
Richmond Road Pedestrian and Bicycle Scoping Study

Hinesburg, Vermont



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This scoping study was a collaborative effort of the Town staff, CCRPC, and Toole Design Group, who possessed a wealth of combined knowledge and expertise regarding project background, history, local insight, and existing conditions. Their valuable insight and assistance was instrumental in developing the implementation strategy.

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I.0 Introduction

I.1 Background

The Chittenden County Regional Planning Commission (CCRPC) and the Town of Hinesburg (Town) initiated this scoping study to analyze and evaluate alternatives for improving walking and bicycling conditions for a 1.5 mile study area on Richmond Road. This section of Richmond Road from Champlain Valley Union/Pond Road/Richmond Road/Mechanicsville Road intersection; to the North Road/Texas Hill Road intersection has been identified with the highest population density in the Town. The western terminus of the study area connects to the village sidewalk system and Champlain Valley Union (CVU) High School.

This report summarizes the findings of the study through robust public participation and outreach during the scoping study process.

I.2 Purpose and Need

The **purpose** of the *Richmond Road Pedestrian/Bicycle Feasibility Study* is to develop and evaluate alternatives for improving walking and bicycling conditions on Richmond Road from Champlain Valley Union Road/Pond Road/Richmond Road/Mechanicsville Road intersection; to the North Road/Texas Hill Road intersection.

The **need** of this project is to:

1. Create a preferred alternative for walking and bicycling on Richmond Road from the Champlain Valley Road/Pond Road/Richmond Road/Mechanicsville Road intersection to the North Road/Texas Hill Road intersection, approximately 1.5 miles.
2. Maximize safety for all users walking and bicycling in this corridor.
3. Support future walking and bicycling connections in the Town of Hinesburg.
4. Provide an estimate of the probable construction costs of the preferred alternative to serve as a basis for the Town to apply for grant applications.

I.3 Project Study Area

The proposed project study site location is shown in **Figure I**.

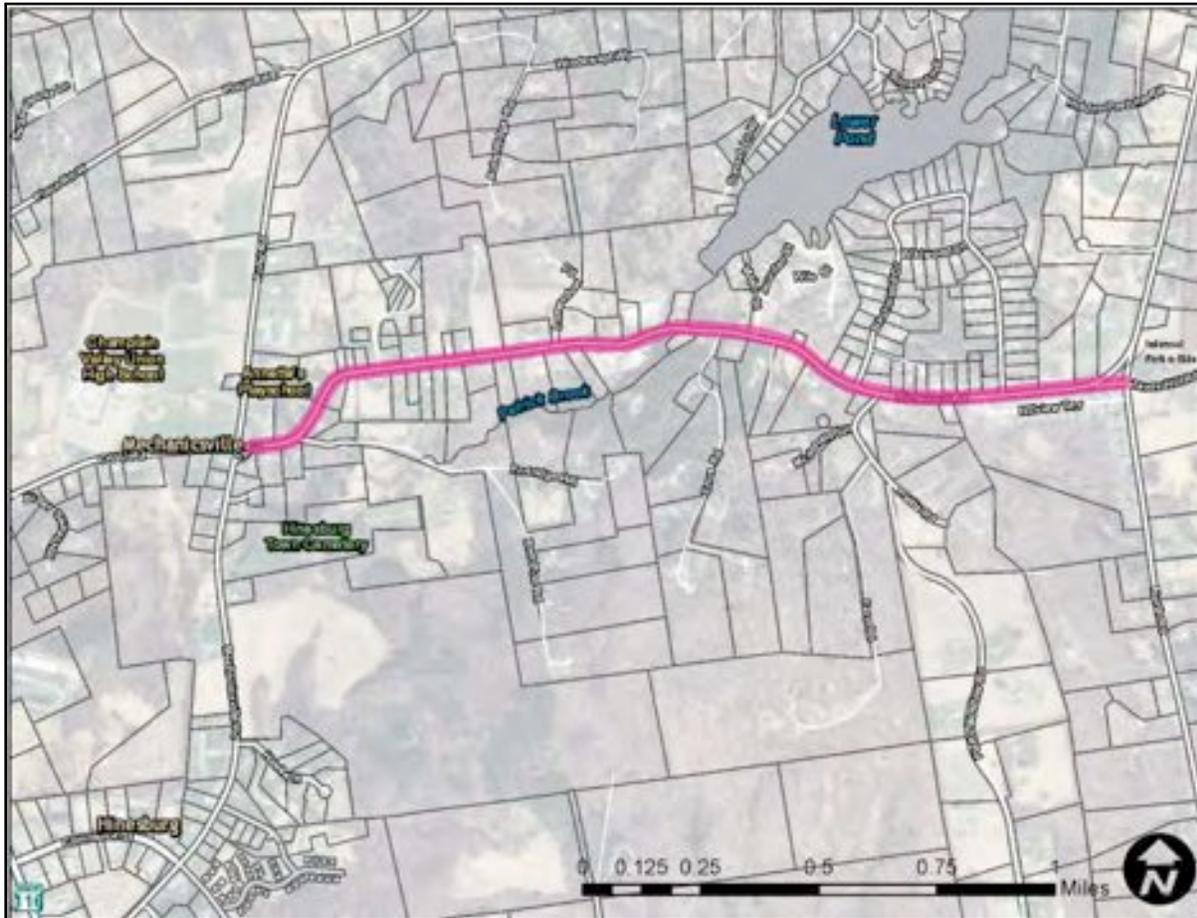


Figure 1: Study Area

I.4 Project Oversight

This scoping study project was conducted and coordinated with public involvement through workshops, presentations, and meetings.

Project meetings and public involvement included the following:

- **Kickoff Meeting:** September 17, 2015 – TDG staff and Steering Committee Members met to discuss project scope, study area limits, conduct a site field visit and review the schedule.
- **Local Concerns Meeting:** November 5, 2015 – TDG staff facilitated a local concerns meeting. As an outcome of the meeting and site fieldwork, TDG crafted a project purpose and need statement based on local input and understanding of existing conditions.
- **Alternatives Presentation:** April 20, 2016 – TDG staff presented project alternatives to members of the public.
- **Report Presentation:** June 23, 2016 – CCRPC staff presented the preferred alternative concept and the findings of the Scoping Study to members of the public and Hinesburg Selectboard.

2.0 Existing Conditions

2.1 Site Characteristics

All base mapping for this scoping study was compiled from Geographic Information System (GIS) and orthographic imagery data as available from the CCRPC, State of Vermont, and the Town. No field survey was performed. Site fieldwork was conducted to field verify all topographic features within the project study area and subsequent fieldwork findings were added to the original base mapping.

There are currently no formal walking or bicycling facilities along the Richmond Road corridor, but a safe route for walkers and bicyclists is a priority in the Hinesburg Town Plan. As shown in Figure 1, CVU, the western terminus of the village sidewalk system, and residents along the Richmond Road corridor would benefit from a designated walking and biking facility.

According to the Vermont Agency of Transportation (VTrans) *High Crash Locations Sections and Intersections* report from 2008-2012, a 0.3 mile section of Richmond Road from CVU Road to east of Partridge Hill Road has been identified as a high crash location (HCL). Subsequently, each year has seen an increase in crashes: four in 2013, six in 2014 with one injury and eight in 2015 with seven injuries to date. This is a known walking and biking route in the Town of Hinesburg despite the lack of facilities. It is estimated that up to 30-40 users walk this corridor on a daily basis.

There is an existing 10-foot wide shared use path on the north side of Shelburne Falls Road that crosses VT Route 116 and continues on the north side of CVU Road to the intersection of Mechanicsville Road, Pond Road and Richmond Road. The shared use path crosses CVU Road to the west of the intersection connecting with the village sidewalk network on Mechanicsville Road. The CVU Road, Mechanicsville Road, Pond Road and Richmond Road intersection has four-way stop control except for an existing slip lane from Mechanicsville Road onto Richmond Road.

The approximate 1.5 mile study area includes rolling topography with a posted speed limit of 35 MPH. Richmond Road generally runs in an east-west direction. Within the study area, Richmond Road consists of two travel lanes. As shown in **Table 1**, the existing pavement width is 24-feet. The existing pavement and pavement markings are generally in good condition.

The intersection of Richmond Road/North Road/Texas Hill Road has a large radius southbound right-turn slip lane onto Richmond Road. The triangle created by the awkward road geometry functions as an informal park and ride within the Town. The intersection is stop-controlled on Richmond Road and Texas Hill Road. A yield sign is located for vehicles traveling north on North Road onto Richmond Road.

The shoulder widths on Richmond Road currently do not meet the *VT State Design Standards* for a rural major collector. However, given the natural resource and topography constraints on either side of the corridor as shown in **Figure 2**, the potential for widening is likely costly and not feasible, so off-road bicycle and walking routes should be considered. A designated walking and bicycling facility, such as a shared use path, would provide a low stress environment for walking and bicycling that is separate from motor vehicle traffic.

Table 1: Roadway Characteristics (source: VTrans Route Log Data)

Richmond Road	
Functional classification	Rural Major Collector
Jurisdiction	Town
Right-of-way width (feet)	49.5*
Roadway width (feet)	24' (11' travel lanes, 1' shoulders)
Widths recommended by VT State Design Standards	11' travel lanes, 3' shoulders (to accommodate bicycles)
2012 AADT**	3600
Posted speed limit	35 MPH
*Vermont Ancient Roads Database	
**AADT= Average Annual Daily Traffic	

