Milton US 7 Corridor Study: Potential Health Impacts

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VERMONT
DEPARTMENT OF HEALTH

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Executive Summary

The goals of this HIA are to:

- Determine the health impacts of the Milton US Route 7 corridor redesign strategies
- Recommend ways the corridor can be designed to help support health and mitigate adverse health impacts

Many of the strategies for the reconfiguration of the Milton US 7 Corridor will make it a more "inviting, safe, and attractive for all users of any age and ability". This statement forms the basis of the Corridor Vision Statement which aligns with the Complete Streets Model. From a health perspective, designing communities to ensure safe active transportation options, equitable access to resources and the opportunity for an active lifestyle is key to mollifying the impacts of chronic disease, injury, and health inequity.

A Health Impact Assessment (HIA) is a collaborative and systematic approach used to consider the effects of a policy, plan, or project on the health of a population. HIA is a systematic, flexible approach that uses data, research, and stakeholder input to assess the potential health impacts of policies or projects. This assessment process included a mix of qualitative and quantitative data and literature review, both peer-reviewed and gray.

Strategies proposed in the corridor study include a combination of improved pedestrian facilities, improved connectivity, and traffic calming options. Specifically, eight strategies are proposed along the corridor. The list of proposed strategies in its entirety is found in the main body of this report. Strategies 1, 2, 3, and 7 have prompted conflicting opinions from the community; we have chosen to examine these most closely. They are:

1. **Reconfigure Bartlett, Legion, and W. Milton Road Intersections** – The strategy includes turning movement restrictions, a one-way road designation, pedestrian crosswalk alternatives, completion of sidewalks and, a traffic signal or roundabout.

2. **West Milton Road Bridge Pedestrian Safety** – 3 different strategies are proposed on this bridge. They include: an option for conversion to a one lane bridge with a traffic signal, reducing lane widths, and adding a dedicated pedestrian bridge.

3. **Multi-Use Backage Roads to Provide Local Alternatives to US 7** – this strategy proposes connecting roads ancillary to the corridor to provide an alternative for local trips, allowing Route 7 to be reserved primarily for commuter traffic.

7. **Streetscape Enhancements on US 7 between Main and Cherry Streets** – this strategy includes several streetscape enhancements, as well as new crosswalks and a mini-roundabout on the northern most section of the corridor.

Recommendations:

1. The Vermont Department of Health recommends reconfiguring the Bartlett, Legion, and West Milton Road intersections.
2. The Vermont Department of Health recommends Strategy #2A, conversion to a one lane bridge with a traffic signal, for its effective handling of safety, opportunity for physical activity, and increased opportunities for access.
1. The Vermont Department of Health recommends Strategy #3. The proposed backage road connecting Park Place, paralleling Route 7, to Racine Road, and that proposed to connect Lamoille Terrace with the Milton Square Shopping Center in addition to the other multi-use, bicycle and pedestrian connections will allow safer travel for all modes.
2. The Vermont Department of Health recommends Strategy #7, the streetscape enhancements, as well as new crosswalks and a mini-roundabout on the northern most section of the corridor.

Acknowledgements

The Burlington District Office of the Vermont Department of Health would like to recognize the contribution of a cadre of community partners without whom completion of this Assessment would have been exceedingly difficult. Participation in this process came in many forms, from active involvement in the qualitative data collection to proof reading the final draft. Many thanks the Milton Community Youth Coalition, Milton Family Community Center, Milton Department of Planning and Economic Development, Milton Recreation Department, Milton Town School District, University of Vermont Medical Center Division of Community Health Improvement, the Chittenden County Regional Planning Commission, Third Sector Associates, Parsons-Brinkerhoff Consulting, and all the residents of Milton who shared in this process.

Background

What is the Milton US 7 Corridor Study?

The Milton US 7 Corridor Study is a collaboration between the Chittenden County Regional Planning Commission (CCRPC), the Town of Milton, and other key community stakeholders to examine possible ways to make a 3 mile stretch of US Route 7 in Milton, Vermont a more complete street. Complete Streets are "designed and operated to enable safe access for all users, including pedestrians, bicyclists, motorists, and transit riders of all ages and abilities."[1] The study is led by Parsons-Brinkerhoff Consulting. The Vision and Goals of this Corridor Study are delineated in the Final Study Report of which this document is a part.

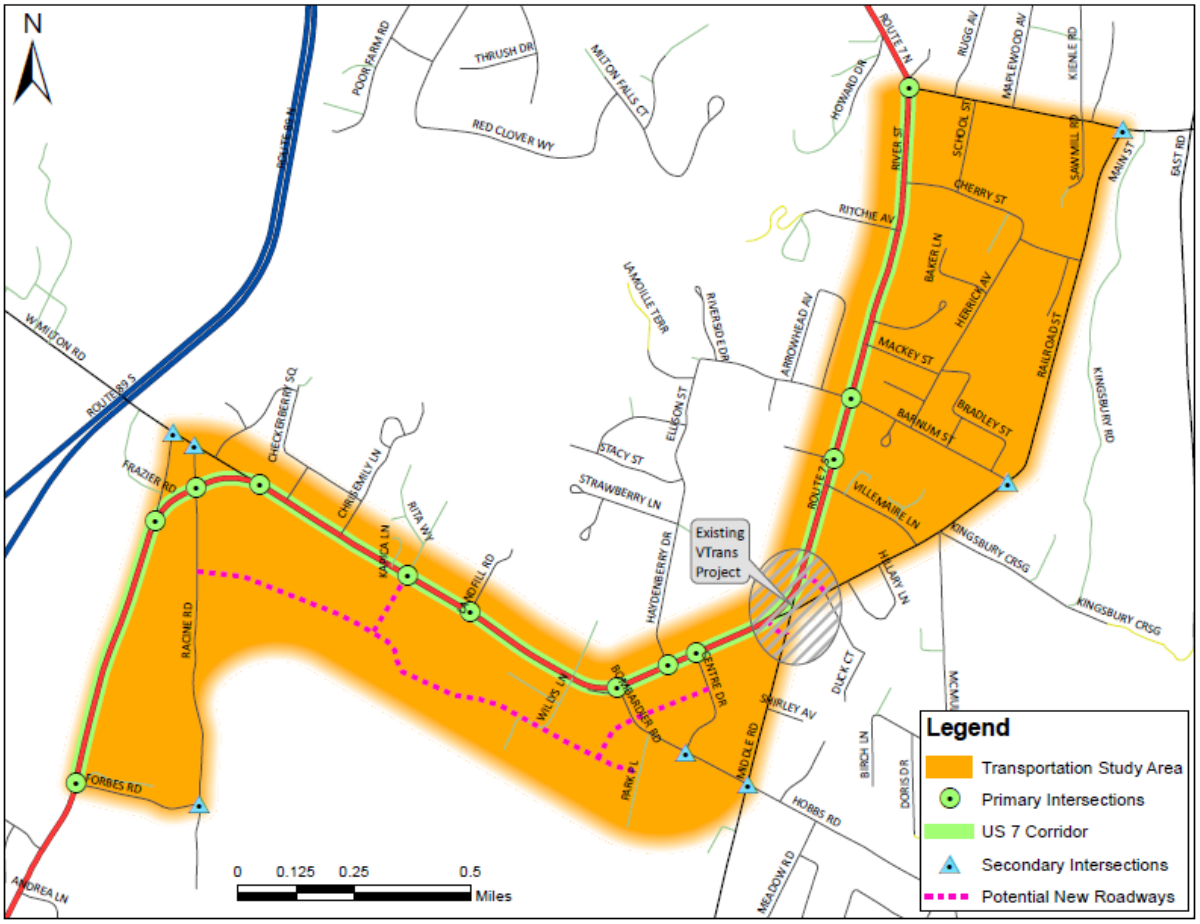


Figure 1: Milton US 7 Corridor Study Area

This stretch of Route 7 is a two lane road within the town core and is a major commuting route. The public elementary, middle, and high schools are along the corridor, as well as the major grocery store, famer's market site, and many other community amenities.

What is proposed?

Strategies proposed in the corridor study include a combination of improved pedestrian facilities, improved connectivity, and traffic calming options. Specifically, eight strategies are proposed along the corridor:

1. Reconfigure Bartlett, Legion, and W. Milton Road Intersections – this strategy includes turning movement restrictions, pedestrian crosswalk alternatives, completion of sidewalks, a one-way road alternative and 3 options at one intersection: a traffic signal, a single lane roundabout, and a two-lane roundabout.
2. West Milton Road Bridge Pedestrian Safety – 3 different strategies are proposed on this bridge. They include: an option for conversion to a one lane bridge with a traffic signal, reducing lane widths, and adding a dedicated pedestrian bridge.
3. Multi-Use Backage Roads to Provide Local Alternatives to US 7 – this strategy proposes connecting roads ancillary to the corridor to provide an alternative for local trips, allowing Route 7 to be reserved primarily for commuter traffic.
4. Enforce Corridor Area Speed Limits – this strategy involves working with the Milton Police Department to strengthen speed enforcement along the corridor.
5. Milton High School Connection Improvements – this strategy proposes alternatives for realigning a key intersection close to Milton High School.
6. Three-lane roadway on US 7 between Bartlett Road and Milton Square Shopping Center – this strategy proposes turning a portion of the 2 lane road into 3 adding a center turn lane with pedestrian refuge islands.
7. Streetscape Enhancements on US 7 between Main and Cherry Streets – this strategy includes several streetscape enhancements, as well as new crosswalks and a mini-roundabout on the northern most section of the corridor.
8. Close Existing Walking and Cycling Gaps – this strategy proposes to complete sidewalks, enhance bicycle lanes, and add crosswalks throughout the corridor.

