TOWN OF EAST MONTPELIER

U.S. ROUTE 2

VILLAGE SAFETY ENHANCEMENT SCOPING STUDY

FINAL REPORT

AUGUST 15, 2012

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TABLE OF CONTENTS

APPENDICES

APPENDIX F: Cost Estimates
APPENDIX G: Public Meetings
APPENDIX H: Evaluation Matrix

EXECUTIVE SUMMARY

This Village Safety Enhancement Study was prepared for the Town of East Montpelier, Vermont in order to determine the feasibility and costs of constructing pedestrian & bicycle facilities along U.S. Route 2 between its intersections with VT Route 14 to the south and north of the Village area. Current pedestrian facilities are inadequate and create an impediment to pedestrians from travelling to the General Store, Post Office, town offices and other Village destinations from their homes along U.S. Route 2. The problems associated with inadequate facilities are compounded by limited shoulder widths, wide commercial driveways, and limited crossing locations.

Recommended sidewalk alignments are described and descriptions of the recommended sidewalks are provided. Existing conditions, utilities, natural and cultural resources, and right of way are all described along with related issues that need to be considered in order to construct the recommended facilities. A typical cross section, layout plans and cost estimates have been generated and can be found in the Study. This Study examined the use of different sidewalk configurations, construction materials, and traffic calming techniques.

The majority of the study area is potentially eligible for listing in the National Register of Historic Places. No portion has been identified as archeologically sensitive. Wetlands exist in the study area and construction of pedestrian facilities may require permits depending upon the final design. No impacts to endangered species, flora/fauna, forest lands, agricultural lands, public recreational lands, hazardous waste, streams, rivers, floodplains or stormwater quality are anticipated. A Section 106 review will be necessary due to the expected use of Federal Funds, but no adverse impacts to cultural resources are foreseen.

New sidewalks are recommended along the west side of U.S. Route 2 within the project area. This is recommended to be combined with a mid-block crossing at the Post Office to an east side sidewalk that connects to the existing sidewalk by the VT Route 14 north intersection. Roadway shoulders would be widened on both sides of U.S. Route 2 throughout the project area to better accommodate bicycles. The overall cost of these improvements is estimated to be approximately $430,000 when engineering and inspection costs are included. Transportation Enhancement Grants include a maximum of $300,000 with a matching 20% ($75,000) from the Town. In order to increase the likelihood that these improvements can be constructed, they have been broken into several phases. These smaller phases incorporate complete sections of sidewalk but would allow for smaller matching funds that could more easily be afforded by the Town. Each phase could be completed (designed, permitted and constructed) approximately two years after funding is secured.

The East Montpelier Selectboard has not endorsed a particular alternative or order of phasing for the proposed improvements. This report provides the Village Committee and the Selectboard with a helpful resource when considering pedestrian and vehicular traffic issues in East Montpelier. As funding sources become available the improvements contained in this report can be revisited to further refine and match the Town's needs at that point in time.

SECTION 1 – BACKGROUND, PURPOSE AND NEED OF THE PROJECT

Background

This Study represents a continuation of interest in providing pedestrian facilities in East Montpelier. The Village Committee has been meeting for several years to spearhead improvements in the Village. They envision an improved U.S. Route 2 corridor where pedestrian and bicycle improvements can improve safety, connect commercial town and residential uses, and improve the village characteristic.

Looking north along U.S. Route 2 near the middle of the project area

The Central Vermont Regional Planning Commission has recently completed a Visioning Study (Village Study Report) for the East Montpelier Village area. This Study reflects a review of a component of the pedestrian improvements described in that evaluation. Considered improvements should not be considered an isolated project, but should be considered one piece of the greater Village circulation plan. The Study envisions a pedestrian and bicycle loop around the East Montpelier Village area including the U.S. Route 2 corridor and the area along the Winooski River immediately east of the Village.

The Vermont Agency of Transportation (VTrans) recently completed the long anticipated reconfiguration of the intersection of U.S. Route 2 and VT Route 14 north, by realigning U.S. Route 2 and VT Route 14 and installing a traffic signal. VTrans is also developing design plans for the replacement of the VT Route 14 bridge (Bridge 68) over the Winooski River (the BRF 037-1(17) project). East Montpelier's project to improve pedestrian access in the area is intended to connect the sidewalks from both these VTrans projects. The proposed sidewalk could be on either the west or east side of U.S. Route 2 and may switch from one side to the other at a new crosswalk, if found to be appropriate.

This Study evaluates the feasibility and costs to improve pedestrian safety and mobility in the Village of East Montpelier, Vermont along U.S. Route 2 between the two intersections of VT Route 14. Potential alignments, impacts to utilities, natural and cultural resources, probable costs and overall feasibility are examined. Feasible alignments with probable costs are presented along with plans and typical sections.

Purpose

The purpose of the project is to examine the feasibility and approximate costs of constructing facilities along U.S. Route 2 in the Village of East Montpelier in order to enhance the safety and mobility of pedestrians and bicyclists, and calm traffic, through the area.

Need

Facilities are needed because:

- There are a significant number of pedestrians who do not have access to a safe sidewalk between their homes and the Post Office, the General Store, the church, town offices, and other destinations.
- School students that are getting picked up or dropped off by the bus do not have safe place to walk or bike to/from school, or to wait.
- Pedestrians and bicyclists must walk or ride on the narrow roadway shoulders and cross wide driveways to move around the Village area.
- Traffic travels through the Study area at speeds greater than the posted speed limit which aggravates the problems associated with inadequate facilities.

SECTION 2 – PROJECT AREA AND EXISTING CONDITIONS

The Study area is along U.S. Route 2 in East Montpelier, Vermont between its two intersections with Vermont Route 14 – the north intersection (heading towards Hardwick) and the south intersection (heading towards Barre). This segment is through the Village portion of East Montpelier.

Project Study Area

This portion of East Montpelier contains businesses, a general store, a U.S. Post Office, residences, and municipal offices and a church just north of the project limit. U.S. Route 2 is a two lane roadway through the study area with 12 foot travel lanes, 1-2 foot shoulders on the east side, and 4-5 foot shoulders on the west side. The posted speed limit is 35 mph and the pavement is in good condition. Utility poles line the east side of the road approximately 19-22 feet from the roadway centerline. There are no pedestrian facilities along U.S. Route 2 in the project area. With no sidewalks or crosswalks, motor vehicles have the right-of-way, making crossing the

roadway potentially dangerous for pedestrians. There is a wide, unchannelized access for the General Store and U.S. Post Office, which are two of the major destinations in this area. As part of our evaluations, we will consider consolidating driveways to designate pedestrian crossing locations and enhance safety.

East Montpelier Village Area

To the north, U.S. Route 2 and VT Route 14 north intersection incorporates a curbed roadway with widened shoulders, sidewalks, and crosswalks at the signal. This sidewalk extends to Quaker Road, but a crosswalk has not been installed here due to the lack of pedestrian facilities on the south side.

The preliminary BRF 037-1(17) project plans incorporate roadway widening at the south end of our project area to include a U.S. Route 2 left turn lane and signal. The plans call for sidewalk to be constructed on the northeast corner of the intersection with connections across the north side of the bridge. In addition, the signal design has been developed to allow for a pedestrian signal and crosswalk to be installed in the future across U.S. Route 2. The traffic signal will include a conduit under U.S. Route 2 so wiring can be added to accommodate pedestrian signal heads. This measure will make it easy and safe for a pedestrian crossing to be made at this location if desired by the Town.

There are some drainage concerns noted during our field view. The west side of U.S. Route 2 has several catch basins located just north of the General Store; however, these structures do not appear to be positioned to collect much runoff. There is evidence that runoff is running down the road across the General Store and Post Office frontage and draining onto the downhill yard. This condition has created an erosion problem in this yard area. Better collection of drainage should be part of any recommendations for sidewalks in this area, especially if curbed.

Catch basin near the north end of the General Store

SECTION 3 – CONSIDERED IMPROVEMENTS

After compiling existing information, and discussing the goals and objectives for the project with the public attending the Local Concerns Meeting, DuBois & King developed a list of considered improvements to be implemented with this project. At the Local Concerns Meeting, the public was unified in their concern for children and other pedestrians walking along U.S. Route 2 with its narrow shoulders and wide driveways. Speeding and high traffic volumes including truck traffic were also mentioned as concerns. Providing some pedestrian connection to the Post Office and General Store from the VTrans sidewalks installed (to be installed) at the VT Route 14 intersections was a priority. Additionally, concerns for handicap individuals living on the east side of the road that cross U.S. Route 2 to reach the Post Office and General Store were expressed. The public asked that the addition of sidewalks, pathways, and bicycle facilities with associated crosswalks and signs be considered for the project, as well as any measures that could be incorporated to calm traffic.

Based upon the stated priorities, DuBois & King prepared conceptual design layouts of the improvements to determine the feasibility and prudence of each. The layouts, cross sections and other information were discussed again at the Alternatives Presentation Meeting. Typical sections showing recommended improvements and sheets showing the recommended location of improvements can be found in Appendix A.

There is no single solution to improving the accommodations for pedestrians and bicyclists along U.S. Route 2 in the study area. Multiple considered improvements, each with their own advantages and disadvantages, are discussed below. For ease the considered improvements have been grouped below based on their routing being either on the west or east sides of U.S. Route 2 since there are similar advantages and disadvantages.

No Build Option

One option considered in this study is the "No Build" option. This option is to take no action; to leave the existing infrastructure as it currently exists and to not construct any new pedestrian or bicyclist facilities. This option is certainly feasible, but would not address the purpose and need statement developed in this study. The "No Build" option will allow for the continued potential for conflicts between motorists and pedestrians in areas without pedestrian facilities. Conflicts between motorists, pedestrians and cyclists can lead to injury, death and property damage as well as being a source of aggravation due to lost time.

Alignment Alternatives

This Study focuses on mobility improvements along US Route 2, and therefore the general alignment of any improvements is along the roadway. In this Study the major questions regarding the facilities are: which side(s) of the road should they be on, and where should they start and end.

Sidewalks, paths, and bike lanes should be located where people will use them. They should be easy to get to, and go to places that people want to go. They should also provide a safer alternative to simply occupying the road, which people will do if it is hard to get to the facility or if it doesn't go where the people wish to travel.

West Side Route Alternatives

Four alternatives have been considered along the west side of U.S. Route 2. These alternatives include two sidewalk alignments, a shared use path, and the addition of a sidewalk connection to the east side of U.S. Route 2. The two sidewalk alternatives include a curbed sidewalk adjacent to the roadway shoulder and a non-curbed sidewalk offset from the roadway shoulder. The shared use path would be a wider paved pathway offset from the shoulder which could accommodate pedestrians and bicyclists. The east side connector sidewalk would be paired with one of the above alternatives to provide additional connectivity to the east side. These alternatives are depicted in Appendix A.

Each of these alternatives generally has an alignment starting at the VT Route 14 south intersection and ending at Quaker Road. On the south end a crosswalk would be installed across U.S. Route 2 at the VT Route 14 south intersection with connection to the sidewalk proposed as part of the VTrans BRF 037-1(17) project. On the north end a crosswalk would be installed across Quaker Road to the existing sidewalk on its north side.

Each of the west side route improvements would be broken at the U.S. Post Office and the General Store driveways. This open section of commercial driveways presents an especially difficult area to negotiate sidewalks or shared use paths.

General Store & Post Office

At the Post Office, the existing property-wide driveway could be split into two driveway accesses with one on each side of the building. To accomplish this an approximately 37 foot curbed island would be installed centered on the building. This island would be utilized as the pedestrian refugee for all of the below considered alternatives. With this curbed island in place it would be recommended that internal site circulation and parking be evaluated to determine any necessary on-site improvements. One feasible on-site configuration has been shown in the attached plans with a sidewalk spur connection to the front of the building and space for an up-front handicap parking stall adjacent to the existing building handicap ramp. Other internal modifications may also be possible. However, this has not been discussed with the property owner to get concurrence.

For the General Store, two segments along the property frontage present difficulty in locating a sidewalk or shared path. The first is along the roadway adjacent to the existing gasoline fueling island. This fuel island runs parallel to U.S. Route 2 and is approximately 15 feet off of the traveled way. This distance is not adequate to provide a shoulder and a sidewalk or path while maintaining a lane for vehicle fueling. The second difficult location is along the roadway in front of the north end of the store building. This section of the property incorporates nose-in parking

adjacent to the building. Some alternatives were explored to determine ways to install a sidewalk island across this segment while maintaining access and parking. No feasible alternative, even with a one-way internal drive and angle parking was found which did not significantly affect the store parking or current internal circulation. Of note is that converting this section of internal drive to one-way behind a sidewalk island was deemed unsafe due to the inability to locate clear wrong way access control from off of U.S. Route 2 or from within the parking area.

Due to the above, the west side routes have all been broken across the entire section of the General Store parcel. Although this is a destination location for potential pedestrians and bicyclists that could traverse within the parking area, no defined route would be included across the property.

Curbed Sidewalk

Under this alternative, a 5 foot wide sidewalk with a 7 inch tall curb could be placed immediately adjacent to the existing edge of pavement. The sidewalk would accommodate pedestrians while bicycles would be expected to share the roadway with motor vehicles on a widened shoulder. This alternative would have similar impacts as the non-curbed sidewalk on existing utility poles, trees and other plantings, and grading, but would have a slightly smaller impact footprint.

Non-Curbed Offset Sidewalk

Under this alternative, a 5 foot wide sidewalk without curb would be installed on the west side of U.S. Route 2 if separated from the existing edge of pavement by at least five feet. This sidewalk would accommodate pedestrians while bicycles would be expected to share the roadway with motor vehicles on a widened shoulder. Several short segments potentially require this uncurbed sidewalk to be curbed due to space limitations between the road and several existing buildings. These locations include by the proposed retaining wall adjacent to the VTrans BRF 037-1(17) project, the Post Office, the chiropractor's office and adjacent to Quaker Road. ADA compliant curb ramps would be needed at the termini of the sidewalk.

Shared Use Path

Given the width and high vehicular volumes on U.S. Route 2 the desire to accommodate all non-motorized users on off-street facilities such as a shared use path was considered. A 10 foot wide path without curb would be separated from the existing edge of pavement by at least five feet. This path would accommodate both pedestrians and bicyclists. This would have similar impacts to the non-curbed sidewalk on existing utility poles, trees and other plantings, and uphill grading, but would have a slightly larger impact footprint.

Unfortunately, this option is not considered feasible along the western edge of U.S. Route 2 due to the short distances between driveways, limited space between U.S. Route 2 and the residences, and the commercial parking lots creating conflicts between path users and motor vehicles. Shared use path traffic would be required to stop at cross streets and commercial driveways. However, stopping or yielding every few hundred feet would greatly decrease the efficiency of bicycling, and it is likely that many

users would ignore the regulations and/or utilize U.S. Route 2 shoulders. Use of a shared use path by bicycles would also significantly increase the difficulty of traversing the U.S. Post Office and General Store parcels. Due to these restrictions, this alternative was not brought forward to the alternative presentation meeting or further detailed review.

Connector to the East Side of U.S. Route 2

One idea raised throughout the development of the alternatives was the need to incorporate a crosswalk somewhere in the "mid-block" area between the VT Route 14 north and south intersections on U.S. Route 2. Residents felt strongly about this feature, and thought it was important so that residents on the east side of the road had a safe way to cross U.S. Route 2 to reach the Post Office and General Store area. The residents felt that if no crosswalk is provided at this location, people will continue to cross the road at this location rather than go to one of the VT Route 14 intersections to cross U.S. Route 2.

Addition of a crosswalk across U.S. Route 2 in the vicinity of the Post Office would be subject to the scrutiny and approval of VTrans. The Town would need to demonstrate that the crosswalk met the appropriate warrants, had adequate sight distance, and had a destination on both sides of the road. Requirements for crosswalks are described later in this Study.

East Side Route Alternatives

Three alternatives have been considered along the east side of U.S. Route 2. These alternatives include two sidewalk alignments, and a shared use path. The two sidewalk alternatives include a curbed sidewalk adjacent to the roadway shoulder and a non-curbed sidewalk offset from the roadway shoulder. The shared use path would be a wider paved pathway offset from the shoulder which could accommodate pedestrians and bicyclists. These alternatives are depicted in Appendix A.

Each of the considered alternatives generally has an alignment starting at the VT Route 14 south intersection and ending at VT Route 14 north intersection. On the south end, the route would tie into the sidewalk to be installed as part of the VTrans BRF 037-1(17) project. On the north end, the route would tie into the existing sidewalk on U.S. Route 2. Since the U.S. Post Office and the General Store are prime pedestrian destinations, a mid-block crosswalk should be considered as part of any east side alternative. The crosswalks at the north and south ends of this route are too far and would have no pedestrian connections to this location leading to likely illegal crossings. All crossings of U.S. Route 2 fall under VTrans jurisdiction and a mid-block crossing to these destinations would require additional scrutiny to determine its acceptability.

Curbed Sidewalk

Under this alternative a sidewalk along the east edge of U.S. Route 2 with a curb would be installed. A 5 foot wide sidewalk with a 7 inch tall curb could be placed immediately adjacent to the existing edge of pavement. This sidewalk would accommodate pedestrians while bicycles would be expected to share the roadway with motor vehicles

on a widened shoulder. Along the east side of U.S. Route 2 within the limits of where this sidewalk would fall are numerous utility poles. These would be impacted with a curbed sidewalk facility closer to the roadway. These utility poles would primarily fall within the green strips of the non-curbed sidewalk and shared use path alternatives considered below.

Non-Curbed Offset Sidewalk

A 5 foot wide sidewalk without curb could be installed on the east side of U.S. Route 2 if separated from the existing edge of pavement by at least five feet. This sidewalk would accommodate pedestrians while bicycles would be expected to share the roadway with motor vehicles on a widened shoulder. This offset sidewalk may also be combined with a curb at the edge of the shoulder. Construction costs have been incorporated later to assess this addition.

Some trees and other plantings would need to be removed or relocated, and grading the downhill slope would be necessary. This sidewalk should not require any utility pole relocations. Several driveways would require modification to address either crossing distances or adjacent roadway slopes. This option would not require the addition of drainage facilities as the existing edge of pavement and roadway drainage patterns would remain as they are today.

One segment potentially requires this uncurbed sidewalk to be curbed for a short length. This location is at the Jockey Hill Auto Repair Garage at the northern end of the route. ADA compliant curb ramps would also be needed at this location.

Jockey Hill Auto Repair

Shared Use Path

A 10 foot wide shared use path on the east side of U.S. Route 2 would have similar impacts to one on the west side with the potential addition of a hydrant relocation. As in the west side, this considered alternative is not deemed feasible due to the short distances between driveways, limited space between U.S. Route 2 and the residences, and the commercial parking lots creating conflicts between path users and motor vehicles. Due to these restrictions, this alternative was not brought forward to the alternative presentation meeting or further detailed review.

On Road Improvement Alternatives

In addition to the above off road improvements, on road bicycle improvements were considered as part of the above off road facilities.

On road shoulder widening would be incorporated on both the east and west sides of U.S. Route 2 within the project limits. This would require widening of the existing shoulders to 5 feet wide. In addition, to maximize the use of the existing pavement width, the travel lanes would be reduced from 12 feet to 11 feet wide by restriping. For the west side, the existing shoulder (4-5 feet) would only need to be widened by approximately 1 foot with minimal impacts on the adjacent roadway or drainage. For the east side, the existing shoulder (1-2 feet) would need to be widened by approximately 3 feet and would have similar low impacts. However, the existing utility poles on the east side are only offset from the shoulder 3-7 feet and a few utility poles would potentially need to be relocated. For both sides, new markings and signage would be required to improve identification of this widened shoulder especially where traversing open driveway accesses such as at the General Store.

Given the width and high vehicular volumes on U.S. Route 2 these widened shoulders are focused to be utilized by bicyclists. However, if other off street improvements are not made for pedestrians, they could potentially give pedestrians who did walk along this section of roadway increased separation to vehicular traffic.

Traffic Calming

Traffic calming is the practice of using design elements to slow vehicles to speeds that are compatible with other roadway users. This is often done by changing the width and alignment of the roadway, or by creating the impression of such a change. Traffic control devices like signs and obstacles such as speed humps can also be used.

Traffic calming is a rapidly developing field of study, and there are numerous approaches to handling very similar problems. Some of these approaches can be universally applied most anywhere, and others can only be used in very specific situations. Factors that are important to consider when choosing traffic calming measures include the type of road (local vs. arterial highway, residential vs. commercial areas), the available right of way, the climate and effect of snow and snow removal, emergency services and the degree to which the community supports the chosen methods.

U.S. Route 2 is required by VTrans to have a minimum width of 15 feet from the centerline to any curbs to facilitate snow removal, and it is an essential emergency vehicle route. These factors severely limit the use of actual physical changes to the roadway configuration such as speed humps, bulb-outs, raised crosswalks, raised medians, neck downs, the creation of cul-de-sacs and other techniques that decrease speeds by creating driving conditions that require lower speeds.

Although it isn't possible to physically reduce the roadway width, it is possible to achieve similar results by creating the impression of a narrowed roadway. This can be done with pavement markings, on-street parking, and the addition of street trees and signs. Adding curbs also helps to define the roadway since they clearly mark where vehicles may and may not travel. Changing the lane striping as proposed to 11 foot lanes provides a visual cue to motorists that the road is somewhat narrow, and they should travel at a lower speed. Pavement markings are relatively cheap and easy, but wear quickly and are only visible when the roadway is clear.

Street trees help give the impression of a narrow roadway, but require additional right of way and can create maintenance concerns.

Other means of calming traffic include signs and textured pavement. Signs can range from informational gateway signs announcing the presence of a village environment to additional speed limit signs or even radar feedback signs that notify motorists of their speed. Radar feedback signs are dynamic and get motorists attention by telling them their speed. The presence of radar waves will also cause motorists with radar detectors to slow down. Pedestrian warning signs help to alert motorists that they may need to yield to pedestrians. This may slow motorists who are concerned about pedestrian conflicts. Adding gateway signs, or increasing the frequency of speed limit signs, are helpful when motorists speed out of ignorance. This is especially useful for motorists who are not familiar with an area, but these signs are likely to be ignored by local traffic that is predisposed to speeding.

Textured pavement on a VTrans maintained road is generally limited to a textured inlay for crosswalks. This can only be done at crossing locations approved for a marked crosswalk. The textured surface creates an audio and tactile signal to motorists when they cross it, which helps them to remember the presence of the crosswalk on future trips. These textured surfaces need to be maintained in order to remain effective, and create noise that neighbors may find to be a nuisance.

Sidewalks

Sidewalks (or shared use paths) provide a safe travel surface for users that is separated from the travelled lanes for motor vehicles. The separation can be provided through either a vertical or horizontal space. Green strips or vertical curb can be used to provide this separation. The amount of space available and the general character of an area help to determine what sort of sidewalk configuration is appropriate.

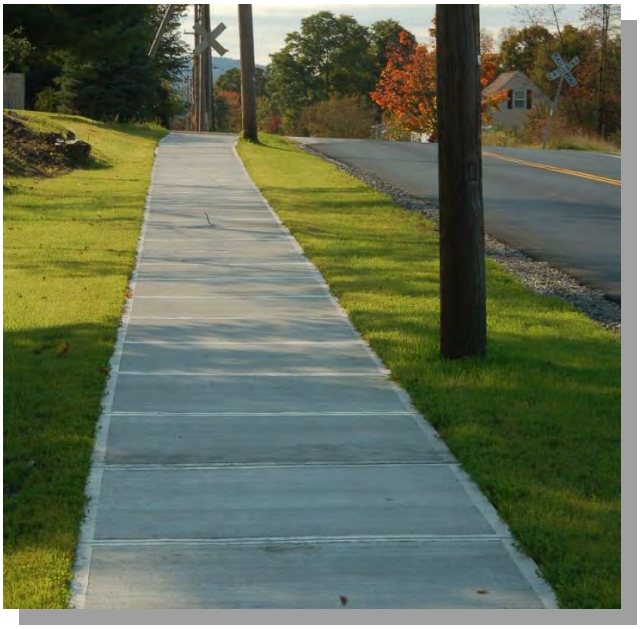
Curbed Sidewalk Typical Section Example

One of the concerns in East Montpelier is the speed at which traffic travels through town. Residents are of the opinion that many drivers are not familiar with the area and may have trouble differentiating between the nearby rural high speed areas and the relatively urban low speed Village. Having curbed sidewalks will promote the impression that the roadway is narrow which may slow some motorists down. It will also help to emphasize that there has been a change from the wide open rural areas motorists have been travelling through and that they are now in a village setting.