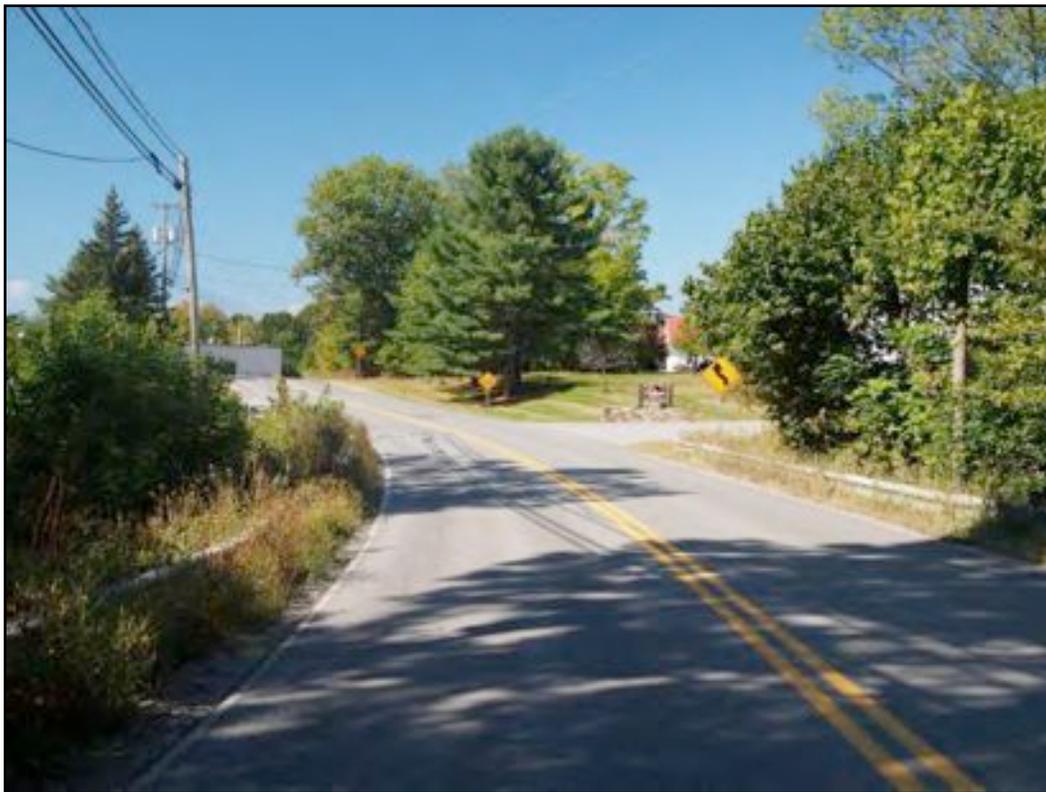


Figure 2: Richmond Road approaching 695 Richmond Road looking west

2.2 Relevant Plans and Studies

The 2013 *Hinesburg Town Plan* and the 2011 *Highway Safety Improvement Program, Traffic Safety Section on Richmond Road* were consulted to ensure consistency with this study. There are a few noteworthy aspects in those plans specific to this study area:

- *Traffic Safety Section, Highway Safety Improvement Program Location Review*
 - The *Traffic Safety Section* report stated there were six crashes in the approximate location of Iroquois Manufacturing (695 Richmond Road) between 2007 and 2009. Recommendations from the report included the installation of warning signage in advance of the identified crash locations.
- *Hinesburg Town Plan*
 - The transportation chapter of the town plan recommends developing a sidewalk or recreation path system from CVU to Richmond Road to connect high density residential areas to existing village infrastructure. This would provide a designated low stress facility from the most densely populated area in Town and connect to CVU High School.

2.3 Existing Resources

This section assess existing resources. Each of the resource types specified in the *VTrans Project Scoping Manual* are addressed below. The data referenced in this section was obtained from the Vermont Center of Geographic Information, the Vermont Agency of Natural Resources (ANR) Atlas and BioFinder mapping programs, as well as site fieldwork verification. The following is a summary considered to be potential impacts by the improvements proposed for the project study area.

2.3.1 Parcel Data and Property Ownership

The majority of the Richmond Road parcels in the study area are private lots with single family residential structures. The exceptions are Iroquois Manufacturing and the Hillview Terrace mobile home community.

2.3.2 Natural Resources

Lakes/Ponds/Streams/Rivers

As shown in **Figure 3**, Patrick Brook flows south from Lower Pond which is located approximately in the center of the study area.

Wetlands

As shown in **Figure 3**, there are identified Class 2 wetlands. This detailed mapping throughout the Town has been incorporated by the State as part of the wetland advisory layer. Many of these identified wetlands occur on private property and have not been ground-truthed. It is recommended to perform a wetland delineation by a certified professional to confirm Class 2 wetland locations and boundary data.

River Corridors

As shown in **Figure 3**, the lateral area around Patrick Brook has been identified as a river corridor. This area is necessary to achieve and maintain a stable condition of the brook.



Figure 3: River Corridors, Streams, Wetlands

Agricultural Soils

As shown in **Figure 4**, much of the western portion of the study area is considered prime agricultural soil.

Forest Land

No forest lands have been identified within the study area.

Rare, Threatened, or Endangered Species

No rare, threatened or endangered species have been identified within the study area.

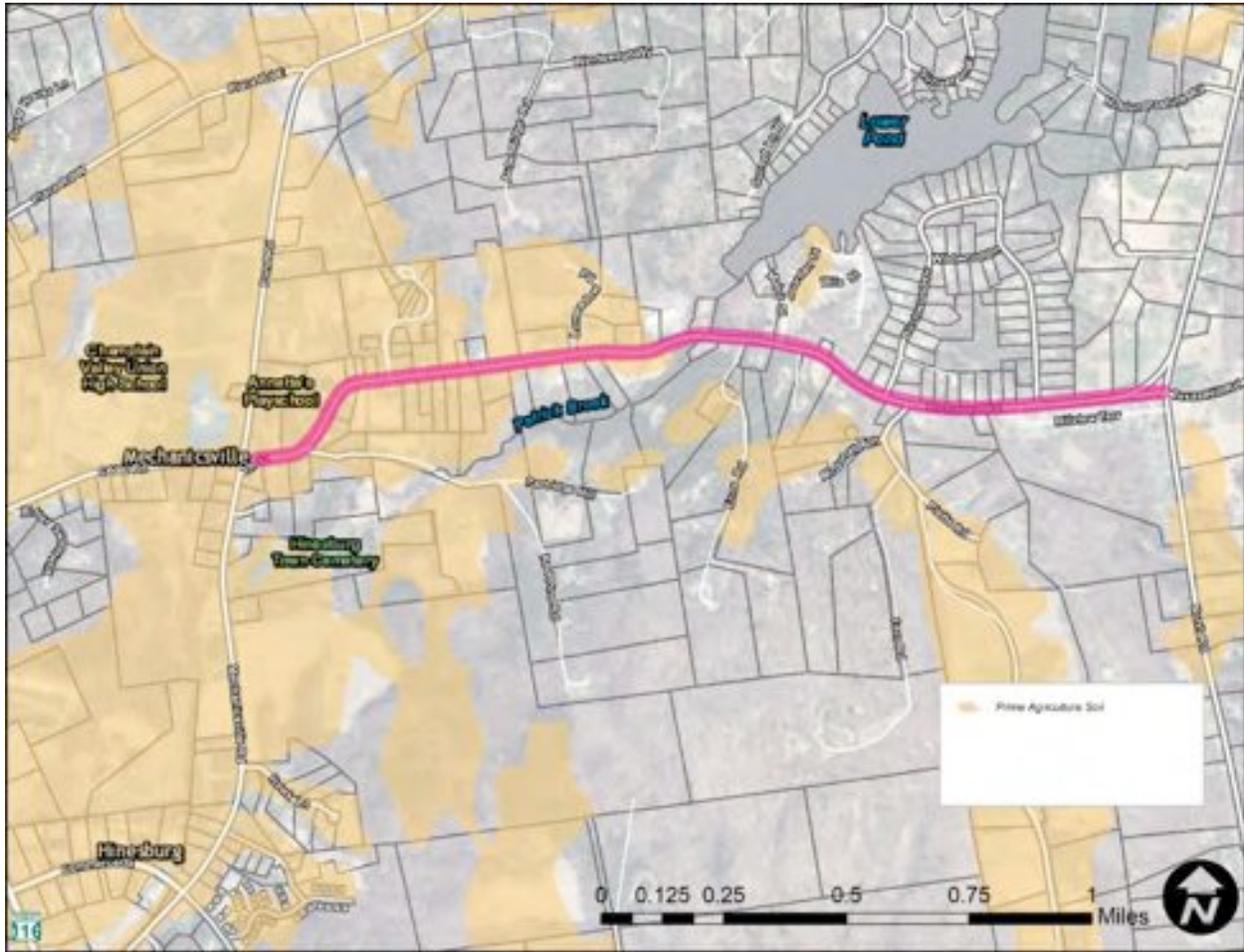


Figure 4: Prime Agricultural Soil

Habitat Zones

As shown in **Figure 5**, lower priority habitat blocks are identified on the north and south sides of the Richmond Road corridor study area. Within each habitat block area, core wildlife habitats have been identified, as well as wildlife corridors/linkage zones. A wildlife corridor/linkage area of importance in Hinesburg has been identified within the study area south of Lower Pond. These corridor and linkage areas provide connections between patches of significant wildlife habitats.

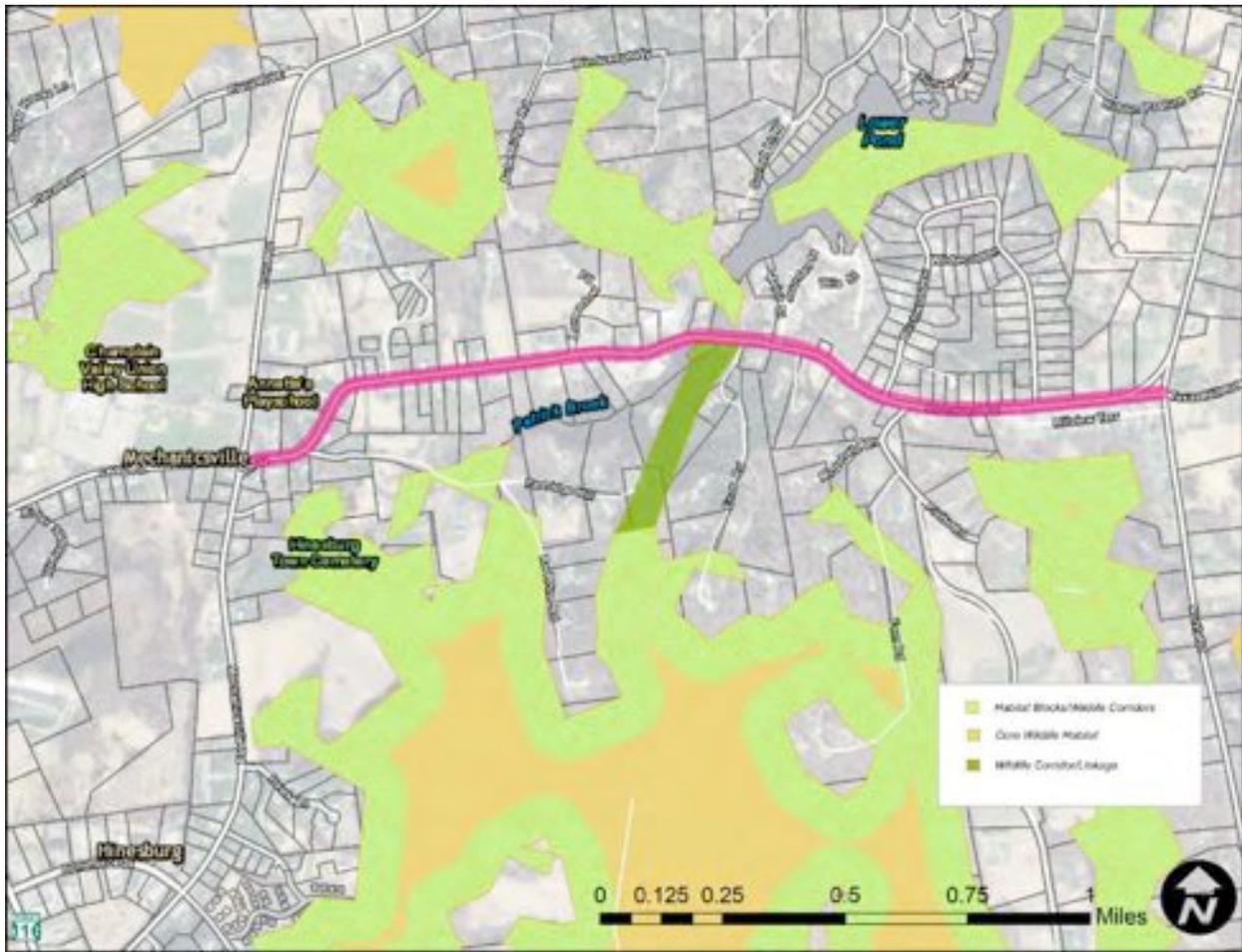


Figure 5: Habitat Zones

2.3.3 Built Environment

Hazardous Wastes

As shown in **Figure 6**, parcels containing Iroquois Manufacturing and several residential parcels are noted as hazardous waste sites by the Agency of Natural Resources.