What is a Health Impact Assessment?

Factors such as access to safe, affordable and reliable transportation, education, places to be physically active, housing, and healthy food are, collectively, more essential to people's health than access to medical care.[2] This understanding is prompting collaboration between the health sector and other sectors that have not traditionally been seen as playing a role in health - such as transportation, land use planning, education, environment, and economic development - to engage in a process called Health Impact Assessment, or HIA.

Figure 2: Source: Lots to Lose: How America's Health and Obesity Crisis Threatens our Economic Future (2012)

HIA is defined as "a collaborative and systematic approach used to consider the effects of a policy, plan, or project on the health of a population" and involves completing 6 steps: screening, scoping, assessment, recommendations, reporting and monitoring. HIA is a systematic, flexible approach that uses data, research, and stakeholder input to assess the potential health impacts of policies or projects.[3]

Why do an HIA on this project?

This project is closely tied to public health because it has the potential to impact chronic disease, injury, and health equity.

This HIA informs the ongoing Milton US 7 corridor study by answering the following questions:

- What are the potential health impacts of proposed changes to US 7 in Milton?
- Which proposals have the most potential to improve the health of the population?

The Burlington District Office of the Vermont Department of Health served on the Milton US 7 Corridor Study Advisory Committee to assure integration of the HIA with the ultimate proposal presented to the town Selectboard. The Advisory Committee met for the first time in the summer of 2014. Advisory Committee members also include representatives from Milton Town government, Planning and Economic Development Department, Recreation Department, Public Works Department, Police Department, Fire Department, School District, local business, Vermont Agency of Transportation, Federal Highway Administration, CCRPC, the Federal Highway Administration, and Parsons-Brinkerhoff Consulting.

"Milton's vision of the future supports dense residential and commercial development in its Town Core with a comfortable mix of amenities and housing choices for all age groups."

(Milton Town website)

Milton, Vermont

Milton, Vermont is located in the northern part of Chittenden County, the most populated county in the state. Since 2000, Milton has experienced more than a 10% population growth. It is now the eighth largest community in the state with a population of 10,572.[4] According to the town website, the community welcomes and supports this growth.[5] Over three quarters (79%) of Milton households have an income $50,000 or above and almost a quarter (24.2%) have Bachelor's Degree or higer.[6]

Demographics	
Age[7]	
19 years and younger	27.4%
20-44 years	32.9%
45-59 years	25.1%
60 years and older	14.6%
Income[6]	
Median household income	$73,674
People living below the poverty level	5.7%

Education, 25 years and older[6]	
High School graduate or higher	94.1%
Bachelor's Degree or higher	24.2

Table 1: Demographics[6, 7]

Milton is home to a vibrant and growing community. Participants who participated in a focus group for this assessment noted that there is growing pride and that the community is actively moving beyond the negative reputation it had in the past.

Health equity, then, as understood in public health literature and practice, is when everyone has the opportunity to "attain their full health potential" and no one is "disadvantaged from achieving this potential because of their social position or other socially determined circumstance." Community design is one way we can address inequity. Transportation is an important component of health equity: access to transportation options other than driving is essential for people with disabilities, children too young to drive, older seniors, and those unable to afford cars. These groups represent a significant proportion of Milton's population. Of all Milton residents, 9% have a disability[6], 20.4% are less than 15 years old, nearly 9% are seniors (age 65+),[7] and 5.7% live below the federal poverty level.[6] The American Public Health Association recommends expanding transportation options for these groups wherever possible.[9] Safe non-motorized travel, and safe access to transit stops, is essential for disadvantaged people seeking to reach jobs, schools, and other opportunities. [10]

Through its nature as a Complete Streets transportation study, the Milton US 7 corridor has the potential to better meet the needs of all of groups that disproportionally experience poor health. The report, "The Path to Complete Streets in Underserved Communities" summarized this, saying: "The transportation disadvantaged, including communities of color, the poor, older adults, youth and people with disabilities, are at a significant disadvantage without access to convenient, safe, well integrated transportation alternatives. All of these groups are often without easy access to cars and live in locations without convenient, safe transportation alternatives, which severely hampers their ability to function as productive members of society. Furthermore, statistics indicate that these demographic groups are growing in numbers, and are not currently being accommodated by the existing transportation system."[11]

Elderly residents

Nearly 9% of Milton residents are over the age of 65.[7] There is a Vermont State Housing Authority senior housing complex of 36 units is located on Villemaire Lane. Cathedral Square, a real-estate development corporation focused on affordable senior housing, has chosen a location on Bombardier Road to construct a 30-unit senior housing complex.[12]

The needs of the aging population require a fresh look at transportation planning and land-use planning. Many seniors can no longer drive an automobile safely and therefore become dependent on other means of transportation. Driving cessation is strongly associated with decreased out-of-home activity levels.[13] For those seniors without significant mobility issues a safe, walkable community is necessary for physical activity, access to services and socialization.

Residents with disabilities

Physical or mental disabilities that impair mobility are a noteworthy concern that is not limited to one age group. Specific disabilities that may reduce transport choice include ambulatory, visual, and auditory limitations. Approximately 9% of the population (all ages) of Milton reports some level of disability.[6] Over 13% of those over 65 years report an ambulatory disability, 7.5 report a hearing disability, and 1.4 report a visual a disability.[6] The Special Services Transportation Authority (SSTA) is a private non-profit corporation that provides transportation for those with disabilities.[40] SSTA has 53 vehicles and provided 133,000 rides in 2013, making it an invaluable resource for those with disabilities that affect their mobility.

Low-income residents

Poverty makes people vulnerable to poor health.[15] In Chittenden County, residents with incomes below 250% of the federal poverty level are three times more likely to be diagnosed with diabetes, cardiovascular disease, and asthma and are twice as likely be diagnosed with depression.[16]

Families living in poverty, regardless of age, ethnicity, or disability, may be heavily impacted by transportation decisions. In Chittenden County nearly 21,000 individuals – 11% of the population – live in poverty and 11% received 3SquaresVT in the past 12 months. Of households receiving 3SquaresVT benefits in Chittenden County, 47% are home to children under 18 years of age while 25% are home to individuals over 60 years of age.[17]

Milton-specific indicators of low socio-economic status include the percentage of students in the Milton school district receiving free and reduced lunch and the number of affordable housing units in neighborhoods adjacent to US 7 corridor. In the 2013-14 academic year just over 43% of students in Milton School District received free or reduced school lunch benefits.[18] In Milton, other than the 36 units of senior housing mentioned previously; there are no subsidized housing units in Milton.[19]

Additional health measures will be discussed in the Assessment section of this report.

Scoping

HIA Goals

The goals of this HIA are to:

- Determine the health impacts of specific corridor redesign strategies
- Recommend those strategies that help support health and mitigate adverse health impacts

HIA Scoping Process

In November 2014, staff from the Burlington District Office of Vermont Department of Health and CCRPC met to discuss a process for incorporating this HIA into the overall corridor study. Using previous desktop HIA experience from a similar “Complete Streets” corridor study in Chittenden County, we

determined health indicators most likely to be impacted by the project. Based on that body of current research, the health impacts we chose are:

1. **Physical activity**
2. **Access** to healthy food, health care, and community services
3. **Safety/unintentional injury**

The pathway diagram below describes how various strategies proposed in the corridor study will ultimately impact these health outcomes. This is described in more detail in the Assessment and Predictions and Recommendations sections in this report.

The impact of changes to Route 7 to air quality and mental health were raised for inclusion in the HIA, but due to a lack of data were not included as part of the research scope. Though air quality may be affected (poor air quality has negative impacts on conditions such as asthma, other respiratory conditions, and cardiovascular disease), there is not enough local data available to comment on whether air quality will improve, worsen, or remain constant as a result of the proposed changes. Similarly, little information is available on the relationship between the proposed corridor changes and the mental health and wellbeing of residents, so these outcomes are not included in this report.

