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**FIGURES**

Figures are located after page 12.

**LAYOUT PLANS**

Layout Plans are located after the Figures.

**APPENDICES**

Appendix A: Task B Summary: Existing Conditions
Appendix B: Task C Summary: Alternatives
I. INTRODUCTION

A. OVERVIEW

As part of the review of alternate transportation improvements to the Circumferential Highway, the Chittenden County Regional Planning Commission (CCRPC), on behalf of the Circ Alternatives Task Force, is updating earlier recommendations for increasing bicycling and walking mobility in the Vermont Route 15 (Route 15) corridor between the West Street Extension intersection on the east and Lime Kiln Road on the west with a new scoping study. The study also includes an analysis of potential improvements for bicyclists and walkers in the Route 15 corridor west of the intersection with Lime Kiln Road to the Interstate 89 interchange. Figure 1 shows the approximate extent of the Study Area.

The Chittenden County Metropolitan Planning Organization (now merged with CCRPC) prepared a scoping report for improved bicycle and pedestrian facilities in the Route 15 Corridor between Lime Kiln Road in Colchester and the Five Corners in Essex Junction in 1997. The report recommended the creation of a shared use path along the northern side of the New England Central Railroad tracks between the Five Corners and Susie Wilson Road, at which point it switched to be a sidepath along the southern side of Route 15 to Lime Kiln Road. The suggested alignment required extensive retaining walls between West Street Extension and Susie Wilson Road and is now considered to be unfeasible due primarily to costs. The Metropolitan Planning Organization updated the study in 2003 but the work only refined the alternatives and did not make a final recommendation.

The CCRPC contracted with a Consulting Team led by Stantec Consulting Services with assistance from Broadreach Planning & Design, Heritage Landscapes LLC and the University of Vermont Consulting Archeological Program to assist with the current scooping study.

B. STUDY PROCESS

To begin the project, the CCRPC created a Project Steering Committee (PSC) to assist in guiding the direction of the project. The PSC consisted of representatives from each of the four communities within the study area, as well as from Local Motion, a local bicycle and pedestrian not-for-profit advocacy organization. After an initial meeting with the CCRPC staff, the Consultant Team began Task B of their scope of work: to analyze the existing conditions in the Study Area. They also met again with the PSC to understand in more detail their concerns, questions and suggestions on where improvements might be located and what the issues associated with the improvements were. At the end of the work on this Task, the Consultant Team produced a Task B Summary describing in detail the existing conditions in the study area. Appendix A is a copy of the final Task B Summary; the main body of this final report incorporates portions of the Task B Summary.
After the completion of the work on Task B, the Consultant Team, along with assistance from the PSC, developed a set of alternatives during a team work session for upgrading bicycle and pedestrian circulation along Route 15 within the study area. The team considered as many different options of making the improvements as possible during their work session. As part of the subsequent analysis after the work session, the Consultant Team reviewed the potential impacts, benefits and likelihood of gaining approvals for the various alternatives. They summarized the numerous alternatives that they considered and analyzed in the Task C Summary. Appendix B is a copy of the final Task C Summary; the main body of this final report incorporates portions of the Task C Summary. After further reviewing and refining the alternatives with the PSC, the Consultant Team assisted with an “Alternatives” public work session hosted by the CCRPC to review the alternatives and begin the selection of a preferred alternative.

After the Consultant Team and the PSC reviewed the comments of the alternatives public work session, they combined several of the alternatives to develop a draft recommendation for a preferred alternative. The CCRPC recommended this alternative to the Circ Task Force for inclusion in their final recommendations to the Vermont Agency of Transportation (VTrans). The Consultant Team completed work on a report summarizing the existing conditions, the alternatives and the recommended improvements to the corridor. The summary report included full copies of the Task B and Task C Summaries as part of the appendix. The Consultant Team assisted CCRPC staff members in discussing the recommendations with appropriate VTrans representatives to include their thoughts and suggestions in the final report.

This report is formatted for double-sided printing; blank pages are intentional.