Curbed sidewalk can either be immediately adjacent to the roadway or separated by a green strip used for planting, utility poles or street amenities such as benches or trash cans. Green strips are typically 4 to 8 feet wide along arterial streets, with the greater widths used when street trees are planted. Green strips help to separate pedestrians from traffic, but require adequate right of way. Without street trees green strips promote an "open" feel which may be

detrimental to traffic calming efforts. Installing green strips in an already developed area may cause more conflict than a sidewalk without a green strip due to the increased width of the disturbance. A wider sidewalk is more likely to impact gardens, hedges and other private landscaping features.

Sidewalks can also be uncurbed if at least a 5 foot green strip is provided between the edge of the travelled way and the sidewalk. This option is generally cheaper than curbed sidewalks because the curbing represents a significant portion of the cost. However, it also requires more width which can impact landscaping and other homeowner improvements. It is generally used in areas with plenty of land and low traffic volumes. Due to the open appearance of this sidewalk configuration it is unlikely to reduce speeds by giving motorists the impression of a narrow village street.



Non-Curbed Sidewalk Typical Section Example

Sidewalks should be a minimum of 5 feet wide (10 feet wide for shared use paths) in order to provide adequate room for the mobility impaired. The surface material should be stable, slip resistant and durable. Sidewalk must be designed to handle pedestrian traffic in addition to vehicular traffic at driveways. Areas with high traffic volumes or heavy vehicles should have a thicker (stronger) sidewalk than a residential driveway. Areas in which the thicker sidewalk should be used would include the driveways at the General Store, Chiropractor's Office and Post Office.

Curb

Curb exists in the Village only at the northerly limit by the VT Route 14 intersection.

New curb should be located a minimum of 15 feet from the road centerline in order to provide space for snowplows. In areas where on-street parking is desired the curb should be located farther from the centerline.

The U.S. Route 2 and Quaker Road Intersection is curbed

Curbing is depressed in areas where foot or motor vehicle traffic will cross or exit the sidewalk. Typically this is done at driveways and pedestrian ramps. Several large

driveways can be found in the Study area, including the Post Office and General Store which should be carefully examined when designing sidewalks and curbs in order to balance the access needs of motor vehicles with the need to minimize the amount of time (distance) that pedestrians are not protected by a full height curb.

Curbs are generally constructed of either Portland cement concrete or granite. Portland cement concrete is less resistant to physical and chemical damage from snow removal operations. According to the VTrans 5 year Averaged Price List dated July 2006 to June 2011, vertical granite curbing is less expensive than cast in place Portland cement concrete curbing. Granite can be removed and reset which will also save money in the future if sidewalks need to be reconstructed again. Granite is more aesthetically appealing, and can be reused when the sidewalk surfaces need replacement which helps to bring its lifecycle costs lower than the single use concrete curbs.

Granite curbs have been considered in this Study for aesthetics, durability, and to match existing curbing. The current and recently completed VTrans projects at the limits of this project utilize granite curbing. In addition to the safety provided by the curbing separating motor vehicle and pedestrian facilities, curbing also is used to direct storm runoff into storm drains.

Surface and Material Types

Depending upon the type of facility, there are two or three choices available for materials. As with other design factors, each material has advantages and disadvantages including durability, appeal to various users, ease of maintenance and costs.

Sidewalks can be constructed of either Portland cement concrete or bituminous concrete. Portland cement concrete is much harder than bituminous concrete which makes it more resistant to physical damage from snow removal equipment and heavy loads. However, Portland cement concrete is brittle and can crack due to frost action. If the soils under the sidewalk settle unevenly this may also crack the Portland cement concrete and may cause sections of sidewalk to shift in relation to one another. This could result in tripping hazards and the necessity to replace sections of sidewalk or the grinding of protrusions. Bituminous concrete cement is flexible, and will deform to match the underlying soil. This could lead to drainage problems or tripping hazards.

Shared use paths can be either paved or unpaved. Paved paths are usually Portland cement concrete or bituminous concrete, although sometimes wood is used, particularly in areas of standing water. The concretes have the characteristics described above in the paragraph about sidewalks. Unpaved paths can be made using stabilized crushed rock or stabilized soil.

Crosswalks

Crosswalks are used to connect segments of sidewalks that are separated by roadways and some commercial driveways. Crosswalks help to concentrate pedestrian traffic into locations that are safer places to cross the road. Crosswalks locations are chosen to maximize the visibility of pedestrians to motorists, and signs and pavement markings can be used to enhance this visibility.

Crosswalks should include both pavement markings and warning signs to alert motorists. Marking crosswalks at the termini of pedestrian facilities is feasible on each end of the study area. All crossings of U.S. Route 2 are under VTrans' jurisdiction, crosswalks can only be installed in accordance with the VTrans *Guideline for the Installation of Crosswalk Markings and Pedestrian Signs at Marked and Unmarked Crossings*. It should not be difficult to accommodate crossings at the existing signalized intersections. However, a mid-block crossing at the Post Office would require additional review by VTrans under design development to determine if this would be acceptable on U.S. Route 2.

U.S. Route 2 is a State Highway under the jurisdiction of the Vermont Agency of Transportation (VTrans). Therefore, in order to have a marked crosswalk VTrans must grant permission. VTrans has several criteria that must be met.

These criteria are:

- Speed limit 40 mph or less
- 20 or more pedestrians per hour during A.M. or P.M. peak vehicular hour
- Annual Average Daily Traffic of 3000 vehicles or more
- Adequate pedestrian facilities on both sides of crosswalk
- 200 foot separation from other crosswalks
- Adequate stopping sight distance

Many of these criteria are met or would be met through the construction of new pedestrian facilities. However, the pedestrian volume criteria for 20 or more pedestrians during the peak hour could be problematic. New crossing locations may not have this many users at first, so an unmarked crossing without signage may need to be constructed. Based on discussions with VTrans, this potentially could be paired with advance pedestrian warning signs but would likely not be able to be striped or identified as a crosswalk. After the public has gotten used to using the crossing location, a pedestrian count could be conducted in order to document the required number of pedestrians. If sufficient volumes can be documented, the Town could then request to install a marked crosswalk.

One new midblock crossing location is recommended in this Study at the Post Office. This location has been chosen based upon the availability of sight distance and the desire to place new sidewalks close to the destination area by the Post Office and General Store. This new crossing location would not prevent pedestrians from crossing the road at intersections if accommodating traffic conditions exist. Curb ramps and warning signs are recommended at both intersection and mid-block crossings.

Recommended crossing areas will not meet the VTrans requirements for marked crosswalks due to a lack of documentation of 20 pedestrians during a peak hour. Therefore, it is recommended that sidewalk ramps and pedestrian warning signs be installed first. After an initial period during which pedestrians become used to using these crossing locations, a pedestrian count should be conducted. Once all criteria have been satisfied then VTrans should be approached about adding crosswalk markings.

Improved Shoulders and Bike Lanes

Improved shoulders or bike lanes can be incorporated into a project to provide a facility for bicyclists. Shoulders or bike lanes are paved and normally adjacent to the motor vehicle travel lanes. Bike lane symbols can be used if the shoulder is a minimum of 4 feet of width is provided (5 feet preferred considering the heavy truck traffic along U.S. Route 2), and if the bike lane is properly signed. Dedicated bike lanes are preferred over unmarked shoulders because they make drivers aware of the presence of bicyclists. However, bike lanes are not ideal when used over short sections of roadway (such as through the Village of East Montpelier) due to the lack of continuity.

Signage

Crosswalks, marked or unmarked, should have pedestrian warning signs installed. These signs would include a symbol of a pedestrian (W11-2) or pedestrians (S1-1) and a plaque showing a down arrow (W16-7P). Signs should be installed at each crosswalk. Advance signs should be installed approximately 100 feet before the first crosswalk when approaching the village. These advance signs would include the W11-2 sign, but instead of the down arrow the informational plaque would say "Ahead" (W16-9P). State law prohibits parking within 20 feet of a crosswalk, so it may be a good idea to install No Parking signs (R7-1) to educate motorists of this fact in areas where parking is currently permitted.

Some Typical Signs used near Crosswalks

Signs should be considered to indicate a “Share the Road” or “Bike Lane” condition, as appropriate. Also, radar feedback speed limit signs are a effective means to alert speeding motorists that they exceeding the posted speed limit, and they should slow down.

Drainage

Roadway runoff flows off of U.S. Route 2 and into the adjacent existing grassed lawns and roadside swales. There are existing storm drains along portions of the study area.

If new curbs are constructed then attention should be paid to how the curbs direct stormwater towards catch basins. With the addition of a curb and impervious sidewalk, storm drains and pipes are usually needed to collect stormwater from the curb line and discharge it through a storm drain to avoid water ponding in the road.

For a west side curbed sidewalk alternative, a storm drainage system would likely be required between the Post Office and the chiropractor’s office. An appropriate discharge point would need to be found for this new storm drain system, but there appear to be two potential locations. The first is at an existing U.S. Route 2 cross culvert by the cemetery driveway and the second is

an existing storm system near the chiropractor's office. In addition for the west side segment south of the post office roadside drainage swales would need to be modified to accommodate the sidewalk. This segment would not require the addition of drainage facilities along a curb as the existing edge of pavement and roadway drainage patterns would remain as they are today.

For an east side non-curbed sidewalk alternative, a storm drainage system would not likely be required. Drainage which currently flows off of U.S. Route 2 would continue into the grass strip zone and potentially across the sidewalk. Roadside drainage swales would need to be modified to accommodate the sidewalk.

SECTION 4 – RIGHT-OF-WAY

In order to determine the available U.S. Route 2 right of way, VTrans was contacted and preliminary VTrans BRF 037-1(17) and final STPG 028-3(35)S plans were reviewed. From these sources, the available right of way is shown as 4 rods or 66 feet. A historical right-of – way plan for this section of U.S. Route 2 is included in Appendix C. Of note is that as part of VTrans BRF 037-1(17), VTrans obtained additional fee simple right of way to address property purchases related to the intersection relocation. This additional right of way does not extend for the length of the study area but does have some overlap. This does not negate the historical right of way but it currently has clearer defined limits in the field. A survey would be necessary to delineate exact locations of the historical 4 rod right of way as it relates to the roadway centerline.

Construction of sidewalks, shared use paths or widened shoulders along any alignment is likely to require temporary easements to provide adequate room for construction crews to perform the work. This is especially true in areas where grading beyond the existing right of way is necessary to provide a stable slope. The size and locations of these easements would be determined during the final design process.

All work conducted in a right of way requires permission from the owner. The Town will need to obtain permission from VTrans in order to construct bicycle or pedestrian improvements in the State's right of way through the procurement of a Section 1111 Utilities Permit.

Slopes and drainage features that fall outside of the right of way will require permanent easements for maintenance purposes. The size and locations of these easements would be determined during the final design process.

It is anticipated that only shared use paths would require permanent right of way outside the 4 rod limit. Temporary construction easements on approximately 9 properties would also be required for both the east and west side non-curbed sidewalk alternatives. Proposed improvements will be located within the existing right of way, but slopes may extend beyond the existing right of way.

No other alternatives are anticipated to require additional permanent right of way or temporary construction easements outside the 4 rod limit.

SECTION 5 – UTILITY IMPACTS

Impacts to existing utilities should be minimal. Utility poles exist along each side of US Route 2 in the study area, and constructing additional facilities may require relocating some of the poles. There is also a fire hydrant located on the east side of U.S. Route 2 adjacent to the cemetery driveway that also may require relocation or changing the elevation. An underground water main exists beneath U.S. Route 2 along the southern half of the project area. These utilities have been identified by a field visit, and additional unmarked or abandoned underground facilities may exist.

East Side Utility Poles

In order to fully determine what impact the improvements considered in this study will have on the existing utilities, a survey and final design plans are required. Some impacts will be due to the existing utilities falling within the proposed path of the new improvements, and other utilities may be impacted by newly created slopes or drainage features. Several utility poles relocated by the VTrans BRF 037-1(17) project are expected to be outside the limits of the west side route alternatives, and no other poles are present on the west side of the road. No utility poles are expected to require relocation for the east side route alternatives since the utility poles would fall within the green strip of these alternatives. However, a potential alignment shift may be necessary to avoid impacts to two (2) utility poles adjacent to the Jockey Hill Auto Shop, or these poles may need to be relocated.

SECTION 6 – NATURAL AND CULTURAL RESOURCES

Natural Resources

Our investigation of natural resources included a query of the Vermont Agency of Natural Resources Environmental Interest Locator as well as a field reconnaissance of the project area. A map showing the results of this query can be found in Appendix D, and specific types of natural resources are discussed below.

Endangered Species, Flora/Fauna, Forest Land, Agricultural Land and Public Land are not present within the project area. Therefore, none of these resources will be impacted by the project. There are no public recreational lands adjacent to the study area. Due to the likelihood of Federal funding for any sidewalk construction it is likely that a Section 106 review will be necessary, but no obstacles to construction are foreseen.

This project is not expected to have a significant detrimental effect on flora or fauna. Some flora will be removed to make room for the proposed improvements and consists primarily of trees,

shrubs and brush located within the established road right of way. Likewise, due to the developed nature of the project area no significant impacts on fauna are expected.

Some of the proposed alignments will require removing some trees and vegetation. The final design will determine which trees will need to be removed because they are in the path of the proposed improvement. Some trees may need to be removed even if not in the path of the improvement because grading will place additional soil above their roots. When possible, uncurbed sidewalks will be routed around existing trees. It is suggested that an arborist be consulted during the design of the project.

Hazardous Waste sites are indicated on the Vermont Agency of Natural Resources Environmental Interest Locator Map within the Study area. The General Store is shown as a known Hazardous Waste Site or Generator. In addition, the Lamb property across U.S. Route 2 has ongoing remediation associated with historical petroleum tank leakage from the fuel station that migrated across U.S. Route 2. This remediation incorporates a contamination removal facility at the rear of the property. These sites should not have any impact on the feasibility of sidewalk construction due to the shallow nature of excavation and previous mitigation efforts. However, information on this site would need to be reviewed in further detail during design development to confirm that no significant impact would result from the project.

Wetlands are present in the Study area. DuBois & King, Inc. visited the project area to look for wetlands and other natural resources. Two wetlands were identified along the west side of U.S. Route 2, near the middle of the project area. These were subsequently classified by Shannon Morrison, VT DEC District Wetlands Ecologist, as Class III wetlands. A memo detailing the investigation of the wetlands along with accompanying photographs and VT DEC review can be found in Appendix D.

Class III Wetlands

Class III wetlands are those wetlands that do not provide significant function and value according to the Vermont Wetland Rules. These wetlands are not protected by the Vermont Wetland Rules and a Vermont Wetland Permit is not required for projects in Class III wetlands. Class III wetlands may, however, be protected by other federal, state or local laws and regulations, including those administered by the U.S. Army Corps of Engineers. Projects that require a federal permit will also require a Section 401 Water Quality Certification. The considered improvements are anticipated to require less than 3,000 SF of fill or disturbance of the wetlands making the project a Category 1 non-reporting impact. Impacts to these wetlands would need to be reviewed in further detail during design development to confirm that there are no significant impacts or reporting requirements.

Streams, Rivers, and Floodplains are not located close to the project area. The Winooski River parallels U.S. Route 2 but is significantly offset behind roadside properties. This project will result in the exposure of soil during construction and a minimal increase of stormwater runoff but is not anticipated to have any significant impacts to the Winooski River or other waterways.

The project area is entirely within Zone C "areas of minimal flooding" as shown on the National Flood Insurance Program Flood Insurance Rate Maps. This project is outside of the 100 year floodplain and therefore there are no floodplain concerns regarding the proposed infrastructure improvements.

Stormwater will be slightly affected by the project. The infrastructure improvements proposed in this study will slightly increase the amount of impervious area, and consequently stormwater volumes and flow rates. Stormwater will be collected and distributed via swales and catch basins and piping. Existing drainage patterns will remain largely unchanged with the construction of the recommended improvements. Areas not currently served by storm drains or sidewalks will see a small increase in runoff. Some new stormwater collection facilities may need to be added. However, any new storm drains would be designed to outlet in the vicinity of the existing drainage pattern, so impacts due to changes in drainage patterns would be minimal. The recommended improvements will create less than one acre of impervious area and will also disturb less than one acre of land. Consequently, the improvements will have no adverse impact to stormwater and no stormwater permit will be required.

Cultural Resources

A reconnaissance level survey of the historical architectural resources was conducted by Mary Jo Llewellyn Preservation Services, and the results were summarized in a Historic Resource Identification Report dated December 22, 2011 that can be found in Appendix E. This report states that the project study area is entirely within the boundaries of the East Montpelier Village Historic District (SR #1207-44) which was listed in 1978 on the Vermont State Register of Historic Places. The report describes East Montpelier as a good example of a typical early milling and industrial village. It was established in 1825 beside the Winooski River which provided the water-power to operate a number of milling and manufacturing businesses. The water-powered industries continued into the 20th century but have now ceased to exist and the associated industrial buildings are no longer standing. The Village that grew up around the industries is today comprised of primarily residential buildings constructed in architectural styles that span the 19th and the first half of the 20th centuries. Nearly all of the buildings included in the East Montpelier State Register of Historic Places are still standing and the majority retain their historic form and massing. The report states that since the Village retains its architectural integrity of location, design, setting, materials, workmanship, feeling and association, it appears eligible for listing on the National Register of Historic Places as a historic district. The report concludes that pedestrian facilities should continue to follow the roadway as they have done historically in order to emphasize the Village nature of the area and to reinforce the social fabric. The construction of the study sidewalks appears to have no potential to adversely impact the historic village.

Archeological resources were investigated by the University of Vermont's Consulting Archeology Program. Their February 13, 2012 report can be found in Appendix E. To accomplish the

Archeological Resource Assessment, a historic properties and pre-contact Native American archaeological sensitivity desk review was conducted. This was followed by a field inspection of the project area. No areas were identified as sensitive for pre-contact Native American sites, and the project was determined to have no effect on historic properties. The report concluded that the construction activities would have no impact on any significant pre-contact or historic-era archaeological resources, or to standing historic structures and thus the project should receive a determination of No Effect.

SECTION 7 – MAINTENANCE

Sidewalks, green strips and parking lanes would be maintained by the Town of East Montpelier or frontage property owners, and curbs and the travelled roadway would be maintained by the Vermont Agency of Transportation. Typical maintenance activities for the Town would include snow removal, pruning, mowing and sidewalk/crosswalk surface repairs. Agency of Transportation maintenance activities would include snow removal on the travelled roadway, refurbishing pavement markings and repairing/replacing signs. New pedestrian facilities would represent only a minimal increase in the maintenance costs for the Agency of Transportation, but the Town would need to plan on additional costs for snow removal and other maintenance activities.

SECTION 8 – PUBLIC INVOLVEMENT

During the course of development of the Study, several public meetings were conducted. These included:

Local Concerns Meeting.....November 15, 2011
Alternatives Presentation Meeting ..... March 8, 2012

The Local Concerns Meeting was attended by approximately 10 community members. The public was unified in their concern for children and other pedestrians walking along U.S. Route 2 with its narrow shoulders and wide driveways. Speeding and high traffic volumes including truck traffic was also mentioned as concerns. Providing some pedestrian connection to the Post Office and General Store from the VTrans sidewalks installed (to be installed) at the VT Route 14 intersections was a priority. This should be reviewed to identify safe crossing locations. Minutes for this meeting and the attendance list can be found in Appendix G. Of note, is that during a field visit we did speak with Jeff Biron, owner of the General Store and the garage property to the north by Quaker Road. His mother also is the owner of the adjacent Post Office and another garage across U.S. Route 2 from Quaker Road. Mr. Biron expressed his opinion that pedestrian improvements were not needed since there were few if any pedestrians. He believed that there was no room for sidewalks and that he would be against any across his properties especially with any associated driveway curbing. Additionally, he expressed concern for the cost to construct and maintain the sidewalk.

The Alternatives Presentation Meeting was attended by approximately 20 residents. The considered alternatives were presented and the proposed sidewalk & bicycle improvements were discussed. Questions regarding the need for right of way, the installation of marked/unmarked crosswalks and possible funding sources were entertained and answered.

The general consensus was that a sidewalk on the west side of U.S. Route 2 was the preferred alternative. It was desired that this also be paired with a mid-block crosswalk to a connector sidewalk on the east side between the crosswalk and the existing sidewalk at VT Route 14 north intersection. After discussion of this alternative, it was requested that the alternative be broken into phases that might more easily be funded through TE grants. Minutes for this meeting and the attendance list can be found in Appendix G.

SECTION 9 – RECOMMENDATIONS

After discussions with the public and developing layouts and their associated costs, DuBois & King recommends that several improvements be made within the Village of East Montpelier. The recommendations include the construction of curbed sidewalks and widened shoulders along portions of the U.S. Route 2 corridor in order to improve pedestrian and bicyclist mobility and safety in East Montpelier. We also recommend that modest traffic calming measures be incorporated to the extent permissible by VTrans. Specific recommendations are:

- Provide sidewalk along the west side of U.S. Route 2 between the VT Route 14 south intersection and Quaker Road.
- Provide shoulder widening in conjunction with reduced travel lane widths on both the east and west sides of U.S. Route 2 between VT Route 14 south intersection and Quaker Road.
- Provide sidewalk along the east side of U.S. Route 2 between the Post Office and existing sidewalk at the VT Route 14 north intersection.
- Sidewalk should be 5 feet wide with a 7 inch granite curb located immediately adjacent to the road without a green strip.
- Provide a new unmarked mid-block crosswalk at the Post Office.
- Install pedestrian warning signs and parking prohibition signs near crosswalks.
- Install crosswalk markings after sufficient pedestrian and vehicular traffic is documented.
- Calm traffic by providing a more urban look to the road by adding curbs and sidewalks, through the use radar feedback signs and pedestrian warning signs, and through increase enforcement of existing speed limits.
- Design and construct recommended sidewalks in phases according to available funding sources.
- Anticipate and obtain funding for approximately $430,000.
- Coordinate design of improvements with property owners and the Vermont Agency of Transportation in order to identify and address impacts to driveways, existing landscaping and right of way.

A plan showing the recommended alternative(s) is included in Appendix A.

SECTION 10 – ESTIMATES OF PROJECT COSTS

Estimates of probable project costs have been developed using the conceptual layouts developed for the alternatives, and the Vermont Agency of Transportation Averaged Price List.

The estimates include the cost for the sidewalks, curb, reconstruction of roadway pavement adjacent to the curb, shoulder widening, drainage adjustments necessitated by the work, signing, erosion control, traffic control, and mobilization of the contractor. A 20% contingency has been added to the overall construction value to account for unforeseen work and circumstances.

Costs for preliminary engineering/final design, and construction inspection are based on a percentage of the construction cost. A value of 15% of the construction cost has been used for engineering/design, and a value of 10% of construction costs has been included for construction inspection.

Detailed, item-by-item cost estimates are included for all the considered alternatives in Appendix F. These are summarized on the table on the following page:

Probable Costs for Alternatives

Description	Construction	Design	Inspection	Total	Probable Cost Per Foot
WEST SIDE U.S ROUTE 2					
SIDEWALK WITH CURB	$281,000	$42,150	$28,100	$351,250	$374
SIDEWALK WITHOUT CURB	$194,000	$29,100	$19,400	$242,500	$258
SIDEWALK CURBED OFFSET	$282,000	$42,300	$28,200	$352,500	$375
EAST SIDE CONNECTOR	$65,000	$9,750	$6,500	$81,250	$160
EAST SIDE U.S ROUTE 2					
SIDEWALK WITHOUT CURB	$216,000	$32,400	$21,600	$270,000	$192
SIDEWALK CURBED OFFSET	$354,000	$53,100	$35,400	$442,500	$314
BOTH SIDES U.S ROUTE 2					
SHOULDER WIDENING ONLY	$95,000	$14,250	$9,500	$118,750	$154

The cost of shoulder widening is included in the sidewalk alternatives, but is also shown separately for informational purposes.

The recommended alternative is for the West Side Curbed Sidewalk ($347,500) with the East Side Connector ($81,250). Because the estimated construction cost exceeds the funding limitations of TE grants for a single year, the construction will need to be divided into several years if TE grants are used to develop the project. Typically, TE grant funding for a project is limited to $300,000 in any year. Adding a 20% local match, then the total funding is normally limited to $375,000. This funding must cover all envisioned project components to be undertaken during the year, which can include construction, right-of-way acquisition, engineering, management, and inspection. Recognizing the funding limitations for a given year, and upon discussions with the Town, DuBois & King has divided up the project into four separate construction sections or phases that should be affordable and provide intermediate functionality. The phases are:

- Phase A: Construction of West side sidewalk between the Post Office and Quaker Road
- Phase B: Construction of shoulder widening on the East side of U.S. Route 2 (provides destination area for the mid-block crosswalk)
- Phase C: Construction of West side sidewalk between VT Route 14 south intersection and the Post Office (including shoulder widening)
- Phase D: Construction of East side connector sidewalk between the Post Office mid-block crosswalk and the existing sidewalk at VT Route 14 north intersection

The four phases are indicated on the Phasing Plan/Study Area Map included as Appendix A. Phases have been lettered in the order that it is suggested they be constructed to best address the concerns voiced at the Alternatives Presentation Meeting.

