RSG INC.
TRANSPORTATION

Georgia South Village Bicycle and Pedestrian Feasibility Study

Town of Georgia, VT

May 2012

DATA ■ ANALYSIS ■ SOLUTIONS

Report Prepared by:

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Report Prepared for:
The Northwest Regional Planning Commission and the Town of Georgia, VT

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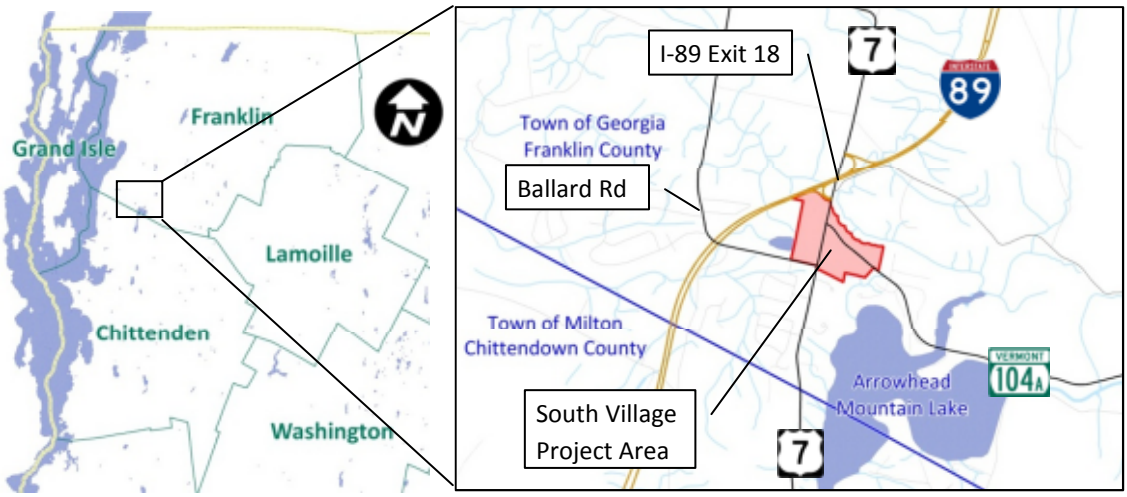
Section 1 Introduction

1.1 Overview

The Town of Georgia and the Northwest Regional Planning Commission have managed this Bicycle and Pedestrian Feasibility Study with the focus on providing immediate recommendations to address deficiencies in the bicycle and pedestrian network, as well as propose a framework and design guideline for a comprehensive plan for future construction of sidewalks, shared-use paths, and bicycle lanes throughout the Georgia South Village. The project study area is the planned smart-growth village center around the Georgia South Village zoning district along US-7 / Ethan Allen Highway and VT-104A / Highbridge Road. This mixed-use zoning district is roughly bounded by Ballard Road (TH #6) to the South, Arrowhead Industrial Park to the East, and I-89 to the north and west. This study area within Franklin County is shown below.



This study has been organized into the following sections:

- **Section 1 – Introduction**: Provides background information, explains the goals of this report, states the formal purpose and need of the study and provides a general description of the planning area. This introduction describes how the study was developed and public outreach

efforts throughout the process. Lastly, this section describes the segmental breakup of the project area and documents the anticipated users.

- **Section 2 – Preferred Alternative along the Existing Road Network:** The preferred alternative is presented early in this report for those who are most interested in the conclusions.
- **Section 3 – Existing Conditions**: Documents the existing land use context of the study area, including the general geography, topography, existing transportation characteristics, approximate highway rights-of-way, and existing utility locations along the corridors.
- **Section 4 – Resource Constraints**: Discusses the potential natural and cultural constraints along the study area. In addition, the existing local, regional, and statewide planning documents are discussed relative to conformance with the goals and objectives of this study.
- **Section 5 – Alternative Alignments along the Existing Road Network**: Identifies the various studied alternatives along each segment of the corridor.
- **Section 6 – Conceptual Estimate of Probable Construction Costs**: Establishes a conceptual cost estimate for the preferred alternative along the existing road network.
- **Section 7 – Planning for Future South Village Development:** Describes the standards for the continued development of the South Village Project area. Primary corridors for bicycle and pedestrian traffic are identified with future considerations and design recommendations for a comprehensive network within the South Village.
- **Section 8 – Implementation**: Identifies the next steps to be taken, presents timelines, potential funding sources and identifies the leader and other partners that will participate or support moving the study forward.