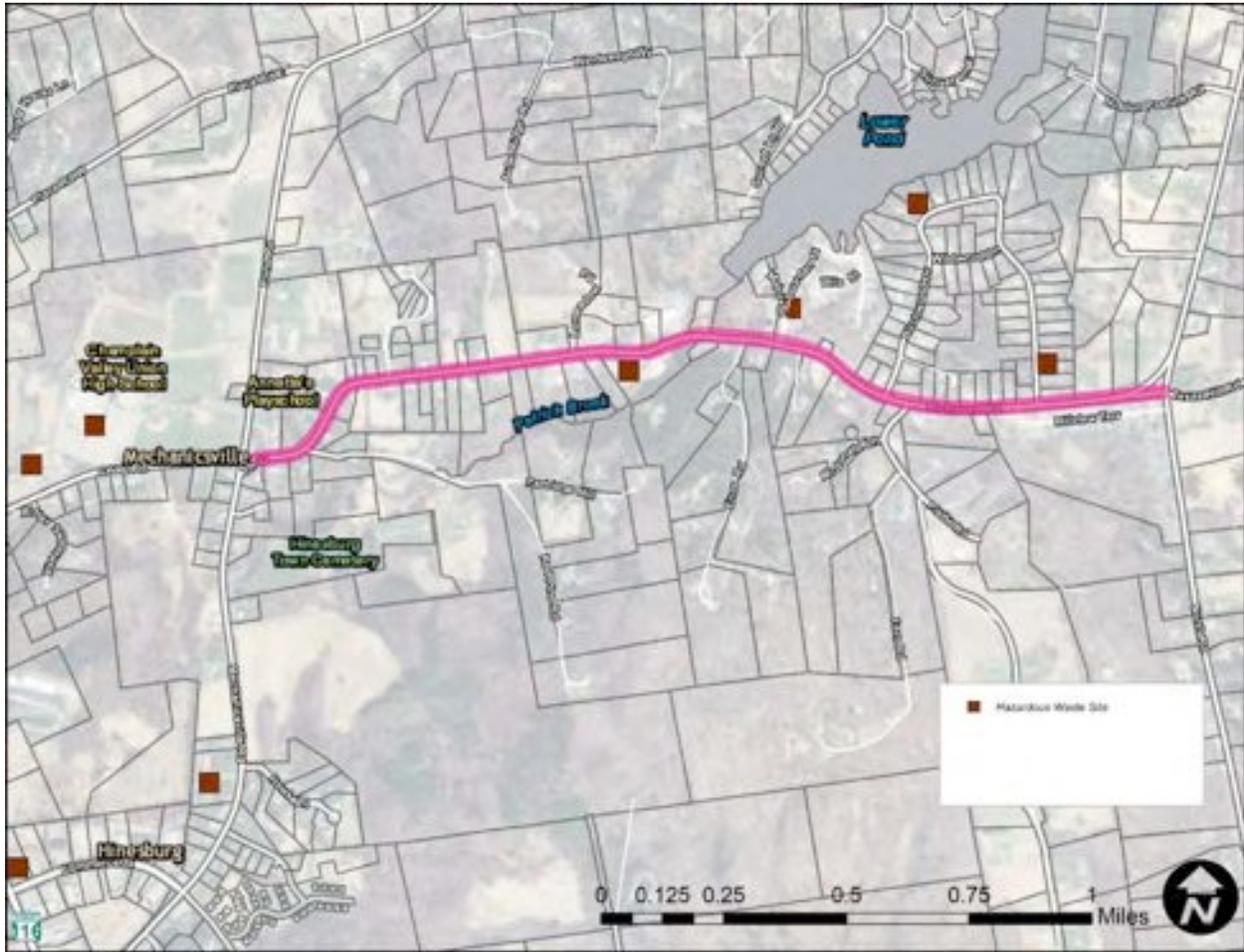


Figure 6: Hazardous Waste Sites

2.3.4 Cultural Resources

Historic

The term 'historic sites' includes prehistoric and historic districts, sites, buildings, structures, or objects listed in, or eligible for, the National Register of Historic Places¹. There are no historic sites identified within the study area.

Archeological

An Archaeological Resources Assessment (ARA) is not being conducted as part of this study. Since the area is already developed and has been previously disturbed, it is not considered to have historic or pre-contact sensitivity.

¹ FHWA Section 4(f) Tutorial. <http://www.environment.fhwa.dot.gov/section4f/properties.aspx>. Accessed December 2015.

Architectural

Mechanicsville and the Village center contain the highest concentration of historically significant buildings. Outside of these areas, buildings and structures can be dated from the 19th century and early 20th century. The 2013 *Hinesburg Town Plan* encourages the development, preservation and enhancement of the town's village and rural areas, and its walkability.

Section 4(f) and 6(f) properties

Section 4(f) properties include publicly owned park and recreation areas that are open to the general public, publicly owned wildlife and waterfowl refuges, and public or privately owned historic sites.

Section 6(f) properties are properties acquired with Land and Water Conservation Act funds be coordinated with the Department of Interior. Usually replacement in kind is required.²

There are no 4(f) properties within the study area.

There are no 6(f) properties within the study area

² Section 6(f) Land and Water Conservation Act. <http://www.fhwa.dot.gov/wadiv/envir/section6f.cfm>. Accessed November 2015.

3.0 Concept Alternatives

3.1 Improvement Recommendations

This section describes the concept alternatives developed for the Richmond Road Pedestrian and Bicycle Scoping Study. Alternatives were developed to meet the project purpose and need, and to respond to public input summarized in **Appendix A**. The conceptual alternative plans are provided in **Appendix B**.

Whether traveling by foot or wheel, well design shared use paths can provide direct and comfortable routes to places of employment, recreation, education, and other desired destinations. The term shared use path refers to a low-stress bikeway that is physically separated from motorized vehicular traffic by an open space or barrier. These facilities are typically found within an existing roadway right-of-way or within an independent right-of-way. Research has shown many people are interested in traveling by walking or bicycling for transportation purposes, however are dissuaded by stressful interactions with motor vehicles.

Designing with these principles in mind, a shared use path facility was considered as a design alternative for the Richmond Road corridor. In addition to a shared use path, the core improvement recommendations below, are included in each alternative;

- Provide ADA- compliant ramps and high-visibility crosswalk pavement markings across all intersecting roadways;
- Provide centerline pavement markings on the proposed shared use path to indicate directional separation;
 - Additional compliant warning signage to alert users of changes in slope. Refer to **Figure 7**;
 - Additional signage reminding users of proper path etiquette, such as announcing when engaging in a passing maneuver may further assist in reducing conflicts;
- Provide a bridge structure over Patrick Brook;
- Provide and identify stormwater management treatment areas;
- Provide landscape tree plantings as approved by the Town (outside the existing right-of-way); and
- Reconstruct all driveway aprons to accommodate the shared use path crossings.



Figure 7: W7-5 Bicycle hill warning signage

3.2 Alternative I

The proposed Alternative I includes an 8 foot wide bituminous concrete shared use path with a 2-5 foot wide buffer on the northside of Richmond Road. Refer to **Figure 8** for the proposed Alternative I cross section. Additional improvements for consideration along this segment would include;

- Providing an enhanced crossing with a Rectangular Rapid Flashing Beacon, signage, and pavement marking improvements from the proposed northside path for users to access the informal park and ride at the eastern terminus of the study area; and
- Study the intersection of Richmond Road and North Road to identify the potential for removing the slip lane onto Richmond Road traveling west (Long Term).

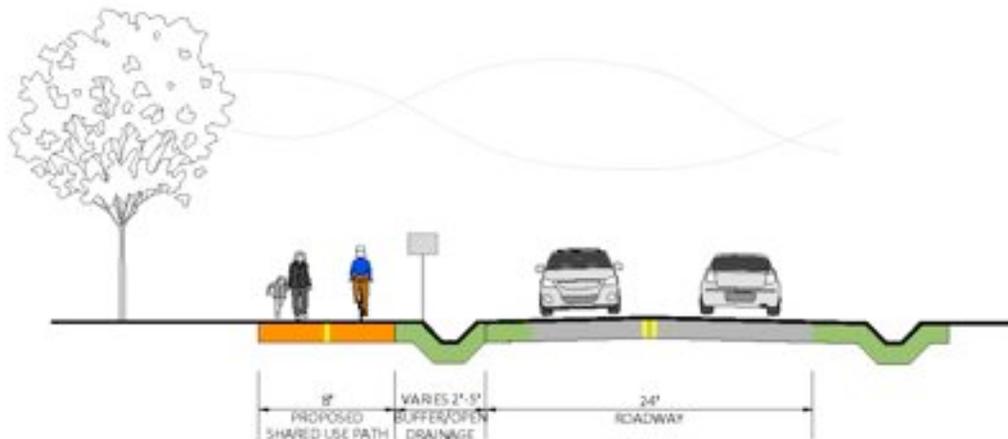


Figure 8: Alternative I cross section

The general path alignment would be contained within the existing right-of-way along the northern edge of Richmond Road. Key impacts with the Alternative I alignment include;

- In the proximity of 56 Pond Road (CVU Road/Mechanicsville Road/Richmond Road/Pond Road intersection), the proposed path alignment may require subsurface drainage systems, site

grading, and potentially a small retaining wall due to an existing open swale system and challenging site grades in this location;

- In the proximity of 129 Richmond Road, the proposed path alignment would be approximately 9 feet from the existing building structure;
- In the proximity of 175 Richmond Road, the proposed path alignment would be approximately 11 feet from the existing building structure;
- In the proximity of 225 Richmond Road, a new culvert will be needed to accommodate the shared use path and buffer width;
- A total of 14 utility poles may need to be relocated to accommodate the shared use path and buffer width;
- A total of 1 hydrant may need to be relocated to accommodate the shared use path and buffer width;
- In the proximity of 884 Richmond Road, a new culvert will be needed to accommodate the shared use path and buffer width;
- In the proximity of 695 Richmond Road, the existing rock outcropping will need to be excavated to accommodate the shared use path and buffer width; and
- Throughout the study area, a combination of closed and open drainage systems may be needed to treat the new impervious facility according to the Vermont Agency of Natural Resources (ANR) Stormwater Management Manual, latest edition.