Costs have been developed for each phase under the assumption that they would each be designed and constructed separately. With the breaking up of the recommended alternative into phases, there is a loss of some economies of doing the work all at once due to economies of scale, such as lower unit prices due to higher volumes or by acquiring a single permit rather than multiple permits. If it was possible to acquire enough funding to pursue multiple phases at once it may be possible to achieve some savings. Other funding sources could be considered by the Town, such as a Federal earmark and a Bike/Pedestrian grant. Federal earmarks and Bike/Pedestrian Program grants can be for any amount, and typically require 10% or 20% local matching funds.

Estimated phase costs can be found in the following table:

Probable Project Costs for Phased Construction					
Phase	Construction	Engineering	Inspection	Total	Cumulative
A	$58,000	$8,700	$5,800	$72,500	$72,500
B	$55,000	$8,250	$5,500	$68,750	$141,250
C	$215,000	$32,250	$21,500	$268,750	$410,000
D	$65,000	$9,750	$6,500	$81,250	$491,250
Totals	**$393,000**	**$58,950**	**$39,300**	**$491,250**	

SECTION 11 – PROJECT TIME LINE

Implementation of the recommended improvements will largely depend on the availability of funding. Generally, Transportation Enhancement Grants are limited to approximately $300,000 per community in any given year by VTrans. Because the recommended improvements that would be eligible for TE funding would cost approximately $430,000 if undertaken as a single project, the project construction would need to be phased over several years.

Identifying funding sources for each phase represents the most uncertain step in the project timeline. Once funding for a phase has been located, then the design, permitting, utility coordination and right of way acquisition is expected to take one to two years. Construction of any phase should be completed within a single construction season (May to October).

If funding can be obtained soon, then design activities could be conducted through 2013 and the first phase constructed in 2014. As funding is found this two year cycle (design/build) could be repeated until all desired improvements are in place.

This schedule assumes that funding could be secured through the TE Grant program to cover 80% of the anticipated costs in the target years, and that the Village would be able to dedicate their 20% matching share.

In regards to the Town's funding of the construction, the value of donated labor, and donated right-of-way and easements, would be eligible to count towards the Town's 20% match. Half of the match must be in cash. The Town should consider these facts as the design, right of way acquisition, and construction are undertaken.

SECTION 12 – VIABILITY

The recommended improvements meet the purpose and need of the project as stated earlier in this Study. This project is an appropriate use of public funds, including Federal Transportation Enhancement and local monies, for the following reasons:

- Sidewalks and widened shoulders will be constructed which will help improve access between homes and the Post Office, the General Store, the church, town offices and other destinations
- Sidewalks and widened shoulders will be constructed that provide school students with an improved pick up and drop off and place to walk or wait
- Addition of curbs, reduction of travel lane widths, and addition of signage will be a traffic calming measures that will decrease speeding within the Village area

This project will clearly serve the public good, as it will increase the safety and mobility of pedestrian and bicyclists in the East Montpelier Village area.

Details for any improvements will require careful coordination between the Town, the property owners and VTrans during the final design phase in order to address issues such as right of way, impacts to existing landscaping and driveways, and maintenance.

APPENDIX A

TYPICAL SECTION AND LAYOUT PLANS

Alternative Alignments

Alignment alternatives were studied for:

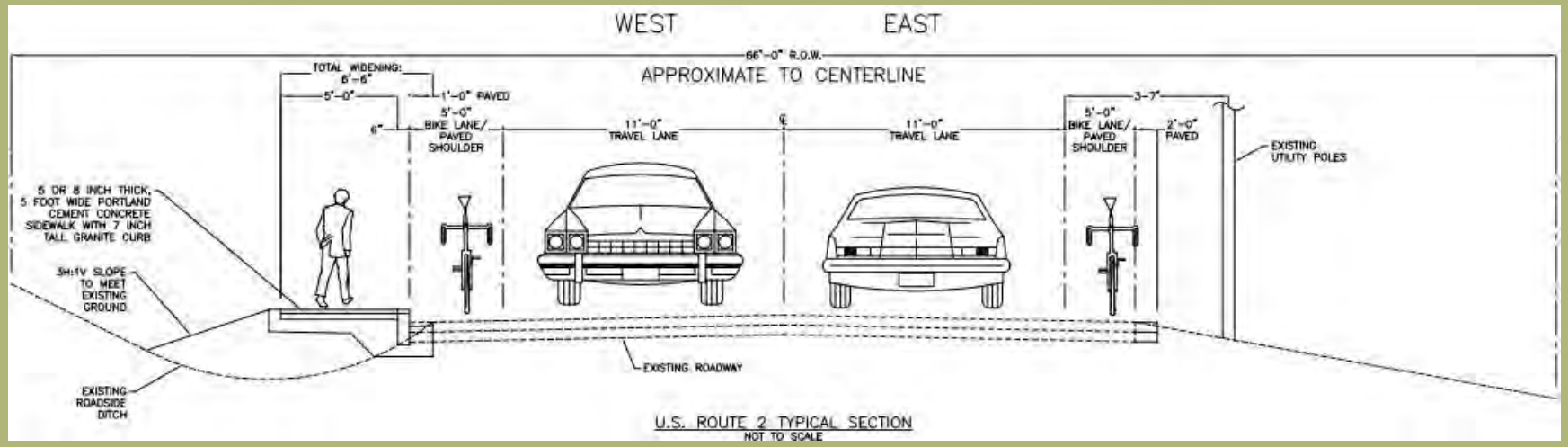
West Side of U.S. Route 2

- Curbed Sidewalk
- Non-Curbed Sidewalk
- Curbed Offset Sidewalk
- With East Side Connector

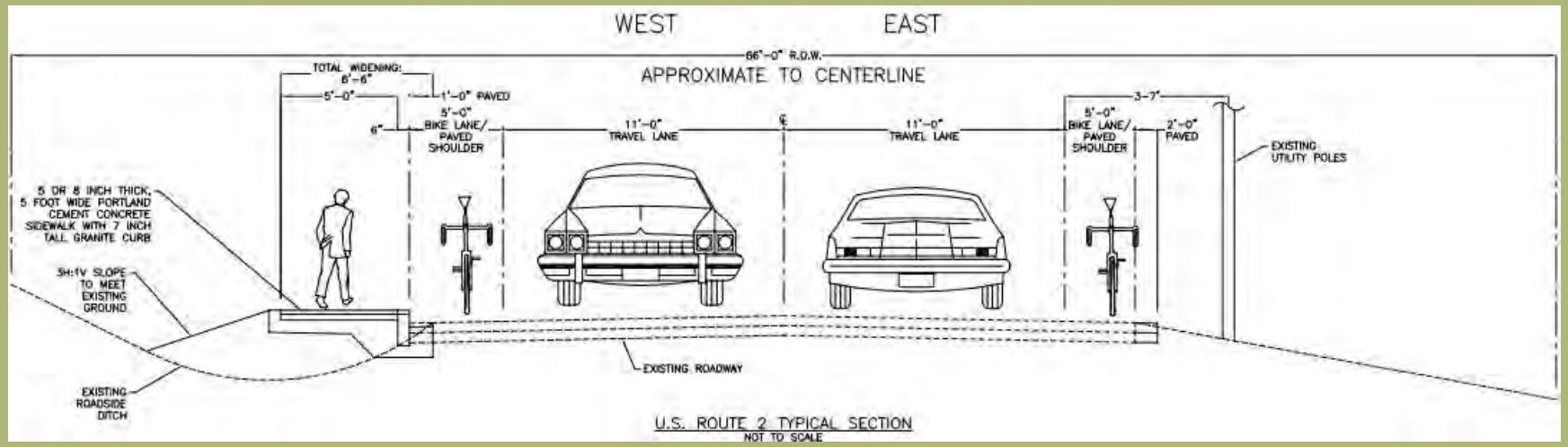
East Side of U.S. Route 2

- Non-Curbed Sidewalk
- Curbed Offset Sidewalk

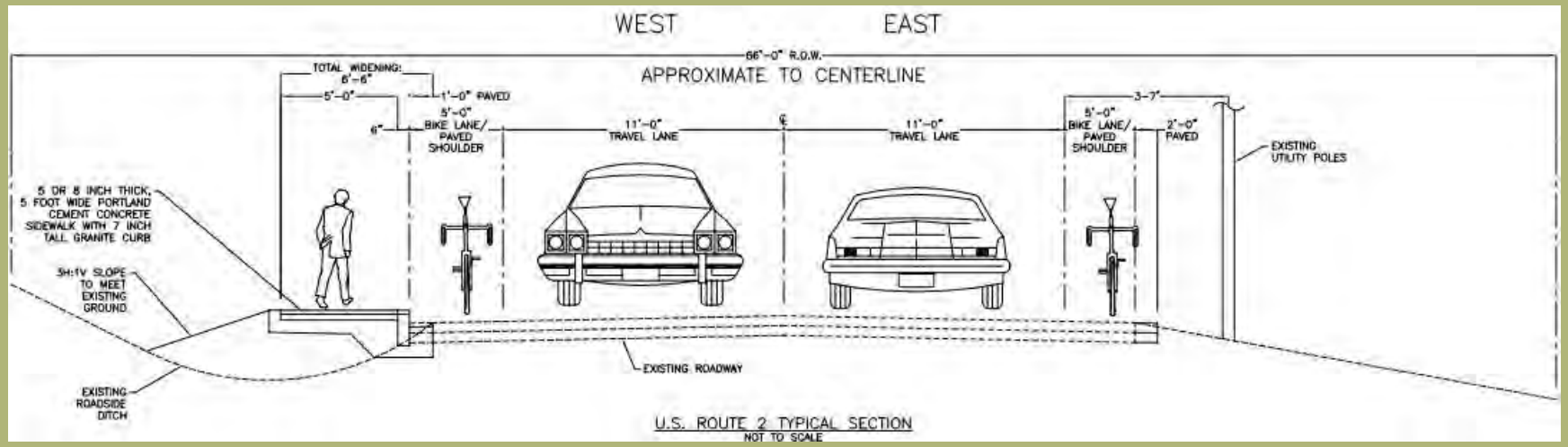
West Side – Curbed Sidewalk



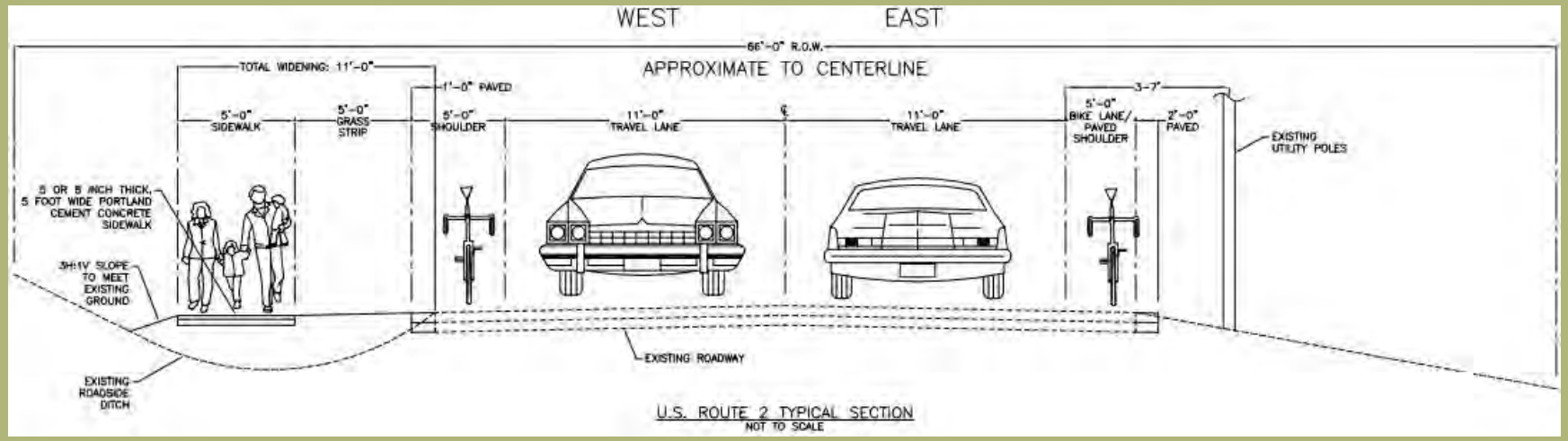
West Side – Curbed Sidewalk



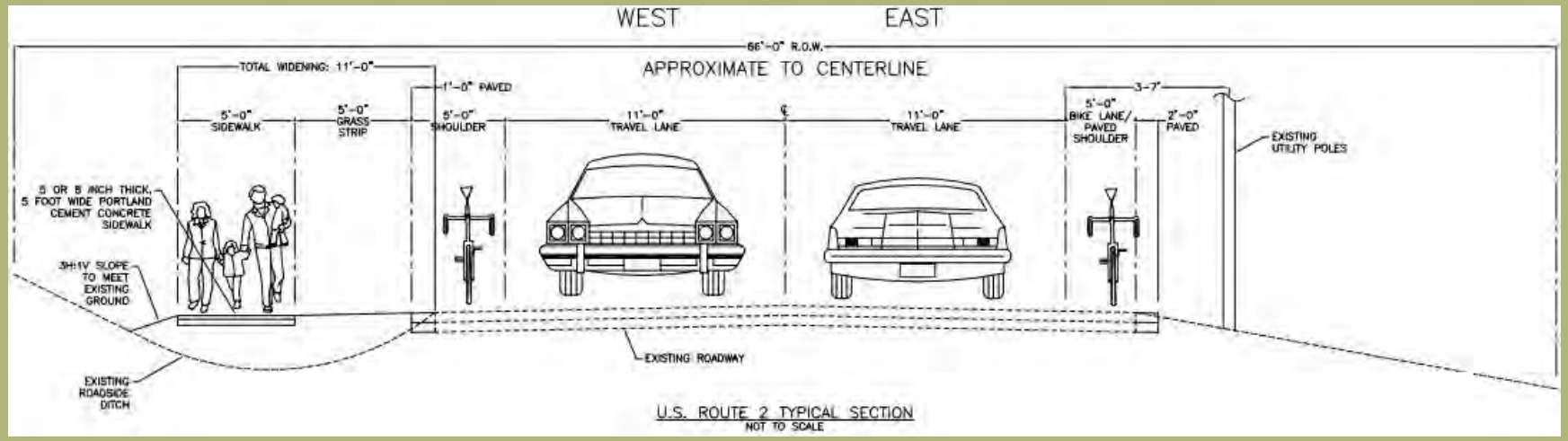
West Side – Curbed Sidewalk



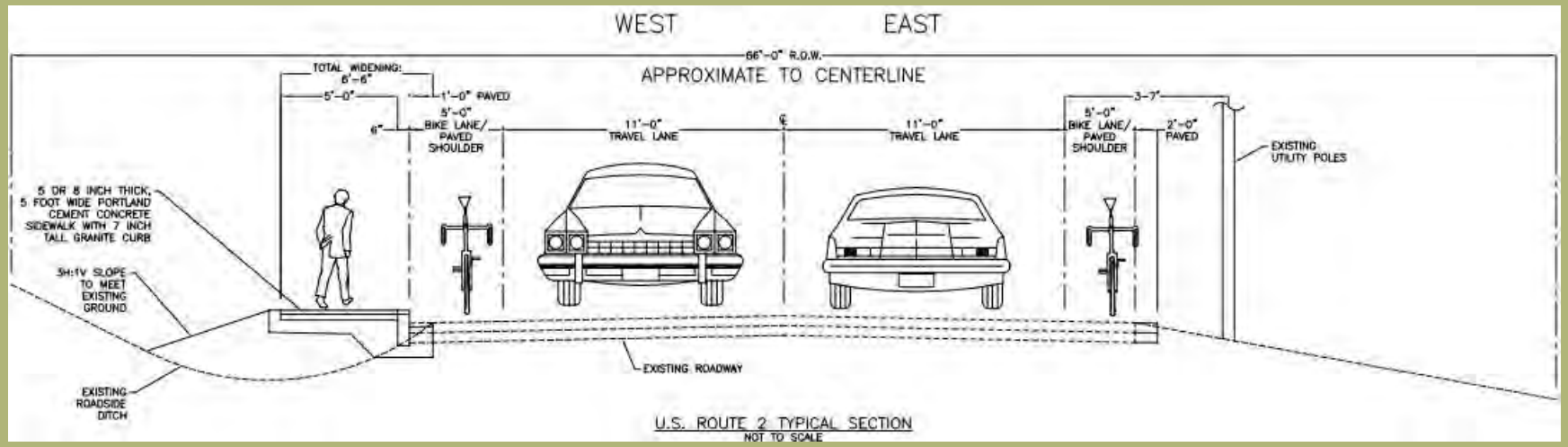
West Side – Non Curbed & Offset Sidewalk



West Side – Non Curbed & Offset Sidewalk

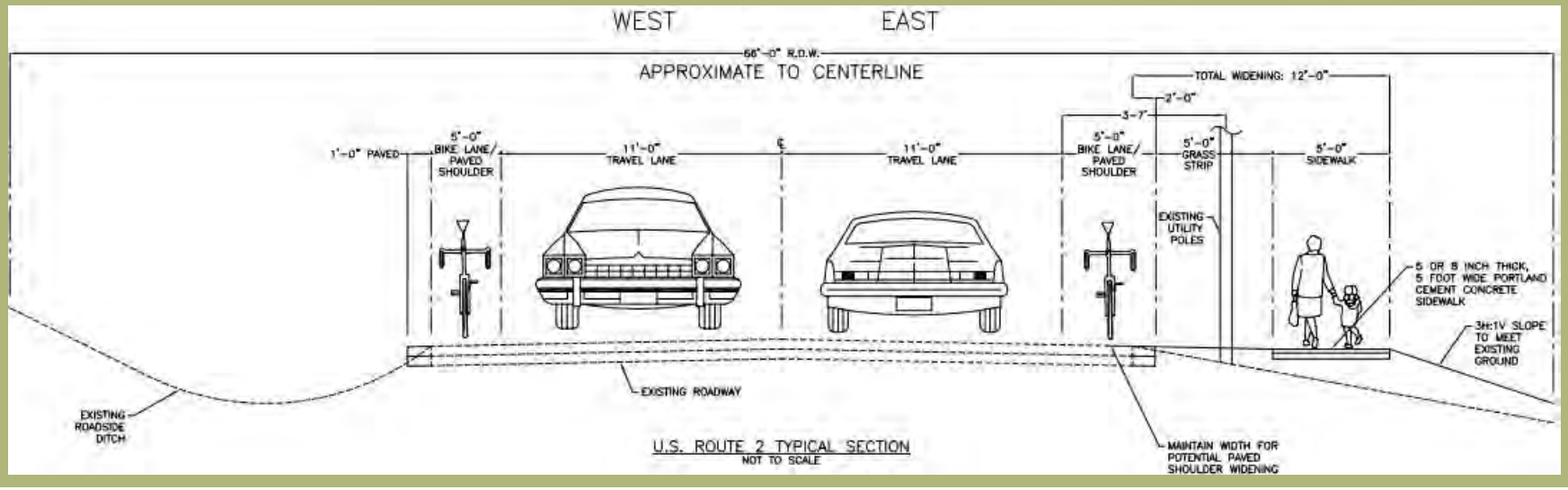


West Side – Non Curbed & Offset Sidewalk

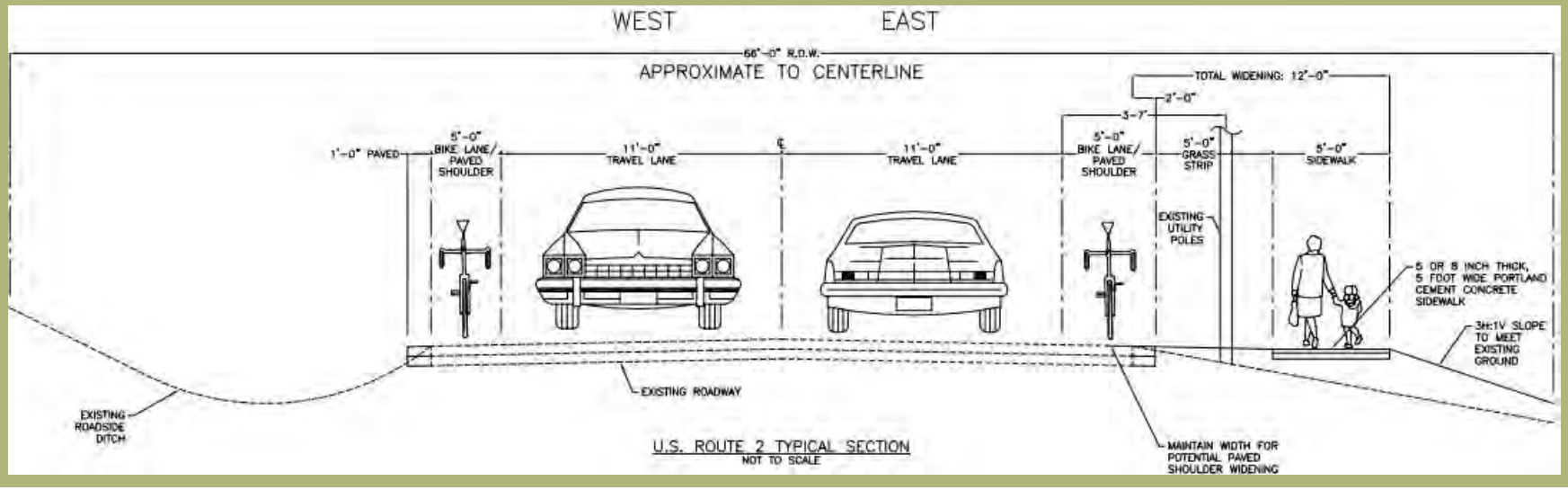


West Side – With East Side Connector

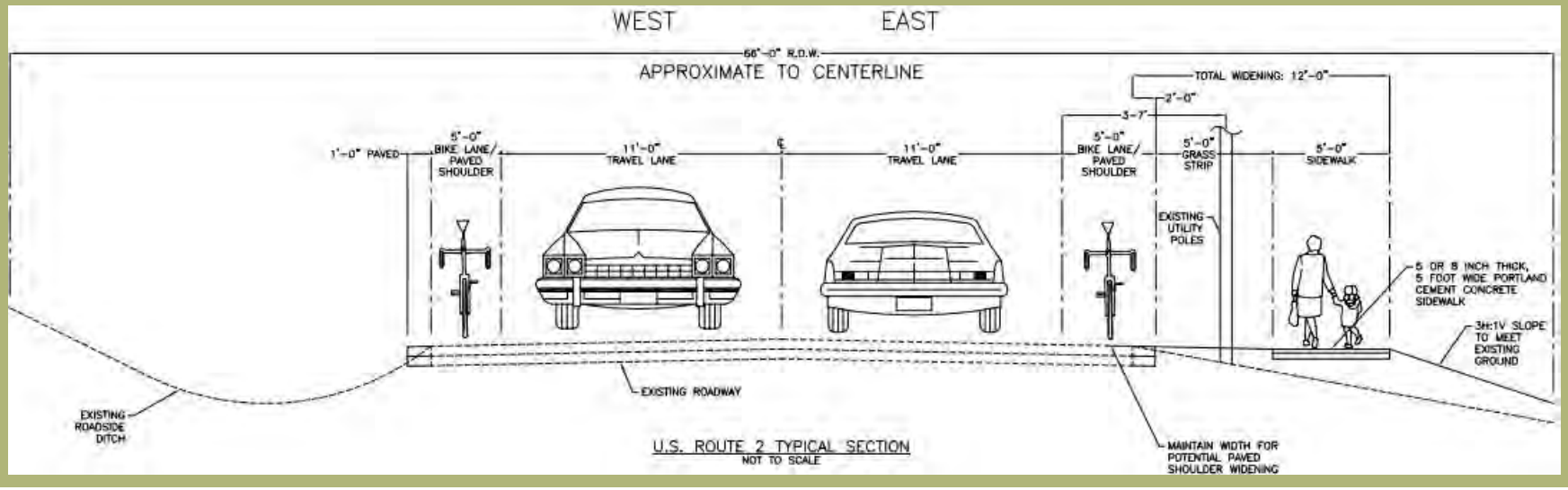
East Side – Non Curbed & Offset Sidewalk