This project and report is being funded by an Energy Efficiency and Conservation Block Grant[1] (EECBG) through the Department of Energy. The explicit purpose of this grant activity is to produce a bicycle and pedestrian feasibility study in areas with new and proposed mixed-use compact growth, specifically to promote "viable alternatives to driving to work, school, or services." As the report will demonstrate in greater detail, past studies and the current zoning regulations have designated the South Village core as a smart-growth, mixed-use, compact development area, and this report will address the bicycle and pedestrian needs in this area.

1.2 Purpose and Need

The purpose of this project is to develop a plan to improve the safety and connectivity of the bicycle and pedestrian network within the South Village core based on the community's current needs, as well as provide a guideline to ensure the construction of consistent, thoughtful, sustainable, and cost-effective bicycle and pedestrian infrastructure as the community continues to develop.

Within this framework, the study serves two primary purposes:

First, this report identifies immediately feasible sidewalk alternatives within the existing road network. These alternatives are prioritized in an action plan with potential funding sources identified. This report supports future grant applications by showing the need for and feasibility of the preferred alternatives.

Second, this report provides guidelines for future sidewalk and bicycle development within the South Village. As the Village continues to develop, the improvements identified in this report will ensure the sidewalk and path network develops in a consistent and complete manner.

Ultimately this report will assist the town in expanding transportation options within and around the South Village community. Short term improvements will address the most pressing deficiencies, while the comprehensive plan outlined in this report will ensure the community develops the needed

[1] Energy Efficiency and Conservation Block Grant DUN# 152676032

sidewalks, bike facilities, and paths to improve mobility. This walking and biking access around the Village, coupled with a nearby regional transit stop, will provide greater transportation alternatives to all the Town's residents.

Project Need:

- The existing pedestrian and bicycle network consists of wide shoulders and short, inconsistent and unconnected sidewalk segments along US-7. No existing bicycle or pedestrian facilities are present along VT-104A.
- Additional pedestrian facilities are planned and permitted but not constructed, affording the opportunity to coordinate a system-wide network prior to construction.
- Two state highways divide the project area. Both US-7 and VT-104A are classified as High Crash Location segments through the South Village project area. No bicyclists or pedestrians were reported in any of the crashes.
- Numerous town documents, including the 2009 Georgia South Village Strategic Plan, the 2006 Georgia Town Plan, and the 2006 Georgia Town Center Economic Feasibility Study, all describe the continued development of the South Village project area as a high-density, mixed-use Village Center.
- The 2004 VT-104 / VT-104A Corridor Study recommends the development of sidewalks, multimodal facilities, and development design guidelines to "improve mobility options" in the South Village.

As this purpose and need statement illustrates, the study is meant to identify immediate and long-term alternatives to improve non-motorized accessibility throughout the South Village core. The study steering committee, including representatives from the Town of Georgia and the Northwest Regional Planning Commission envision the results of this study providing not only safer walk- and bikeways, but also an opportunity to promote healthy lifestyles, reduce dependence on motor vehicles, and encourage continued smart-growth development patterns.

1.3 Projected Users

Throughout the project, the steering committee has intended for the proposed improvements to be accessible to all potential users of the facility regardless of age and skill level. The primary users were identified to be pedestrians and bicyclists. Some consideration was given to potential snowmobile and equestrian needs, although these considerations were discarded as inconsistent with the overall development and compact core vision of the South Village.