3.2.1 Alternative 1A

Based on steering committee input and public feedback, a variation of Alternative 1 was evaluated. Alternative 1A includes a 6 foot wide concrete sidewalk with a 7 foot buffer on the northside of the corridor and shared lane pavement markings including signage improvements. Alternative 1A would include many of the core improvement recommendations documented in Alternative 1 and would also have similar construction impacts and permitting requirements. Refer to **Table 2** Evaluation Matrix.

3.2.2 Evaluation Matrix

All of the anticipated costs, resource impacts, and permit requirements for Alternative 1 and 1A have been summarized in the evaluation matrices below in **Table 2**.

Table 2: Evaluation Matrix; Alternative I and Alternative IA

Item	Shared-Use Path Alternative 1 (North)	Sidewalk, Markings & Signage Alternative 1A (North)
Construction Characteristics		
Facility Length	7,200 LF	7,200 LF
Facility Width	8 FT	6 FT
Buffer Width	Varies 2-5 FT	Varies 5-7 FT
Proposed Surface	Bituminous Concrete	Concrete
Terrain	Rolling natural slopes	Rolling natural slopes
Shared Use Bridge	Yes	Yes
Potential Impacts		
Agricultural Lands	None, Previously Disturbed	None, Previously Disturbed
Archeological Impacts	None	None
Class 2 Wetland Impacts	Potentially (Need delineation)	Potentially (Need delineation)
Floodplain	None	None
Historic Property Impacts	None	None
Rare, Threatened, Endangered	None	None
Right-of-Way Impacts	Easements Required	Easements Required
Trees- Removed/Replaced	Yes	Yes
Utility Impacts- Aerial	None	None
Utility Impacts- Underground	None	None
Permits		
ACT 250	No	No
401 Water Quality	No	No
NEPA	Categorical Exclusion	Categorical Exclusion
404 Corps of Engineer Permit	Yes	Yes
ANR Wetlands	No	No
Stream Alteration	Yes, bridge construction	Yes, bridge construction
Conditional Use Determination	Yes	Yes
Stormwater Discharge	Yes, construction >1 acre	Yes, construction >1 acre
Shoreland Encroachment	No	No
Archeological- Phase 1B	No	No
Section 106 / Historic	No	No
VTRANS Access Permit	No	No
Opinion of Probable Construction Costs		
Conceptual Cost Estimate	\$2,485,000	\$2,250,000

3.2.3 Opinion of Probable Construction Costs

The opinion of probable construction costs for Alternative I is approximately \$2,485,000. The opinion of probable construction costs for Alternative IA is approximately \$2,250,000. The cost estimates were developed from the concept alternative plans and account for the anticipated construction costs which

include engineering, construction, construction administration, annual maintenance costs, and a 25% contingency. The table of unit costs associated with developing a sidewalk or shared use path facility does not account for construction administration or permitting requirements. The detailed itemized opinion of probable construction costs are provided in **Appendix C**. The unit cost data was applied from VTrans 5 year average price list.

3.3 Alternative 2

The proposed Alternative 2 includes an 8 foot wide bituminous concrete shared use path with a 2-5 foot wide buffer on the southside of Richmond Road. Refer to **Figure 9** for the proposed Alternative 2 cross section. Additional improvements for consideration along this segment would include;

- Study the intersection of Mechanicsville Road and Richmond Road to identify the potential for removing the right turn slip lane onto Richmond Road (Long Term); and
- Providing curb radii reductions at the existing driveways of the Iroquois Manufacturing property.

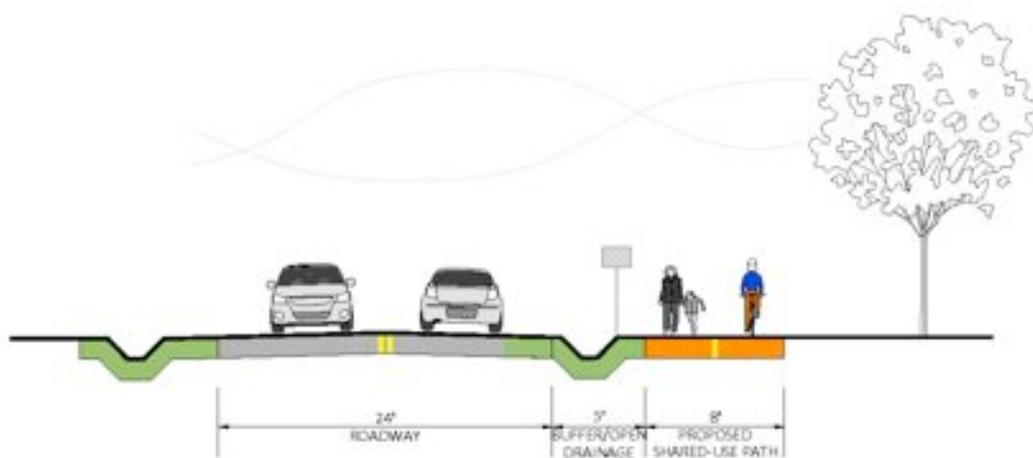


Figure 9: Alternative 2 cross section

Alternative 2 would provide increased access and a dedicated facility for both pedestrian and bicycle users. The general path alignment would be contained within the existing right-of-way along the southern edge of Richmond Road. Key impacts with the Alternative 2 alignment include;

- In the proximity of 114 Richmond Road, the proposed path alignment would be approximately 7 feet from the existing building structure;
- In the proximity of 178 Richmond Road, the proposed path alignment would be approximately 5 feet from the existing building structure;
- In the proximity of 496 Richmond Road, the proposed path alignment would be approximately 4 feet from the existing building structure;
- In the proximity of Hillview Terrace, the proposed path alignment would range 3-12 feet from the existing building structures;
- The southside path alignment would impact the current staging area adjacent to Richmond Road for the Iroquois Manufacturing Company;
- In the proximity of 178 and 274 Richmond Road, a new culvert will be needed to accommodate the shared use path and buffer width;

- In the proximity of 884 Richmond Road, a new culvert will be needed to accommodate the shared use path and buffer width;
- A total of 3 utility poles may need to be relocated to accommodate the shared use path and buffer width; and
- Throughout the study area, a combination of closed and open drainage systems may be needed to treat the new impervious facility according to the Vermont Agency of Natural Resources (ANR) Stormwater Management Manual, latest edition.

3.3.1 Alternative 2A

Based on steering committee input and public feedback, a variation of Alternative 2 was evaluated. Alternative 2A includes a 6 foot wide concrete sidewalk with a 7 foot buffer on the southside of the corridor and shared lane pavement markings including signage improvements. Alternative 2A would include many of the core improvement recommendations documented in Alternative 2 and would also have similar construction impacts and permitting requirements. Refer to **Table 3** Evaluation Matrix.

3.3.2 Evaluation Matrix

All of the anticipated costs, resource impacts, and permit requirements for Alternative 2 and 2A have been summarized in the evaluation matrices below in **Table 3**.

Table 3: Evaluation Matrix; Alternative 2 and Alternative 2A

Item	Shared-Use Path Alternative 2 (South)	Sidewalk, Markings & Signage Alternative 2A (South)
Construction Characteristics		
Facility Length	7,050 LF	7,050 LF
Facility Width	8 FT	6 FT
Buffer Width	Varies 2-5 FT	Varies 5-7 FT
Proposed Surface	Bituminous Concrete	Concrete
Terrain	Rolling natural slopes	Rolling natural slopes
Shared Use Bridge	Yes	Yes
Potential Impacts		
Agricultural Lands	None, Previously Disturbed	None, Previously Disturbed
Archeological Impacts	None	None
Class 2 Wetland Impacts	Yes	Yes
Floodplain	None	None
Historic Property Impacts	None	None
Rare, Threatened, Endangered	None	None
Right-of-Way Impacts	Easements Required	Easements Required
Trees- Removed/Replaced	Yes	Yes
Utility Impacts- Aerial	None	None
Utility Impacts- Underground	Yes	Yes
Permits		
ACT 250	No	No
401 Water Quality	No	No
NEPA	Categorical Exclusion	Categorical Exclusion
404 Corps of Engineer Permit	Yes	Yes
ANR Wetlands	No	No
Stream Alteration	Yes, bridge construction	Yes, bridge construction
Conditional Use Determination	Yes	Yes
Stormwater Discharge	Yes, construction >1 acre	Yes, construction >1 acre
Shoreland Encroachment	No	No
Archeological- Phase 1B	No	No
Section 106 / Historic	No	No
VTRANS Access Permit	No	No
Opinion of Probable Construction Costs		
Conceptual Cost Estimate	\$2,273,000	\$2,100,000

3.3.3 Opinion of Probable Construction Costs

The opinion of probable construction costs for Alternative 2 is approximately \$2,273,000. The opinion of probable construction costs for Alternative 2A is approximately \$2,100,000. The cost estimate was developed from the concept alternative plans and account for the anticipated construction costs which include engineering, construction, construction administration, annual maintenance costs, and a 25%

contingency. The table of unit costs associated with developing a sidewalk or shared use path facility does not account for construction administration or permitting requirements. The detailed itemized opinion of probable construction costs are provided in **Appendix C**. The unit cost data was applied from VTrans 5 year average price list.

3.4 Additional Alternative

An additional alternative was studied based on steering committee input and public feedback. A hybrid variation was evaluated using the shared use path alignments from Alternative 1 and Alternative 2. Applying the key impacts identified in Alternative 1 and Alternative 2, a hybrid path option was considered using the northside path alignment from the CVU Road/Mechanicsville Road/Pond Road/Richmond Road intersection until approximately the Iroquois Manufacturing property. A proposed crosswalk would cross Richmond Road and continue with the southside pathway alignment until the North Road/Texas Hill Road intersection. Approximate crossing sight distances were taken in the field to identify the need for the proposed crossing location. Based on field measurements, horizontal, and vertical curvature of Richmond Road, the only locations where a crossing would be feasible between Orchard Commons Road to Lomeadow Road. Based on this designated crossing location, the hybrid alternative would not lessen the impacts identified in Alternative 1 or Alternative 2. The hybrid alternative does add a new impact of a proposed uncontrolled crossing of Richmond Road. Therefore, based on observed motor vehicle speeds and general topography, the viability of this hybrid alternative was removed from consideration.

3.5 Maintenance

Pedestrian and bicycle facilities require routine maintenance to ensure they provide safe walking and bicycling conditions. In addition to current maintenance needs, there are two other maintenance activities that are essential to maintain walking and bicycling facilities. These activities include general maintenance of snow removal, sweeping, mowing/pruning/trimming vegetation, and pavement preservation maintenance activities such as pavement sealing or patching. Maintenance activities are broken out below to document anticipated summer and winter activities.