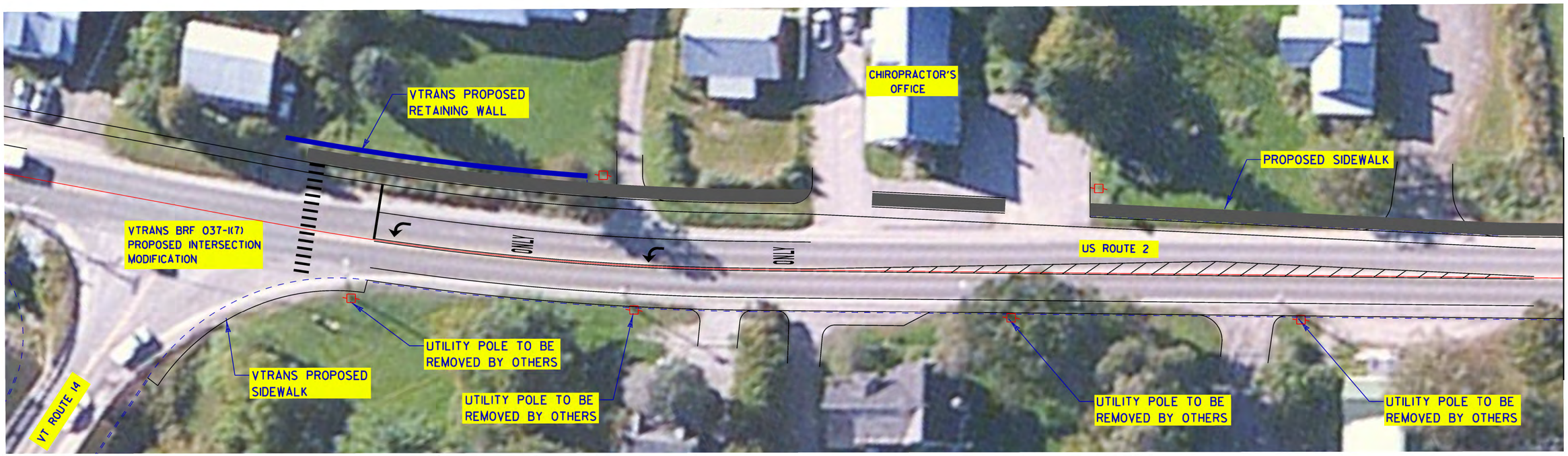


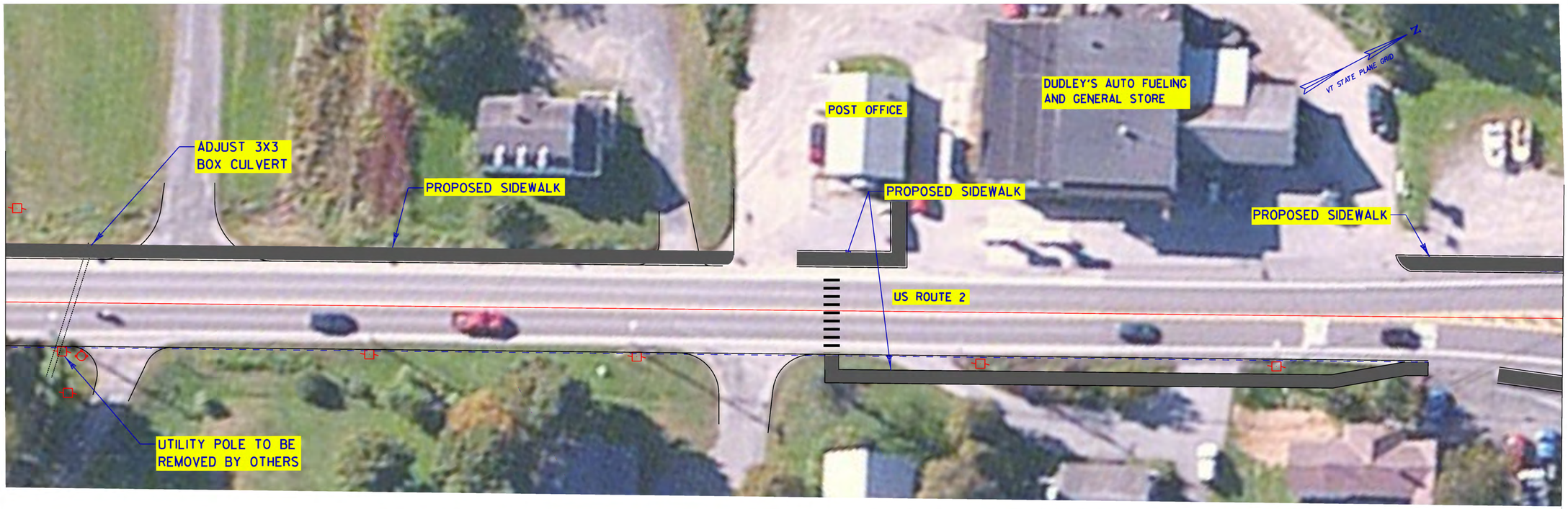
East Side – Non Curbed & Offset Sidewalk



East Side – Non Curbed & Offset Sidewalk







DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83

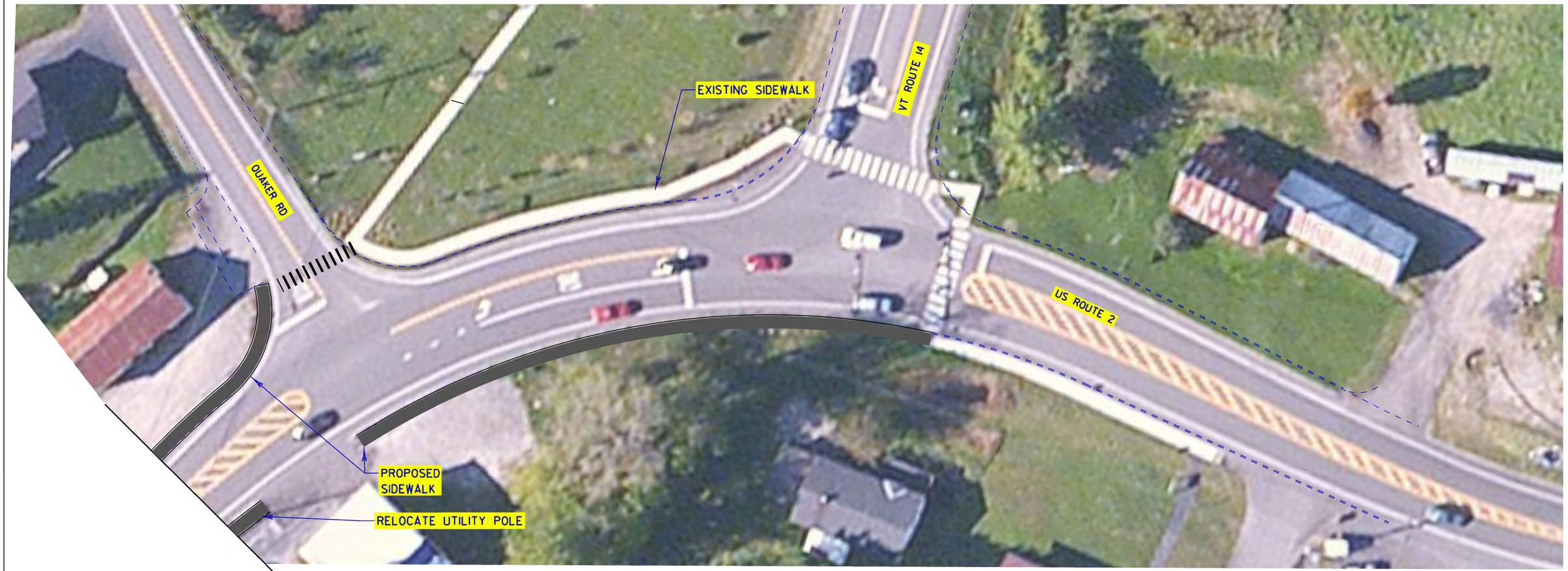
SCALE 1" = 20'-0
20 0 20

PREFERRED ALTERNATIVE

PROJECT NAME: EAST MONTPELIER SIDEWALK
PROJECT NUMBER: STP EH 11(3)

FILE NAME: 621360.dgn
PROJECT LEADER: CDL
DESIGNED BY: SJL
PLOT FILE: 621360.1

PLOT DATE: 8/20/12
DRAWN BY: SJL
CHECKED BY: EPD
SHEET 1 OF 2



DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83

SCALE 1" = 20'-0
20 0 20

PREFERRED ALTERNATIVE

PROJECT NAME: EAST MONTPELIER SIDEWALK
PROJECT NUMBER: STP EH 11(3)

FILE NAME: 621360.dgn
PROJECT LEADER: CDL
DESIGNED BY: SJL
PLOT FILE: 621360.1

PLOT DATE: 8/20/12
DRAWN BY: SJL
CHECKED BY: EPD
SHEET 2 OF 2

APPENDIX B

TRAFFIC COUNT AND ACCIDENT DATA

2010 (Route Log) AADTs
State Highways

VERMONT AGENCY OF TRANSPORTATION
POLICY, PLANNING AND INTERMODAL DEVELOPMENT DIVISION
TRAFFIC RESEARCH UNIT

May 2011

VERMONT AGENCY OF TRANSPORTATION
POLICY, PLANNING AND INTERMODAL DEVELOPMENT DIVISION
Traffic Research Unit

					BEGINNING REFERENCE:			ENDING REFERENCE:					2006	2008	2010
TYPE	NO.	NAME	FC	TOWN	MM	NAME	NUMBER	MM	NAME	NUMBER	ATR STA	STATUS	AADT	AADT	AADT
US	2		2	E MONTPELIER	2.007	TOWN HILL RD	TH-2	2.733	VT 14S			H	8700 E	9200 E	11600 E
US	2		2	E MONTPELIER	2.733	VT 14S	VT 14S	2.940	VT 14N/QUAKER RD	T14N/TH-25		H	10900 E	11500 E	12500 E
US	2		2	E MONTPELIER	2.940	VT 14N/QUAKER RD	T14N/TH-2	4.924	PLAINFIELD TL		W182	H	5800 E	6800 E	6600 E
US	2		2	PLAINFIELD	0.000	E MONTPELIER TL		0.859	VT 214		W103	H	6800 E	6800 A	6600 A
US	2		2	PLAINFIELD	0.859	VT 214	VT 214	1.282	MIDDLE RD/HARVEY HILL RD	TH-1/TH-35	W707	H	7200 E	7200 E	7100 E
US	2		2	PLAINFIELD	1.282	MIDDLE RD/HARVEY HILL RD	TH-1/TH-3	1.486	MARSHFIELD TL			H	7600 E	7000 E	8000 E
US	2		2	MARSHFIELD	0.000	PLAINFIELD TL		0.157	HOLLISTER HILL RD	TH-42		H	7600 E	7400 E	8000 E
US	2		2	MARSHFIELD	0.157	HOLLISTER HILL RD	TH-42	1.937	NAISMITH BROOK RD	TH-49		H	7000 E	6800 E	7500 E
US	2		2	MARSHFIELD	1.937	NAISMITH BROOK RD	TH-49	6.519	CREAMERY ST	TH-2	W104/098	H	5300 E	5200 A	5700 A
US	2		2	MARSHFIELD	6.519	CREAMERY ST	TH-2	6.755	CABOT RD	T215 (TH-1)		H	4800 E	4900 E	5300 E
US	2		2	MARSHFIELD	6.755	CABOT RD	T215 (TH-	7.892	GROTON RD	VT 232	W105	H	3600 E	3700 A	4000 A
US	2		2	MARSHFIELD	7.892	GROTON RD	VT 232	8.205	CABOT TL			H	3100 E	3200 E	3600 E
US	2		2	CABOT	0.000	MARSHFIELD TL		6.217	DANVILLE TL		W029/030/10	H	2900 E	3000 A	3200 A
US	2		2	DANVILLE	0.000	CABOT TL		0.313	W SHORE RD	TH-117		H	2900 E	3000 E	3200 E
US	2		2	DANVILLE	0.313	W SHORE RD	TH-117	1.674	VT 15		C022	H	3900 E	3600 E	3900 E
US	2		2	DANVILLE	1.674	VT 15		4.463	HILL ST/RAILROAD ST	TH-2/TH-3	C110	H	6100 E	5400 A	6000 A
US	2		2	DANVILLE	4.463	HILL ST/RAILROAD ST	TH-2/TH-3	7.339	VT 2B		C028	C	7000 A	6600 A	7100 A
US	2		2	DANVILLE	7.339	VT 2B		9.059	ST JOHNSBURY TL		C702	H	6600 E	6400 E	6900 E
US	2		14	ST JOHNSBURY	0.000	DANVILLE TL		0.919	BEGIN DIVIDED HWY			H	6600 E	6400 E	6900 E
US	2		14	ST JOHNSBURY	0.919	BEGIN DIVIDED HWY		1.169	N DANVILLE RD	TH 7		H	6600 E	6400 E	6900 E
US	2		12	ST JOHNSBURY	1.169	N DANVILLE RD		1.686	I 91 RAMP A: EXIT 21		C214	H	6800 E	8300 E	7300 E
US	2		12	ST JOHNSBURY	1.686	I 91 RAMP A: EXIT 21		1.864	I 91 RAMP H: EXIT 21			H	6200 E	7300 E	5600 E
US	2		12	ST JOHNSBURY	1.864	I 91 RAMP H: EXIT 21		2.021	I 91 RAMP G: EXIT 21		C031	H	4400 E	6500 E	5800 E
US	2		12	ST JOHNSBURY	2.021	I 91 RAMP G: EXIT 21		2.209	I 91 RAMP F: EXIT 21			H	6100 E	5400 E	5100 E
US	2		12	ST JOHNSBURY	2.209	I 91 RAMP F: EXIT 21		2.313	I 91 RAMP B: EXIT 21			H	6300 E	5700 E	5800 E
US	2		12	ST JOHNSBURY	2.313	I 91 RAMP B: EXIT 21		2.630	VT 2B		C215	H	5700 E	4900 E	4900 E
US	2		14	ST JOHNSBURY	2.630	VT 2B		2.805	CENTRAL ST		C154	H	6200 E	5400 A	5400 A
US	2	WESTERN AVE	14	ST JOHNSBURY	2.805	HIGH ST/CENTRAL ST	TH-356/34	3.053	BARKER AVE		C209		6500 E	5700 E	5900 E
US	2	WESTERN AVE	14	ST JOHNSBURY	3.053	BARKER AVE	TH-360	3.242	S MAIN ST	TH-3	C155		7200 E	7600 E	7600 E
US	2	S MAIN ST	14	ST JOHNSBURY	3.242	S MAIN ST	TH-3	3.350	MAIN ST	TH-3	C156		8200 E	8700 E	8000 E
US	2	EASTERN AVE	14	ST JOHNSBURY	3.350	MAIN ST	TH-3	3.619	RAILROAD ST…(joins US5 for 0.12 mi.)	US5 (TH-1	C157		6200 E	6300 E	5200 E
US	2	RAILROAD ST	14	ST JOHNSBURY	3.619	RAILROAD ST…(joins US5 for 0.12 mi.)	US5 (TH-1	3.870	CALEDONIA ST		C159		8600 E	7300 E	7000 E
US	2	PORTLAND ST	14	ST JOHNSBURY	3.870	CALEDONIA ST		4.202	CONCORD AVE	TH-4	C160		8600 A	7400 E	7100 E
US	2		14	ST JOHNSBURY	4.202	CONCORD AVE	TH-4	4.386	LINCOLN ST			H	7500 E	6800 E	7100 E
US	2		14	ST JOHNSBURY	4.386	LINCOLN ST		5.808	SPAULDING DR	TH-37	C161/112	H	6100 E	6000 A	6100 A
US	2		14	ST JOHNSBURY	5.808	SPAULDING DR	TH-37	6.567	VT 18		C134		5900 E	5900 E	6000 E
US	2		14	ST JOHNSBURY	6.567	VT 18		7.690	E VILLAGE RD	TH 40		H	5800 E	5800 E	5500 E
US	2		14	ST JOHNSBURY	7.690	E VILLAGE RD	TH 40	8.421	SEVERANCE HILL RD	TH-8	C113	H	4600 E	4300 A	4300 A
US	2		14	ST JOHNSBURY	8.421	SEVERANCE HILL RD	TH-8	8.659	KIRBY TL			H	4300 E	4900 E	4700 E
US	2		2	KIRBY	0.000	ST JOHNSBURY TL		0.967	CONCORD TL		C023	H	3900 E	3600 A	4100 A
US	2		2	CONCORD	0.000	KIRBY TL		2.030	SHADOW LAKE RD	TH-3	E100	H	3900 E	3600 E	4100 E
US	2		2	CONCORD	2.030	SHADOW LAKE RD	TH 3	2.268	ROYALSTON CORNER	TH-6		H	3800 E	3300 E	3800 E
US	2		2	CONCORD	2.268	ROYALSTON CORNER	TH 6	5.460	VICTORY RD	TH-1	E101/020	H/W	3100 A	2900 A	2900 A
US	2		2	CONCORD	5.460	VICTORY RD	TH-1	8.621	MILES POND RD	TH-2	E124	H	2600 E	2300 A	2500 A
US	2		2	CONCORD	8.621	MILES POND RD	TH-2	9.284	MILES POND RD	TH-2	E006	H	2500 E	2200 E	2400 E
US	2		2	CONCORD	9.284	MILES POND RD	TH-2	10.661	OREGON RD	TH-4	E007	H	2600 E	2000 A	2300 A

Source: SQL Server VCSG

Vermont Agency of Transportation

Statewide Sections - Route Log Order /2 - Statewide

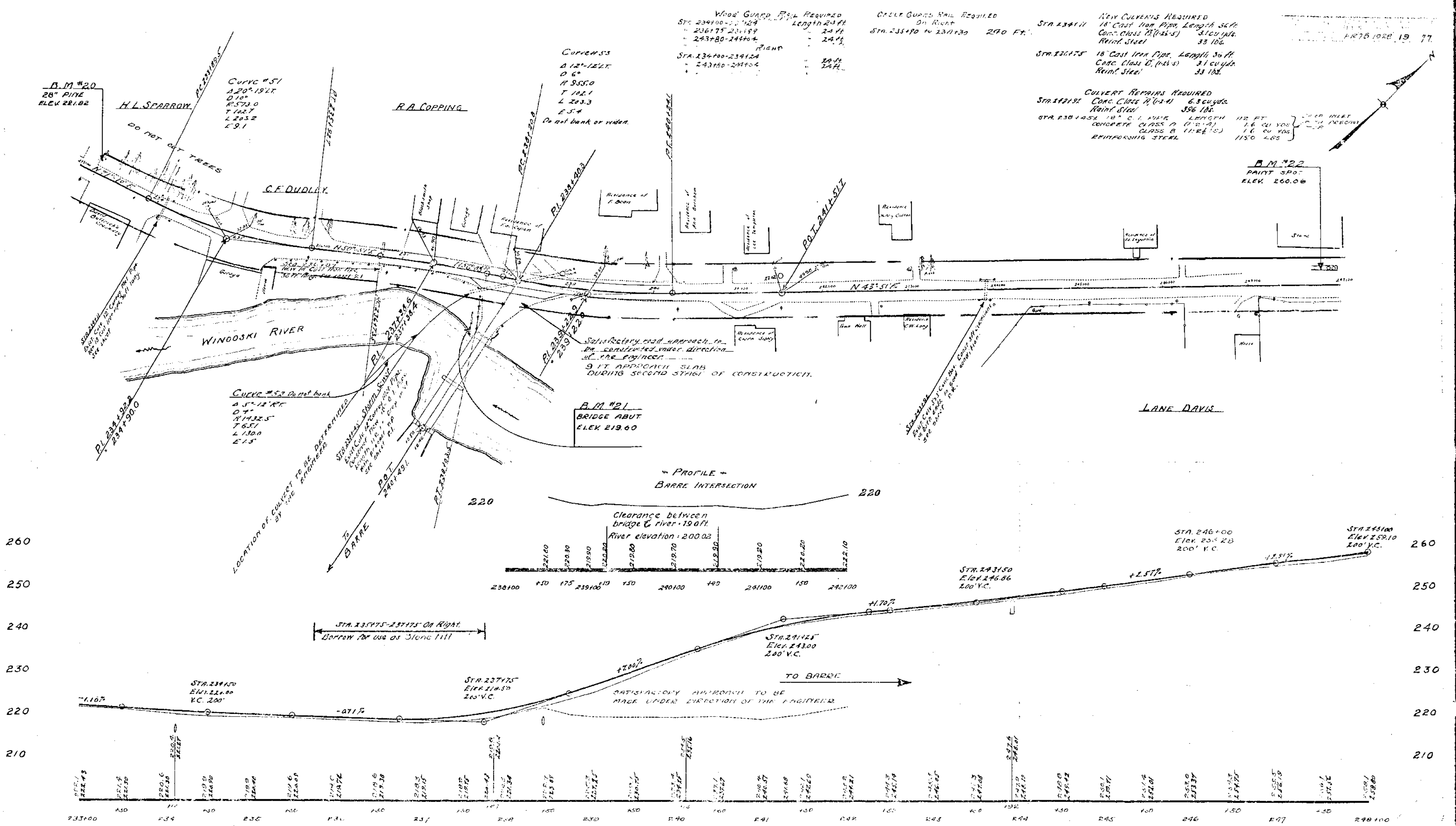
Years: 2003 - 2007

H.C.L No.	/3.	Route	System	Town	Mileage	ADT	Years	Crashes	Fatalities	Injuries	PDO Crashes	Critical Rate	Actual Rate	Ratio Actual/Critical	Severity Index ($/Accident/1.)
	39	US-2	Principal Arterial (r)	Alburgh	1.000 - 1.300	4385	5	14	0	8	9	2.303	5.831	2.531	$35,050
	87	US-2	Principal Arterial (r)	Alburgh	4.000 - 4.300	4700	5	12	0	0	12	2.263	4.663	2.06	$7,500
	450	US-2	Principal Arterial (r)	Alburgh	4.600 - 4.900	4750	5	7	0	5	5	2.257	2.691	1.192	$43,143
#	147	US-2	Principal Arterial (u)	Burlington	0.289 - 0.589	29941	5	175	0	31	153	6.06	10.675	1.761	$15,928
#	22	US-2	Principal Arterial (u)	Burlington, South Burlington	0.689 - 0.158	33262	5	346	1	58	302	5.992	18.999	3.17	$18,738
#	23	US-2	Principal Arterial (u)	South Burlington	0.558 - 0.858	26800	5	279	0	55	235	6.135	19.014	3.098	$16,746
#	597	US-2	Principal Arterial (u)	South Burlington	1.558 - 1.858	18417	5	68	0	17	56	6.421	6.743	1.05	$19,401
	376	US-2	Major Collector (r)	Richmond	0.553 - 0.853	4000	5	9	0	2	7	3.187	4.109	1.289	$17,589
	253	US-2	Major Collector (r)	Richmond	1.053 - 1.353	7698	5	17	0	13	10	2.727	4.033	1.479	$44,865
	462	US-2	Major Collector (r)	Richmond	4.853 - 5.153	3200	5	7	0	7	3	3.371	3.995	1.184	$56,114
	568	US-2	Major Collector (r)	Richmond, Bolton	6.153 - 0.074	2962	5	6	0	1	5	3.438	3.699	1.075	$15,067
#	519	US-2	Major Collector (r)	Waterbury	3.505 - 3.805	6336	5	11	0	0	11	2.852	3.17	1.111	$7,500
#	180	US-2	Minor Arterial (r)	Waterbury	3.905 - 4.205	11697	5	26	0	3	24	2.449	4.059	1.657	$13,027
	542	US-2	Major Collector (r)	Middlesex	0.753 - 1.053	4278	5	8	0	3	5	3.135	3.415	1.089	$24,525
#	561	US-2	Principal Arterial (u)	Montpelier	2.025 - 2.325	14861	5	58	0	16	47	6.609	7.128	1.078	$20,671
	407	US-2	Principal Arterial (r)	East Montpelier	1.740 - 2.040	9179	5	12	0	8	7	1.92	2.387	1.243	$39,642
*	201	US-2	Principal Arterial (r)	East Montpelier	2.440 - 2.740	9840	5	16	0	5	12	1.889	2.969	1.572	$22,156
	353	US-2	Principal Arterial (r)	East Montpelier	2.940 - 3.240	6717	5	10	0	5	6	2.07	2.719	1.313	$30,950

Note: East Montpelier U.S. Route 2 study area is between MM 2.733 2 2.940. The studied portion of U.S. Route 2 is not classified as a high accident roadway section, but the sections north and south of the VT Route 14 intersections are.