Pathway Diagram

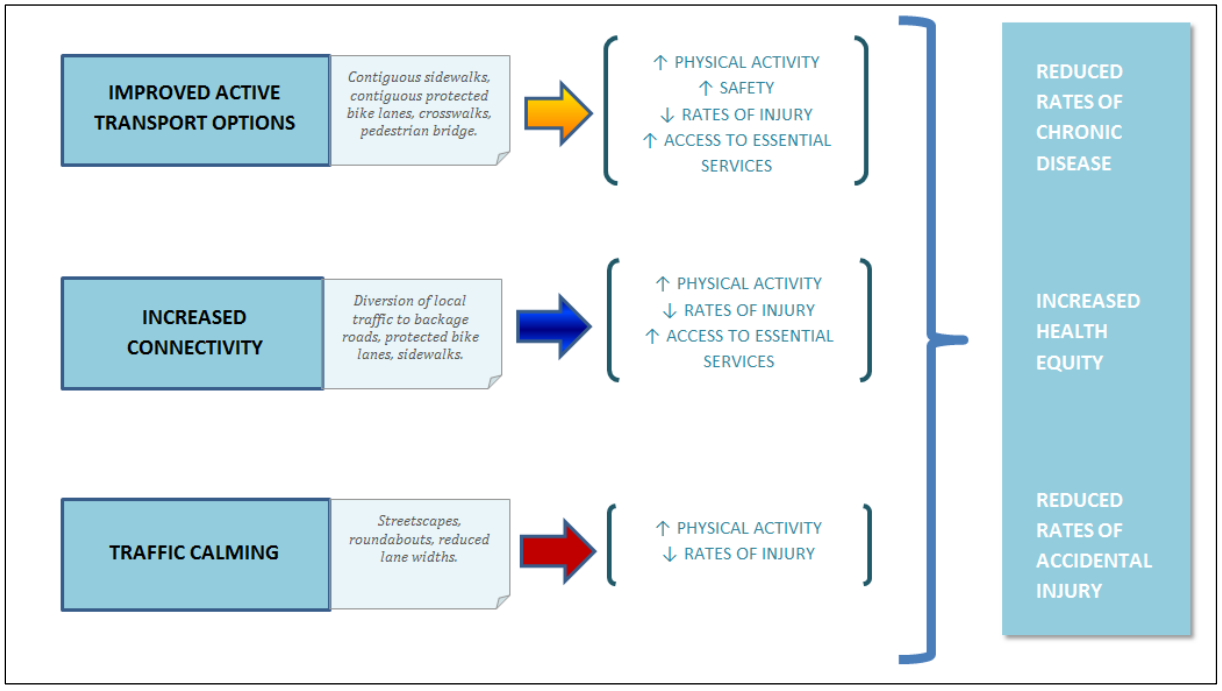


Figure 3: Pathway Diagram

Assessment

Methodology

The assessment process included a mix of qualitative and quantitative data and literature review, both peer-reviewed and gray, or not formally published.

Quantitative data were collected from federally supported public health surveys. Adult health data are not available at the sub-county level due to small population size, therefore it is presented in this section at the Chittenden County level. Youth data are available at the Milton School District level.

Qualitative data for this assessment were gathered from six public engagement meetings and events either dedicated solely to the presentation of information about the corridor redesign or with the redesign as a featured portion of a community event already in place. Audit tools and interpersonal and written comments were the prime methods of data collection. The event chronology is as follows:

- US Route 7 Corridor Public Engagement Meeting – October 6, 2014
- Milton Community Dinner – November 17, 2014
- Milton Walkability and Bikeability Audits – November 21, 2014
- Milton Community Dinner – January 12, 2015
- US Route 7 Corridor Public Engagement Meeting – January 29, 2015
- Focus Group at Milton Family Community Center – February 6, 2015

The US Route 7 Public Engagement Meetings were hosted by the CCRPC and Parsons-Brinkerhoff Consultants. A total of three were conducted throughout the study period. The Milton Community Dinner Series was established by the Milton Community Youth Coalition (MCYC) as means of supporting local agriculture, promoting the local food system, improving access to healthy foods, and engaging Milton residents around community design issues. This dinner series has evolved into a major community event. The series is typically comprised of 3-5 dinners per academic year with attendance numbers ranging from 150 – 400 people. In November, the CCRPC was invited to exhibit large maps of each of the four segments of the corridor under consideration. Those attending the dinner were given a quick *elevator speech* about the project as they entered and were asked to speak with CCRPC staff and comment on what changes should be made to Route 7. All comments were recorded.

The Walkability Audit was conducted using a Walkability Checklist developed by the Partnership for a Walkable America, the US Department of Transportation (USDOT), the Pedestrian and Bicycle Information Center, and the US Environmental Protection Agency.[20] A similar tool, the Bikeability Checklist developed by the National Highway Traffic and Safety Administration (NHTSA), the Pedestrian and Bicycle Information Center and the USDOT, was used to assess bikeability.[21] A dozen community partners divided into 4 groups, walked segments of the corridor, and recorded their observations to complete each checklist.

At the Community Dinner in January 2015, the CCRPC was once again present to display and record all attendees' comments about the seven preliminary design strategies prepared based on previous public input and data collected from traffic studies and transportation planning best practices.

The focus group held in partnership with the Milton Family Community Center had 12 participants and was held in conjunction with a regularly occurring group called *Women with Purpose Learning Together*. The group consists of women from a variety of ages and income levels. Some participants live in one of the local mobile home parks. It was conducted in three phases throughout a 90 minute period. The first was a traditional focus group format with a facilitator asking four broad questions relating to community life, health, and transportation in Milton. A Senior Transportation Planning Engineer from the Chittenden County Regional Planning Commission (CCRPC) then presented the study background and described the details of each of the preliminary strategies developed for the project in phase two of the focus group. The last phase gave participants an opportunity to comment on each of the strategies using sticky notes. Participants were asked to begin commenting on the strategy that was nearest their home or place of employment, or that which they felt the most visceral reaction, pro or con.

To complement this qualitative data collection, a national literature search was conducted to garner historical and recent information from peer-reviewed journals, local public health data, municipal reports, and the local safe routes to school plan.

Findings

Existing Conditions and Literature Review

Physical Activity

Physical activity is a key component of weight management and is associated with lower rates of chronic disease.[22] Chronic diseases are persistent, life-changing conditions that can be controlled but not cured.[23] They impact an individual's quality of life, risk of premature death, and healthcare costs. Chronic diseases are widespread; among Chittenden County adults 23% have ever been diagnosed with arthritis, 31% have been told they have high cholesterol, 24% have hypertension, 6% have been diagnosed with cardiovascular disease, and 6% have diabetes.[24] Being overweight or obese increases an individual's risk of developing serious health problems such as heart disease, diabetes, stroke, cancer, and arthritis.[23] Nearly one third of high school students in the Milton School District are overweight (17%) or obese (15%).[25] Six in ten Chittenden County adults are overweight (36%) or obese (21%).[24]

To stay healthy, adults should participate in at least 150 minutes of moderate activity or 75 minutes of vigorous activity each week.[22] Only 61% of adults in Chittenden County meet physical activity recommendations and 15% participate in no leisure time physical activity.[24]

The US Department of Health and Human Services recommends that young people ages 6–17 participate in at least 60 minutes of physical activity every day.[22] In the Milton School District, 47% of middle school students were physically active for one hour each day for the past 7 days. The rate for boys meeting the physical activity recommendations is 50% and for girls it is 43%. Only 24% of high

school students were physically active for one hour each day for the past 7 days. Again rates for boys (32%) were higher than for girls (16%).[24]

Living in a community that helps build physical activity into the daily structure of life, such as safe routes for walking or biking to school or errands and proximity to parks and bicycle paths, can help children and their families get more physical activity each day.[26] More than 70% of Chittenden County adults report using community resources for physical activity.[24] Walking and biking figure prominently as popular forms of physical activity, as they are accessible, affordable, and readily incorporated into one's daily routine.[27] Nationally, children who walk or bicycle to school have higher daily levels of physical activity and better cardiovascular fitness than do children who do not actively commute to school.[28, 29]

Milton is home to 3 schools, one being the largest elementary school in the state. The total student population is over 1500 students. As discussed earlier, physical activity is critical for children, but they are often reliant on their immediate neighborhoods, parks, and routes to school for their physical activity. Milton School District is actively participating in the Safe Routes to School Program. Part of this effort included mapping where elementary and middle school students live in relationship to the school. This mapping assessment shows that almost half, 47%, of elementary and middle school students live within 2 miles of the school, with 21% within one mile.[30]

***Southern Section** of the Corridor*

- No sidewalks or incomplete sidewalks (depending on the segment)

- High vehicle speed

- No crosswalks

(Walk Audit comments)

Northern Section of the Corridor

- Incomplete sidewalks, some needing repair

- Not enough crosswalks

- Heavy traffic that did not always yield as warranted

(Walk Audit comments)

Though this is a high percentage of students within walking and biking distance to school, results from the Walkability and Bikeability Audits reflect specific issues along the corridor that make using it for active commutes and physical activity a challenge. The Walkability Audit asks participants to rate the experience based on five questions which are then scored. The scores are then totaled and corridor a rating is assigned, ranging from a low of 0-5 points ("It's a disaster for walking!" to a high of 26-30 points ("Celebrate! You have a great neighborhood for walking."). The southern section of the corridor, starting from Forbes Road to Bombardier Road scored in the category: "It's a disaster for walking!"