Summer Maintenance Activities:

- Striping Pavement Markings
- Pavement Repairs (Crack sealing, Patching)
- Culvert/Drainage Maintenance
- Sweeping
- Signage
- Bridge maintenance
- Mowing

Winter Maintenance Activities:

- Plowing
- Sanding/Salting

The Town would need to determine whether or not to remove snow from the path and a formal maintenance agreement is recommended.

4.0 Project Summary

4.1 Conclusion

The Richmond Road Pedestrian and Bicycle Scoping Study was prepared at the request of the CCRPC and the Town of Hinesburg to analyze and evaluate all concept alternatives for pedestrian and bicycle improvements for the Richmond Road project study area. This report presents existing conditions data, conceptual design alternatives, a preferred conceptual design alternative, and opinion of probable construction costs for the project study area.

Evaluating design impacts, input from public involvement through workshops, presentations, and meetings; Alternative I has been identified as the recommended preferred alternative. At the conclusion of the public participation and outreach process, in which the findings of this report were presented and reviewed, the Hinesburg Selectboard also identified Alternative I preferred design alternative for the project study area.

The proposed recommendations alternative align with the transportation goals in the Hinesburg Town Plan, 2013 and will continue to develop walking and bicycling infrastructure within the community.

Appendix A

Public Input Summary

Appendix A: Public Input Summary

Summary of meeting comments during the Local Concerns Meeting 11/5/15:

- Consider a roundabout option for the Richmond Road, North Road and Texas Hill Road intersection.
- Explore design options to maintain the park-n-ride facility while also considering enhancing the facility through design treatments.
- The right-of-way has been confirmed 49.5 feet or 3 rods and is approximately measured from the centerline of the existing roadway.
- The Richmond Road corridor is not fully developed and is expected to see incremental growth.
- Observed very fast car speeds. Traffic calming measures should be considered for concept alternatives.
- Pedestrian safety is a priority concern for the Richmond Road corridor.
- Consider a roundabout option for the Richmond Road, CVU Road, Mechanicsville Road and Pond Road intersection.
- The ditches or swales are extremely important for proper drainage of the Richmond Road corridor.
- Drainage should be addressed for all concept alternatives. It was also noted, Birchwood Drive currently has drainage problems.
- Maintenance recommendations will be included in the final report.
- Corridor topography should be taken into account when selecting the preferred alternative.
- Town should consider reducing Richmond Road travel lanes to 9 feet to be able to provide for a wide shoulder. It was noted Charlotte Road and North Road currently have striped 9 foot travel lanes.
- It was estimated approximately 30 people walk the Richmond Road corridor per day.
- It was recommended that the pedestrian and bicycle concept alternatives should include a buffer or vertical treatment to provide separation from motor vehicles and pedestrians/cyclists.
- A comment was made regarding how much use a proposed pedestrian and bicycle facility will actually receive.
- The design team should factor in aesthetics for sidewalk or shared use path concept alternatives.
- Construction costs should include estimates for sidewalk, shared use path and or roadway widening to meet VT State Design Standards.
- The Town of Hinesburg process of narrowing travel lane widths was discussed. A Selectboard hearing would need to approve the narrowing of a roadway travel lane.
- Solar feedback machines can be effective to reduce motor vehicle speeds. The Hinesburg Police Department can also increase enforcement if this is a Town priority.
- The process of reducing the posted speed limit on Richmond Road was discussed. In order to reduce a posted speed limit, first a speed study must be conducted.

- A comment was made identifying Richmond Road as having a relatively high number of driveway and some hidden driveways. Consider warning signage to alert future users of these conditions.
- Consider traffic islands in or around the vicinity of Iroquois Manufacturing.
- Once a preferred concept alternative is selected and future development occurs, it may be possible for the developer to implement and finance the proposed pedestrian and bicycle improvements as part of their development process.
- A cost benefit analysis has not been conducted as part of this study and to date the Town has not performed such an analysis. The Hinesburg Town Plan identifies Richmond Road from CVU to Texas Hill Road as a way to guide improvements to the village transportation infrastructure to encourage pedestrian and business-friendly community development.
- Safety and liability is of concern if the proposed facility is placed on the south side the space in front of Iroquois Manufacturing is used intermittently throughout the day. Preference was given to a north side facility. Potential impacts for crossing Patrick Brook will be identified and evaluated.

Meeting comments received electronically:

- ‘Thank you for the meeting notice regarding Richmond Road. I am surprised by the timing however. It looks like this was written on the 28th, mailed on the 30th (postmarked), and delivered 4 days prior to the meeting. So you meant to give us a total of eight days, or 4 by the time it was delivered to notify and give us time to rearrange our schedules to attend!? I would like to attend, however due to the very short notice unable to do so. You see I live directly on the road, 13 feet to be ***exact***, and this could or will effect our property. No other home sits as close to the road as this one does, albeit a few on Mill Road. But this is a major thorough fare. I am not only concerned about proximity, but by security. Please, tell me what time is good for you to meet with me in person.’
- ‘Thank you for the letter. Richmond Road from CVU to North road is very windy and steep. The road is often slippery in the winter and I am concerned about vehicles sliding into the pedestrian walkway area and injured or killing pedestrians. I recall a severe crash that took out a tree at the bottom of one hill a few years ago. While I live off of Richmond road, I would never walk with my kids on such a pathway because I fear we could be hit by a car. Vehicles travel fast on Richmond road and because of the curves it is so easy for someone to come around a corner and enter a walking path. Please include me on future communications regarding this matter.’
- ‘I am a student at CVU. I live on Richmond Road and often have to walk to and from school. I have some friends that are in a similar situation. I think that this path is a great idea, and am certain my friends would agree with me. Richmond Road is a very populated road, and there are lots of people that would love to be able to walk on it, but the absence of a pedestrian path makes it difficult and dangerous. There is almost no shoulder, and cars come flying down the hill and without slowing down careen around the turns without any thought of those that may be

walking. There are also a large number of bicyclists that love to travel on it, but because of the miniscule shoulder that can be a problem. The path that was made down by CVU has become very popular for bikers and pedestrians alike, but from there on it is very difficult for these citizens to continue. Having walked on it most days, I do understand that it would be quite the challenge to put in a similar walkway on Richmond Road's thin and twisting side, but I feel that it would be a worthwhile endeavor. I am unable to come to the meeting this Wednesday about it, but still want to make sure that the people that have to walk there are spoken for.'

- 'I'm very interested to hear about the feasibility findings. I continue to believe that this is an issue of safety, as well as moving us towards a walkable community, and should be one of the town's highest priorities. Thanks to you and the other townspeople involved. And again! Yesterday evening at 5:45, I was driving down the hill to that same CVU Rd/Pond Rd intersection and barely saw at the last minute a student that I know walks home from CVU. Given the early darkness, he was very hard to see on that very dangerous strip of road with no pedestrian access. That brings my total risk to 8-10 students in one day - one normal day. Horrifying to think about a driver harming one of these kids. P.S. Don't worry, I won't send you anymore examples. I just figure if other residents don't drive that way regularly, they might not be clear about the frequency and severity of the risks this road poses multiple times every day.'
- 'I am writing with a strong endorsement for the improvement of the bike/pedestrian access to the Richmond Rd. I feel this should be a top priority for the town. It is treacherous to walk, bike or run on this stretch of road, and I am surprised there has not been a major incident given the car/bike/pedestrian use of this stretch of road. With the increased congestion on 116 in the village during rush hour, more and more traffic is diverting to Richmond and North Roads making it even more dangerous at rush hour. It would be great for CVU students to be able to walk to and from the school safely. The improved safety would decrease the use of cars if people could safely walk to the village. Having a non-motorized connection between the two most densely populated parts of town would strengthen the Hinesburg community.'
- 'I am very supportive of initiatives to make the corridor more walkable and more cycle friendly (my particular interest). I look forward to learning more. P.S. Let me know if you want to discuss control of invasive plant along corridor as well. There's a stand of knotweed that is of particular concern.'
- 'I received your letter outlining the feasibility study and upcoming meeting. Although I will not be able to attend the meeting I would like to pass on some thoughts on the subject. As a Richmond Road resident I think it would be a wonderful thing to have the sidewalk continue from CVU up to North Road. I walk that road every day, as many others do, and even very early in the morning it can be very dangerous. The traffic is high speed and cars seldom pull over to give pedestrians or bikers space. This of course does not address the speed and amount of traffic at other times during the day.'

- 'I wanted to thank you for the notification about the meeting tomorrow night regarding a bike/pedestrian options along Richmond Rd. We can't make it with prior work and family commitments but wanted to lend our full support to this venture. We are a family of runners and bikers who live on Lomeadow Rd. Not only would this path make walking, running, and biking into town with our own children easier, but I've noticed an increasing number of pedestrians and bicyclists trying to remain safe in the busy morning and evening commutes. I've also witnessed CVU teams, out for a run, dangerously avoiding traffic as they workout on that fantastic Richmond Road hill. I worry these teens aren't always as safe as they assume running in packs, particularly amid the end of the day commuters.'
- 'As a Selectman, I conceived of and advocated for the side striping of roads at 9 ft width instead of 10 ft. This was first done on the Charlotte Rd. It immediately increased the usership of the road in terms of runners, walkers and bikers. Part of this was the clear, broader shoulder. Part was likely the fact that cars were going a little slower, to try to keep within the lines. Win-win. And the third win: with cars not driving on the shoulder, the paving has lasted longer. The downside: the side stripe needs to be repainted, and the old price was 6 cents a foot. So it wasn't something for nothing.

Cyclists need more space on a hill, but really only going up. On the Richmond Road, going downhill, one can move right along and generally not slow down traffic. If there is not enough space to expand the road, it would be potentially useful to slide the center line over to the north, and give a little more space on the southerly shoulder going uphill. This might improve the safety for cyclists.

If you are talking about an actual sidewalk, it looks like it might go best on the south side, where there is less of the hillside to cut away.

The narrow point where there is a large culvert at the bottom of the main hill above the Partridge Hill intersection, where a branch of Patrick Brook goes under the road, needs more than just the culvert. It should be expanded to allow for a better shoulder space. There's an opportunity there for a better stream crossing, and I hope that can also become a part of the plan.'

- 'I am very pro sidewalk! It definitely would make our city more walkable and offer safer running routes!'
- 'I'm unable to attend, but from a cycling standpoint, the road isn't too bad for biking, but wider shoulders with a white line are always very helpful. Wide shoulders keep cyclists out of the way of car drivers (so that car drivers don't get mad at cyclists) and also keep cyclists safe.

And in any situation where it's not possible to create a 3-foot shoulder, signs that say "cyclists may use the full lane" or some such thing is helpful. "share the road" signs are NOT helpful - car drivers think the signs are aimed at cyclists, telling them to get the heck out of their (the car drivers') way. I've actually had car drivers say this.'