C. PURPOSE AND NEED

The purpose of the Route 15 bicyclist and walker improvements within the Study Area is to transform the Route 15 corridor from a transportation facility dominated by motor vehicles to an attractive, inviting transportation corridor that encourages increased mobility, safety and access for walkers, bicyclists and transit users of various ages and abilities.

The need for the improvements is indicated by:

- A physical lack of connectivity exists between the various bicycle facilities now in the Study Area; many bicyclists now ride on five-foot wide sidewalks due to the lack of adequate shoulders/paths combined with high traffic volumes and high motor vehicle speeds. (While it is not illegal to ride bicycles on sidewalks in Vermont, shared use of a five-foot sidewalk does not meet Vermont State design standards and does not meet the needs of more experienced bicyclists.)
- A lack of connectivity exists between sidewalks along the corridor; as a result, pedestrians have blazed their own paths, or “desire lines,” which are not ADA compliant.
Many land uses and origins/destinations are present along the corridor including St. Michael's College, the Elley-Long Music Center, The Fletcher Allen Campus, various convenience stores and residential neighborhoods; providing connections between these uses will encourage increased bicycle and pedestrian activity.

The Chittenden County Regional Bicycle and Pedestrian Plan calls for the development of both on- and off-road bicycle and pedestrian facilities in the Study Area to promote transportation choice, economic vitality, safe neighborhoods, clean environment, energy efficiency, better health and social equity.

D. PROJECTED USERS

The municipalities would like to improve bicycling and walking conditions for people of all ages and abilities. This means that as much as possible, the improvements should be usable by school children, elderly citizens and those with disabilities, as well as experienced bicyclists and walkers. They should also enhance conditions for skilled bicyclists. The Task B Summary in Appendix A includes more information on the projected users of the path.

II. EXISTING CONDITIONS

A. OVERVIEW

This section presents important aspects of the existing conditions within the study area. Appendix A includes a more complete discussion of the existing conditions.

B. ORIGINS, DESTINATIONS & TRAVEL PATTERNS

There are several key destinations within the Study Area for walkers and bicyclists. Figure 2 shows the locations of these areas. In addition to these larger destinations, there are numerous smaller businesses as well as residential areas that also serve as origins or destinations for walking or bicycling trips. The Route 15 corridor is also a commuting corridor for bicyclists heading to or from Burlington, Essex Junction or IBM.

C. TRANSPORTATION FACILITIES

For the general discussion of transportation facilities within the Study Area, the Consulting Team divided Route 15 into five segments:

- Interstate 89 exit 15 northbound off-ramp to Lime Kiln Road,
- Lime Kiln Road to Vermont National Guard Road,
- Vermont National Guard Road to Barnes Road,
- Barnes Road to Susie Wilson Road, and
- Susie Wilson Road to West Street Extension.
Figure 2 shows the locations of the segments. Route 15 within the Study Area is a four-lane roadway with a curbed median. The road is curbed on both sides. VTrans classifies Route 15 as an urban arterial State highway. Figure 2 also shows the main roadway and the other transportation features described in this section. Nine intersections along the project corridor are signalized. The posted speed limit along Route 15 from Florida Avenue to Vermont National Guard Road in Colchester is 45 miles per hour (mph). The posted speed limit from Vermont National Guard Road to West Street Extension in Essex Junction is 35 mph. The roadway was recently resurfaced by VTrans in 2010 and is in good condition.

A five-foot wide sidewalk with a green strip of varying width is located along the north side of the road from West Street Extension to Ethan Allen Avenue. From Ethan Allen Avenue to Barnes Road, there is no sidewalk. The five-foot sidewalk and green strip begins again at Barnes Road and extends all the way to the Winooski City line. The south side of Route 15 has a five-foot sidewalk and green strip beginning just south of Fanny Allen Hospital and extending to the Winooski City line.

Generally, Route 15 has a one-foot shoulder on each side of the road. The shoulder widths are not suitable for bicycles.

Table 1 provides a summary of the Average Annual Daily Traffic (AADT) of each segment of Route 15 within the study area.