The northern section of the corridor, from Bombardier Road to Main Street, earned a higher rating, but there is room for improvement.

Comments from community dinners, public meetings, and focus group reflected these results. For example, one focus group participant noted, "We need sidewalks all the way through town."

The National Walking Survey indicates that local neighborhoods are commonly used for walking. Of the nearly 7,000 people who participated in the survey, 63.9% reported walking exclusively on sidewalks or streets.[31] An aesthetically appealing street can increase residents' perceptions of safety on streets by providing a buffer from traffic, contiguous sidewalks that are in good condition, street trees and with pedestrian or human-scale lighting for evening trips. Such lighting features are usually white (not yellow), closer to the ground, spaced more closely to create an even lighting of the sidewalk finally and often have design aesthetics that add interest. As a further benefit, human-scale lighting, street furniture and landscaping are features that alert drivers to the presence of pedestrians in an area. Adequate lighting is an important means of addressing actual safety concerns as well as to increase the perception of safety and encourage use of the area after dark.[32] The odds of achieving recommended levels of walking were nearly 50% higher among those who lived on a street with trees and/or lighter traffic than for residents in neighborhoods with heavier traffic and no street trees.[33] Additionally, road connectivity and increased number of intersections is associated with more direct routes, shorter distances, and thus increased likelihood of walking or biking.[34]

Infrastructure changes that decrease vehicle speeds, increase the attention of drivers and enhance pedestrian safety are known as traffic-calming devices. Devices such as speed bumps can improve pedestrian and bicyclist safety. Other devices include reductions in the number or width of car lanes and sidewalk extensions into traffic lanes at street crossings to shorten the crossing distance.[35] Traffic calming measures can help to increase physical activity in several ways. First, crashes at lower speeds are less likely to result in severe injury or death.[36] Fast and heavy traffic is commonly cited by youth and adults as a barrier to walking and cycling.[35] A systematic review of 22 controlled before-and-after studies concludes suggest that area-wide traffic calming in towns and cities is a proven intervention for reducing the number of road traffic injuries, and deaths.[37]

Second, when traffic is moving more slowly, people perceive the street to be a safer place.[38] A telephone survey of a random sample of 1880 adult Australians found that 46% of women and 38% of men agreed or strongly agreed that "aggressive drivers put me off cycling or walking."[38] Lower vehicular speeds, protected bike lanes, and clear edge demarcation with trees can reduce injury risk and increase the perception of safety [36, 38, 39, 40, 41] Calming traffic through engineering measures is most practical on moderate and low speed roadways. Once implemented, they are effective without constant attention (such as enforcement), and they can be placed in areas where regular enforcement is cost prohibitive. Also, they require little maintenance, so engineering changes can be implemented as funding is available without placing burdens on future budgets. The US DOT National Highway Safety Administration recommends a multi-faceted approach to reducing traffic speeds and thereby increasing safety. Some key elements are regulation (speed limits), signage, public information and education, enforcement, and engineering modifications. [36]

The street edge acts as a structural reference for motorists; it enables them to distinguish the roadway from the surrounding environment.[41] Presence of street trees along that edge increase perception of safety.

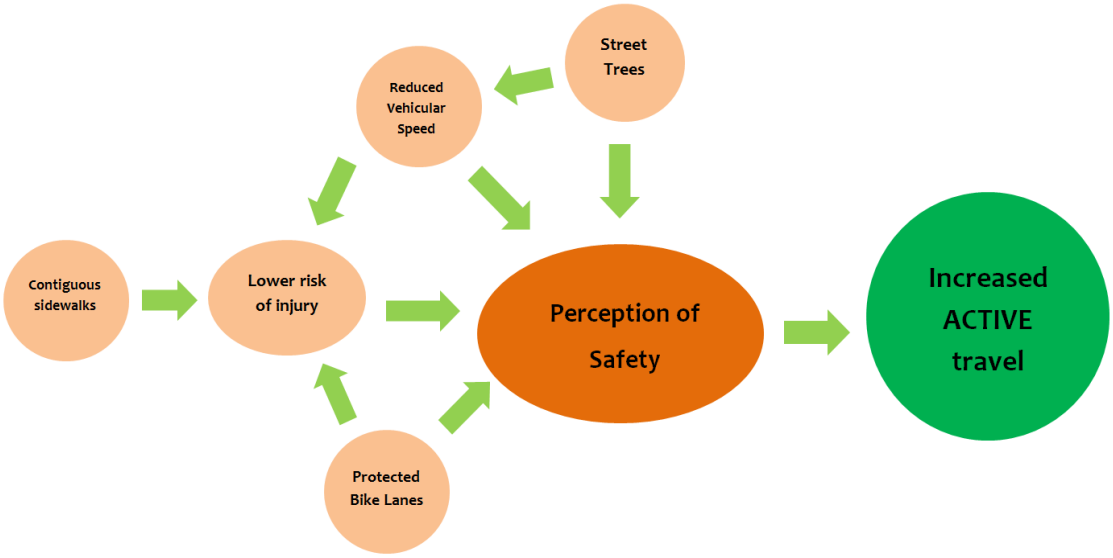


Figure 4: Factors that affect perception of safety. (Vermont Department of Health)

Access

For the purposes of this report, access to healthy foods, healthcare, and community services were examined more closely. First, a review of services currently in place is provided, followed by literature to support how improvements to the corridor can increase access, particularly for underserved populations.

Healthy Foods

Together, physical inactivity and poor diet are the second leading cause of preventable death nationally due to their impact on many chronic disease outcomes.[42] Most adults in Chittenden County are not meeting the recommended intake of fruits and vegetables; 37% of adults consume two or more servings of fruit daily and only 21% consume three or more servings of vegetables daily.[24]

More focused, local information about dietary habits is available for students in the Milton School District. Among high school students, 30% ate fruits or fruit juice at least twice a day, 12% ate vegetables three or more times per day. Only 43% of students reported eating breakfast every morning for the past seven days. High school students were also asked about what they drank. Every day in the past seven days, 15% of students drank at least one can, bottle, or glass of soda and 16% drank at least one can, bottle, or glass of another type of sugar-sweetened beverage.[25]

Residents in communities with a more imbalanced food environment typical of "food deserts" (large geographic areas with no grocery stores within reasonable proximity) have more health problems and higher mortality than residents of otherwise similar areas with a higher proportion of grocery stores. [43] The problem of food deserts is not limited to big cities; the rural nature of Vermont creates its own challenges for grocery store access. In 2013, University of Vermont Medical Center (formally Fletcher

Allen Healthcare) conducted a community health needs assessment of the Burlington Health Service Area (Chittenden County, Southern Grand Isle County, and the adjacent towns of: Cambridge, Fairfax, Ferrisburg, Fletcher, Monkton, Starksboro).[44] Through discussion with focus groups and community leaders, access to healthy food and nutrition was identified as one of the top priorities for maintaining a healthy community, with transportation to markets highlighted as a major community need.

Milton is home to a full-service grocery store, Hannaford, which is located within the center of the study area along the Route 7 Corridor. The community also has a seasonal Farmer's Market that has been undergoing revitalization in recent years. The current location of the Farmer's Market is adjacent to Hannaford on Route 7 in the center of town. According to the 2012 Community Food Audit completed by the MCYC, there are 4 other retail food stores in the area:[45]

- Frenchy's Meat Market, US Route 7
- Middle Road Market, Middle Road
- Dam Store, US Route 7
- Georgia Market, Ethan Allen Highway, Fairfax

There is also one food shelf in Milton located at the Milton Family Community Center and two community gardens, one at the Milton Family Community Center and the other at Milton Family Practice.[45]

Though there are these sources of fresh, healthy foods available (primarily Hannaford and the seasonal Farmer's Market), the MCYC Community Food Audit identified transportation as a considerable barrier for residents living beyond walking distance of the Hannaford complex. Transportation is limited primarily to privately owned vehicles. Those who do not have a vehicle rely on friends, relatives, and neighbors, and an intermittent commuter bus that runs from Milton to Burlington. The commuter bus operates on weekdays only, runs twice in during the morning commute, once in the early afternoon, twice during the evening commute, and once in the late evening.[46] Though there are stops within the core of town, this transit service is not adequate.