- 'Thank you for organizing last night's meeting. It is so heartening to see that we're looking at the Richmond Rd corridor for bike and ped facilities as I live on Birchwood Dr. and look forward to having my future kids be able to ride and walk to school, a big part of what makes a town liveable. It's a big reason why I moved to Hinesburg.'

As I was thinking further about the possibilities for this bike/walk path and going back to someone's comment about usage in the winter, I thought that the recreational opportunities for sledding and skiing down in the winter could be considered as well, particularly if the path is off the road enough (or has a sort of barrier) to make those activities safe from cars.

I could see this bike path becoming a major draw for local kids and their families for winter activities as well (if the town does not have the funds to plow it), particularly during the weekend.

Another consideration in the design of the path, which I mentioned to one of the project consultants, are the locations of school bus pick up and drop off on Richmond Rd (Jourdan St being the only one I see consistently myself). It may bring potential for an area of the path that serves multiple purposes (such as maybe installing a bike rack or bench where the school bus picks up, giving kids the option to bike to the bus stop, lock their bike and get on the bus).'

- 'I could not come to the meeting, but I am definitely in favor of a path. I live on Richmond Road and would love a path. Right now I walk and have to stop and get off the road for cars sometimes. I am at 538 Richmond Road and would definitely let you go through my land as long as you keep the water draining correctly. If there are any other meetings that are going to take place, please put them on Front Porch forum.'
- 'What kind of volume (how many people and how often) are going to use a sidewalk / walking path in this area? I know 268 homes are in the area. But how many people will actually use it? Where will they walk to? Very few jobs in town. A quart of milk? You know kids won't use them to walk to school. A few dog walkers who will complain loudly about the one who doesn't pick up after their pup? In the twenty-one years I've driven that stretch, I've only seen a few people walking - usually with their back to traffic. I have seen bicyclists a number of times, but believe they are the same couple of fellows - judging by their clothing and helmet color. And bicyclists won't use sidewalks. Just can't see the volume.'

Given the curves, hills, lack of lighting (one spot is in shade 24/7), the road would have to be substantially widen to be safe from the crazy drivers who continue to use their phones while driving.'

- 'I missed the meeting, but I am in favor of having a bike path near Richmond Rd and North Rd as well. North Rd is such a beautiful road to bike on, but the cars go so fast on Richmond Rd and North Rd that it's quite scary as a bicyclist. I would love to have a safe place to ride bikes with my family. There are so many children and families from the trailer parks that could benefit from a safe place to ride bikes as well. Please let me know if there is anything I can do to help and support such a wonderful new project in our community. Not only would this benefit adults in our community, but a bike path will get children up and moving, and away from computers and video games. What a wonderful way to promote a healthy life style in our community!'
- 'I live off of Richmond road and love enjoying the morning walk before I officially start my day. I was on a routine where I was walking every morning starting at 5:30 am and even possibly enjoying an evening walk on a nice day. I have three children ranging in age Fromm 11-4. My children would argue to go on my evening walk I took them 1 time and after yelling at every car that pasted us to move over or slow down they have never joined me since. Too scary to think of losing one of them because we were following the rules and walking in the ditch it's just not worth it. I gave up my morning walk due to the same issues. I wore reflective wear plus a head lamp and walked with a bright flash light however after almost getting hit and numerous phone calls to chief koss I have given up. I strongly believe that we need safer ways to get out and enjoy the fresh air.'
- 'Thanks again for organizing and I think the number of people demonstrates the support this project has. I walked/drove up and down the street yesterday and came away with the following recommendations;
 - a) Make the sidewalk 5 feet. The amount of space on either side is limited in many areas making a 8 ft wide path out of dimension with the topography and amount of expected traffic (We are talking about 1 K people overall here).
 - b) Put the side walk on the north side of the road. I think this serves the side where more of the populations of orchard commons and further up. Having to have folks cross the road while not terrible could reduce usage. Also the two closest houses are on the south side so my guess is from a cost perspective this would make it higher.
 - c) In talking with Andrea she said this is like a 10 year plan given what it took to do the other side walks. How do we accelerate this? What does the process /people have to look like to accelerate this?

One thing she mentioned was having the town fund it. Well one recommendation would be to put this on the ballot and let the towns people decide? Could be a pricey items (similar to football fields) but at least it would let us make that decision).'

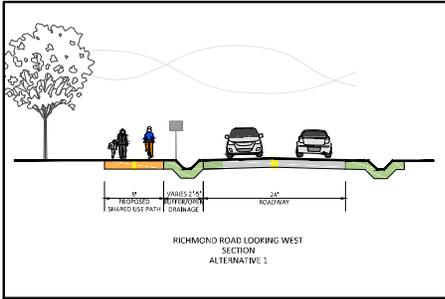
- 'I didn't make the Thursday meeting re: Richmond Rd. Bike/Ped path, but wanted to pass on a couple of thoughts to include with the rest of the perspective you're gathering. I lived on Texas Hill for 10 years and have been on Piette Meadow for 10 years, so have traveled, ran, etc. along that stretch of road tens of thousands of times. A couple of thoughts:

First and foremost, completely support this patricidal project and any/all town efforts to support alternative transportation, fitness, walkable communities, etc. Bravo!

The one caution I'll throw out is that most of the non-vehicle traffic I have observed on that stretch of Richmond Road are serious road bikers out for a workout. That population will not use a bike/ped path, so that portion of non-vehicle traffic will still be on the road. I think it's important to support the project keeping that in mind.'

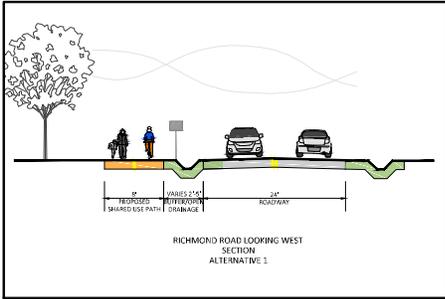
Appendix B

Concept Alternatives 1 & 2/Typical Cross Sections



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LEGEND	
	EXISTING ELECTRICAL LINE
	EXISTING WATER LINE
	EXISTING SEWER LINE
	EXISTING GAS LINE
	PROPERTY LINE
	EXISTING EDGE OF PAVEMENT
	EXISTING UTILITY POLE
	EXISTING HYDRANT

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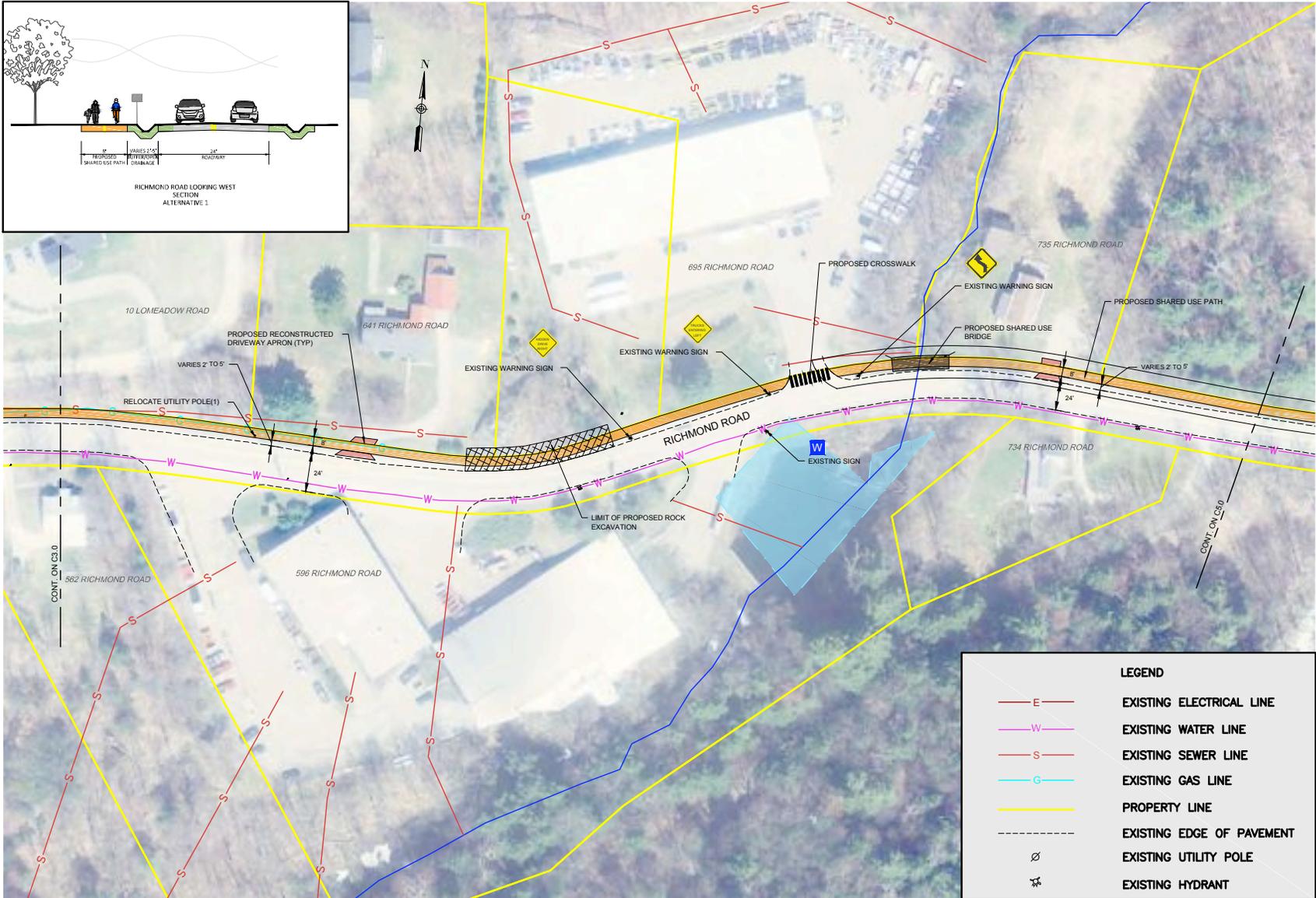
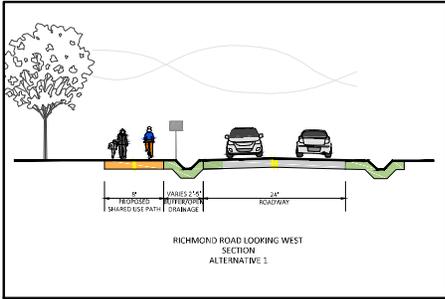


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 HINESBURG, VT



PREPARED: JDEMPSEY
 CHECKED: JDEGRAY
 DATE: AUGUST 2016
 REV 1 -
 REV 2 -
 REV 3 -
 SHEET NAME: CONCEPTUAL ALTERNATIVE-1
 DRAWING NUMBER: C2.0
 SHEET NUMBER: 2 OF 8



