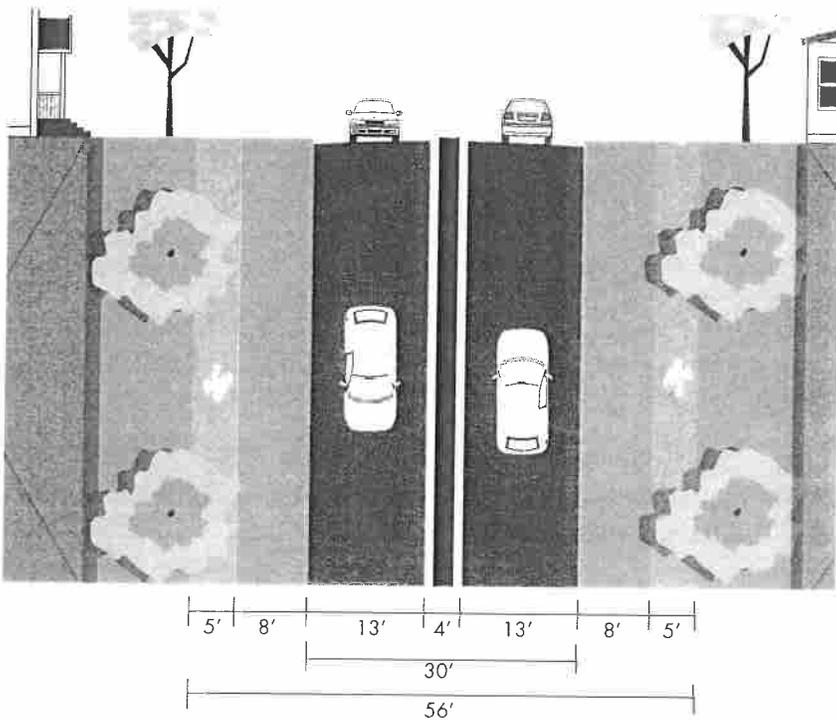


OPTION 2

Option 2 illustrates a more intensive project, in which the existing greenbelts on Shelburne Road are redesigned to feature a planter-protected bike lane in each direction.

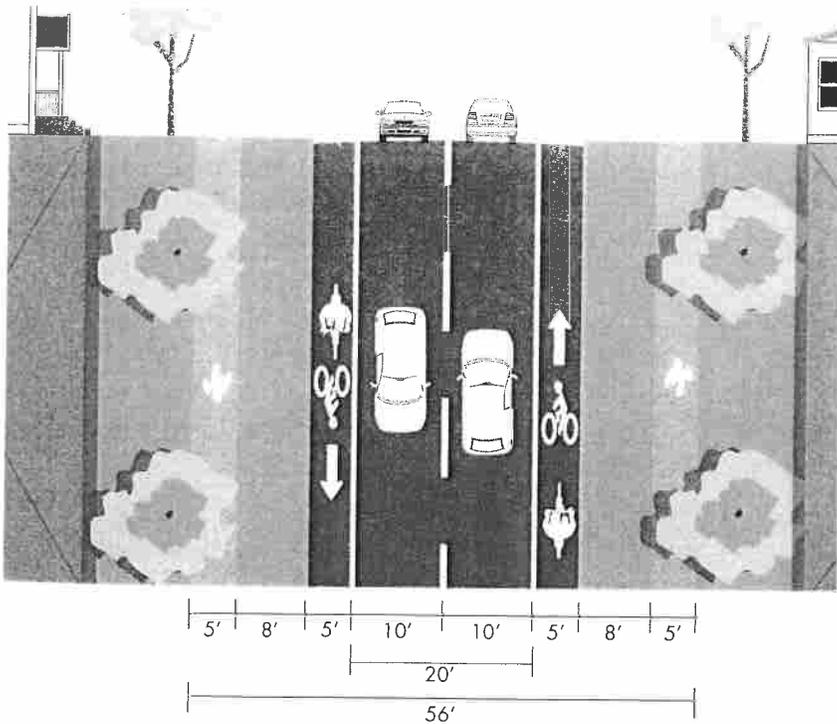
Home Avenue Bikeway

Home Avenue is an important east-west connector in the southern end of Burlington. It provides access between key recreational facilities and trail heads at Oakledge Park to Pine Street and Shelburne Road. The long-term bike network plan proposes a redesign of Home Avenue to create safe conditions for people walking and biking. *It does, however, lack crosswalks between Shelburne Rd and Pine St.*



EXISTING CONDITIONS

Home Avenue features wide travel lanes in each direction. A narrow median serves to separate cars, but provides no value in terms of pedestrian or cyclist safety. Though sidewalks are narrow, they are protected from vehicle travel lanes by a generous green belt on one side. On-street parking is permitted.



PROPOSED BICYCLE LANE

Calm traffic in both directions by removing parking and narrowing vehicle travel lanes. This adjustment provides space for a narrow bicycle lane in each direction.

SCRAMBLE CROSSING

Definition: The use of a signal that goes red for people driving on all sides of an intersection, while allowing people walking or biking to cross in all directions, including diagonally, in an exclusive signal phase.



SHARED SPACE

Definition: A public right-of-way, typically curbsless, where people using all modes of transportation share the space without traditional safety infrastructure to guide them. May also be called a “woonerf.”

Overlapping benefits: Can provide a low-stress bikeway and place-making benefits.



PHOTO: NACTD

*I do not like sharrows. They just restate the obvious and
save no paper.*

SHARED USE LANE MARKING (OR “SHARROW”)

Definition: Pavement marking that indicates a shared lane for bicycles and automobiles. Sharrows reinforce the legitimacy of bicycles on the street, recommend proper positioning, and may be used to offer directional guidance. Sharrows are not a substitute for bike lanes, and more robust treatments should be applied wherever conditions indicate that sharrows are not an appropriate treatment. Sharrows typically do not improve bicyclist safety or comfort unless applied on low-speed streets in conjunction with other traffic calming features.



SHARED USE PATH

Definition: A two-way path that is physically separated from vehicular traffic. Shared-use paths should be designed to accommodate the needs of both people on bikes and people on foot.

Overlapping benefits: Provides safe and protected recreational option for people walking, jogging, skating, wheeling etc.