APPENDIX C

RIGHT-OF-WAY MAP



B.M. #20 SPIKE IN ROOT OF 28" PINE LEFT STA. 234+20± ELEV. 221.82

B.M. #21 N. W. CORNER BRIDGE ABUTMENT RIGHT STA. 238+00± 219.60 (U.S. ELEV. 669.70)

B.M. #22 PAINT SPOT ON FOUNDATION OF GAS PUMP AT STORE LT. STA. 247+00± ELEV. 260.06

SERIES FR NO 78

SHEET 19 OF 77

APPENDIX D

NATURAL RESOURCES

DuBois & King inc.

Charlotte W. Brodie
Field Naturalist

34 Blair Park Road, Suite 10
P.O. Box 1257
Williston, Vermont 05495
(802) 878-7661
Fax (802) 878-2907
cbrodie@dubois-king.com

ENGINEERING ∃ PLANNING ∃ SURVEY
PROGRAM MANAGEMENT

MEMORANDUM

621360F1

TO: **Evan Detrick, Project File**
SUBJECT: **Wetlands Review of East Montpelier Sidewalk Study area**
DATE: **December 9, 2011**

1. The East Montpelier Sidewalk Study project is located along U.S. Route 2 in East Montpelier between VT RT 14 E and VT RT 14 W, as shown on the attached VANR Environmental Interest Locator map.

2. I visited the project area on November 15, 2011 to search for wetlands. I found two wetlands within the project area, joined by a ditch along US Route 2. I delineated the wetlands in accordance with the COE 1987 Wetland Delineation Manual and the COE 2009 Interim Regional Supplement (transect data sheets attached). I flagged the boundaries, and recorded them using a Trimble Geo-XT GPS unit with sub-meter accuracy. The wetlands are designated as Wetlands A and B on the attached annotated GPS Print-out. Photos of the wetlands are attached.

3. The Vermont Agency of Natural Resources Wetlands Office now determines the Class of wetlands, primarily through field visits accomplished by District Wetlands Ecologists. Wetlands shown on VSWI maps, or contiguous to such mapped wetlands, are automatically assumed to be Class II. Other wetlands require determinations based upon their size, significant functions, and contiguity (or lack thereof) to surface waters. A Vermont District Wetlands Ecologist will make a determination of Class on the project wetlands in the near future.

4. Wetland A is a wet meadow dominated by cattails, creeping Jenny, sedges, dark green bulrush, and aster (cf calico) in the vicinity of the project, with a ditch running through it. It connects to a forested wetland, dominated by balsam poplar, tall white aster and sensitive fern to the west of the project area. It also connects via a ditch along the road edge to wetland B. The roadside ditch flows under Route 2 and becomes a defined stream channel there. The principal valuable functions of the wetland in the vicinity of the project include sediment/toxicant retention and nutrient removal/ retention/ transformation. The entire wetland is less than 0.5 acre.

5. Wetland B is a wet meadow, dominated by cattails and aster (cf calico) in the vicinity of the project, with a ditch running through it. To the west, it is confined to a deep ditch, where Virginia water leaf is dominant. Further west,

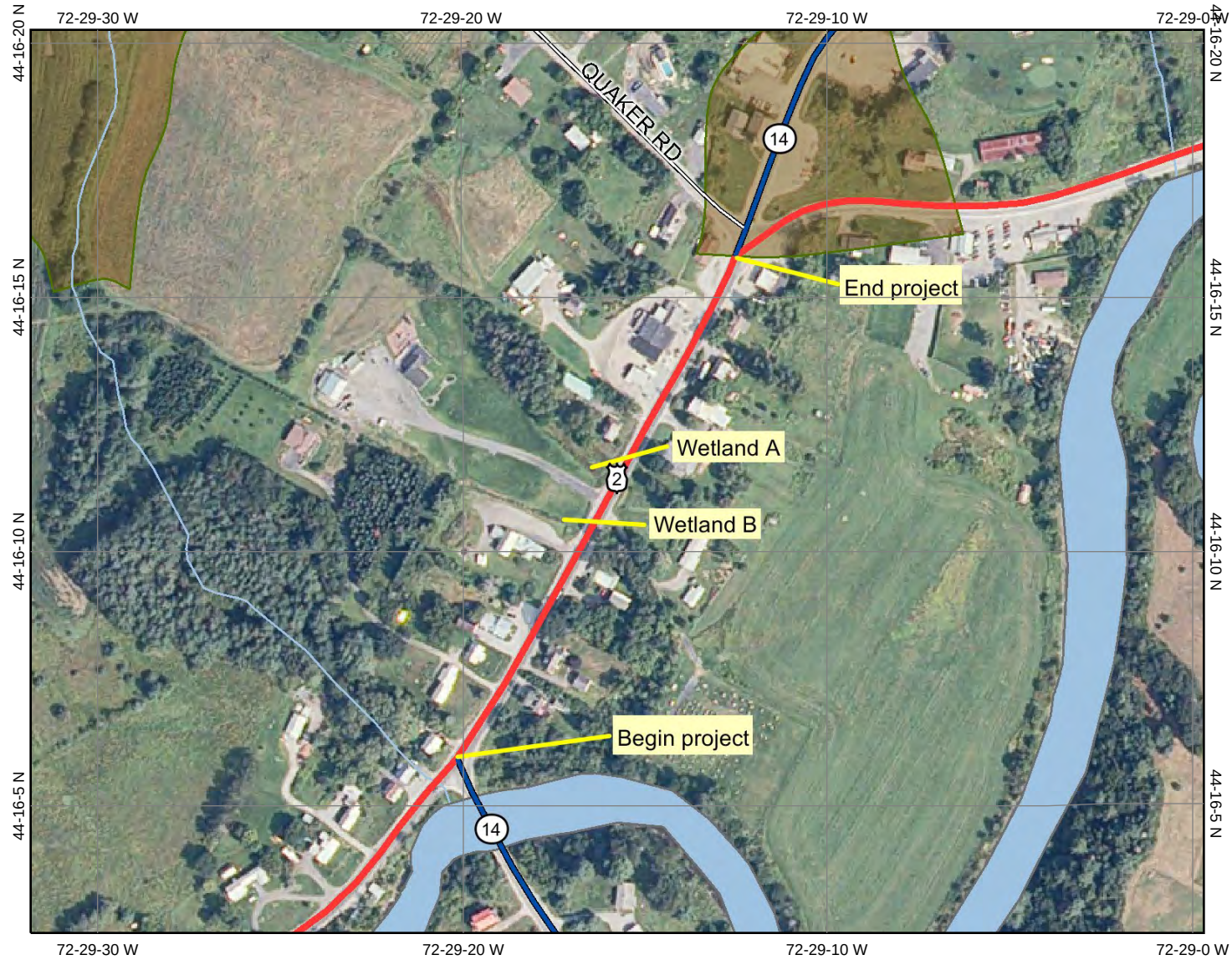
it extends into a balsam fir plantation. The entire wetland appears to be less than 0.5 acre.

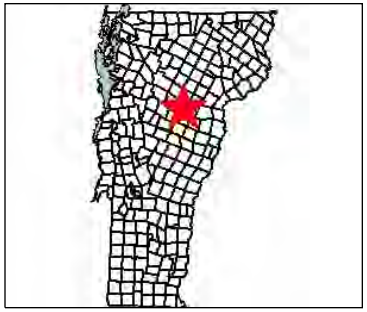
6. The Environmental Interest Locator Map shows no known elements of concern (rare, threatened or endangered species or significant natural communities) in the project area, and none were observed during the course of field work.

ANR Environmental Interest Locator

Vermont Agency of Natural Resources (ANR)

E. Montpelier Sidewalk Study





Legend

Roads
- US Highway
- Vermont State Highway
- Class One
- Class Two
- Legal Trail
- Emergency U-Turn Area
- Proposed Class Two
- Proposed Class Three
- Proposed Vermont State Highway
- Proposed US Highway
- Proposed Interstate
- Discontinued Interstate
- Class Three
- Class Four
- State/National Forest Highway
- Military Road (No Public Access)
- Private Road

Wetland Advisory Layer: Class 3 Wetlands

VSWI
- Class 1 Wetland
- Class 2 Wetland

Rare, Threatened, and Endangered Species
- Threatened or Endangered
- Rare (Not T or E)

Significant Natural Communities
- Palustrine
- Terrestrial

Hydrography Lakes and Ponds (VHD 5k)

Hydrography (VHD 5k)

Deer Wintering Areas

Indiana Bat Hibernacula By Town

Indiana Bat Summer Range By Town
- Observed
- Potential

VT County Boundary

Hydric Soils

Hydric Soils

VT Town Boundaries (No Hill)

VT State Plane Meters (NAD83)

0 375 750 1125 ft.

Scale: 1:3,838

Map center: 500981, 196621

URL: http://maps.vermont.gov/imf/sites/ANR_NATRESViewer/jsp/launch.jsp

12/9/11

PHOTO EXHIBIT

Wetland A—Looking east towards Route 2

Forested Wetland; continuation of herbaceous swale wetland A, west of project area

Wetland B, west of project area

Wetland B—Looking east towards Route 2

Stream on east side of Route 2

I:\621360F1 E. Montpelier sidewalk study\photos\Exhibit.pub

East Montpelier Sidewalk Scoping Study

Dave Conger <dconger@dubois-king.com>

RE: Request for Class Determination for wetlands in E. Montpelier

1 message

Morrison, Shannon <Shannon.Morrison@state.vt.us> Mon, Jan 30, 2012 at 9:08 AM
To: Charlotte Brodie <cbrodie@dubois-king.com>
Cc: Dave Conger <dconger@dubois-king.com>

Charlotte, I took a look at these wetlands back in December of 2011. Based on the information you provided and looking at these wetlands from the road, I would conclude these are Class III wetlands based on size and landscape position. Neither wetland appears to meet the presumptions listed in Section 4.6 of the Vermont Wetland Rules. Pease let me know if you have any further questions.

Shannon Morrison

District Wetlands Ecologist

Department of Environmental Conservation

Water Quality Division

103 S. Main Street, Building 10 N

Waterbury, VT 05671

Winooski phone: 802-338-4823

http://www.vtwaterquality.org/wetlands.htm

From: Charlotte Brodie [mailto:cbrodie@dubois-king.com]
Sent: Friday, January 27, 2012 3:43 PM
To: Morrison, Shannon

APPENDIX E

CULTURAL RESOURCES

December 22, 2011

Scott Newman
Vermont Agency of Transportation
Technical Services Division
National Life Building
Montpelier, Vermont 05602-0501

Re: East Montpelier STP EH 11(3)
Village Safety Enhancement Scoping Study Project
East Montpelier, Vermont
Historic Resource Identification

Dear Mr. Newman,

This Historic Resource Identification Report will assist the Town of East Montpelier, the Vermont Division for Historic Preservation, the Vermont Agency of Transportation (VTrans), and the Federal Highway Administration (FHWA) with compliance under Section 106 of the National Historic Preservation Act. Project review has been conducted according to the standards ser forth in 36 C.F.R., regulations established by the Advisory Council on Historic Preservation to implement Section 106. The purpose of this report is to identify historic buildings, structures, districts, landscapes and settings that may be affected by this project. A final clearance letter for Section 106 will be drafted by VTrans.

INTRODUCTION

The purpose of this letter report is to identify historic resources listed on or eligible for listing on the National Resister of Historic Places (NR) within the project's Area of Potential Effect (APE), "the geographic area within which the project may cause changes to the character of or the use of the historic properties" [36CFR 800.2(c)]. The determination of National Register eligibility follows the guidelines established in National Register Bulletin 15, *How to Apply the National Register Criteria for Evaluation*, published by the National Park Service.

The report will also provide an opinion of the potential effect of the project on historic resources, and include recommendations for mitigation for any potential adverse effect as needed. The report has been prepared for DuBois & King, Inc., Randolph, Vermont. Archaeological review will be conducted by the UVM Consulting Archaeology Program. National Register and Vermont State Register (SR) files were reviewed to identify listed sites located within the project area. A site visit was made on November 7, 2011 at which time photographs were taken.

PROJECT DESCRIPTION

US Route 2 and VT Route 14 pass through the center of East Montpelier Village. Both highways are major roads that carry a heavy volume of passage and truck traffic through the residential village. There are no sidewalks along the road west of the intersection of US 2 and VT14 North and there are no bike lanes.

The purpose of the project is to conduct a Scoping Study that will plan for and identify issues with construction of safety improvements for pedestrians and bicyclists including the possible construction of a sidewalk/multi-se path along US Route 2 in East Montpelier Village. The study will focus on the feasibility and best location of a sidewalk and crosswalk(s) beginning at the proposed sidewalk associated with the VTrans project (East Montpelier BRF 037-1(7) VT 14) to replace Bridge 68 that carries VT 14 South over the Winooski River at the west end of the village to the existing sidewalk along the north side of US Route 2 that terminates on the north side of Quaker Road, a distance of 2/10 of a mile. The study will be conducted along both sides of US Route 2 and will also include study of the feasibility of public utility relocation as well as features such as lighting, shoulders, and other safety enhancements for pedestrians and bicyclists. It is assumed that the proposed project will occur within the State's ROW.

The project study area is located entirely within the boundaries of the East Montpelier Village Historic District (SR #1207-44) which was listed on the Vermont State Register of Historic Places in 1978. Therefore the project's Area of Potential Effect is the entire historic district.

The Town of East Montpelier has received funding for the project through the Vermont Agency of Transportation's Transportation Enhancement Grant program.

DESCRIPTION OF THE RESOURCES

East Montpelier Village is a good example of a typical early milling and industrial village in Vermont. It was established in 1825 on a site beside the Winooski River which provided the water-power to operate a number of milling and manufacturing businesses. The water-powered industries that included a grist mill, several saw mills and a shingle mill, as well as a blacksmith shop continued into the 20th century but have now ceased to exist; the industrial buildings are no longer standing. The Village that grew up around the industries is today comprised of primarily residential buildings constructed in architectural styles that span the 19th and the first half of the 20th centuries. Among these are several Federal period houses and a number of Greek Revival buildings, including a lovely temple-front house. Queen Anne style bay windows and porches have been added to several of the earlier Greek Revival buildings. There are also several small, vernacular houses that may have been built as worker housing for people employed in the mills. The Village also includes several examples of hipped and gambrel-roofed Colonial Revival houses and two good examples of the Bungalow style. The Italianate style is represented by Dudley's Store and by the 2-story commercial/residential building opposite the story. A 1940 milk transfer depot located at the west end of the village was historically associated with Vermont's leading 20th century industry, dairy farming. Civic buildings include the Old Brick Church and a former school, now the Municipal Offices.

Nearly all of the buildings included in the East Montpelier State Register Historic District are still standing. Only a few have been removed or destroyed by fire. The majority of the buildings retain their historic form and massing; two have been altered by the addition of incompatible enclosed entries to the front elevations. Historic, character-defining materials have generally been retained although several of the houses are now covered with synthetic siding; historic sash windows have also been replaced in some cases. When the Village was placed on the State Register, the district included several buildings that were considered non-contributing due to age. At least two of these are now over 50 years old and therefore considered to be historic.

Construction since 1978 is limited to several additional houses that are set back from the road and from the linear collection of historic buildings, and to a recently-constructed multi-family dwelling built to replace one that burned.

There are thirteen buildings and structures on the south side of US Route 2 within the study area, all of which are discussed in the State Register survey form and nine of which appear to be eligible for listing on the National Register. They are as follows:

1. SR# 1207-44 (#28). The small gable-roofed building immediately west of the project area may have been associated with the historic industries along the river. It retains historic from, massing, and most materials including 6/6 sash and appears eligible to the National Register as part of a potential historic district. Photo 32.

2. SR# 1207-44 (# 29). Bridge 68 was constructed in 1936. The ornate concrete balustrade railing is character-defining but is seriously deteriorated. Apparently the bridge is scheduled for replacement. Photo 2.

3. SR# 1207-44 (# 31). The house is a 1 ½ story, eaves-front, simple Colonial Revival style building that appears to have been constructed in the mid- 20th century. The house is a typical example of many little residences built just after WW2 and has gained sufficient age to be considered historic and eligible to the National Register as part of a potential East Montpelier Historic District. Photo 4

4. SR# 1207-44 (#32). The Greek Revival house with its added Queen Anne style bay window retains its historic farm, massing and most materials and appears eligible for the National Register. The associated garage behind the house is not historic. Photo 5.

5. SR# 1207-44 (#33). The 20th century house is listed as non-contributing in the State Register due to age. The building is now over 50 years old but due to the added incompatible entry porch on the front elevation the building does not appear eligible to the NR. Photo 6.

6. The barn/garage associated with house # 33 has been altered over time; the alterations appear to be over 50 years old and therefore historic. The building appears to contribute to the potential NR district but is not individually eligible. Photo 7.

7. SR# 1207-44 (#35). The house is not eligible to the National Register due to age. Photo 8.

8. SR# 1207-44 (#36). The Colonial Revival style house has been altered by the installation of synthetic siding and alteration of the original fenestration pattern on the front elevation but generally retains its unusual form and massing and therefore appears eligible for listing on the National Register as a contributing structure in a historic district. Photo 9.

9. SR# 1207-44 (#37). This intact Greek Revival style house with added Queen Anne style three-part bay window retains clapboard siding, corner pilasters, granite foundation and two-over-two sash and is eligible for the potential NR district. Photo 10.

10. The Colonial Revival style barn associated with the Greek Revival house (#37) is included in the SR district. The gambrel roof form suggests that the barn was constructed c.1900. The generally intact building retains historic form, massing and materials and appears eligible to the National Register. Photo 11.

11. SR# 1207-44 (#38). The Colonial Revival style house is a generally intact example of the style as it retains its historic form, massing and most materials. The historic sash windows have been replaced but the house appears eligible for the National Register. Photo 12.

12. SR# 1207-44 (#39). The house is not eligible to the NR due to lack of architectural distinction and to age. Photo 13.

13. SR# 1207-44 (#40). This Italianate style building was probably constructed c.1880 as a commercial building with residential use on the second floor. It was later converted to a garage but retains historic form, massing and most materials and is eligible to the potential NR district as a contributing structure. Photo14.

There are also thirteen buildings on the north side of US Route 2 within the study area, all of which are discussed in the State Register survey form. Eleven of these appear eligible for listing on the National Register.

1. SR# 1207-44 (#4). The Old Brick Church is listed in the East Montpelier State Register Historic District and is also individually listed on the National Register.
Photo 16.

2. SR# 1207-44 (#5). The garage is listed on the State Register historic district as non/contributing and does not appear eligible to the NR due lack of architectural distinction. Photo 19.
3. SR# 1207-44 (#6). The ornate Italianate style commercial building retains its historic form, massing and materials and appears eligible for listing on the National Register. Photo 20.

4. SR# 1207-44 (#7). The State Register survey states that the Post Office was constructed in 1959. It is now over 50 years old and can be considered for eligibility to the NR. Although the structure lacks architectural distinction it is very typical of numerous mid-20th century Post Office buildings constructed in Vermont. Importantly, it was built within the Village and is part of the streetscape, unlike typical post office buildings that are today constructed outside historic village centers. The Post Office therefore appears eligible for listing on the NR. Photo 21.

5. SR# 1207-44 (#8). The mid-20th century Colonial Revival style house is a very good, intact example of the type and appears eligible for listing on the National Register. Photo 22.

6. SR# 1207-44 (#9). The vernacular/Greek Revival style house and attached barn are well-preserved and retain integrity of form, massing, and most materials and appear eligible for listing on the NR. Photo 23.

7. SR# 1207-44 (#10). The temple-front Greek Revival style house is a well-preserved example of the type. The house and its associated barn appear eligible for listing on the National Register. Photo 25.

8. SR# 1207-44 (#11). The Cape style house appears to have been constructed before 1830 but has been heavily modified. The incompatible enclosed porch was added before the house was listed as contributing to the State Register Historic District but at that time the house retained historic sash windows as well as a historic attached shed. The windows have been replaced and the shed is apparently no longer standing. It also appears that the eave trim has also been modified. Because of the cumulative effect of these alterations, particularly the impact to the historic massing caused by the added entry on the primary elevation, the house does not appear eligible to the NR. Photo 26.

9. SR# 1207-44 (#27). The vernacular style house was listed as a contributing structure in the State Register historic district despite the fact that the front elevation of the main block had been modified by the removal of the centered front door. The house is now covered with vinyl siding but retains historic 2/2 sash windows. It also retains its historic form and massing and therefore can be considered eligible to the potential NR district. It is not individually eligible. to the NR due to alterations. Photo 12.

10. SR# 1207-44 (#13). This five-bay-wide, 2-story eaves-front house was probably constructed before 1840. Federal period detailing includes cornice returns, second story windows located tight up under the eaves and a centered entry flanked by four windows. The existing door hood over the front door does not appear to be historic but otherwise the house retains historic form, massing and materials and is eligible to the potential NR historic district. Photo 28.

11. SR# 1207-44 (#14). The small 1½ story eaves-front vernacular house lacks architectural distinction and has been impacted by the installation of vinyl siding and replacement sash but the rectangular form and massing are intact. The shed dormers also appear to be historic. The State Register form states that the house may have been constructed as worker housing. The house appears to be marginally eligible for listing on the NR as part of a historic district. Photo 29.

12. SR# 1207-44 (#15). The 1½ story eaves-front vernacular house appears to have been constructed in the second half of the 19th century. The wall dormers have 2/2 wood sash and are therefore probably historic features. The Colonial Revival style hip-roofed front porch was probably added later and may have originally been an open porch. The house retains historic form, massing and most materials including clapboard siding, 2/2wood windows and a brick chimney and appears eligible for listing on the National Register. The State Register survey forms states that the building may have been constructed as worker housing. Photo 30.

13. SR# 1207-44 (#16). This c. 1890 vernacular house retains historic form, massing, and 2/2 wood windows. It is currently being covered with vinyl siding but appears eligible for the potential NR district. Photo 31.

Photos 33 to 37 provide a sampling of buildings included in the East Montpelier State Register Historic District that are located outside the project area.

Four of these are west of the project area. Building # 18 has been altered by the installation of modern garage doors in the front elevation of the wing but otherwise the house is well-preserved and generally intact and is eligible for the NR as part of the potential historic district.

Building # 19 is a wonderful, very well-preserved example of a c. 1940 Bungalow and is clearly eligible for the National Register.

The handsome two-story, eaves-front Federal period house (#20) with its transitional Greek Revival/Gothic Revival wing retains historic form massing and materials and is also clearly eligible for listing on the NR.

Building #21 now houses the East Montpelier Home Center but was constructed in 1940 as a milk transfer station for area dairy farmers. The front elevation of the main block apparently originally contained two truck bays. The bays have been in-filed with brick and large plate glass windows. The alteration to the front elevation is significant but the building's historic form and massing have been retained. The building was noted as non-contributing due to age in 1978 but is now over 50 years old and can be considered marginally eligible to the NR as part of a district, in part because of its historic association with Vermont's leading 20th century industry, dairy farming.

The historic school located at the east end of the historic district is now houses the Municipal Offices (#1). The building has been modified by the construction of the front entry but retains its character-defining banks of windows. The former school is eligible to the NR for its historic significance.

The attached map of the State Register Historic District was not drawn to scale and the individual buildings shown on the map are inaccurately located relative to their actual location along US Route 2.

EVALUATION OF EGIGIBILITY TO THE NATIONAL REGISTER

East Montpelier Village appears nearly as it did in 1978 when it was entered into the Vermont State Register of Historic Places. Only two buildings included in the 1978 survey are not longer standing and only a few additional ones have been constructed. Alterations have been made to a number of the buildings including installation of synthetic siding and replacement windows but with only two exceptions the historic form and massing are intact. The 1978 survey identified "widening or encroaching of the highway running through the middle of the village as the greatest threat to its integrity".

The linear village is made up of a sufficient, concentrated collection of 19th and early 20th century residential, civic and commercial buildings that grew up around the no longer extant industrial and milling buildings located on the Winooski River. East Montpelier Village retains architectural integrity of location, design, setting, materials, workmanship, feeling and association and therefore appears eligible for listing on the National Register of Historic Places as a historic district.

POTENTIAL EFFECTS

The proposed safety improvements described in the RFP for the scoping study are to be contained within the State's existing ROW. Currently, due to the width of the paved roadway and the very narrow shoulders, it is dangerous for pedestrians to walk in the Village. There are no bike lanes on this section of US 2; therefore bicyclists are required to ride in the travel lanes. There is no safety net due to the lack of sufficient shoulders.