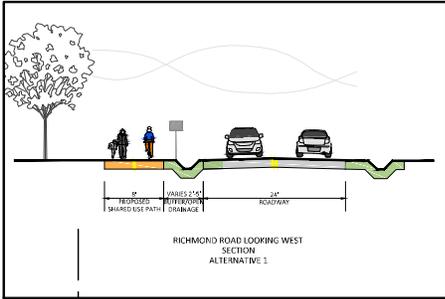
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 REV. 3 -
 SHEET NAME: CONCEPTUAL ALTERNATIVE-1
 DRAWING NUMBER: **C4.0**
 SHEET NUMBER: **4** OF **8**



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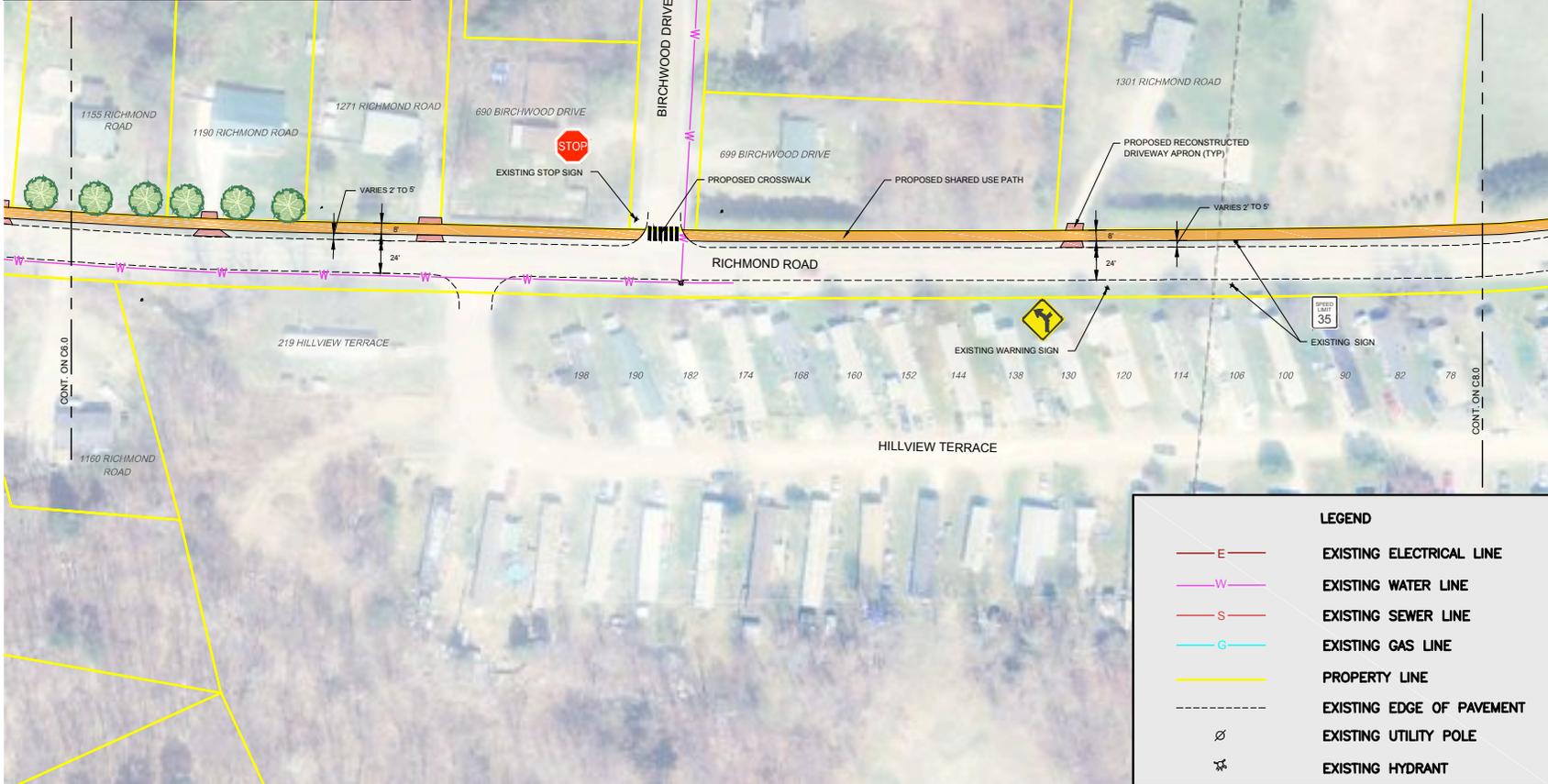
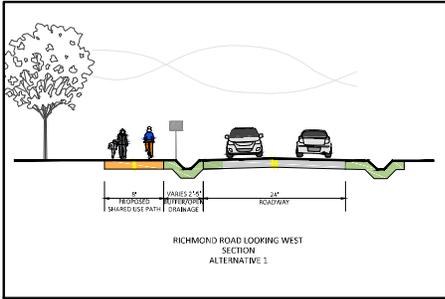


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SHEET NAME:
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DRAWING NUMBER:
C6.0

SHEET NUMBER:
6 OF 8



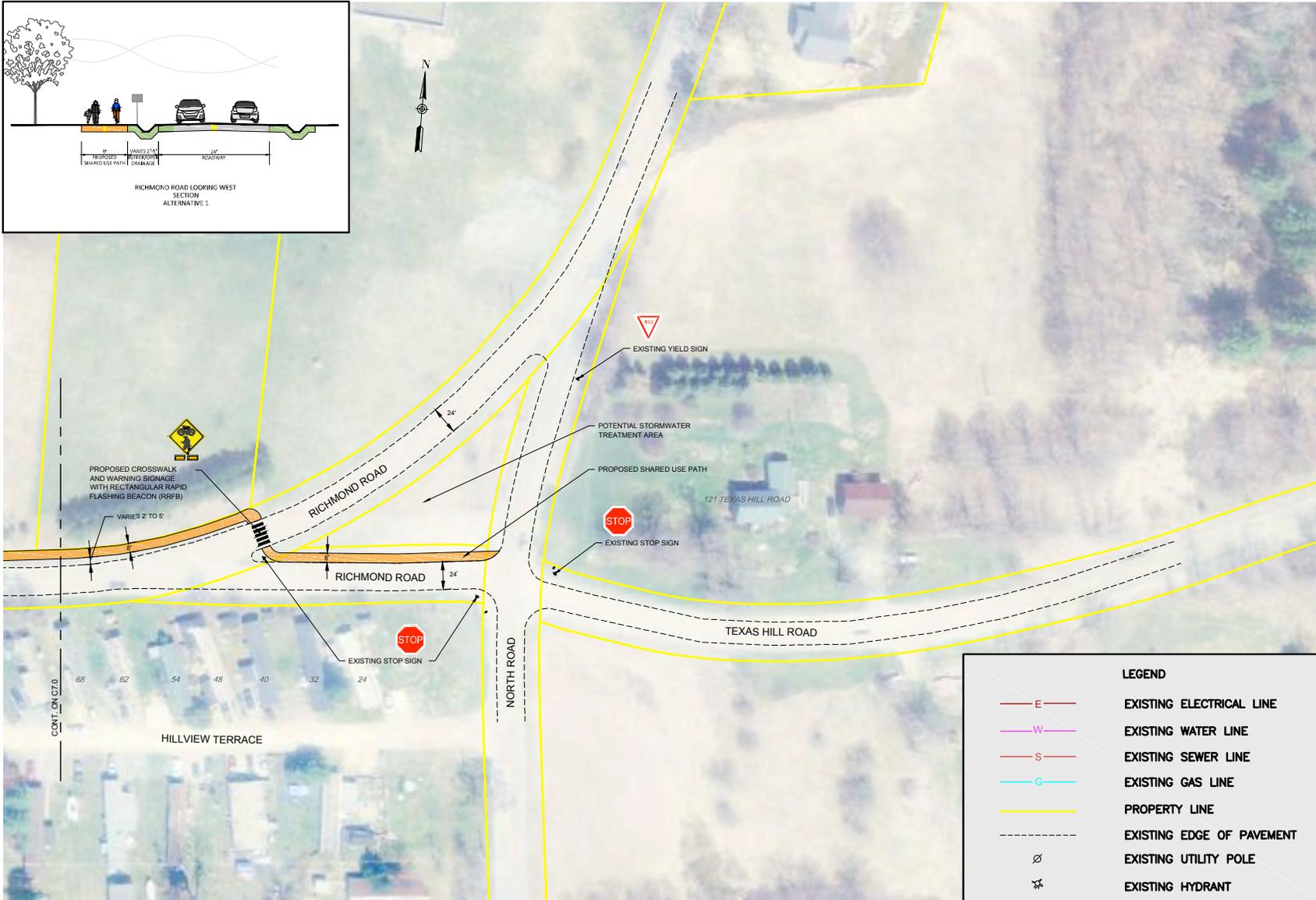
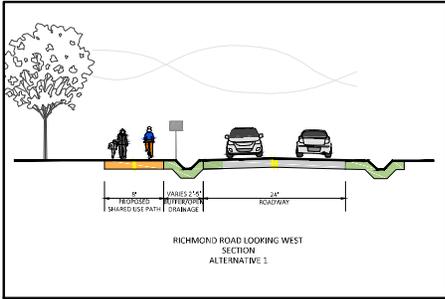
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HINESBURG, VT**



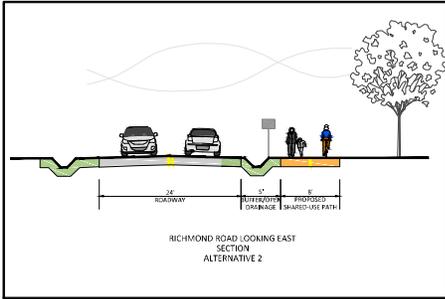
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DRAWING NUMBER: C7.0
SHEET NUMBER: 7 OF 8



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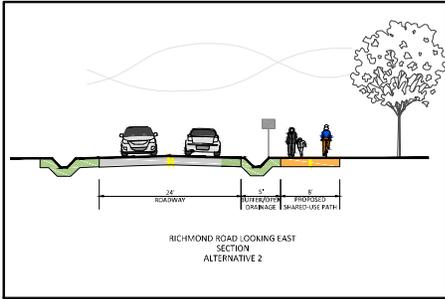
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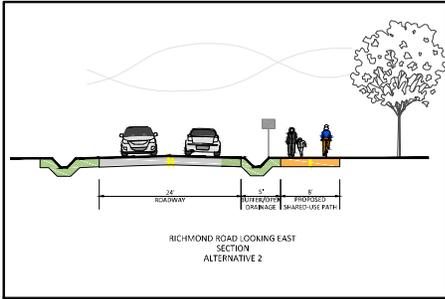
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 CHECKED: JDEGRAY
 DATE: AUGUST 2016
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 DRAWING NUMBER: C1.0
 SHEET NUMBER: 1 OF 8