Table 1: AADT by Roadway Segment

<table>
<thead>
<tr>
<th>Segment</th>
<th>AADT</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gorge Road to Lime Kiln Road</td>
<td>23,500</td>
<td>2010 E</td>
</tr>
<tr>
<td>Lime Kiln Road to Vermont National Guard Road</td>
<td>25,200</td>
<td>2010</td>
</tr>
<tr>
<td>Vermont National Guard Road to Barnes Avenue</td>
<td>25,100</td>
<td>2010 E</td>
</tr>
<tr>
<td>Barnes Avenue to Susie Wilson Road</td>
<td>20,400</td>
<td>2010 E</td>
</tr>
<tr>
<td>Susie Wilson Road to West Street Extension</td>
<td>14,200</td>
<td>2010</td>
</tr>
</tbody>
</table>

E = Estimated

The Study Area and immediate vicinity includes one roadway segment and two intersections that are considered High Crash Locations (HCL) as reported in the most recent VTrans HCL Report 2006-2010. Figure 2 shows HCL locations. A 0.3 mile highway segment or intersection must have at least five crashes over a five-year period and the actual crash rate (number of crashes per million vehicles) must exceed a critical crash rate to be classified as an HCL. The critical crash rate is based on the average crash rate for similar highways.

Since the completion of the previous studies, the Campus Connector project has been completed. This project created a new through road north of and parallel to Route 15 connecting Barnes Avenue in Fort Ethan Allen with St. Michael’s College. The portion of the new road between Barnes Avenue and Camp Johnson Road also has a shared use path.
along its north side. From Camp Johnson Road west, the road includes bicycle lanes and sidewalks. The project also included the redesign of Camp Johnson Road itself to add new turn lanes and bicycle lanes between the new road and Route 15.

The Chittenden County Transportation Authority (CCTA) has a well-used bus route along Route 15 in the Study Area. There are bus stops along the route on both sides of the road, with a bus stop shelter located just west of the intersection with Susie Wilson Road on the north side of Route 15. There is another bus shelter just west of the west signalized entrance to the St. Michael’s campus.

There is a crosswalk in front of the Fletcher Allen property with special overhead stop signals activated via a push button by pedestrians wishing to use the crosswalk.

D. UTILITIES

Almost all of Route 15 within the Study Area has utility poles with overhead lines located along the edge of the right-of-way (ROW). The lines are almost exclusively on the northern side of the road. The utility poles are typically located close to the edge of the existing pavement. Figure 2 shows the approximate location of the overhead utility lines in the Study Area.

A natural gas line is located along the side of Route 15 for most of its length within the Study Area.

A fiber optic line is also located primarily along the north side of the Route 15 pavement area. The line is direct burial underground from the I-89, Exit 15 interchange to Johnson Avenue. The line transitions to aerial at Johnson Avenue and extends in the air to Vermont National Guard Road. The line returns to direct burial underground at Vermont National Guard Road and extends underground on the north side of Route 15 to Susie Wilson Road. The line remains underground from Susie Wilson Road to West Street Extension but is in a manhole system under the pavement, which likely means the line is encased in concrete.

E. NATURAL RESOURCES

Sunderland Brook runs along the north side of Route 15 starting close to the eastern edge of the Study Area and flowing west, under Susie Wilson Road and north of Fort Ethan Allen. Representatives from the Vermont Agency of Natural Resources have indicated that they would like to see the open areas between existing development close to Susie Wilson Road and the Brook remain undisturbed, since the Brook is considered an important habitat area.

There are no significant wetlands adjacent to Route 15 with the exception of wetland areas adjacent to Sunderland Brook.

The topography in the study area is generally level along Route 15. There is a steep drop to the Winooski River valley to the south of the Study Area. The land also drops gradually to
the west at the western end of the St. Michael's campus, close to Florida Avenue. Figure 3 shows the existing contours and topography in the Study Area.

The State of Vermont has identified several natural areas of special importance within the Study Area. Figure 4 shows the general location of these areas.

There are also a few notable old trees within or close to the Route 15 ROW. Figure 4 highlights the location of these trees.

There are several open spaces and parks within or close to the Route 15 ROW Study Area. Figure 4 shows the general location of the open space areas.