> *"Bus transport needs to be expanded particularly to destinations outside of town and at other times."*
>
> *-Focus Group participant*

Healthcare

Access to healthcare plays an important role in ensuring that chronic diseases are diagnosed early and managed appropriately to keep people as healthy as possible. Among adults in Chittenden County, 65% had a routine doctor's visit and 77% had a dental visit in the last year.[24] Cancer screenings are not significantly different from the state, though there is room for improvement: 81% of women are up to date on breast cancer screening, 84% of women are up to date on cervical cancer screening, and 76% of men and women meet guidelines for colorectal cancer screening.[24]

There are two provider offices in Milton, Milton Family Practice and Mousetrap Pediatrics. Milton Family Practice is located on Centre Drive, located off of Route 7 near the center of the study area. Mousetrap Pediatrics is located directly on Route 7. During the focus group conducted at the Milton Family Community Center, this question was posed to participants: *What do you hear family, friends, and neighbors saying when they talk about their health and the health of others in the community?* Responses salient to this project included issues around lack of transportation for medical visits outside of Milton. One participant noted: "there need to be options that are more frequent and easily accessible". Diabetes is a major concern for many residents. A more walkable, bikeable community with equitable access to healthy foods and medical care can help prevent or postpone the development of chronic conditions such as diabetes.

Community Services

Milton has a number of community services which are well connected and coordinated. There is a well-attended monthly "PATCH" meeting for networking and sharing of services and events. Participants of this meeting include: school district, health care, the town parks and recreation department and library, the Milton Family Community Center, the MCYC, and the local newspaper.

This range of services delivers opportunities for personal growth, social engagement, entertainment, and support for individuals and families. They address basic needs, promote social/civic engagement, optimize health and well-being, and support independent living for seniors.[47] Accessibility to essential community services across the lifespan and across socioeconomic strata is supported by the complete streets model, which forms the framework of the Route 7 Corridor plan. If the opportunity exits to engage neighbors at libraries, community gardens, recreational programs, educational programs, and entertainment events, then the likelihood of residents feeling isolated is reduced. Communities that lack the interconnectedness afforded by contiguous sidewalks, frequent transit service, bike lanes, and paths are missing an integral piece of community services even if the infrastructure and programs are in place.[48]

In summary, though there are several community amenities (including a full service grocery store in the heart of town, two medical providers, and other valuable community services) and improving connectivity and pedestrian and bicycle amenities would increase access particularly for those who do not own private vehicles.

Safety/Injury

In Chittenden County, the nonfatal motor vehicle crash-related injury rate per 100,000 population is 700.6.[49]. Motor vehicle-related hospitalizations are the second leading cause of injury-related hospitalizations in the state, accounting for about one in eight injury-related hospitalizations (13%). Of those hospitalized 6% were pedestrians or bicyclists while the rest were passengers or drivers of motor vehicles.[50]

In Vermont, the highest rates of hospitalization for motor vehicle injuries occur among 15 to 24 year olds and among those 85 years of age and older.[50] Of those aged 15 to 24, the motor vehicle

hospitalization rate is 159.3 per 100,000, more than one and a half times that of the next oldest age group (25 to 44 year olds, 95.5 per 100,000). In Milton, 11.6% of the population is between the ages of 15 and 24. In Chittenden County 19.3% of the population is in that age group.[7] Injury rates also spike among Vermont's oldest citizens, with 167.8 per 100,000 of those 85 years and older being hospitalized for a motor vehicle injury. [50]

Between the ages of 15 and 24 the rate of injury hospitalization for males is slightly higher – 192.6 per 100,000 men compared to 124.2 per 100,000 women. Among the oldest Vermonters, men are hospitalized at more than three and a half times that of women (336.1 per 100,000 for males, compared to 87.0 per 100,000 females).[50]

According to the Existing and Future Conditions Report by Parsons-Brinkerhoff Consulting, there are no segments of the corridor with crash rates that exceed the state average. Clusters of crashes (five or more crashes within a 250 foot linear distance) were found at five intersections in the corridor. One (Route 7 at Rebecca Lander Rd) exceeds the average. No crashes involving bicycles or pedestrians were found in the data.[51]

Personal behaviors such as using a bicycle helmet, wearing a seatbelt, and not using cellphones while on the road can reduce injury risk. Among high school students in the Milton School District, 30% have texted or e-mailed in the past 30 days while driving a car or other vehicle.[25] Vermont has traffic laws that prohibit texting and handheld cellphone usage, but use of electronic devices by motorists, and to a smaller extent, bicyclists and pedestrians is a growing concern. Among students in the Milton School District, 55% of high school students and 36% of middle school students who rode a bicycle reported never or rarely wearing a bicycle helmet in the past 12 months. Seatbelt use is a more widely used personal injury prevention measure; 7% of high school students and 2% of middle school students reported never or rarely wearing a seatbelt while riding in a car.[25] Unintentional injury to pedestrians, bicyclists, and motorists is remediable, in part, through individual behavior change. Though Strategy 4 (enforce corridor area speed limits) focuses on speed, there is potential for enforcement of seatbelt and prohibition of handheld device laws as well.

Infrastructure that promotes more of the population to walk and bike can reduce injuries through a "safety in numbers" effect. A study in California examined per capita injury rates to commuting pedestrians and bicyclists in 68 cities and towns, each with a very different proportion of their populations that use these active modes. As bicycling and walking increased, the rates of injury went down. Similar studies conducted in the United Kingdom, the Netherlands, and Denmark, all of which have greater cycling and walking rates than the US, yielded the same results. In all cases a motorist is less likely to collide with a pedestrian or bicyclist when there are more people walking or bicycling.[52]

Predictions and Recommendations

This section outlines strategies the Vermont Department of Health ascertains will most effectively increase levels of physical activity, improve access to healthy food, healthcare, and community services,

and decrease unintentional injury for Milton residents. Strategies 4 (Enforce Corridor Area Speed Limits), 6 (Three-lane Roadway between Bartlett Rd and Milton Square Shopping Center), and 8 (Close Existing Walking and Cycling Gaps) are more straightforward, less controversial and nearly completely evidence-based. These strategies propose changes to existing infrastructure which are well-supported by the community and also by research of peer-reviewed literature, gray literature, and best practices in transportation planning for Complete Streets. Lastly, Strategy 5 (Milton High School Connection Improvements) will not be addressed. The solution aims to realign a key intersection to relieve congestion around the high school and improve storm water drainage. It also includes improvements to pedestrian and bicycle facilities. Based on these improvements and others proposed in the remaining strategies, more children will potentially be walking to school and the need to alleviate congestion at the beginning and end of the school day will be less necessary.

Because strategies 1, 2, 3, and 7 have prompted conflicting opinions from the community, we have chosen to examine these most closely. They are:

1. Reconfigure Bartlett, Legion, and West Milton Road Intersections
2. West Milton Road Bridge Pedestrian Safety
3. Multi-Use Backage Roads to Provide Local Alternatives to US 7
7. Streetscape Enhancements on US 7 between Main and Cherry Streets

Each strategy will be reviewed with regard to physical activity, access and equity and safety and unintentional injury. Perception of safety is a critical determinant in walkability and bikeability of a corridor. Transportation planners recognize that factors affecting pedestrians' sense of safety / comfort within a roadway corridor include:

- presence of a sidewalk
- lateral separation from motor vehicle traffic
- barriers and buffers between pedestrians and motor vehicle traffic
- motor vehicle volume and composition
- motor vehicle traffic speed
- presence of other pedestrians
- driveway frequency and access volume
- conditions at intersections[53]

When these conditions are met, the perception of safety is amplified and use increases. This helps individuals achieve the recommended level of physical activity for their respective age groups.