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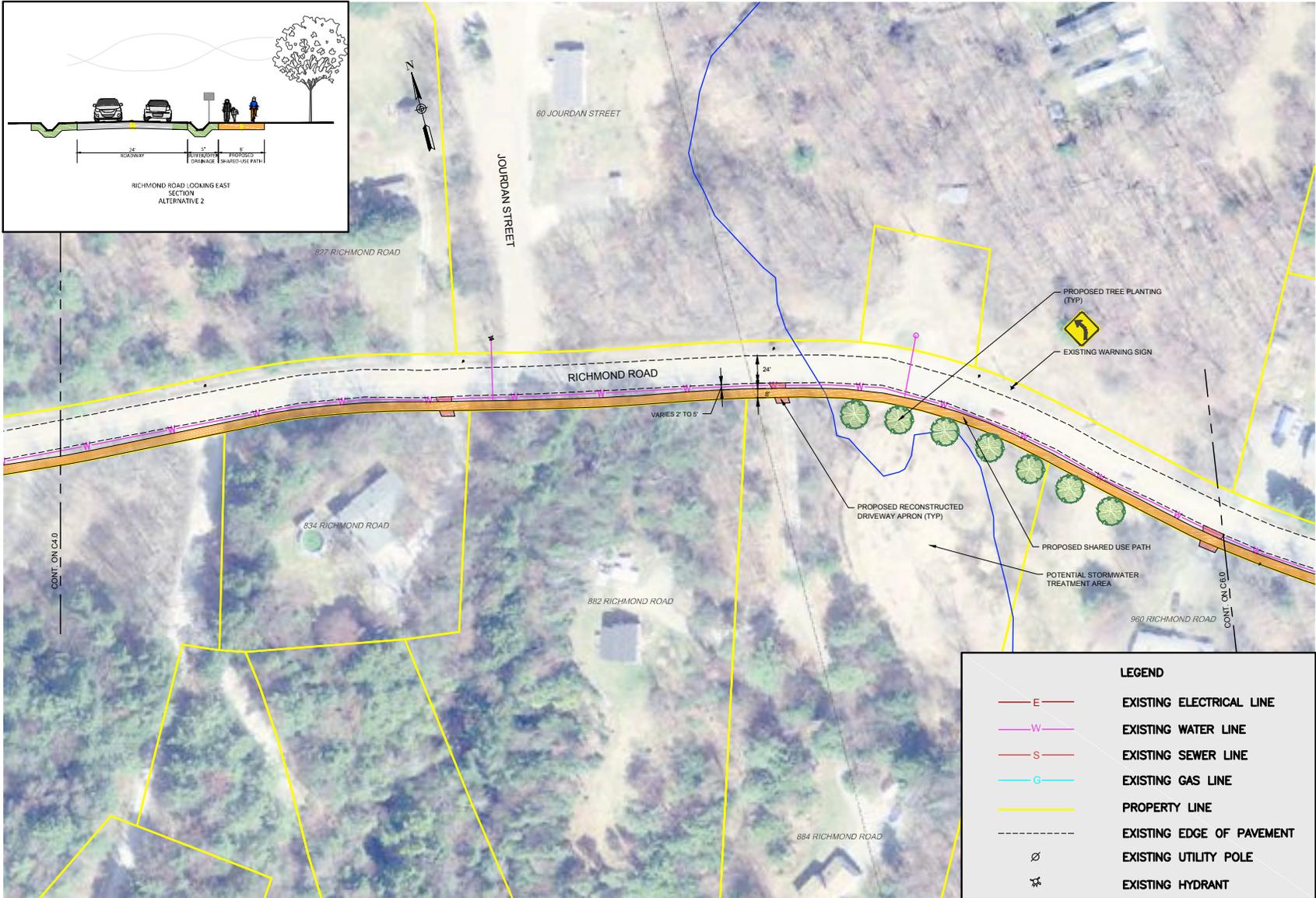
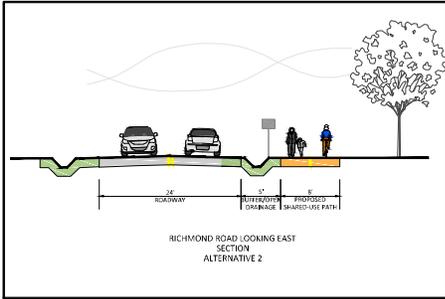
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 REV. 3 -
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 DRAWING NUMBER: C3.0
 SHEET NUMBER: 3 OF 8



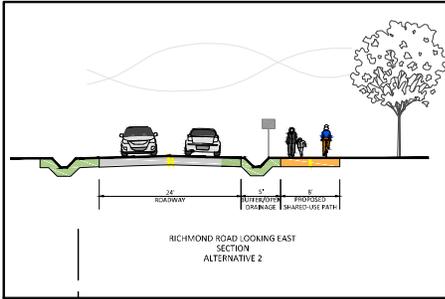
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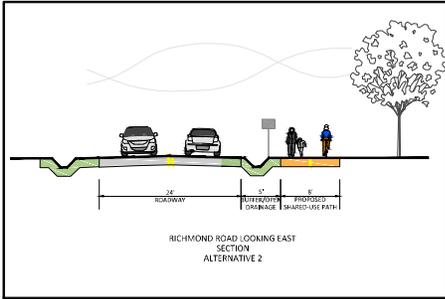
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 REV. 3 -
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 DRAWING NUMBER: C6.0
 SHEET NUMBER: 6 OF 8



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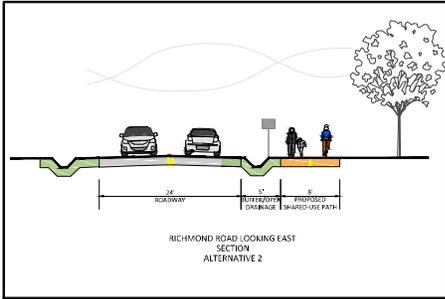


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REV. 1 -
REV. 2 -
REV. 3 -
SHEET NAME: CONCEPTUAL ALTERNATIVE-2
DRAWING NUMBER: C8.0
SHEET NUMBER: 8 OF 8

Appendix C

Opinion of Probable Construction Costs

Richmond Road Pedestrian and Bicycle Scoping Study
Hinesburg, VT
Opinion of Probable Construction

Prepared By: Toole Design Group
Date: June 2016

Richmond Road Alternative 1	Cost	\$2,485,000
ESTIMATED PROJECT TOTAL		\$2,485,000

Notes:

Background information is provided on individual tabs.

Cost does not include environmental permitting, easement or property acquisition.

VTrans 5 Year Price List

January 2011 - December 2015

Richmond Road Pedestrian and Bicycle Scoping Study

Hinesburg, VT

Opinion of Probable Construction

Prepared By: Toole Design Group

Date: June 2016

Alternative 1 Improvements

DESCRIPTION	QTY	UNIT	UNIT PRICE	AMOUNT
Clearing and Grubbing	10	Acre	\$20,000.00	\$200,000
Unclassified Excavation	3880	CY	\$25.00	\$97,000
Solid Rock Excavation	55	CY	\$150.00	\$8,300
Subbase Gravel	3745	CY	\$28.00	\$104,900
Subbase Sand Borrow	1875	CY	\$18.00	\$33,800
Culvert Replacement	2	EA	\$5,000.00	\$10,000
Shared Use Bridge	1500	SF	\$300.00	\$450,000
Bituminous Concrete Path	1085	TON	\$147.00	\$159,500
Accessible Ramps	16	EA	\$3,200.00	\$51,200
Detectable Warning Surface	16	EA	\$45.00	\$720
Durable 4" Yellow Line, Type 1 Tape	3600	LF	\$2.00	\$7,200
Durable 12" White Line, Type I Tape	1360	LF	\$6.00	\$8,160
Hydrant Relocation	1	EA	\$2,500.00	\$2,500
Utility Pole Relocation	14	EA	\$7,500.00	\$105,000
Traffic Signs & Posts	10	EA	\$120.00	\$1,200
Rectangular Rapid Flashing Beacon (RRFB)	2	EA	\$8,000.00	\$16,000
Loam & Seed	8000	SY	\$15.00	\$120,000
Tree Plantings	45	EA	\$300.00	\$13,500
Annual Maintenance	1	LS	\$5,000.00	\$5,000
Erosion Control	1	LS	\$4,300.00	\$4,300
Traffic Controls	1	LS	\$120,000.00	\$120,000
Mobilization	1	LS	\$84,000.00	\$84,000

SUBTOTAL = \$1,603,000

25% CONTINGENCY = \$401,000

DESIGN & CONSTRUCTION ENGINEERING = \$481,000

TOTAL = \$2,485,000.00

Richmond Road Pedestrian and Bicycle Scoping Study
Hinesburg, VT
Opinion of Probable Construction

Prepared By: Toole Design Group
Date: June 2016

Richmond Road Alternative 2	Cost	\$2,273,000
ESTIMATED PROJECT TOTAL		\$2,273,000

Notes:

Background information is provided on individual tabs.

Cost does not include environmental permitting, easement or property acquisition.

VTrans 5 Year Price List

January 2011 - December 2015

Richmond Road Pedestrian and Bicycle Scoping Study

Hinesburg, VT

Opinion of Probable Construction

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Alternative 2 Improvements

DESCRIPTION	QTY	UNIT	UNIT PRICE	AMOUNT
Clearing and Grubbing	10	Acre	\$20,000.00	\$200,000
Unclassified Excavation	4180	CY	\$25.00	\$104,500
Subbase Gravel	3665	CY	\$28.00	\$102,700
Subbase Sand Borrow	1835	CY	\$18.00	\$33,100
Culvert Replacement	2	EA	\$5,000.00	\$10,000
Shared Use Bridge	1500	SF	\$300.00	\$450,000
Bituminous Concrete Path	1065	TON	\$147.00	\$156,600
Accessible Ramps	10	EA	\$3,200.00	\$32,000
Detectable Warning Surface	10	EA	\$45.00	\$450
Durable 4" Yellow Line, Type 1 Tape	3600	LF	\$2.00	\$7,200
Durable 12" White Line, Type I Tape	1450	LF	\$6.00	\$8,700
Utility Pole Relocation	3	EA	\$7,500.00	\$22,500
Traffic Signs & Posts	8	EA	\$120.00	\$960
Loam & Seed	7840	SY	\$15.00	\$117,600
Tree Plantings	45	EA	\$300.00	\$13,500
Annual Maintenance	1	LS	\$5,000.00	\$5,000
Erosion Control	1	LS	\$4,300.00	\$4,300
Traffic Controls	1	LS	\$107,000.00	\$107,000
Mobilization	1	LS	\$89,000.00	\$89,000
			<i>SUBTOTAL =</i>	\$1,466,000
			<i>25% CONTINGENCY =</i>	\$367,000
			<i>DESIGN & CONSTRUCTION ENGINEERING =</i>	\$440,000
			TOTAL =	\$2,273,000.00