For the proposed infrastructure improvements to be used as a convenient and reasonable transportation alternative, the route must also be direct between trip origins and their destinations. In addition to directness, the proposed route should attempt to minimize crossing locations to avoid vehicle conflicts with pedestrians and bicyclists as much as possible.

The design characteristics of typical bicycle and pedestrian users is discussed in the 2002 Vermont Pedestrian and Bicycle Facility Planning and Design Manual (Design Manual)[1]. The physical characteristics and dimensions of pedestrians, pedestrians with disabilities, and bicyclists are reprinted on the following page.

[1] "*Vermont Pedestrian and Bicycle Facility Planning and Design Manual*" , December 2002, National Center for Bicycling and Walking http://www.aot.state.vt.us/progdev/Documents/LTF/FinalPedestrianAndBicycleFacility/PedBikeTOC.html

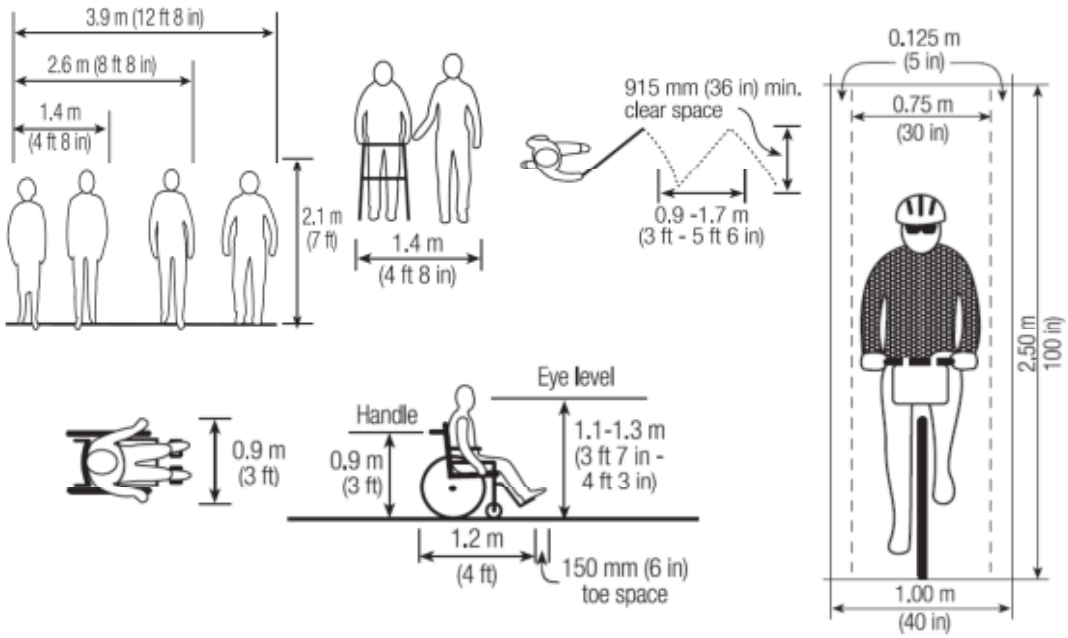


Figure 1: Pedestrian, disabled pedestrian, and bicyclist dimensions reprinted from the 2002 Design Manual.

1.4 Recommended Cross Section

To achieve the stated purpose of improving bicycle and pedestrian access throughout the study area, there are three proposed infrastructure improvements along the existing road network under consideration for this study: a sidewalk, an off-road path, and on-road bicycle facilities.

- Sidewalk Cross Section. In general, the typical sidewalk section along the existing road network should consist of a five-foot wide, five inch deep Portland cement concrete sidewalk for durability. Across commercial drives or areas expected to receive above average driveway traffic, the depth of the concrete sidewalk should be increased to eight inches. To remain compliant with Americans with Disabilities Act guidelines, the sidewalk should not exceed a 2% cross slope and maintain a five foot width. A minimum six inch and eight inch base of crushed stone is recommended for the five inch and eight inch sidewalks, respectively. All driveway crossings should include a paved apron between the road and walkway, plus ten feet beyond the sidewalk where feasible. The widths of all driveways should be brought into conformance with the latest VTrans access management standards.