Strategy #1 – Reconfigure Bartlett, Legion and West Milton Road Intersections

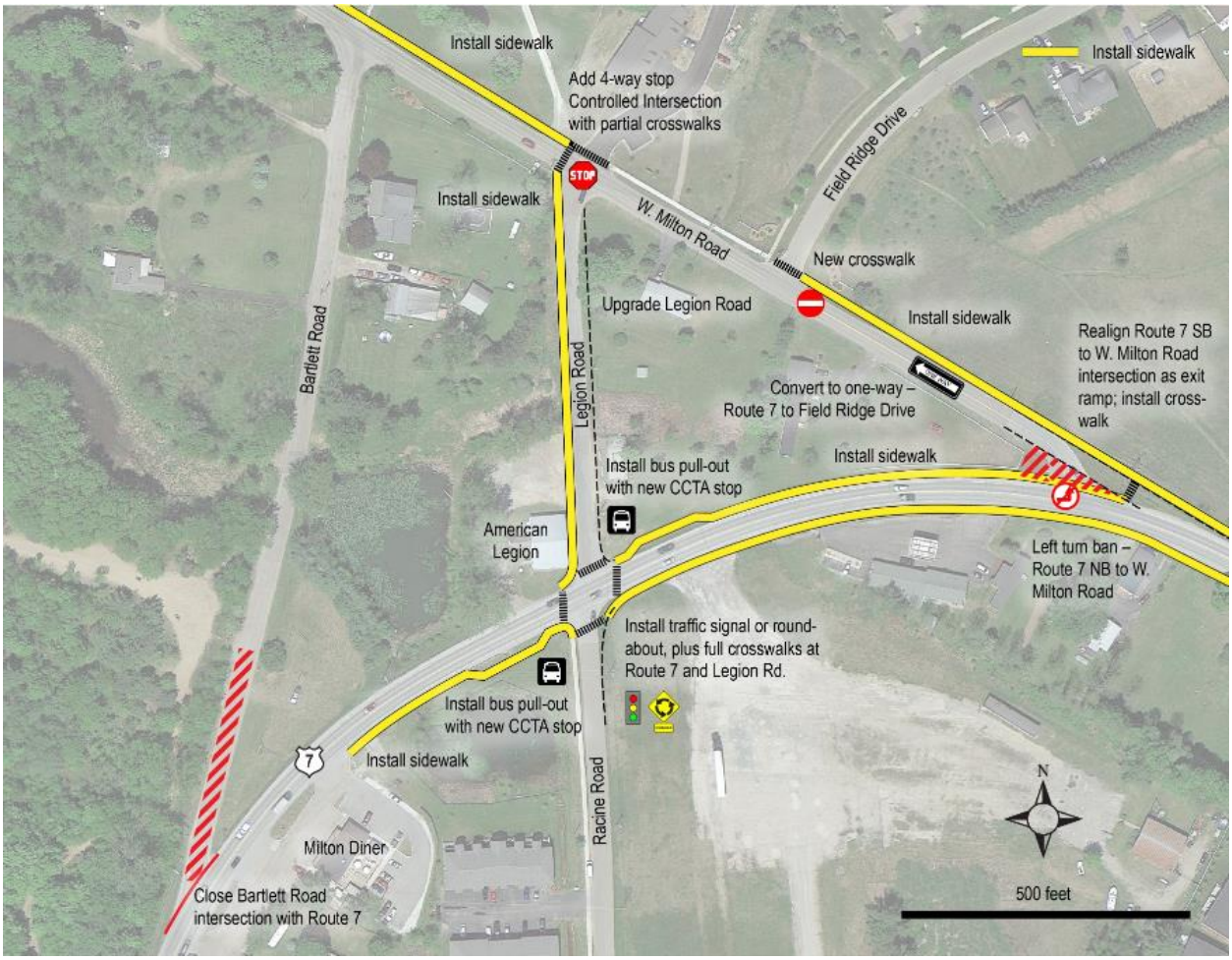


Figure 5: Strategy 1

This strategy attempts to mitigate the risks associated with limited sight distance at the intersection of Route 7 and Legion Road. Additionally the strategy aims to reduce wait times for vehicles turning onto Route 7 from West Milton Road during peak times by reconfiguring the intersection for safer, efficient traffic flow Improving the sidewalk network, bikeability and easing access to the local diner complete the details of this strategy. Intersection options presented to the community include a signalized intersection, a single lane roundabout, and a two-lane roundabout.

Physical activity - The discontinuous or non-existent accommodation for pedestrians and bicyclists may prevent individuals and families from walking or biking for utilitarian purposes or for recreation. Those who choose to walk or bike in current conditions are under considerable risk.

Access & Equity - Lack of connectivity due to undeveloped or deteriorating pedestrian and bicycle infrastructure and reduced perception of safety impede access for individuals who do not own or have usage of an automobile and undercuts usage by all users.

Safety/Unintentional Injury - Broadside crashes at US Route 7 and Legion Road are the most common type.[51] Side crashes account for about a quarter of passenger vehicle occupant deaths in the United States.[54] The potential for injury to pedestrians and bicyclists inferred by the following comments documented during the walkability audit of the area: *"No signals, no crosswalks – very fast traffic!" "Sidewalk fits and starts. Curve at West Milton Rd is bad."* Infrastructure for pedestrians and bicyclists such as sidewalks, greenstrips, protected lanes and curbs is lacking. What's more, it's clear that pedestrians put a high premium on safety. Facilities that are designed to protect pedestrians (and bicyclists) result in increased number of individuals who choose active over motorized transport. The FHWA guidance released this month (May 2015) is the result of two years of research into numerous modern protected bike lanes around the country and consultation with a team of national experts.

The FHWA document cites a 2014 study by the National Institute for Transportation and Communities - *Many potential cyclists (including children and the elderly) may avoid on-street cycling if no physical separation from vehicular traffic is provided.*[55] The current configurations at Bartlett Rd and Route 7 and at Route 7 and West Milton Road do nothing to slow traffic as vehicles transition from the faster, busier roadway (US Route 7) to either of the two accessory roadways.

The Vermont Department of Health recommends reconfiguring the Bartlett, Legion, and West Milton Road intersections. We predict this configuration would increase physical activity and access to services while decreasing unintentional injury. This strategy allows Southbound traffic to exit Route 7 at West Milton Road. Traffic from Route 7 will experience a narrower lane, helping to reduce speeds as vehicle begin traveling on West Milton Rd. Making West Milton Road a one way corridor between Route 7 and Field Ridge Drive eliminates direct connection to US Route 7 and West Milton Rd and the currently inefficient intersection.

The construction of a two-lane roundabout at Route 7 and Legion is recommended over a conventional signalized intersection. A review of 28 studies of motorist safety at roundabouts found that converting intersections to roundabouts decreased both the frequency and severity of vehicle crashes.[56] The physical shape of roundabouts eliminate crossing conflicts that are present at conventional intersections, thus reducing the total number of potential conflict points. A comprehensive study showed overall reductions of 35 percent in total crashes and 76 percent in injury crashes.[57] Roundabouts can have traffic calming effects since they necessitate reduced vehicle speeds upon entry and through the use of yield indicators.[58]

With these beneficial attributes in mind there is reticence from some community members regarding the utility and safety of roundabouts. This skepticism may result from the equation of roundabouts with traffic circles. Traffic circles often have high entry speeds and place the responsibility of yielding on vehicles already in the circle, rather than those entering.[59] Although only around 10% of all intersections are signalized, nearly 30% (2,744) of intersection fatalities occurred at signalized intersections.[60] Motorists are particularly confused by the less common two-lane roundabout. Drivers' lack of familiarity with roundabouts coupled with their uncertainty in navigating through a two-lane roundabout are real concerns. A town in Minnesota converted two such roundabouts into smaller, one-

circulating-lane designs due to driver confusion.[61] Since the two lane roundabout proposed in this strategy delivers the level of service that is more desirable than a single-lane roundabout, the scoping study required to move this project forward should include a review of pavement markings and signage that guide motorists most safely and effectively. For example, one of the primary causes of accidents in a two-lane roundabout is the entering vehicles failure to yield. To troubleshoot this, the city of Richfield, Minnesota extended the solid lines leading up to the intersection from 50 to 250 feet to encourage drivers to choose the correct lane before entering the roundabout. It also replaced fish-hook-style roundabout signs with traditional lane designation signs and did away with complex striping patterns.[61] Such alternative markings might also be considered for this roundabout.

Strategy #2 – West Milton Road Pedestrian Bridge Safety

This strategy addresses the sole bicycle and pedestrian connection between the Birchwood Mobile Home Park and Route 7. The bridge also serves as a connector between Route 7 and the western portion of Milton with access to Colchester Northern Burlington and Lake Champlain. Three different strategies are proposed for this bridge: 1) conversion to a one lane bridge with a traffic signal, 2) reducing lane widths and, 3) adding a dedicated pedestrian bridge.

Physical Activity – The lack of accommodation for pedestrians and bicyclists may prevent individuals and families from walking or biking for utilitarian purposes or for recreation. Currently, accommodation for pedestrians and bicyclists on the bridge is non-existent, save for narrow shoulders on both the North and South sides of the roadway. In order to remain consistent with the Complete Streets concept and with Milton residents' input expressing the need for more contiguous infrastructure for pedestrians and bicyclists, safe accommodation must be made for all users. Many people do not meet the minimum level of physical activity recommended.[24] At the same time, people are more likely to walk on the sidewalks or streets in their neighborhood.[31] Interested but concerned cyclists might forgo being physically active if safe, contiguous infrastructure is not available.

Figure 6: West Milton Bridge

Access & Equity – Transportation options other than driving are essential for people with disabilities, children too young to drive, older seniors, and those unable to afford cars. Communities that lack the interconnectedness afforded by contiguous sidewalks, frequent transit service, bike lanes and paths are missing an integral piece of community services. In order to diminish health inequities all individuals

must have convenient access to healthcare, nutritious food, and the broad array of community services that underpin quality of life.