F. CULTURAL RESOURCES

The Study Team conducted a review of historic resources after the development of the various alternatives. The work indicated that there were several historic resources along Route 15, including older trees, cemeteries and stone retaining walls, with several of them located close to the road.

The previous study included an initial archeological resource assessment of the study area from East Street Extension to Lime Kiln Road. The assessment found that the area in general has a high probability of having archeological resources in undisturbed areas.

III. RECOMMENDATIONS

A. OVERVIEW

The preferred alignment recommended in this Scoping Study consists primarily of a shared use path adjacent to Route 15. Except near the far western end, the path only has one unsignalized driveway/roadway crossing, the entrance to the Fanny Allen Campus of Fletcher Allen Health Care. Figure 5 shows the general layout of the recommended facilities. The Layout Plan sheets provide more detailed information on the recommendations.

B. I-89 EXIT 15 NORTHBOUND OFF-RAMP TO LIME KILN ROAD

The existing wide sidewalk on the south side of Route 15 between the I-89 Exit 15 northbound off-ramp and the Roland Court intersection would remain. Between Roland Court and Gorge Road, the sidewalk would be widened to eight feet in width.

Due to significant right of way constraints, the existing sidewalk width between Gorge Road and the west entrance to St. Michael's College would be maintained as well as the small, existing, green buffer strip between the existing sidewalk and the Route 15 curb. Because
there are numerous driveway crossings along this portion of the path, warning signs
notifying both turning vehicles and path users of the presence of each other would be added.

Between the west entrance to St. Michael’s College and Lime Kiln Road, the south side path
would increase to ten feet and be separated from the roadway by a five-foot wide green
buffer strip. The path would be routed around the existing old trees close to Route 15 near
the Lime Kiln intersection. The path would cross Lime Kiln Road with the aid of a
pedestrian crosswalk.

C. LIME KILN ROAD TO VERMONT NATIONAL GUARD ROAD

Between Lime Kiln Road and Vermont National Guard Road, the improvement would
continue as a ten-foot wide path on the south side of Route 15 with a five-foot wide green
buffer strip for most of its length. The path would follow the alignment of the existing jug
handle at the east entrance to St. Michael’s College. The path would be reduced in width to
eight feet and the green strip would be eliminated as the path passes between an existing
cemetery and Route 15. The path would cross the entrance driveway to Fletcher Allen
Health Care close to the stop sign and then return to the edge of the roadway and the
intersection with Vermont National Guard Road. A new crosswalk on the west side of the
intersection on Route 15 would take the path to the north side of the road. The existing
crosswalk on Vermont National Guard Road would take the path and users through the rest
of the intersection. The traffic signal at the intersection would require updating to the
phasing and timing to accommodate the new crosswalk.

D. VERMONT NATIONAL GUARD ROAD TO SUSIE WILSON ROAD

Between Vermont National Guard Road and Barnes Avenue, the path would replace the
existing sidewalk on the north side of Route 15 with a new ten-foot wide path separated
from the road by a five-foot wide green buffer strip.

Between Barnes Avenue and Susie Wilson Road, the path would continue as a ten-foot wide
path separated by a variable width green buffer strip on the northern edge of the Route 15
right of way, adjacent to the Fort Ethan Allen Parade Grounds. The path would cross Ethan
Allen Avenue between the brick columns and the edge of Route 15 via the existing
crosswalk. Grade modifications may be required between Ethan Allen Avenue and Susie
Wilson Road. The path would cross Susie Wilson Road using the existing crosswalk aided
by existing pedestrian signals.