Proposed construction of a sidewalk and/or multi-use and crosswalk(s) path through the center of East Montpelier appears to have no potential to adversely impact the historic village which appears eligible to the National Register. In fact the installation of walks or paths that provide safe routes for pedestrians and cyclists will help to re-establish a human scale and usability to East Montpelier Village.

The linear pattern of the village is a historic feature. It is therefore recommended that any sidewalks or paths be designed so that they do not conflict with or negate the historic pattern. It is also recommended that lighting fixtures that are compatible with a collection of buildings that spans 150 years, rather than mimic a period-specific time, be selected. Vermont was not electrified until the early to mid 20th century so fixtures that appear to be from the Victorian period, for example, should be avoided.

Please let me know of you need additional information. If the Vermont Agency of Transportation concurs with this determination, please affix your concur stamp. Thank you.

Sincerely,

Mary Jo Llewellyn
Historic Preservation Consultant

cc: David Conger, P.E. DuBois & King, Inc.

Attachments:

Vermont Town Highway Map, Town of East Montpelier
East Montpelier State Register Historic District Map
Arial photograph of the project area (included in the RFP)
Photos 1- 37

Bibliography

How to Apply the National Register Criteria for Evaluation. National Register Bulletin No. 15, US Department of the Interior, National Park Service.

National Register of Historic Places, Washington County, Vermont. On file at the Vermont Division for Historic Preservation, Montpelier, Vermont.

Vermont State Register of Historic Places, East Montpelier, Vermont. On file at the Vermont Division for Historic Preservation, Montpelier, Vermont.

Photo 1. View NE showing the intersection of US Route 2 and VT 14 south. The study area begins at this intersection and extends 2/10 of a mile east along both sides of US 2 in East Montpelier Village to the intersection of US Route 2 and VT 14 north.

Photo 2. View NE showing Bridge # 68 that carries VT 14 south across the Winooski River. The 1936 bridge is listed as a contributing structure in the North Montpelier State Register Historic District (# 29) but is deteriorated and will be replaced. The proposed study sidewalk will connect with the proposed sidewalk associated with BRF 037-1 (7) VT 14, the project to replace the bridge.

Photo 3. View NE showing US Route 2 in East Montpelier Village just east of the intersection with VT 14 south. The scoping study will present options for a sidewalk and/or multi-use path on both sides of the road, as well as for crosswalks and lighting.

Photo 4. View NE showing the first building east of Bridge 68, on the south side of US 2. The house is included in the State Register Historic District (#31). It appears to have been constructed in the mid-20th century and is a good, generally intact representative of its simple Colonial Revival form and appears eligible in the potential National Register Historic District.

Photo 5. View NE showing the second house on the south side of US Route 2 within the study area. The Greek Revival style house is # 32 in the SR historic district and retains clapboards and trim elements and an added Queen Anne style bay window. The house appears eligible to the National Register in the potential East Montpelier National Register Historic District.

Photo 6. This house is listed as non-contributing the SR district (#33) but now appears to be over 50 years old. Regardless, the form and massing have been impacted by the added enclosed entry so that the building appears ineligible to the potential NR district.

Photo 7. View NE, showing a ban/garage associated with #33 above. Although the building has been altered over time, the alterations appear to be over 50 years old and therefore historic. The building appears to contribute to the potential NR district but is not individually eligible.

Photo 8. The house is listed as non-contributing to the State Register (#35) district and does not appear eligible to the National Register district due to age.

Photo 9. This building is # 36 in the State Register district. The building has been altered by the installation of synthetic siding and alteration of the original fenestration pattern on the front elevation but generally retains its unusual form and massing and therefore appears eligible for listing on the National Register as a contributing structure.

Photo 10. This intact Greek Revival style house with added Queen Anne style three-part bay window is # 37 in the SR district. The house retains clapboard siding, corner pilasters, granite foundation and two-over-two sash and is eligible for the proposed NR district..

Photo 11. This Colonial Revival style barn is associated with the Greek Revival house (#37) above and is included in the SR district. The gambrel roof form suggests that the barn was constructed c.1900. The generally intact building retains historic form, massing and material and appears eligible to the National Register.

Photo 12 . The Colonial Revival style house is a generally intact example of the style as it retains its historic form, massing and most materials. The historic sash windows have been replaced but the house, # 38 in the SR district, appears eligible for the National Register.

Photo 13. This building is listed as non-contributing to the State Register district (#39) and is not eligible for the National Register.

Photo 14. This Italianate style building (SR #40) was probably constructed c.1880 as a commercial building with residential use on the second level. It was later converted to a garage but retains historic form, massing and most materials as is eligible to the potential NR district as a contributing structure.

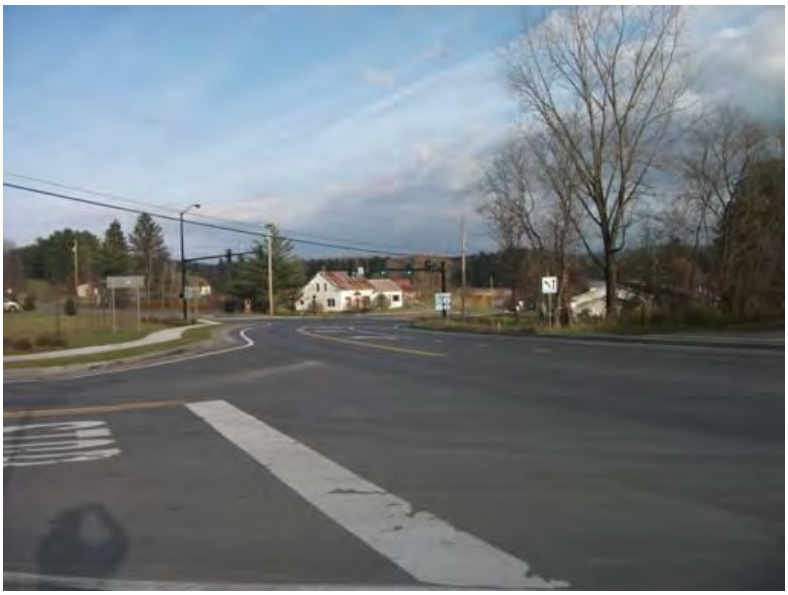


Photo 15 . View NE showing the recently reconstructed intersection of US Route 2 and VT Route 14 north and the eastern end of the project study area. The Garage (#40) is just out of the photography on the right. The existing sidewalk on the north side of Quaker Hill Road is visible on the left of the photo. The SR Historic district extends north and east beyond the study area.

Photo 16. View N, showing the intersection of Quaker Hill Road (left) and US 2 at the eastern end of the study area. The proposed sidewalk and/or multi use path will connect with the existing sidewalk on the north side of Quaker Hill Road. The Old Brick Church is # 4 in the SR district and is also individually listed on the National Register.

Photo 17. View SE showing the intersection of US 2 and Quaker Hill Road (right) and the existing sidewalk on the north side of Quaker Hill Road to which the proposed sidewalk will connect. The scoping study will present options for both sides of US 2.

Photo 18. View NW showing the north side of US 2 west of the intersection with Quaker Hill Road. The proposed sidewalk and/or multi-use path will occur within the State's existing ROW. Note the very narrow shoulders and lack of sidewalks or bike lanes within the Village.

Photo 19. View NW showing the first building west of Quaker Hill Road on the north side of US2. The garage is listed as non-contributing in the SR district (#5) and is not eligible for the NR.

Photo 20. View NW, showing Dudley's Store, # 6 in the SR district. The Italianate style commercial building retains historic form, massing and most materials and is eligible to the NR as part of the potential National Register Historic District.

Photo 21. View NW showing the US Post Office (#7). The SR survey form for the Village States that the building was constructed in 1959; it is therefore over 50 years old. Due to its age the Post Office can be considered for eligibility to the NR district as a typical example of a mid-20th century Post Office built in a small community.

Photo 22. View SW, showing building # 8 in the SR district. The gambrel-roofed house is a good, intact example of a mid-20th century Colonial Revival style house and appears eligible for the potential NR district.

Photo 23. This Vernacular/Greek Revival farmhouse and attached barn are well-preserved and retain historic form, massing and most materials. The buildings are listed on the SR district (# 9) and appear eligible for listing in the potential NR district.

Photo 24. View NW showing the north side of US 2 just east of the intersection of US 2 and VT 14 south. Note the very narrow shoulders and lack of any sidewalk. Note also the steep bank along the north side of the highway.

Photo 25. View NW, showing SR district # 10. The temple-front Greek Revival house is a very good example of the style and is generally well-preserved. The house and attached barn are eligible for the potential NR district.

Photo 26. The Federal period Cape is included in the SR district (#11). When the SR district was surveyed the incompatible enclosed entry was in place but the house retained historic sash windows as well as an attached historic shed. The windows have been replaced and the shed is apparently no longer standing. The eave trim is also not historic. The historic form and massing have also been altered so that the house does not appear to be eligible to the potential NR district due to the accumulations of incompatible alterations.

Photo 27. The vernacular house is listed in the SR district (# 12). At the time of SR listing the front door had been removed from the north (front) elevation of the main block. The building is now covered with vinyl siding but retains historic 2/2 sash windows. It also retains is historic form and massing and therefore can be considered eligible to the potential NR district. It is not individually eligible to the NR due to alterations.

Photo 28. This Federal period house is # 13 in the SR district. The existing door hood over the front door does not appear to be historic but otherwise the house retains historic form, massing and materials and is eligible to the potential NR historic district.

Photo 29. View SW showing # 14 (right) and #15 in the SR district. These two houses are located opposite Bridge # 68 and VT 14 south at the west end of the study area. The buildings are believed to have been constructed as working housing. The vernacular style building # 14 retains historic form and massing and is marginally eligible to the NR district.

Photo 30. View NW, showing building # 15 in the SR district, located opposite Bridge 68 and VT 14 south at the west end of the study area. The house retains historic form, massing and most materials including 2/2 wood sash and is eligible to the NR. The dormers are also historic.

Photo 31. This c. 1890 vernacular house is # 16 in the SR district. It retains historic form, massing, and 2/2 wood windows. It is currently being covered with vinyl siding but appears eligible for the potential NR district.

Photo 32. This small vernacular building is located on the south side of US 2, immediately west of the intersection of US 2 and VT 14 south and may have been associated with historic milling activities in the village. It is # 28 in the SR district and retains historic form, massing and materials including 6/6 sash and appears eligible for listing in the potential NR district.

Photo 33. View NW, showing building # 18 in the SR district, west of the project area. The front elevation of the wing has been altered by the addition of the modern garage doors but otherwise the house is well-preserved and generally intact and is eligible for the NR as past of the potential historic district.

Photo 34. View NW, showing # 19 in the SR historic district, west of the project area. . The building is a very good example of the Bungalow style and retains historic form, massing and materials and is eligible for the NR.

Photo 35. View NW, showing building # 20 in the SR Historic District, west of the project area. The house is five-bay Federal style house with a transitional Greek Revival/Gothic Revival wing. It is well-preserved, retaining historic form, massing, wood siding and trim and brick chimneys as well as historic wood sash and is eligible o the NR.

Photo 36. View NE showing building #21. It was constructed in 1940 as a milk transfer station for area dairy farmers and now houses the East Montpelier Home Center store. The front elevation of the main block apparently originally contained two truck bays. The bays have been in-filed with brick and large plate glass windows. The alterations to the front elevation are significant but the form and massing have been retained. The building was noted as non-contributing due to age in 1978 but is now over 50 years old and can be considered marginally eligible to the NR as part of a district as it is historically an extension of the industrial activities in the Village.

Photo 37. View N, showing the former East Montpelier School, now the Municipal Building, listed as # 1 in the SR district and located northeast of the project area. The modern entry is an addition and has altered the historic massing but the building retains character-defining school house windows, wood siding and trim and historic brick chimney. It is also historically significant as a school and is eligible to the NR as part of the potential historic district.

Archaeological Resources Assessment for the Proposed East Montpelier STP EH11(3) Village Safety Enhancement Project, East Montpelier, Washington County, Vermont

Submitted to:
DuBois & King, Inc.
28 North Main Street
Randolph, VT 05060

Submitted by:
Francis Robinson, IV.
Consulting Archaeology Program
University of Vermont
111 Delehanty Hall
180 Colchester Ave
Burlington, VT 05405

UVM CAP Report No. 678

February 13, 2012

Archaeological Resources Assessment for the Proposed East Montpelier STP EH11(3) Village Safety Enhancement Project, East Montpelier, Washington County, Vermont

Project Description

The Town of East Montpelier has received funding through the Vermont Agency of Transportation's Transportation Enhancement Grant program to plan for and identify issues with construction of safety improvements for pedestrians and bicyclists along US Route 2 in East Montpelier Village. The proposed improvement alignment extends along VT Rte 2 from the intersection with VT Rte 14S at the south to the intersection with VT Rte 14 at the north (Figure 1). Additional project elements include studying the feasibility of public utility relocation as well as the addition of features such as lighting, shoulders, and other safety enhancements for pedestrians and bicyclists. To satisfy permitting requirements under the Section 106 permitting process for the proposed East Montpelier STP EH11(3) Village Safety Enhancement Project, the University of Vermont Consulting Archaeology Program conducted an Archaeological Resources Assessment (ARA) of the proposed project's Area of Potential Effects (APE). This work was conducted on behalf of the town of East Montpelier for project engineer DuBois-King, Inc.

To accomplish the ARA, an historic properties and preContact Native American archaeological sensitivity desk review was conducted, followed by a field inspection within the proposed project area. The field inspection was conducted on 2/7/12. As a result of the desk reviews and field inspection, no areas were identified as sensitive for preContact Native American sites, and the proposed project was determined to have no effect on historic properties. Below are an overview of the methodology the UVM CAP employed and a summary of findings.

Study Goal

The goal of an ARA (or "review") is to identify portions of a specific project's APE that have the potential to contain significant preContact and/or historic sites. An ARA is accomplished through a "background search" and a "field inspection" of the project APE . For this study, reference materials were reviewed following guidelines by the Vermont Division for Historic Preservation. Resources examined included the National Register of Historic Places (NRHP) files; the Historic Sites and Structures Survey; and the USGS master archaeological maps that accompany the Vermont Archaeological Inventory (V AI). Relevant town histories and nineteenth-century maps were also consulted. Based on the background research, general contexts were derived for preContact and historic resources in the study area.

Archaeological Site Potential

According to the state archaeological site inventory, there are two documented preContact Native American sites and two significant historic-era archaeological sites located within approximately three kilometers of the proposed East Montpelier STP EH11(3) Village Safety Enhancement Project APE. The closest documented site is designated as VT-WA-65 in

the Vermont State Files (Figure 2). It includes an early historic dam located just north of the project area.

The closest documented preContact Native American site (VT-WA-4) is located approximately 2.75 km northeast of the proposed project area. It denotes a surface collection of non-diagnostic artifacts. Approximately 250 m northeast of VT-WA-4, site VT-WA-1 is documented at the confluence of Kingsbury Branch and the Winooski River. Although no formal archaeological investigations were conducted at the site, early gazetteers report that the area exhibited the remains of a Native American village, including middens and as many as 12 firepits related to the remains of separate structures. The absence of archaeological sites within the proposed project area is likely a result of the lack of professional archaeological investigations in the area rather than the local absence of such sites.

Historically, the project area lies within the small village of East Montpelier, one of the most intensively developed industrial and residential settlements in the town of East Montpelier (see Figure 1). This village and the entire district area are situated directly within the state "East Montpelier Village Historic District" as recorded by the VDHP. Several designated historic properties are located within the proposed project area.

The UVM CAP also utilized the Vermont Division of Historic Preservation's (VDHP) predictive model for identifying preContact Native American archaeological sites. Because of linear extent of the proposed project area, portions of the project area exhibit differing scores on the paper-based model. Some of the southern portion of the proposed project area scored a 60 on the Predictive Model, due to its location within 90 m of a river (12), within 90 m of a wetland (12), and within 90 m of an intermittent stream (12), within 90 m of a stream/river confluence (12), and its location on an alluvial terrace (12). The northern portion of the project area scored somewhat less due to its more distant location from the Winooski River and intermittent streams.

In addition to the paper-based predictive model, the UVM CAP also utilized a Geographical Information System (GIS) developed jointly by the UVM CAP, and its consultant Earth Analytic, Inc., which operationalizes the paper-based model. It does this by applying the VDHP's sensitivity criteria to all lands within the State of Vermont. Within this model, archaeological sensitivity is depicted by the presence of one or more overlapping factors, or types of archaeological sensitivity (i.e. proximity to water, etc.). Much of the southern portions of the proposed East Montpelier STP EH11(3) Village Safety Enhancement Project APE are located in an area that exhibits five or six overlapping sensitivity factors, which more or less mirror the sensitivity factors enumerated above (Figure 3). As for the paper-based model, the northern portion of the proposed project area exhibits three or less preContact archaeological sensitivity factors. Overall, the desk review of the project area indicated that numerous State Register historic properties were located within the project area, and also that much of the area has the potential to contain significant preContact Native American cultural material.

Field Inspection

A field inspection of the project area was carried out on February 7th, 2012 by Francis Robinson, Research Supervisor at the UVM CAP. Robinson examined both sides of the road

where proposed project elements are proposed (Figure 4). Despite the overall sensitivity of the area as indicated by the desk review, the specific construction elements proposed and their locations along the existing road were determined to not pose an adverse effect to existing historic structures or to existing or as yet unidentified historic-era or preContact Native American archaeological sites. Specifically, both road sides appear to have already been thoroughly modified through previous construction, utility emplacement and driveway and related usage of the frontage of the buildings along the stretch of Rte. 2 considered here. As a result, any sites in the project area, if once present, have since been heavily disturbed by past ground disturbing activities. No significant archaeological deposits are therefore expected to exist within the project APE.

Conclusions

After background research, desk review and a field inspection of the project area it was determined that the proposed construction activities will have no impact on any significant preContact or historic-era archaeological resources, or to standing historic structures. No additional archaeological work is therefore necessary within these areas prior to project construction. We recommend that the project receive a determination of No Effect. If you have any questions about the results and recommendations presented in this ARA, please feel free to contact us.

Figure 1. Overview of the proposed East Montpelier STP EH11(3) Village Safety Enhancement Project APE.

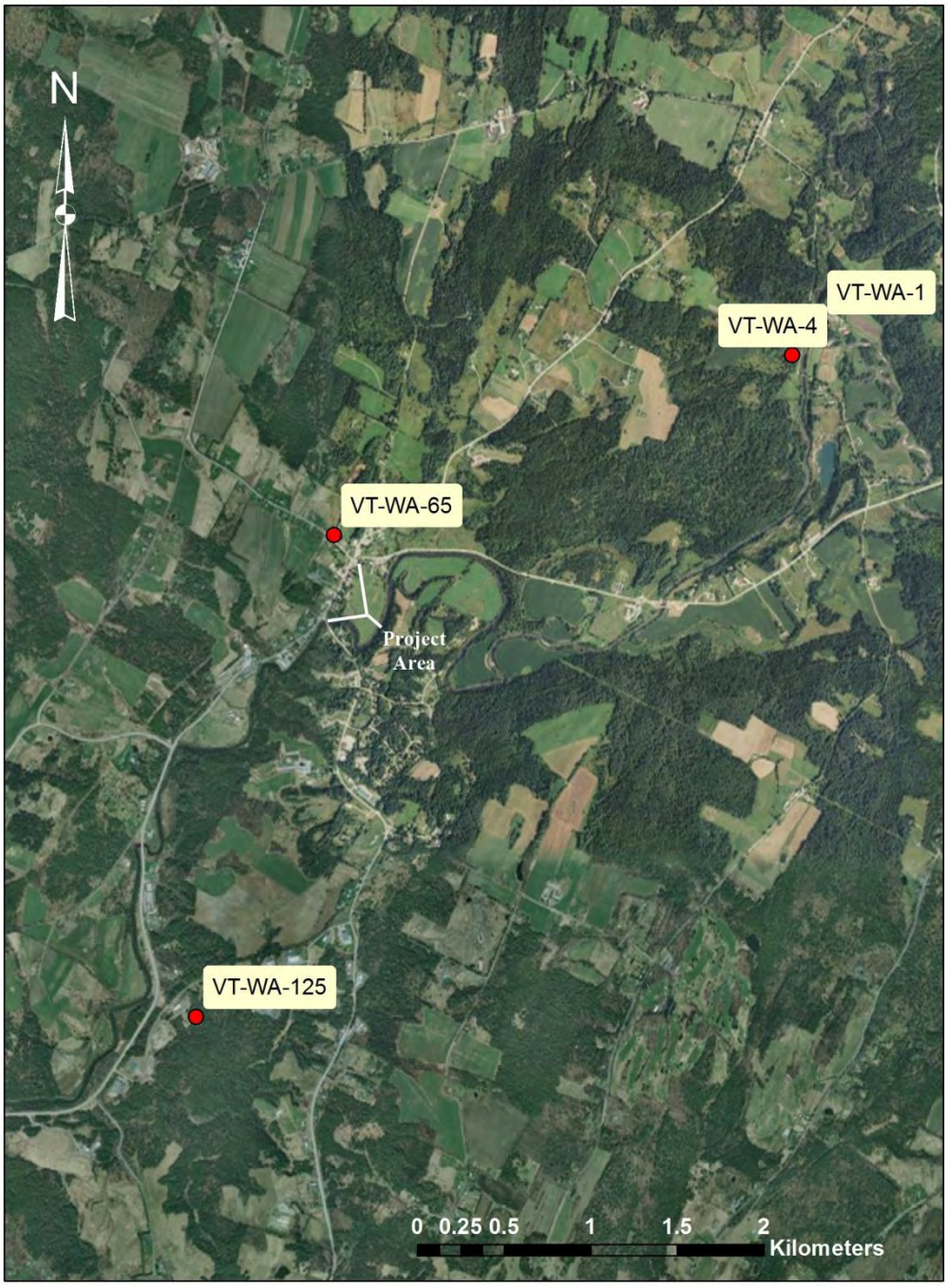


Figure 2. Project area overview with nearby (ca. 3 km) archaeological sites indicated. Sites VT-WA-4 and VT-WA-1 indicate preContact Native American sites. Sites VT-WA-65 and VT-WA-125 indicate historic-era archaeological sites

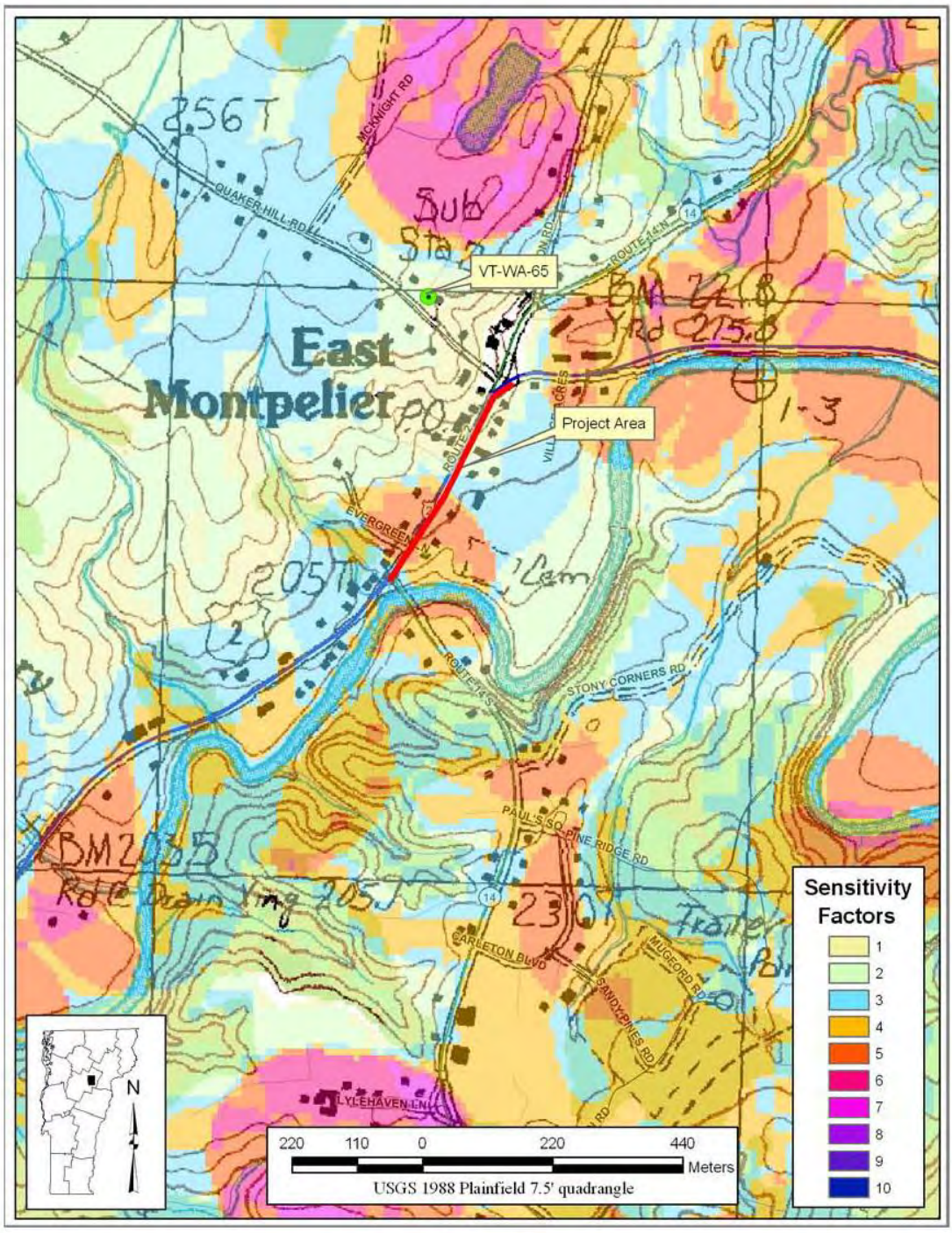


Figure 3. GIS-rendered archaeological sensitivity of the proposed East Montpelier STP EH11(3) Village Safety Enhancement Project, East Montpelier, Washington County, Vermont.