Safety/Injury – At present the lack of accommodation for pedestrians and bicyclists, such as a sidewalk or bike lane, presents a high risk for injury. While there is little commentary about the accommodation on the bridge there are many comments from the public regarding increasing bike lanes, sidewalk connectivity, crosswalks and curbs for pedestrian safety. As the sole local access to Route 7, the bridge must be amended to provide safe access for pedestrians and bicyclists. The minimum preferred sidewalk width is 5 feet.[62] The existing curbed buffer on either side of the bridge is inadequate for pedestrians to cross safely. Bicyclists may cross with the flow of traffic but the roadway markings do not include pavement markings or any signage alerting drivers to the presence of bicyclists. Placement of shared lane pavement markings (sharrows) or other pavement markings will not entice the interested but concerned cyclist to begin regular trips across the bridge. This population favors a protected bicycle lane, which may be unattainable in this instance. Perception of safety is a major concern for pedestrians and for the large majority of bicyclists.[39]

The population of Milton is expected to double over the next two decades.[51] With this population increase there will be an associated increase in usage of Route 7 for local, utilitarian trips. The current low traffic volumes typical of the bridge will rise increasing the risk of injury for users of all modes if the existing conditions are allowed to remain. Families with young children, individuals with disabilities who are dependent upon wheelchairs or motorized scooters cannot negotiate the bridge safely.

The Vermont Department of Health recommends Strategy #2A, **conversion to a one lane bridge with a traffic signal, and predict it will increase opportunity for physical activity, access to services, and decrease risk of unintentional injury.** An alternate strategy (2B) which would maintain two way traffic on the bridge (lane widths 10 and 11 feet) and a 3 foot buffer (painted stripe) along one side is also under consideration. Though the narrow lane width would have the traffic calming effect of reducing vehicular speed, the width of the buffer for pedestrians does not meet Federal Highway Administration (FHWA) recommendations and the lack of delineated, if not protected, accommodations for bicyclists still excludes many. Though ADA guidelines dictate minimum passage width for wheelchairs should be 32 inches at a point and 36 inches continuously, this does not meet the minimum recommendation for sidewalk width.[62] Concerns regarding wait times for motorists are notable, however based on the following pieces of information the wait times will likely be minimal. First, over the next two decades, the one-lane scenario will remain efficient even if the average number of cars traversing the bridge each day doubles.[63, 64] Second, the traffic signal on the bridge would be actuated by the presence of traffic thereby eliminating wait times when no opposing traffic is present. The maximum wait time would likely be 40-60 seconds at the start of the red light during peak hours.[65]

Strategy 2C presents installation of a cantilevered pedestrian/bicycle bridge would safeguard pedestrians and bicyclists and therefore also improves physical activity and access while decreasing risk of unintentional injury. However, the high cost of this option is not likely to be born.

Strategy #3 - Multi-Use Backage Roads to Provide Local Alternatives to US 7

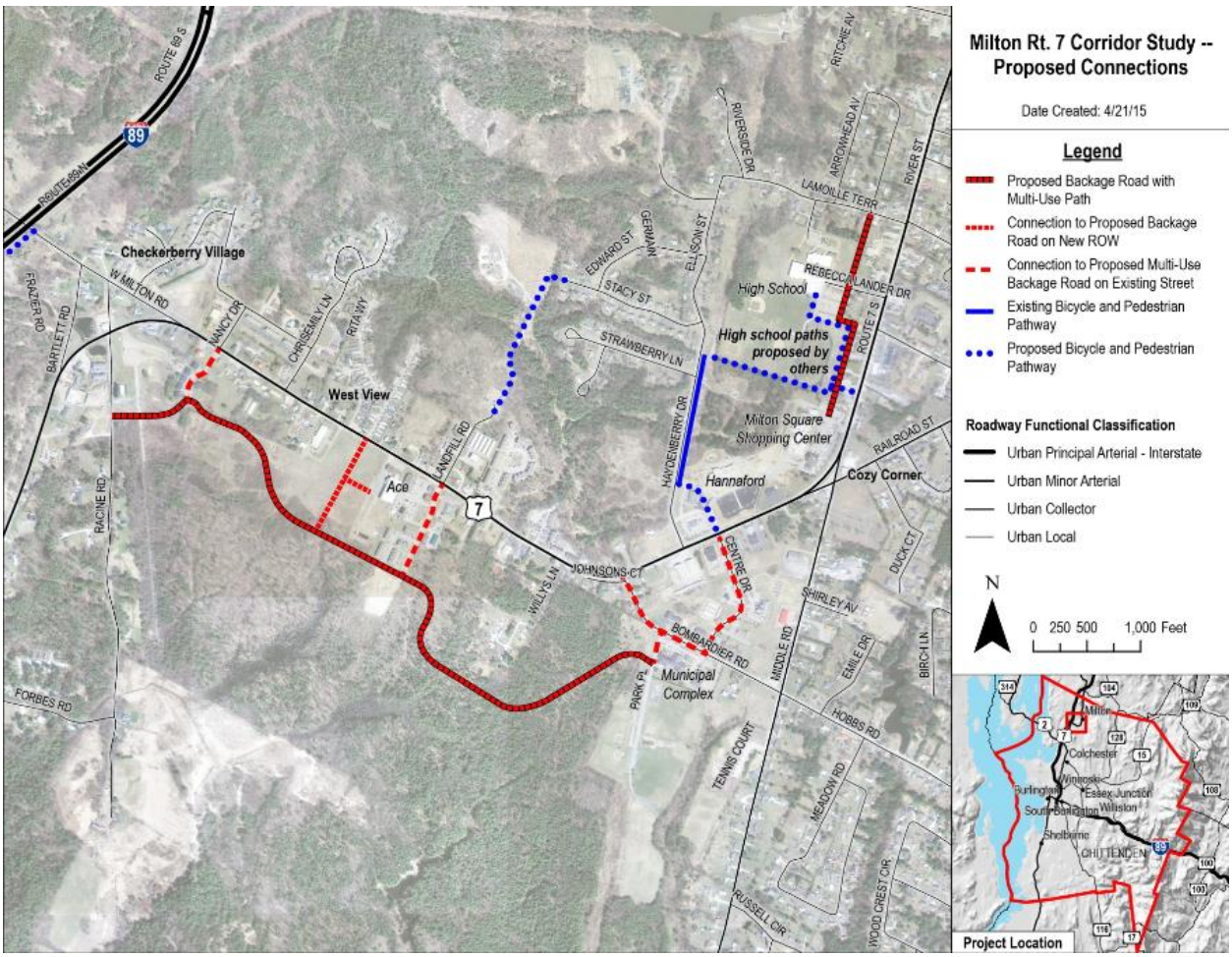


Figure 7: Strategy 3

This strategy is aimed at easing increased traffic on Route 7 by proposing redevelopment of accessory roads. The impetus behind this strategy is to ease local traffic on Route 7 creating alternative for local trips, thus allowing Route 7 to be reserved primarily for commuter traffic.

Physical Activity – Neither Route 7 nor its backage roads provide infrastructure that is safe and pleasant for travelers and their mode of choice.

Access/Equity – Lack of connectivity due to undeveloped or deteriorating pedestrian and bicycle infrastructure impedes access for individuals who do not own or have usage of an automobile.

Safety/Injury - VTrans estimates current annual average daily traffic (AADT) along Route 7 through Milton ranges from 9,800 to 14,000 vehicles. Over the next twenty years the traffic volume on Route 7 through Milton is projected to increase by a range of 23 to 38%.[51] If left as is, without improved pedestrian amenities, bicycle amenities, and traffic calming measures, the volume will increase the potential for injury while decreasing the perception of safety for pedestrians and bicyclists. Streets without safe places to walk, cross, catch a bus, or bicycle put people at risk. Over 5,000 pedestrians and bicyclists died on U.S. roads in 2008, and more than 120,000 were injured. Pedestrian crashes are more than twice as likely to occur in places without sidewalks.[66]

"Curve North of Main Street makes it difficult to see oncoming traffic while in crosswalk."

"Crosswalk at Main and Route 7 is brick without white markings. Scary curve!"

(Walk-Bike Audit participants)

The Vermont Department of Health recommends Strategy #3. The proposed backage road connecting Park Place, paralleling Route 7, to Racine Road, and that proposed to connect Lamoille Terrace with the Milton Square Shopping Center in addition to the other multi-use, bicycle and pedestrian connections. We predict this strategy will increase physical activity and access to services while allowing safer travel for all modes. Streets with protected bike lanes see 28% fewer injuries per mile than comparable streets with no bike infrastructure. People were also 2.5 times more likely to bike on the protected lanes than in general travel lanes.[67] As noted previously in the National Walking Survey most people reported walking exclusively on sidewalks or streets in their neighborhood. Developing a more consistent, contiguous network of complete streets increases travel option, safety and consequently usage of alternate modes. More people using active transport options make it more likely that individuals will meet physical activity recommendations. Increased connectivity with enhanced, safer accommodations for pedestrians and bicyclists as proposed would improve access, and therefore, equity.