E. SUSIE WILSON ROAD TO WEST STREET EXTENSION

Between Susie Wilson Road and West Street Extension the facility would continue as on-
road bicycle lanes and an existing sidewalk on the north side. A crossing of Route 15 would
be required to access the eastbound bicycle lane. These lanes would connect to the existing
bicycle lanes on the east side of the West Street Extension intersection. The traffic signal at
Susie Wilson Road would require updating to the phasing and timing to accommodate the
new crosswalk.
IV. IMPACTS & ISSUES

A. BASIS OF THE DECISION

Numerous factors led the PSC to select the improvements described in Section III as the final recommendation, including:

- The lack of a safe way to cross from the north to the south side of Route 15 at Gorge Road;
- The limited Route 15 right-of-way near the west end of the Study Area;
- The difficulty in finding an acceptable alignment for a shared use path on the north side of Route 15 near Lime Kiln Road;
- The reluctance of St. Michael’s College administration for security reasons to allow a public shared use path to run through the middle of the campus;
- The high number of commercial driveways on the north side of Route 15 between Johnson Avenue and Vermont National Guard Road;
- The low level of commercial driveways on the south side of Route 15;
- The increased number of residences along the north side of Route 15 east of Vermont National Guard Road;
- The difficulty of creating the room needed to provide bicycle lanes on Route 15 itself;
- The lack of room to widen Route 15 to the south between the Ethan Allen Drive and West Street Extension intersections to create a cycle track on the south side of Route 15; and
- The difficulty for basic or beginner bicyclists to reach a cycle track located on the Route side of Route 15.

The recommended facility and alignment should have no impacts on:

- Wetlands;
- Watercourses;
- Historic or archeological features;
- Floodplains;
- Flora or fauna;
- Rare, threatened or endangered species; or
- Land use.

B. SAFETY

The proposed alignment includes two crossings of Route 15 for eastbound bicyclists and one crossing for westbound bicyclists. Pedestrians in either direction may be able to travel without crossing Route 15 depending on their starting or ending point. The crossings of Route 15 would occur at the signalized Vermont National Guard Road and the Susie Wilson Road intersections with the installation of new pedestrian signals and crosswalks on the east side of the intersections. Although the Study Team has considered in general how the
crosswalk phase would be worked into the signal timing, specific analysis still needs to be done.

Even though the crossings would be at signalized intersections, not all intended users of the new bicycle facilities users may be comfortable using them. Additionally, once the need to make two crossings is known to bicyclists, there could be a tendency for experienced bicyclists to ignore the crossings and continue to ride in the outer lane between the two crossings, creating slower conditions for motorists and potentially dangerous conditions for themselves. There are few options to the Vermont National Guard Road intersection crossing for westbound bicyclists. For those heading eastbound, there is an additional recommendation that could address their concerns.

An additional improvement would be to replace the existing sidewalk along the north side of Route 15 between Susie Wilson Road and West Street Extension with an eight- to ten-foot wide shared use path (sidewalk). There is ample room within the right-of-way to add a wider path while maintaining the existing three-foot green space separating the path from the curb and roadway. While there are numerous driveways that would cross the new path, all but three are residential. As is recommended for the far western end of the Study Area, signage and pavement markings could alert motorists, bicyclists and pedestrians to the potential conflicts between them at the driveway intersections with the path. The wider path would require the removal or relocation of several trees.

One additional consideration would be the addition of street trees in the existing medians that are at least eight feet wide. The street trees would eventually create a more enclosed space which has the tendency to slow motorists. The trees would be a continuation of the street trees already planted in the median east of the Susie Wilson Road intersection.

C. HISTORIC & ARCHEOLOGICAL RESOURCES

The proposed shared use path on the south side of Route 15 west of the Lime Kiln Road intersection would need to move further outside the existing right-of-way to avoid impacting at least one oak tree. The path should stay a minimum of 20 feet away from the base of the tree. Such a wide circumference around the tree would require additional easements from St. Michael’s College. The alternative is to reduce the width of the path as it passes between the tree and the curb. In addition to creating a narrow spot on the shared use path, this alternative would require disturbances close to the base of the tree and could result in the eventual death of the tree.

The proposed alignment and improvements would not disturb the existing stone retaining wall along the edge of the road at the corner of Route 15 and Gorge Road. It would also not impact the other historic resources highlighted in the historic resources analysis.