Figure 4. View of one side of the proposed project APE. Note numerous power poles and large driveways across the frontage of several yards.

APPENDIX F

COST ESTIMATES

DuBois & King inc.

- Randolph, VT 05060 (802) 728-3376
- Bedford, NH 03110 (603) 883-0463
- Williston, VT 05495 (802) 878-7661

Engineering • Planning • Development • Management

JOB E. Montpelier Village Safety Enhancement Project

SHEET NO. 1 OF 10

CALCULATED BY: LDC DATE: 26-Apr-12

CHECKED BY: EPD DATE: 00-Jan-00

SCALE:

ENGINEER'S PRELIMINARY ESTIMATE OF PROBABLE CONSTRUCTION COST

PHASE A OF CURBED WEST SIDE SIDEWALK

ITEM NO.	DESCRIPTION	UNIT	QUANT.	UNIT PRICE	AMOUNT
201.11	CLEARING AND GRUBBING, INCL. INDV. TREES AND STUMPS	AC	0.0	$10,000.00	$0.00
203.15	COMMON EXCAVATION	CY	67.4	$14.00	$943.70
203.30	EARTH BORROW	CY	0.0	$11.00	$0.00
204.20	TRENCH EXCAVATION OF EARTH	CY	0.0	$13.00	$0.00
301.15	SUBBASE OF GRAVEL	CY	45.9	$28.00	$1,285.93
406.25	BITUMINOUS CONCRETE PAVEMENT	T	18.7	$150.00	$2,800.00
540.10	PRECAST CONCRETE STRUCTURE (4X4 BOX) - EXTENSION	LS	0.0	$10,000.00	$0.00
601.2620	24" CPEP(SL)	LF	0.0	$38.00	$0.00
604.20	PRECAST REINFORCED CONCRETE CATCH BASIN WITH CAST IRON GRAT	EA	0.0	$2,650.00	$0.00
616.21	VERTICAL GRANITE CURB	LF	290.0	$38.00	$11,020.00
618.10	PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH	SY	110.0	$75.00	$8,250.00
618.11	PORTLAND CEMENT CONCRETE SIDEWALK, 8 INCH	SY	0.0	$95.00	$0.00
618.30	DETECTABLE WARNING SURFACE	SF	60.0	$50.00	$3,000.00
631.16	TESTING EQUIPMENT, CONCRETE	LS	1.0	$900.00	$900.00
631.17	TESTING EQUIPMENT, BITUMINOUS	LS	1.0	$650.00	$650.00
635.11	MOBILIZATION/DEMOBILIZATION	LS	1.0	$4,328.90	$4,328.90
641.10	TRAFFIC CONTROL	LS	1.0	$5,000.00	$5,000.00
646.427	DURABLE 6 INCH WHITE LINE, RECESSED TYPE I TAPE	LF	0.0	$4.76	$0.00
646.437	DURABLE 6 INCH YELLOW LINE, RECESSED TYPE I TAPE	LF	0.0	$4.76	$0.00
646.491	DURABLE LETTER OR SYMBOL, TYPE I TAPE	EA	0.0	$96.46	$0.00
646.507	DURABLE CROSSWALK MARKING, RECESSED TYPE I TAPE	LF	32.0	$29.98	$959.36
651.15	SEED	LB	0.0	$10.00	$0.00
651.18	FERTILIZER	LB	0.0	$3.00	$0.00
651.20	AGRICULTURAL LIMESTONE	T	0.0	$500.00	$0.00
651.25	HAY MULCH	T	0.0	$600.00	$0.00
651.35	TOPSOIL	CY	0.0	$25.00	$0.00
652	EROSION CONTROL	LS	1.0	$5,000.00	$5,000.00
675.20	TRAFFIC SIGNS, TYPE A	SF	40.0	$15.00	$600.00
675.431	SQUARE TUBE SIGN POST AND ANCHOR	LF	240.0	$12.00	$2,880.00
675.50	REMOVING SIGNS	EA	0.0	$17.00	$0.00
675.60	ERECTING SALVAGED SIGNS	EA	0.0	$30.00	$0.00
	UTILITY POLE RELOCATION	EA			
	SUBTOTAL				**$47,617.89**
	CONTINGENCY (20%)				**$9,523.58**
	TOTAL				**$57,141.47**
	USE				**$58,000.00**

Surface Material: **Length** **ft** **Cost per foot:**

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- Williston, VT 05495 (802) 878-7661

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JOB E. Montpelier Village Safety Enhancement Project

SHEET NO. 1 OF 10

CALCULATED BY: LDC DATE: 26-Apr-12

CHECKED BY: EPD DATE: 00-Jan-00

SCALE:

ENGINEER'S PRELIMINARY ESTIMATE OF PROBABLE CONSTRUCTION COST

PHASE B OF CURBED WEST SIDEWALK

ITEM NO.	DESCRIPTION	UNIT	QUANT.	UNIT PRICE	AMOUNT
201.11	CLEARING AND GRUBBING, INCL. INDV. TREES AND STUMPS	AC	0.0	$10,000.00	$0.00
203.15	COMMON EXCAVATION	CY	146.2	$14.00	$2,047.17
203.30	EARTH BORROW	CY	0.0	$11.00	$0.00
204.20	TRENCH EXCAVATION OF EARTH	CY	0.0	$13.00	$0.00
301.15	SUBBASE OF GRAVEL	CY	121.3	$28.00	$3,396.30
406.25	BITUMINOUS CONCRETE PAVEMENT	T	60.3	$150.00	$9,050.00
540.10	PRECAST CONCRETE STRUCTURE (4X4 BOX) - EXTENSION	LS	0.0	$10,000.00	$0.00
601.2620	24" CPEP(SL)	LF	0.0	$38.00	$0.00
604.20	PRECAST REINFORCED CONCRETE CATCH BASIN WITH CAST IRON GRAT	EA	0.0	$2,650.00	$0.00
616.21	VERTICAL GRANITE CURB	LF	0.0	$38.00	$0.00
618.10	PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH	SY	0.0	$75.00	$0.00
618.11	PORTLAND CEMENT CONCRETE SIDEWALK, 8 INCH	SY	0.0	$95.00	$0.00
618.30	DETECTABLE WARNING SURFACE	SF	0.0	$50.00	$0.00
631.16	TESTING EQUIPMENT, CONCRETE	LS	1.0	$900.00	$900.00
631.17	TESTING EQUIPMENT, BITUMINOUS	LS	1.0	$650.00	$650.00
635.11	MOBILIZATION/DEMOBILIZATION	LS	1.0	$4,160.37	$4,160.37
641.10	TRAFFIC CONTROL	LS	1.0	$5,000.00	$5,000.00
646.427	DURABLE 6 INCH WHITE LINE, RECESSED TYPE I TAPE	LF	1540.0	$4.76	$7,330.40
646.437	DURABLE 6 INCH YELLOW LINE, RECESSED TYPE I TAPE	LF	1540.0	$4.76	$7,330.40
646.491	DURABLE LETTER OR SYMBOL, TYPE I TAPE	EA	0.0	$96.46	$0.00
646.507	DURABLE CROSSWALK MARKING, RECESSED TYPE I TAPE	LF	30.0	$29.98	$899.40
651.15	SEED	LB	0.0	$10.00	$0.00
651.18	FERTILIZER	LB	0.0	$3.00	$0.00
651.20	AGRICULTURAL LIMESTONE	T	0.0	$500.00	$0.00
651.25	HAY MULCH	T	0.0	$600.00	$0.00
651.35	TOPSOIL	CY	0.0	$25.00	$0.00
652	EROSION CONTROL	LS	1.0	$5,000.00	$5,000.00
675.20	TRAFFIC SIGNS, TYPE A	SF	0.0	$15.00	$0.00
675.431	SQUARE TUBE SIGN POST AND ANCHOR	LF	0.0	$12.00	$0.00
675.50	REMOVING SIGNS	EA	0.0	$17.00	$0.00
675.60	ERECTING SALVAGED SIGNS	EA	0.0	$30.00	$0.00
	UTILITY POLE RELOCATION	EA			

SUBTOTAL	**$45,764.04**
CONTINGENCY (20%)	**$9,152.81**
TOTAL	**$54,916.84**
USE	**$55,000.00**

Surface Material: **Length** **ft** **Cost per foot:**

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JOB E. Montpelier Village Safety Enhancement Project

SHEET NO. 1 OF 10

CALCULATED BY: LDC DATE: 26-Apr-12

CHECKED BY: EPD DATE: 00-Jan-00

SCALE:

ENGINEER'S PRELIMINARY ESTIMATE OF PROBABLE CONSTRUCTION COST

PHASE C OF CURBED WEST SIDE SIDEWALK

ITEM NO.	DESCRIPTION	UNIT	QUANT.	UNIT PRICE	AMOUNT
201.11	CLEARING AND GRUBBING, INCL. INDV. TREES AND STUMPS	AC	0.5	$10,000.00	$5,000.00
203.15	COMMON EXCAVATION	CY	260.0	$14.00	$3,640.00
203.30	EARTH BORROW	CY	70.0	$11.00	$770.00
204.20	TRENCH EXCAVATION OF EARTH	CY	510.0	$13.00	$6,630.00
301.15	SUBBASE OF GRAVEL	CY	170.0	$28.00	$4,760.00
406.25	BITUMINOUS CONCRETE PAVEMENT	T	100.0	$150.00	$15,000.00
540.10	PRECAST CONCRETE STRUCTURE (4X4 BOX) - EXTENSION	LS	1.0	$10,000.00	$10,000.00
601.2620	24" CPEP(SL)	LF	490.0	$38.00	$18,620.00
604.20	PRECAST REINFORCED CONCRETE CATCH BASIN WITH CAST IRON GRAT	EA	4.0	$2,650.00	$10,600.00
616.21	VERTICAL GRANITE CURB	LF	440.0	$38.00	$16,720.00
618.10	PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH	SY	440.0	$75.00	$33,000.00
618.11	PORTLAND CEMENT CONCRETE SIDEWALK, 8 INCH	SY	0.0	$95.00	$0.00
618.30	DETECTABLE WARNING SURFACE	SF	40.0	$50.00	$2,000.00
631.16	TESTING EQUIPMENT, CONCRETE	LS	1.0	$900.00	$900.00
631.17	TESTING EQUIPMENT, BITUMINOUS	LS	1.0	$650.00	$650.00
635.11	MOBILIZATION/DEMOBILIZATION	LS	1.0	$16,265.35	$16,265.35
641.10	TRAFFIC CONTROL	LS	1.0	$20,000.00	$20,000.00
646.427	DURABLE 6 INCH WHITE LINE, RECESSED TYPE I TAPE	LF	770.0	$4.76	$3,665.20
646.437	DURABLE 6 INCH YELLOW LINE, RECESSED TYPE I TAPE	LF	0.0	$4.76	$0.00
646.491	DURABLE LETTER OR SYMBOL, TYPE I TAPE	EA	0.0	$96.46	$0.00
646.507	DURABLE CROSSWALK MARKING, RECESSED TYPE I TAPE	LF	35.0	$29.98	$1,049.30
651.15	SEED	LB	20.0	$10.00	$200.00
651.18	FERTILIZER	LB	110.0	$3.00	$330.00
651.20	AGRICULTURAL LIMESTONE	T	0.5	$500.00	$250.00
651.25	HAY MULCH	T	0.5	$600.00	$300.00
651.35	TOPSOIL	CY	60.0	$25.00	$1,500.00
652	EROSION CONTROL	LS	1.0	$5,000.00	$5,000.00
675.20	TRAFFIC SIGNS, TYPE A	SF	20.0	$15.00	$300.00
675.431	SQUARE TUBE SIGN POST AND ANCHOR	LF	120.0	$12.00	$1,440.00
675.50	REMOVING SIGNS	EA	7.0	$17.00	$119.00
675.60	ERECTING SALVAGED SIGNS	EA	7.0	$30.00	$210.00
	UTILITY POLE RELOCATION	EA			
	SUBTOTAL				**$178,918.85**
	CONTINGENCY (20%)				**$35,783.77**
	TOTAL				**$214,702.62**
	USE				**$215,000.00**

Surface Material: **Length** **ft** **Cost per foot:**

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JOB E. Montpelier Village Safety Enhancement Project

SHEET NO. 1 OF 10

CALCULATED BY: LDC DATE: 26-Apr-12

CHECKED BY: EPD DATE: 00-Jan-00

SCALE:

ENGINEER'S PRELIMINARY ESTIMATE OF PROBABLE CONSTRUCTION COST

EAST SIDE CONNECTOR SIDEWALK (Phase D of West Side Curbed Sidewalk)

ITEM NO.	DESCRIPTION	UNIT	QUANT.	UNIT PRICE	AMOUNT
201.11	CLEARING AND GRUBBING, INCL. INDV. TREES AND STUMPS	AC	0.5	$10,000.00	$5,000.00
203.15	COMMON EXCAVATION	CY	120.0	$14.00	$1,680.00
203.30	EARTH BORROW	CY	190.0	$11.00	$2,090.00
203.31	SAND BORROW	CY	0.0	$19.00	$0.00
204.20	TRENCH EXCAVATION OF EARTH	CY	0.0	$13.00	$0.00
301.15	SUBBASE OF GRAVEL	CY	70.0	$28.00	$1,960.00
406.25	BITUMINOUS CONCRETE PAVEMENT	T	10.0	$150.00	$1,500.00
540.10	PRECAST CONCRETE STRUCTURE (4X4 BOX) - EXTENSION	LS	0.0	$10,000.00	$0.00
601.2620	24" CPEP(SL)	LF	0.0	$38.00	$0.00
604.20	PRECAST REINFORCED CONCRETE CATCH BASIN WITH CAST IRON GRAT	EA	0.0	$2,650.00	$0.00
616.21	VERTICAL GRANITE CURB	LF	180.0	$38.00	$6,840.00
618.10	PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH	SY	230.0	$75.00	$17,250.00
618.11	PORTLAND CEMENT CONCRETE SIDEWALK, 8 INCH	SY	60.0	$95.00	$5,700.00
618.30	DETECTABLE WARNING SURFACE	SF	30.0	$50.00	$1,500.00
631.16	TESTING EQUIPMENT, CONCRETE	LS	0.0	$900.00	$0.00
631.17	TESTING EQUIPMENT, BITUMINOUS	LS	0.0	$650.00	$0.00
635.11	MOBILIZATION/DEMOBILIZATION	LS	0.0	$5,349.04	$0.00
641.10	TRAFFIC CONTROL	LS	0.0	$20,000.00	$0.00
646.427	DURABLE 6 INCH WHITE LINE, RECESSED TYPE I TAPE	LF	0.0	$4.76	$0.00
646.437	DURABLE 6 INCH YELLOW LINE, RECESSED TYPE I TAPE	LF	0.0	$4.76	$0.00
646.491	DURABLE LETTER OR SYMBOL, TYPE I TAPE	EA	0.0	$96.46	$0.00
646.507	DURABLE CROSSWALK MARKING, RECESSED TYPE I TAPE	LF	31.0	$29.98	$929.38
651.15	SEED	LB	20.0	$10.00	$200.00
651.18	FERTILIZER	LB	90.0	$3.00	$270.00
651.20	AGRICULTURAL LIMESTONE	T	0.4	$500.00	$200.00
651.25	HAY MULCH	T	0.4	$600.00	$240.00
651.35	TOPSOIL	CY	50.0	$25.00	$1,250.00
652	EROSION CONTROL	LS	1.0	$5,000.00	$5,000.00
675.20	TRAFFIC SIGNS, TYPE A	SF	20.0	$15.00	$300.00
675.431	SQUARE TUBE SIGN POST AND ANCHOR	LF	120.0	$12.00	$1,440.00
675.50	REMOVING SIGNS	EA	3.0	$17.00	$51.00
675.60	ERECTING SALVAGED SIGNS	EA	3.0	$30.00	$90.00

SUBTOTAL	**$53,490.38**
CONTINGENCY (20%)	**$10,698.08**
TOTAL	**$64,188.46**
USE	**$65,000.00**

Surface Material: **Length** **ft** **Cost per foot:**

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JOB E. Montpelier Village Safety Enhancement Project

SHEET NO. 1 OF 10

CALCULATED BY: LDC DATE: 26-Apr-12

CHECKED BY: EPD DATE: 00-Jan-00

SCALE:

ENGINEER'S PRELIMINARY ESTIMATE OF PROBABLE CONSTRUCTION COST

CURBED WEST SIDE SIDEWALK

ITEM NO.	DESCRIPTION	UNIT	QUANT.	UNIT PRICE	AMOUNT
201.11	CLEARING AND GRUBBING, INCL. INDV. TREES AND STUMPS	AC	0.5	$10,000.00	$5,000.00
203.15	COMMON EXCAVATION	CY	460.0	$14.00	$6,440.00
203.30	EARTH BORROW	CY	70.0	$11.00	$770.00
204.20	TRENCH EXCAVATION OF EARTH	CY	510.0	$13.00	$6,630.00
301.15	SUBBASE OF GRAVEL	CY	320.0	$28.00	$8,960.00
406.25	BITUMINOUS CONCRETE PAVEMENT	T	140.0	$150.00	$21,000.00
540.10	PRECAST CONCRETE STRUCTURE (4X4 BOX) - EXTENSION	LS	1.0	$10,000.00	$10,000.00
601.2620	24" CPEP(SL)	LF	490.0	$38.00	$18,620.00
604.20	PRECAST REINFORCED CONCRETE CATCH BASIN WITH CAST IRON GRAT	EA	4.0	$2,650.00	$10,600.00
616.21	VERTICAL GRANITE CURB	LF	730.0	$38.00	$27,740.00
618.10	PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH	SY	530.0	$75.00	$39,750.00
618.11	PORTLAND CEMENT CONCRETE SIDEWALK, 8 INCH	SY	0.0	$95.00	$0.00
618.30	DETECTABLE WARNING SURFACE	SF	100.0	$50.00	$5,000.00
631.16	TESTING EQUIPMENT, CONCRETE	LS	1.0	$900.00	$900.00
631.17	TESTING EQUIPMENT, BITUMINOUS	LS	1.0	$650.00	$650.00
635.11	MOBILIZATION/DEMOBILIZATION	LS	1.0	$21,212.85	$21,212.85
641.10	TRAFFIC CONTROL	LS	1.0	$20,000.00	$20,000.00
646.427	DURABLE 6 INCH WHITE LINE, RECESSED TYPE I TAPE	LF	1540.0	$4.76	$7,330.40
646.437	DURABLE 6 INCH YELLOW LINE, RECESSED TYPE I TAPE	LF	1540.0	$4.76	$7,330.40
646.491	DURABLE LETTER OR SYMBOL, TYPE I TAPE	EA	0.0	$96.46	$0.00
646.507	DURABLE CROSSWALK MARKING, RECESSED TYPE I TAPE	LF	67.0	$29.98	$2,008.66
651.15	SEED	LB	20.0	$10.00	$200.00
651.18	FERTILIZER	LB	130.0	$3.00	$390.00
651.20	AGRICULTURAL LIMESTONE	T	0.6	$500.00	$300.00
651.25	HAY MULCH	T	0.6	$600.00	$360.00
651.35	TOPSOIL	CY	70.0	$25.00	$1,750.00
652	EROSION CONTROL	LS	1.0	$5,000.00	$5,000.00
675.20	TRAFFIC SIGNS, TYPE A	SF	50.0	$15.00	$750.00
675.431	SQUARE TUBE SIGN POST AND ANCHOR	LF	360.0	$12.00	$4,320.00
675.50	REMOVING SIGNS	EA	7.0	$17.00	$119.00
675.60	ERECTING SALVAGED SIGNS	EA	7.0	$30.00	$210.00
	UTILITY POLE RELOCATION	EA			

SUBTOTAL	**$233,341.31**
CONTINGENCY (20%)	**$46,668.26**
TOTAL	**$280,009.57**
USE	**$281,000.00**

Surface Material:		PCC	Length	940	ft	Cost per foot:		$299

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JOB E. Montpelier Village Safety Enhancement Project

SHEET NO. 1 OF 10

CALCULATED BY: LDC DATE: 26-Apr-12

CHECKED BY: EPD DATE: 00-Jan-00

SCALE:

ENGINEER'S PRELIMINARY ESTIMATE OF PROBABLE CONSTRUCTION COST

NON-CURBED WEST SIDE SIDEWALK

ITEM NO.	DESCRIPTION	UNIT	QUANT.	UNIT PRICE	AMOUNT
201.11	CLEARING AND GRUBBING, INCL. INDV. TREES AND STUMPS	AC	0.5	$10,000.00	$5,000.00
203.15	COMMON EXCAVATION	CY	400.0	$14.00	$5,600.00
203.30	EARTH BORROW	CY	80.0	$11.00	$880.00
204.20	TRENCH EXCAVATION OF EARTH	CY	0.0	$13.00	$0.00
301.15	SUBBASE OF GRAVEL	CY	280.0	$28.00	$7,840.00
406.25	BITUMINOUS CONCRETE PAVEMENT	T	80.0	$150.00	$12,000.00
540.10	PRECAST CONCRETE STRUCTURE (4X4 BOX) - EXTENSION	LS	1.0	$10,000.00	$10,000.00
601.2620	24" CPEP(SL)	LF	0.0	$38.00	$0.00
604.20	PRECAST REINFORCED CONCRETE CATCH BASIN WITH CAST IRON GRAT	EA	0.0	$2,650.00	$0.00
616.21	VERTICAL GRANITE CURB	LF	220.0	$38.00	$8,360.00
618.10	PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH	SY	530.0	$75.00	$39,750.00
618.11	PORTLAND CEMENT CONCRETE SIDEWALK, 8 INCH	SY	0.0	$95.00	$0.00
618.30	DETECTABLE WARNING SURFACE	SF	100.0	$50.00	$5,000.00
631.16	TESTING EQUIPMENT, CONCRETE	LS	1.0	$900.00	$900.00
631.17	TESTING EQUIPMENT, BITUMINOUS	LS	1.0	$650.00	$650.00
635.11	MOBILIZATION/DEMOBILIZATION	LS	1.0	$14,677.85	$14,677.85
641.10	TRAFFIC CONTROL	LS	1.0	$20,000.00	$20,000.00
646.427	DURABLE 6 INCH WHITE LINE, RECESSED TYPE I TAPE	LF	1540.0	$4.76	$7,330.40
646.437	DURABLE 6 INCH YELLOW LINE, RECESSED TYPE I TAPE	LF	1540.0	$4.76	$7,330.40
646.491	DURABLE LETTER OR SYMBOL, TYPE I TAPE	EA	0.0	$96.46	$0.00
646.507	DURABLE CROSSWALK MARKING, RECESSED TYPE I TAPE	LF	67.0	$29.98	$2,008.66
651.15	SEED	LB	20.0	$10.00	$200.00
651.18	FERTILIZER	LB	170.0	$3.00	$510.00
651.20	AGRICULTURAL LIMESTONE	T	0.7	$500.00	$350.00
651.25	HAY MULCH	T	0.7	$600.00	$420.00
651.35	TOPSOIL	CY	90.0	$25.00	$2,250.00
652	EROSION CONTROL	LS	1.0	$5,000.00	$5,000.00
675.20	TRAFFIC SIGNS, TYPE A	SF	50.0	$15.00	$750.00
675.431	SQUARE TUBE SIGN POST AND ANCHOR	LF	360.0	$12.00	$4,320.00
675.50	REMOVING SIGNS	EA	7.0	$17.00	$119.00
675.60	ERECTING SALVAGED SIGNS	EA	7.0	$30.00	$210.00
	UTILITY POLE RELOCATION	EA			
	SUBTOTAL				**$161,456.31**
	CONTINGENCY (20%)				**$32,291.26**
	TOTAL				**$193,747.57**
	USE				**$194,000.00**

Surface Material:		PCC	Length	940	ft	Cost per foot:		$207

Note: In providing opinions of probable construction cost, the Client understands that D&K has no control over the cost or availability of labor, equipment or materials, or over market conditions or the Contractor's method of pricing, and that our Opinion of Probable Construction Costs are made on the basis of our professional judgment and experience. D&K makes no warranty, expressed or implied, that the bids or the negotiated cost of the Work will not vary from the Opinion of Probable Construction Cost provided herein.