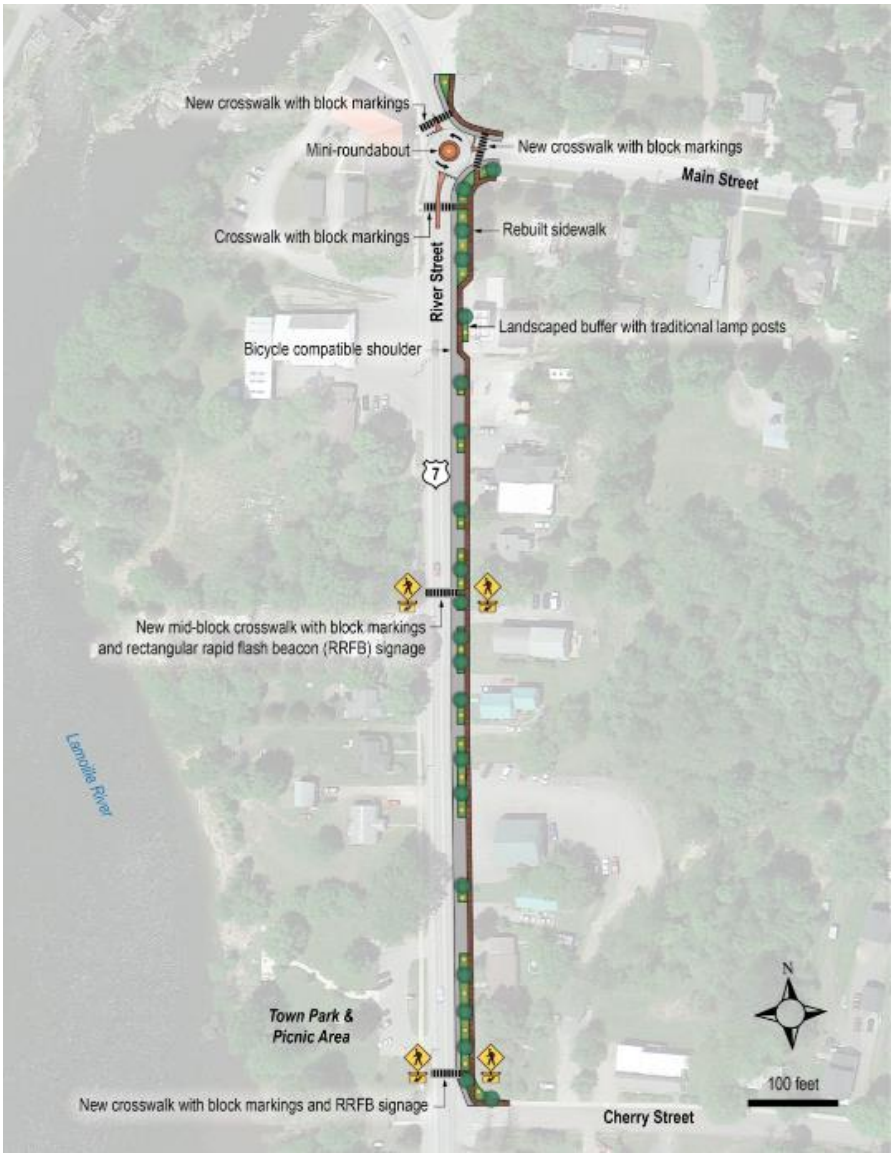
Citizens in neighborhoods adjacent to Route 7 expressed concerns about heavier traffic on backage roads, jeopardizing the quiet nature of their neighborhoods and the safety of their children. The changes planned for Route 7 will *right size* the corridor. This is a tactic to develop a more complete street. Right sizing typically involves reducing a four lane road to a three lane road (two through lanes and a center turn lane). The fourth lane may be converted to bicycle lanes, sidewalks, and/or on-street parking. In other words, existing space is reallocated; the overall area remains the same. People often express concern that such a scenario will cause more traffic congestion, slow traffic and drive motorists to seek alternate routes through neighborhoods.

Making the backage roads complete streets will make them safer and may actually reduce traffic since other modes will become safer options. The refitting of Route 7, based on traffic counts will not necessarily increase automobile traffic on backage roads. Again, as more transit option increase there

may be little change in volume. For right sizing with Average Daily Traffic (ADT) above approximately 20,000 vehicles, there is a greater likelihood that traffic congestion will increase to the point of diverting traffic to alternate routes.[68] The projection for ADT through Milton by 2035 is estimated at 16,000 which does not reach the threshold likely to divert traffic through neighborhoods. Consequently, traffic on backage roads will likely be limited to local trips since traffic calming features along with lower speed limits will be in place which will deter most commuters. Additionally, such Complete Streets can help reduce traffic by giving people safer options for local destination-driven trips or recreation.

Strategy #7 – Streetscape Enhancements on US 7 between Main and Cherry Streets

This strategy attempts to improve safety for all users at intersection of Route 7 and Main Street in addition to enhancing the streetscape along the length of the segment. Currently, sidewalks between Main and Cherry Streets lack curbs in many locations, Northbound side frontage is dominated by parking, driveways run into each other which makes walking difficult and more crosswalks are needed.



Physical activity - The lack of continuous sidewalks for pedestrians may prevent individuals and families from walking for utilitarian purposes or for recreation. Walk/Bike audit results also indicate a dearth of crosswalks, further limiting pedestrian mobility while increasing risk. In order to remain consistent with the Complete Streets concept, accommodation must be made for all users. Underpinning the Complete Streets concept is the recognized need for a contiguous sidewalk network. No facilities for bicycles currently exits but the road width is such that

this accommodation could be made easily.

Figure 8: Strategy 7

Access & Equity - Lack of connectivity due to undeveloped or deteriorating pedestrian and bicycle infrastructure and reduced perception of safety impede access for individuals who do not own or have usage of an automobile and undercuts usage by all users.

Safety/Injury – Comments from residents and notes from the Walk-Bike Audit indicate poor site distance for drivers making turns at the intersection of Main Streets and Route 7. Additionally, pedestrians note the difficulty seeing oncoming traffic when using the crosswalk at Main and Route 7. Lack of curbs on sidewalks and the broad expanses of driveway decreased the perception of safety for pedestrians.

The Vermont Department of Health recommends Strategy #7. We predict it will increase physical activity, increase access to services, and decrease risk of unintentional injury. In particular, the proposed roundabout at the intersection of Route 7 and Main Street may make that intersection safer for all users. A recent review of 23 studies relating to bicycle safety at intersections and on straightaways found that cycle tracks through single-lane roundabouts resulted in the greatest reduction in crashes for people riding bikes.[69] Additionally, a review of 28 studies of motorist safety at roundabouts found that converting intersections to roundabouts decreased both the frequency and severity of vehicle crashes.[56] Indeed, injury and fatal crashes can be reduced by as much as 70% for traffic flows of single-lane roundabouts up to 20,000 cars per day.[70]

Residents were split as to whether a roundabout was a welcome solution in this location. In defense of roundabout, there are many examples where these are working well, such as the intersection at VT Route 108 and VT Route 15 in Jeffersonville and the intersection of VT Route 302 and US Route 2 in Berlin. Most people reference the roundabout in Winooski as the primary impetus for their dislike of this measure. That is not a traditional roundabout. Statistics show, on average, 2.65 accidents occur at a signalized intersection, yearly versus less than 1 (0.83) at intersections equipped with roundabouts.[71] Multi-lane roundabouts pose other issues as previously described in Strategy 1, but the roundabout planned here is a single lane feature.

In this strategy perceptions of safety are bolstered by streetscape amenities, such as trees, that improve aesthetics, and additional crosswalks. Slower traffic as a result of the roundabout and contiguous sidewalks will meet the needs of pedestrians. If people feel safe, they walk more; the presence of pedestrians encourages others to walk. For instance, striping a crosswalk at Cheery Street allows safe crossing of Route 7 and easier access to the town park/picnic area.

Monitoring

Our interest in monitoring the influence of the recommendations made herein begins with the utility of this Health Impact Assessment for the Town of Milton Selectboard. After the Steering Committee recommends the plan with the HIA in addendum and the Selectboard determines an implementation

plan, the Burlington District Office will survey the board to determine to what extent the HIA impacted their decision making. This will be helpful in two ways. Firstly, it will help us to gauge the format, readability and persuasiveness of the data and accompanying narrative. Secondly, it will assist us in framing future efforts to encourage towns to adopt health in all policies approach.

To determine if implemented changes shift our three major indicators (physical activity, access, and unintentional injury/safety) a monitoring plan may involve the following:

- Number of students walking to school - We propose that the Milton Town School District and VT Safe Routes to School continue to evaluate school transport demography, including student travel tallies to determine the number of students walking, biking, bussed or driven to school. If the number of students walking and biking increases we consider this proof of increased walkability and perception of safety brought about by the implementation of the strategies or components of strategies recommended.
- Pedestrian and bicyclist counts - Scoping studies should precede implementation of the major elements of the plan to determine baseline bicycle and pedestrian counts. This will allow clear analysis of the impact of the plan on the change in the number of individuals using active transportation options.
- Number of motor vehicle collisions - Documented by the Milton Police Department, number and type of collisions should be used as an indicator for increased road safety, particularly at the Legion Road and Route 7 intersection which is identified as a high crash area.
- The convention of a Corridor Working Group, slated to meet annually may be the most logical entity to monitor progress and ensure that strategies are implemented.

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