The proposed alignment is located almost exclusively within areas that appear to be previously disturbed. The Archeological Resources Assessment (ARA) determined that no areas within the proposed project’s immediate area of potential effect (APE) were sensitive for Pre-Contact Native American sites. While the proposed project’s APE crosses the road
The potential impact of the project on the historic properties is limited to formal yard areas or areas already disturbed and considered negligible. The exception to this is the Merrill Cemetery Lot on the St. Michael’s campus.

Early cemeteries were not always well marked or documented. From the research presented in the ARA and based on experiences elsewhere in Vermont, the Consultant Team notes the likelihood that there are unmarked burials associated with this cemetery and that some of these may lie wholly or partially outside of the existing fence, especially considering the widening of Vermont Route 15 in the 1960s. Therefore, the Consultant Team recommends that the area along the south side and western front of the cemetery within the proposed APE be mechanically stripped with a clean-up bucket down to the interface with undisturbed subsoil prior to construction to make sure no graves are located within this portion of the project area and that this work be monitored by a professional archaeologist. They also recommend that there be a discussion with the Vermont Division for Historic Preservation early in the construction planning process to determine what procedures should be followed should one or more graves be identified that might be disturbed by the construction process or ongoing use of the path.

D. GRADING

Grading would be needed between the Ethan Allan Avenue and Susie Wilson Road intersections to create a level area wide enough for the shared use path that still meets ADA requirements. Additionally, the path should also be located as close to the outer edge of the right-of-way as feasible to leave room for possible future widening of Route 15 as part of future upgrades to the Susie Wilson Road intersection. The design process would need to examine this detail in more detail.

E. RIGHT-OF-WAY & EASEMENTS

The final recommendation would require either an expanded right-of-way for Route 15 or permanent easements from St. Michael’s College and Fletcher Allen Hospital for several portions of the shared use path that cross in front of their properties. The path as currently planned maintains a five-foot grass strip between the edge of the roadway and the path, which pushes the outer edges of the path beyond the limits of the current right-of-way in several locations. The right-of-way itself varies often in its overall width and location, so the depth and length of needed easements or additional right-of-way varies. The Layout Plan sheets show the various locations where the path needs to go beyond the current limits of the right-of-way.

F. DRAINAGE

The recommended shared use path would increase the overall amount of paved surface in the Route 15 corridor by more than an acre. The construction would most likely require storm water discharge permits for construction and post-construction use. The overall
design of the path should include methods for minimizing increases in storm water runoff, such as small retention areas or rain gardens. Additionally, locations where existing storm water runoff from Route 15 may be creating erosion problems, such as in the gully on the south side of Route 15 between the St. Michael’s College and Fletcher Allen properties, should be examined and would need to be upgraded if appropriate to minimize or eliminate the problems.

G. UTILITIES

The recommended improvements will require the relocation of several utility poles. The Layout Plan identifies the specific locations of the poles to be impacted and the recommended relocation spot.

The natural gas line, sewer line and the fiber optic line are not anticipated to be disturbed, as long as their locations are noted and appropriate measures taken to ensure that they are not disturbed during construction.

H. OPEN SPACE

St. Michael’s College has created an open space along most of its frontage on both sides of Route 15. The proposed improvements would remove up to five feet of the open space in several locations and possibly up to ten feet of the open space close to the jug handle at the east entrance to the campus. The current St. Michael’s administration has indicated that it has no objections at this time to the conversion of a small portion of its green space to shared use path.

I. MAINTENANCE

Due to the important regional nature of the recommended improvements, it is very likely that VTrans will require that it be cleared of snow in the winter. Essex Junction, Essex, Colchester and Winooski will most likely need to commit to this, although there would be no requirement that they undertake the maintenance themselves. The communities could make arrangements for others to maintain the facilities if it would be more appropriate or convenient. Additionally, the municipalities would also be responsible for the long-term maintenance of the pavement and associated amenities.

These issues will most likely need to be resolved prior to the construction of the recommended improvements.