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JOB E. Montpelier Village Safety Enhancement Project

SHEET NO. 1 OF 10

CALCULATED BY: LDC DATE: 02-Aug-12

CHECKED BY: EPD DATE: 00-Jan-00

SCALE:

ENGINEER'S PRELIMINARY ESTIMATE OF PROBABLE CONSTRUCTION COST

CURBED WEST SIDE OFFSET SIDEWALK

ITEM NO.	DESCRIPTION	UNIT	QUANT.	UNIT PRICE	AMOUNT
201.11	CLEARING AND GRUBBING, INCL. INDV. TREES AND STUMPS	AC	0.5	$10,000.00	$5,000.00
203.15	COMMON EXCAVATION	CY	460.0	$14.00	$6,440.00
203.30	EARTH BORROW	CY	80.0	$11.00	$880.00
204.20	TRENCH EXCAVATION OF EARTH	CY	510.0	$13.00	$6,630.00
301.15	SUBBASE OF GRAVEL	CY	320.0	$28.00	$8,960.00
406.25	BITUMINOUS CONCRETE PAVEMENT	T	140.0	$150.00	$21,000.00
540.10	PRECAST CONCRETE STRUCTURE (4X4 BOX) - EXTENSION	LS	1.0	$10,000.00	$10,000.00
601.2620	24" CPEP(SL)	LF	490.0	$38.00	$18,620.00
604.20	PRECAST REINFORCED CONCRETE CATCH BASIN WITH CAST IRON GRAT	EA	4.0	$2,650.00	$10,600.00
616.21	VERTICAL GRANITE CURB	LF	730.0	$38.00	$27,740.00
618.10	PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH	SY	530.0	$75.00	$39,750.00
618.11	PORTLAND CEMENT CONCRETE SIDEWALK, 8 INCH	SY	0.0	$95.00	$0.00
618.30	DETECTABLE WARNING SURFACE	SF	100.0	$50.00	$5,000.00
631.16	TESTING EQUIPMENT, CONCRETE	LS	1.0	$900.00	$900.00
631.17	TESTING EQUIPMENT, BITUMINOUS	LS	1.0	$650.00	$650.00
635.11	MOBILIZATION/DEMOBILIZATION	LS	1.0	$21,296.85	$21,296.85
641.10	TRAFFIC CONTROL	LS	1.0	$20,000.00	$20,000.00
646.427	DURABLE 6 INCH WHITE LINE, RECESSED TYPE I TAPE	LF	1540.0	$4.76	$7,330.40
646.437	DURABLE 6 INCH YELLOW LINE, RECESSED TYPE I TAPE	LF	1540.0	$4.76	$7,330.40
646.491	DURABLE LETTER OR SYMBOL, TYPE I TAPE	EA	0.0	$96.46	$0.00
646.507	DURABLE CROSSWALK MARKING, RECESSED TYPE I TAPE	LF	67.0	$29.98	$2,008.66
651.15	SEED	LB	20.0	$10.00	$200.00
651.18	FERTILIZER	LB	170.0	$3.00	$510.00
651.20	AGRICULTURAL LIMESTONE	T	0.7	$500.00	$350.00
651.25	HAY MULCH	T	0.7	$600.00	$420.00
651.35	TOPSOIL	CY	90.0	$25.00	$2,250.00
652	EROSION CONTROL	LS	1.0	$5,000.00	$5,000.00
675.20	TRAFFIC SIGNS, TYPE A	SF	50.0	$15.00	$750.00
675.431	SQUARE TUBE SIGN POST AND ANCHOR	LF	360.0	$12.00	$4,320.00
675.50	REMOVING SIGNS	EA	7.0	$17.00	$119.00
675.60	ERECTING SALVAGED SIGNS	EA	7.0	$30.00	$210.00
	UTILITY POLE RELOCATION	EA			

SUBTOTAL	**$234,265.31**
CONTINGENCY (20%)	**$46,853.06**
TOTAL	**$281,118.37**
USE	**$282,000.00**

Surface Material:		PCC	Length	940	ft	Cost per foot:	$300

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Engineering • Planning • Development • Management

JOB E. Montpelier Village Safety Enhancement Project

SHEET NO. 1 OF 10

CALCULATED BY: LDC DATE: 26-Apr-12

CHECKED BY: EPD DATE: 00-Jan-00

SCALE:

ENGINEER'S PRELIMINARY ESTIMATE OF PROBABLE CONSTRUCTION COST

NON-CURBED EAST SIDE SIDEWALK

ITEM NO.	DESCRIPTION	UNIT	QUANT.	UNIT PRICE	AMOUNT
201.11	CLEARING AND GRUBBING, INCL. INDV. TREES AND STUMPS	AC	0.5	$10,000.00	$5,000.00
203.15	COMMON EXCAVATION	CY	480.0	$14.00	$6,720.00
203.30	EARTH BORROW	CY	190.0	$11.00	$2,090.00
203.31	SAND BORROW	CY	0.0	$19.00	$0.00
204.20	TRENCH EXCAVATION OF EARTH	CY	0.0	$13.00	$0.00
301.15	SUBBASE OF GRAVEL	CY	320.0	$28.00	$8,960.00
406.25	BITUMINOUS CONCRETE PAVEMENT	T	70.0	$150.00	$10,500.00
540.10	PRECAST CONCRETE STRUCTURE (4X4 BOX) - EXTENSION	LS	1.0	$10,000.00	$10,000.00
601.2620	24" CPEP(SL)	LF	0.0	$38.00	$0.00
604.20	PRECAST REINFORCED CONCRETE CATCH BASIN WITH CAST IRON GRAT	EA	0.0	$2,650.00	$0.00
616.21	VERTICAL GRANITE CURB	LF	180.0	$38.00	$6,840.00
618.10	PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH	SY	730.0	$75.00	$54,750.00
618.11	PORTLAND CEMENT CONCRETE SIDEWALK, 8 INCH	SY	60.0	$95.00	$5,700.00
618.30	DETECTABLE WARNING SURFACE	SF	30.0	$50.00	$1,500.00
631.16	TESTING EQUIPMENT, CONCRETE	LS	1.0	$900.00	$900.00
631.17	TESTING EQUIPMENT, BITUMINOUS	LS	1.0	$650.00	$650.00
635.11	MOBILIZATION/DEMOBILIZATION	LS	1.0	$16,361.22	$16,361.22
641.10	TRAFFIC CONTROL	LS	1.0	$20,000.00	$20,000.00
646.427	DURABLE 6 INCH WHITE LINE, RECESSED TYPE I TAPE	LF	1540.0	$4.76	$7,330.40
646.437	DURABLE 6 INCH YELLOW LINE, RECESSED TYPE I TAPE	LF	1540.0	$4.76	$7,330.40
646.491	DURABLE LETTER OR SYMBOL, TYPE I TAPE	EA	0.0	$96.46	$0.00
646.507	DURABLE CROSSWALK MARKING, RECESSED TYPE I TAPE	LF	31.0	$29.98	$929.38
651.15	SEED	LB	30.0	$10.00	$300.00
651.18	FERTILIZER	LB	250.0	$3.00	$750.00
651.20	AGRICULTURAL LIMESTONE	T	1.0	$500.00	$500.00
651.25	HAY MULCH	T	1.0	$600.00	$600.00
651.35	TOPSOIL	CY	140.0	$25.00	$3,500.00
652	EROSION CONTROL	LS	1.0	$5,000.00	$5,000.00
675.20	TRAFFIC SIGNS, TYPE A	SF	40.0	$15.00	$600.00
675.431	SQUARE TUBE SIGN POST AND ANCHOR	LF	240.0	$12.00	$2,880.00
675.50	REMOVING SIGNS	EA	6.0	$17.00	$102.00
675.60	ERECTING SALVAGED SIGNS	EA	6.0	$30.00	$180.00

SUBTOTAL	**$179,973.40**
CONTINGENCY (20%)	**$35,994.68**
TOTAL	**$215,968.08**
USE	**$216,000.00**

Surface Material:		PCC	Length	1407	ft	Cost per foot:		$154

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Engineering • Planning • Development • Management

JOB E. Montpelier Village Safety Enhancement Project

SHEET NO. 1 OF 10

CALCULATED BY: LDC DATE: 26-Apr-12

CHECKED BY: EPD DATE: 00-Jan-00

SCALE:

ENGINEER'S PRELIMINARY ESTIMATE OF PROBABLE CONSTRUCTION COST

CURBED EAST SIDE OFFSET SIDEWALK

ITEM NO.	DESCRIPTION	UNIT	QUANT.	UNIT PRICE	AMOUNT
201.11	CLEARING AND GRUBBING, INCL. INDV. TREES AND STUMPS	AC	0.5	$10,000.00	$5,000.00
203.15	COMMON EXCAVATION	CY	570.0	$14.00	$7,980.00
203.30	EARTH BORROW	CY	190.0	$11.00	$2,090.00
203.31	SAND BORROW	CY	0.0	$19.00	$0.00
204.20	TRENCH EXCAVATION OF EARTH	CY	800.0	$13.00	$10,400.00
301.15	SUBBASE OF GRAVEL	CY	380.0	$28.00	$10,640.00
406.25	BITUMINOUS CONCRETE PAVEMENT	T	180.0	$150.00	$27,000.00
540.10	PRECAST CONCRETE STRUCTURE (4X4 BOX) - EXTENSION	LS	1.0	$10,000.00	$10,000.00
601.2620	24" CPEP(SL)	LF	770.0	$38.00	$29,260.00
604.20	PRECAST REINFORCED CONCRETE CATCH BASIN WITH CAST IRON GRAT	EA	6.0	$2,650.00	$15,900.00
616.21	VERTICAL GRANITE CURB	LF	950.0	$38.00	$36,100.00
618.10	PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH	SY	730.0	$75.00	$54,750.00
618.11	PORTLAND CEMENT CONCRETE SIDEWALK, 8 INCH	SY	60.0	$95.00	$5,700.00
618.30	DETECTABLE WARNING SURFACE	SF	30.0	$50.00	$1,500.00
631.16	TESTING EQUIPMENT, CONCRETE	LS	1.0	$900.00	$900.00
631.17	TESTING EQUIPMENT, BITUMINOUS	LS	1.0	$650.00	$650.00
635.11	MOBILIZATION/DEMOBILIZATION	LS	1.0	$26,787.22	$26,787.22
641.10	TRAFFIC CONTROL	LS	1.0	$20,000.00	$20,000.00
646.427	DURABLE 6 INCH WHITE LINE, RECESSED TYPE I TAPE	LF	1540.0	$4.76	$7,330.40
646.437	DURABLE 6 INCH YELLOW LINE, RECESSED TYPE I TAPE	LF	1540.0	$4.76	$7,330.40
646.491	DURABLE LETTER OR SYMBOL, TYPE I TAPE	EA	0.0	$96.46	$0.00
646.507	DURABLE CROSSWALK MARKING, RECESSED TYPE I TAPE	LF	31.0	$29.98	$929.38
651.15	SEED	LB	30.0	$10.00	$300.00
651.18	FERTILIZER	LB	250.0	$3.00	$750.00
651.20	AGRICULTURAL LIMESTONE	T	1.0	$500.00	$500.00
651.25	HAY MULCH	T	1.0	$600.00	$600.00
651.35	TOPSOIL	CY	140.0	$25.00	$3,500.00
652	EROSION CONTROL	LS	1.0	$5,000.00	$5,000.00
675.20	TRAFFIC SIGNS, TYPE A	SF	40.0	$15.00	$600.00
675.431	SQUARE TUBE SIGN POST AND ANCHOR	LF	240.0	$12.00	$2,880.00
675.50	REMOVING SIGNS	EA	6.0	$17.00	$102.00
675.60	ERECTING SALVAGED SIGNS	EA	6.0	$30.00	$180.00

SUBTOTAL	**$294,659.40**
CONTINGENCY (20%)	**$58,931.88**
TOTAL	**$353,591.28**
USE	**$354,000.00**

Surface Material:	PCC	Length	1407	ft	Cost per foot:	$252

Note: In providing opinions of probable construction cost, the Client understands that D&K has no control over the cost or availability of labor, equipment or materials, or over market conditions or the Contractor's method of pricing, and that our Opinion of Probable Construction Costs are made on the basis of our professional judgment and experience. D&K makes no warranty, expressed or implied, that the bids or the negotiated cost of the Work will not vary from the Opinion of Probable Construction Cost provided herein.

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Engineering • Planning • Development • Management

JOB E. Montpelier Village Safety Enhancement Project

SHEET NO. 1 OF 10

CALCULATED BY: LDC DATE: 26-Apr-12

CHECKED BY: EPD DATE: 00-Jan-00

SCALE:

ENGINEER'S PRELIMINARY ESTIMATE OF PROBABLE CONSTRUCTION COST

ON ROAD BICYCLE FACILITY ONLY

ITEM NO.	DESCRIPTION	UNIT	QUANT.	UNIT PRICE	AMOUNT
201.11	CLEARING AND GRUBBING, INCL. INDV. TREES AND STUMPS	AC	0.5	$10,000.00	$5,000.00
203.15	COMMON EXCAVATION	CY	220.0	$14.00	$3,080.00
203.30	EARTH BORROW	CY	0.0	$11.00	$0.00
203.31	SAND BORROW	CY	0.0	$19.00	$0.00
204.20	TRENCH EXCAVATION OF EARTH	CY	0.0	$13.00	$0.00
301.15	SUBBASE OF GRAVEL	CY	180.0	$28.00	$5,040.00
406.25	BITUMINOUS CONCRETE PAVEMENT	T	80.0	$150.00	$12,000.00
601.2620	24" CPEP(SL)	LF	0.0	$38.00	$0.00
604.20	PRECAST REINFORCED CONCRETE CATCH BASIN WITH CAST IRON GRAT	EA	0.0	$2,650.00	$0.00
616.21	VERTICAL GRANITE CURB	LF	0.0	$38.00	$0.00
618.10	PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH	SY	0.0	$75.00	$0.00
618.11	PORTLAND CEMENT CONCRETE SIDEWALK, 8 INCH	SY	0.0	$95.00	$0.00
618.30	DETECTABLE WARNING SURFACE	SF	0.0	$50.00	$0.00
631.16	TESTING EQUIPMENT, CONCRETE	LS	0.0	$900.00	$0.00
631.17	TESTING EQUIPMENT, BITUMINOUS	LS	1.0	$650.00	$650.00
635.11	MOBILIZATION/DEMOBILIZATION	LS	1.0	$7,190.18	$7,190.18
641.10	TRAFFIC CONTROL	LS	1.0	$20,000.00	$20,000.00
646.427	DURABLE 6 INCH WHITE LINE, RECESSED TYPE I TAPE	LF	1540.0	$4.76	$7,330.40
646.437	DURABLE 6 INCH YELLOW LINE, RECESSED TYPE I TAPE	LF	1540.0	$4.76	$7,330.40
646.491	DURABLE LETTER OR SYMBOL, TYPE I TAPE	EA	0.0	$96.46	$0.00
646.507	DURABLE CROSSWALK MARKING, RECESSED TYPE I TAPE	LF	0.0	$29.98	$0.00
651.15	SEED	LB	10.0	$10.00	$100.00
651.18	FERTILIZER	LB	40.0	$3.00	$120.00
651.20	AGRICULTURAL LIMESTONE	T	0.2	$500.00	$100.00
651.25	HAY MULCH	T	0.2	$600.00	$120.00
651.35	TOPSOIL	CY	20.0	$25.00	$500.00
652	EROSION CONTROL	LS	1.0	$5,000.00	$5,000.00
675.20	TRAFFIC SIGNS, TYPE A	SF	40.0	$15.00	$600.00
675.431	SQUARE TUBE SIGN POST AND ANCHOR	LF	360.0	$12.00	$4,320.00
675.50	REMOVING SIGNS	EA	13.0	$17.00	$221.00
675.60	ERECTING SALVAGED SIGNS	EA	13.0	$30.00	$390.00
	SUBTOTAL				**$79,091.98**
	CONTINGENCY (20%)				**$15,818.40**
	TOTAL				**$94,910.38**

USE **$95,000.00**

Surface Material:		AC	Length	770	ft	Cost per foot:		$124

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APPENDIX G

PUBLIC MEETINGS

EAST MONTPELIER VILLAGE

SAFETY ENHANCEMENT SCOPING STUDY

LOCAL CONCERNS MEETING

NOVEMBER 15, 2011

MEETING SUMMARY

1. Michelle McFadden opened the meeting and gave an overview of the Committee activities that led to the current project.

2. Evan Detrick gave a formal presentation to explain the project develop process, the requirements to be followed, and the project goals and schedule.

3. There was general discussion that the pedestrian destinations are primarily the Post Office and General Store, as well as the Town office.

4. There was general discussion about the desire to connect the sidewalks from the VT Route 14 north and south projects.

5. Pedestrians cross U.S. Route 2 anywhere along the corridor.

6. A citizen stated their concerns about maintenance, drainage, taxes, and impacts to the water main.

7. Evan Detrick explained rules and requirements for the installation of new crosswalks.

1962-2012 Celebrating 50 Years

EAST MONTPELIER VILLAGE

SAFETY ENHANCEMENT SCOPING STUDY

ALTERNATIVES PRESENTATION MEETING

MARCH 8, 2012

MEETING SUMMARY

1. Jean Vissering opened the meeting and gave an overview of the Committee activities that led to the current project.

2. Dave Conger gave a formal presentation to explain the alternatives, impacts, issues, and costs. Alternatives include widening shoulders on both sides; providing curbed or uncurbed sidewalks on the east side, the west side, or both sides of U.S. 2.

3. A citizen stated that he preferred the east side alignment. However, others were concerned about the amount on the east side, particularly south of the Post Office. The general sentiment was that this would be out of the way.

4. There was a question about driveway accesses, and would they be changed by the addition of sidewalks. A sidewalk would not change the access, other than to possibly reduce the width of the openings to meet VTrans criteria.

5. There was a discussion of utility poles and their possible relocation. The relocations, from the VT 14 bridge replacement, are still being decided. However, D&K is confident that we can avoid all of the poles except for one in front of garage on east side.

6. There was concern about blocking off the Post Office traffic circulation if a sidewalk leading up to the door is added. Dudley trucks would block off circulation around the Post Office.

7. Concerns were expressed about trucks that stop at Dudley's and block sight lanes.

8. Michelle asked if just shoulders could be done (perhaps as a separate phase)? Yes, but they may have to be reconstructed by any future sidewalk project (to add drainage, etc.), so Town may have to pay twice.

9. There was some discussion about utilities and water line conflicts. Conflicts with the water line can probably be avoided or minimized, and would likely only result if drainage facilities are needed.

10. General consensus was a preference for the west side/curbed alternative, and that the east side connector would be beneficial. The project could be phased for 2 grants to make it affordable.

11. A comment was made that it would be nice to have residents from VT 14 south of the bridge to be able to reach the Village, so continuity is important from bridge area to the center of the Village.

12. Jean asked if street lights could be included with the project. Street lights could be added on each side of sidewalks for about $2,500 each. Would like fixture like at Town Hall, but not as tall.

13. Consensus was to widen shoulders on both sides to accommodate bicyclists.

14. Strong desire to have crosswalk at Post Office to get folks from east side to west side. There are elderly crossers, and a regular crosser in a wheelchair.

15. D&K is to discuss a crosswalk across U.S. 2 at the Post Office with VTrans' Jon Kaplan, even if it would be a stand-alone Phase I project.

16. There are discussions taking place between residents, VTrans, and GMP regarding the realignment of poles associated with the VT 14 bridge project to get them away from the Chiropractor's Office. These discussions are on-going.

17. D&K is to measure the distance between the hedge and the centerline of U.S. 2 on property just south of Chiropractor's Office to determine if hedge can remain. The property owner's septic system is just beyond the hedge, and this feature needs to be avoided.

APPENDIX H

EVALUATION MATRIX

East Montpelier Sidewalk Study
July 2012

Evaluation Matrix

		Alternative Description							
				West Side of U.S. Route 2			East Side of U.S. Route 2		Both Sides of U.S. Route 2
		No Build	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Alternative G
			PCC Sidewalk with granite curb following the west side of US Route 2 from VT Route 14 south intersection to Quaker Road	PCC Sidewalk without curbing following the west side of US Route 2 from VT Route 14 south intersection to Quaker Road	PCC Sidewalk with granite curb offset from the roadway following the west side of US Route 2 from VT Route 14 south intersection to Quaker Road	PCC Sidewalk with granite curb following the east side of Route 2 from a midblock crosswalk near the Post Office to the existing VT Route 14 north sidewalk **(Impacts and construction costs are in addition to Alternative A-C which this extension would be paired with)**	PCC Sidewalk without curbing following the east side of US Route 2 from VT Route 14 south intersection to VT Route 14 north sidewalk	PCC Sidewalk with granite curb offset from the roadway following the east side of US Route 2 from VT Route 14 south intersection to VT Route 14 north sidewalk	Bit. Shoulder widening to create 6 ft on-road bicycle lane on both east and west sides of US Route 2 from VT Route 14 south intersection to VT Route 14 north intersection **(Stand alone shoulder widening project. Alternatives A-C and E-F incorporate shoulder widening)**
	Retaining Wall	NO	NO [installed under VTrans BRF 037-1(7)]	NO [installed under VTrans BRF 037-1(7)]	NO [installed under VTrans BRF 037-1(7)]	No	NO		NO
	Drainage Impacts	NO	YES	YES	YES	Maybe	NO		MAYBE
	Length (ft)	N/A	940	940	940		1407		770
	Probable Cost ($)	$0	$351,250	$242,500	$347,500	$81,250	$270,000	$442,500	$118,750
	Utility Relocation/Impacts	NO	NO	NO	NO	YES (2 POLES)	YES (2 POLES)	YES (2 POLES)	NO
	Right of Way Impacts (historical 66' ROW)	NO	NO	NO	NO	NO	NO	NO	MAYBE
	Landscaping Impacts	NO	YES	YES	YES	YES	YES	YES	YES
	Agricultural Lands	NO	NO	NO	NO	NO	NO	NO	NO
	Archaeological	NO	NO	NO	NO	NO	NO	NO	NO
	Historic Structure, Sites and Districts	NO	NO	NO	NO	NO	NO	NO	NO
	Hazardous Materials	NO	MAYBE	MAYBE	MAYBE	MAYBE	MAYBE	MAYBE	MAYBE
	Floodplains	NO	NO	NO	NO	NO	NO	NO	NO
	Fish & Wildlife	NO	NO	NO	NO	NO	NO	NO	NO
	Rare, Threatened and Endangered Species	NO	NO	NO	NO	NO	NO	NO	NO
	Public Lands - Section 4(f) (Section 106)	NO	NO	NO	NO	NO	NO	NO	NO
	LWCF - Section 6(f)	NO	NO	NO	NO	NO	NO	NO	NO
	Noise	NO	NO	NO	NO	NO	NO	NO	NO
	Wetlands	NO	MINOR	MINOR	MINOR	MINOR	NO	NO	MAYBE
	Property Vehicular Access Impacts	NO	YES	YES	YES	NO	NO	NO	NO
	Provides safe pedestrian facility	NO	YES	YES	YES	YES	YES	YES	PARTIAL
	Provides adequate separation between vehicles and pedestrians	NO	YES	YES	YES	YES	YES	YES	NO
	Provides safe bicycle facility	NO	YES	YES	YES	YES	YES	YES	YES
	Provides connections to business destinations	NO	YES	YES	YES	PARTIAL	PARTIAL	PARTIAL	PARTIAL