J. BUS SHELTERS

As the use of the bus route on Route 15 continued to increase, CCTA is responding by adding more bus shelters with more amenities, such as bicycle storage posts and electronic bus time data. One shelter is currently planned in front of the Fletcher Allen Medical campus, adjacent to the signalized crosswalk. CCTA is aware of this project and will make sure that if a bus shelter is installed prior to the development of the shared use path in this
location, the shelter location will not eliminate the potential to add the path behind the shelter. If this project is developed prior to the installation of the bus shelters, the design should be coordinated with CCTA so that the alignment eliminates the potential to add a bus shelter.

V. PHASING & INITIAL ESTIMATES OF POTENTIAL COSTS

A. OVERVIEW

The Study Committee understands that the project may not be completed all at once and has suggested phasing to address the most pressing need immediately. Work to upgrade the rest of the facilities would occur as funds allow. The following phasing recommendations reflect their thinking on which portions of the plan are most needed as well as relatively simple to permit and construct. Figure 6 graphically shows the recommended phasing.

The costs presented here are estimates for construction only and do not include preliminary engineering, construction engineering or right-of-way costs.

B. PHASE I

Phase I is recommended to include:

- A south side path from Lime Kiln Road to Vermont National Guard Road, including a pedestrian crossing of National Guard Road,
- North side path from Vermont National Guard Road to Susie Wilson Road, and
- Pedestrian Crossing of Susie Wilson Road.

Construction Cost - $1,170,000
Possible Funding Sources - CIRC Alternatives Process

C. PHASE II

Phase II should include:

- South side path from I-89 Exit 15 to Lime Kiln Road (limited widening possible between Gorge Road and St. Michaels College west entrance).

Construction Cost - $290,000
Possible Funding Sources - Transportation Alternatives Program, Vermont Bicycle and Pedestrian Program, Other
D. PHASE III

Phase III should include:

- Bicycle lanes on the north and south sides of Route 15 from Susie Wilson Road to West Street Extension.

**Construction Cost** - $510,000

**Possible Funding Sources** - Funding with future Route 15 roadway reconstruction project, Transportation Alternatives Program, Vermont Bicycle and Pedestrian Program, Other

E. POTENTIAL FUTURE PHASES

- Off-road segment between Gorge and Lime Kiln Road,
- A shared use path on the north side of Route 15 between Susie Wilson Road and West Street Extension,
- A wide paved shoulder on the south side of Route 15 between Vermont National Guard Road and Susie Wilson Road, and
- Off-road segment between Susie Wilson Road and Pearl Street Park.

**Possible Funding Sources** - Transportation Alternatives Program, Vermont Bicycle and Pedestrian Program, Other
Figure 2

Route 15 Bicycle Pedestrian Study Existing Conditions: Transportation

Beige call-out boxes show real or estimated (E) Average Annual Daily Traffic counts.

Chittenden County Regional Planning Commission

November 2012
Route 15 Bicycle Pedestrian Study
Existing Conditions: Topography

Legend
- 20 Foot Contours
- Route 15
- City/Town/Village Boundaries

Chittenden County Regional Planning Commission

November 2012
Figure 3
Route 15 Bicycle Pedestrian Study

Existing Conditions: Natural Resources

Chittenden County Regional Planning Commission

Route 15

Bicycle Pedestrian Study

Legend

- Significant Tree
- High Roadkill Location
- Wetlands
- High Wildlife Crossing Value
- Rare, Threatened or Endangered
- Route 15
- City/Town/Village Boundaries

Figure 4

November 2012

Chittenden County Regional Planning Commission

BROADREACH Planning & Design

Stantec
Route 15
Bicycle
Pedestrian
Study

Recommended
Improvements

Chittenden County
Regional Planning
Commission

November 2012
Figure 5
Route 15 Bicycle Pedestrian Study

Recommended Phasing

Legend
- Phase I
- Phase II
- Phase III
- Future Phases
- NEC Railroad
- City/Town/Village Boundaries

Chittenden County Regional Planning Commission

Figure 6

November 2012
**CONCEPTUAL PLANS - ALTERNATIVE 1**

**ROUTE 15 BICYCLE PEDESTRIAN STUDY**

**MATCH LINE**

**MATCH LINE**

**TYPICAL SECTION IN FRONT OF CEMETARY M.T.S.**

**SOUTHSIDE SHARED USE PATH**

**COORDINATE FURTHER RESEARCH FOR UNMARKED GRAVES TO THE NORTH AND WEST OF THE CEMETARY WITH THE VERMONT DIVISION FOR HISTORIC PRESERVATION PRIOR TO STARTING CONSTRUCTION**

**AVOID SIGNAL POLE**

**NARROW SHARED USE PATH TO 6' IN FRONT OF CEMETARY**

**10' SHARED USE PATH**

**RELOCATE UTILITY POLE FURTHER EAST IN GREEN STRIP, UNDERGROUND TO EXISTING DROP**

**UPDATE EXISTING DRAINAGE AS NEEDED**

**FENCE MAY NEED TO BE TEMPORARILY REMOVED FOR CONSTRUCTION**

**SCALE 1"=50'**

**5/6/2013**

**LAYOUT PLAN SHEET # 3 OF 10**

**Stantec Consulting Services Inc.**

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**VT. STATE POLE LANE**

NEW CROSSING AND RELOCATED STOP BAR. INSTALL NEW PEDESTRIAN SIGNAL POLES AND UPDATE SIGNAL TIMING

COORDINATE ALIGNMENT AROUND POSSIBLE CCTA BUS SHELTER

AVOID IMPACTS TO LANDSCAPING

RELOCATE UTILITY POLE TO GREEN STRIP

10' SHARED USE PATH

AVOID IMPACTS TO LANDSCAPING

TYPICAL SECTION
SOUTH SIDE SHARED USE PATH
N.T.S.
WIDEN TURN BAY TO ACCOMMODATE BIKE LANE

PRESERVE BRICK COLUMNS

AVOID SIGNAL POLE AND CONTROLLER AND ADJUST LOCATION OF PEDESTRIAN CROSSING SIGNAL

EXTEND SIDEWALK GUY WIRE

EXTEND SIDEWALK GUY WIRE

RELOCATE AND EXPAND BUS SHELTER AND AMENITIES

NEW BIKE CROSSING INSTALL NEW PEDESTRIAN SIGNAL POLES AND UPDATE SIGNAL TIMING

MODIFY ISLAND TO FIT BIKE LANE

REDUCE MEDIAN ISLAND WIDTH TO 8' (NOTE: HORIZONTAL CLEARANCE TO TREES IN MEDIAN REDUCED TO +/- 4')

BIKE LANE OFF-RAMP

FUTURE PROPOSED 10' SHARED USE PATH

5' BIKE LANE

10' SHARED USE PATH

10' SHARED USE PATH TO NORTH

TYPICAL SECTION

PREFERRED ALTERNATIVE

SHARED USE PATH TO NORTH

N.T.S.
FUTURE PROPOSED 10' SHARED USE PATH (ENDS AT PARK)

REDUCE MEDIAN ISLAND WIDTH TO 8' (NOTE: HORIZONTAL CLEARANCE TO TREES IN MEDIAN REDUCED TO +/- 4')

TYPICAL SECTION BIKE LANES REDUCE MEDIAN ISLAND WIDTH N.T.S.
PATH CONNECTS TO FUTURE PROPOSED 10’ SHARED USE PATH

REMOVE 4’ CONC. MEDIAN ISLAND AND REPLACE WITH DOUBLE YELLOW LINE

REDUCE MEDIAN ISLAND WIDTH TO 8’ (NOTE: HORIZONTAL CLEARANCE TO TREES IN MEDIAN REDUCED TO +/- 4’)

5’ BIKE LANES

SHIFT MEDIAN ISLAND

STORAGE LENGTH MAY NEED TO BE EXTENDED (2009 PHV = 300 VPH)

BIKE LANES REDUCE MEDIAN ISLAND WIDTH

TYPICAL SECTION

EXISTING BIKE LANES

V.T. STATE PLAN GRID

SCALE 1"=50’

ROUTE 15 BICYCLE PEDESTRIAN STUDY
CONCEPTUAL PLANS - ALTERNATIVE 1
SOUTHSIDE SHARED USE PATH
LAYOUT PLAN SHEET # 10 OF 10
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