  Curbing is generally not recommended along the existing road network due to the additional drainage infrastructure required to accommodate the channelized stormwater flow. Without curbing, the Design Manual requires that the sidewalk is offset a minimum of five feet from the edge of paved surface, including the paved shoulder. This five foot offset will serve as a physical separation between motorists and pedestrians while also providing snow storage from roadway and sidewalk plowing. In all cases, the sidewalk should be at the same or lower elevation than the roadway and the green strip should be designed to convey stormwater appropriately. If additional stormwater outfalls and infrastructure is

Figure 2: Recommended typical uncurbed sidewalk cross section along the existing road network.

needed, all above ground elements will require the appropriate easement and access rights to maintain and replace the features as needed.

All state highways are regulated as a non-traditional Municipal Separate Storm Sewer Systems (MS4). Significant modifications to the stormwater system within the state right-of-way, including new curbing, must be in accordance with the National Pollutant Discharge Elimination System (NPDES) permit. Enhancements to the stormwater system outside of the state right-of-way are not subject to these permitting requirements.

For the future road network within the South Village, sidewalks are recommended throughout the development. It is assumed that this high density mixed use core will include on street parking and extensive stormwater treatment. In this scenario, concrete or granite curbing is recommended to define the pedestrian space. In addition, the recommended sidewalk width and green strip will vary depending on the adjacent development pattern. These specific future development recommendations are discussed in greater detail in Section 7.

- Shared-Use Path Cross Section. The recommended off-road shared use path typical section includes a ten-foot wide facility with two-foot shoulders on both sides for an overall width of 14 feet. The surface of the path should be bituminous concrete to be accommodating to bicycles, skateboards, and pedestrians. The cross slope should not exceed 2% and the maximum side slope beyond the shoulder shall be 1:3.

  The same curbing recommendation and roadway separation requirements are valid for an off-road shared use path as with the sidewalk along both the existing road network and the future South Village Development network.

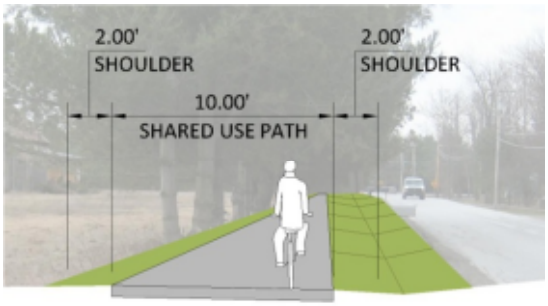


Figure 3: Recommended off-road shared use path typical cross section.

- On-Road Bicycle Facilities. The minimum width for marked bike lanes is 5 feet and 4 feet, with and without on-street parking, respectively. A marked bike lane is only recommended along primary streets with high levels of vehicular traffic where the bicycle lane completes a network of bicycle facilities. On many existing roads within the study area, marked bike lanes are not feasible due to space limitations, low vehicular traffic, and a lack of continuing bicycle facilities. Without a regional network of marked facilities, marked bike lanes are not recommended. Rather, the recommended section includes a widened shoulder to provide additional comfort to bicyclists and pedestrians where sidewalks, shared-use paths, and full bike lanes are not provided.

All recommended cross sections should follow applicable state design standards, including VTrans standards A-78: Shared-Use Path Typical, B-71: Standards for Residential and Commercial drives, and C-2A, C-2B, C-3A, and C-3B curb and sidewalk standards. All driveways reconstructed due to path or sidewalk crossings should be re-graded so that stormwater does not enter the highway.

1.5 Public Outreach Efforts

To assist in setting the goals and guiding the development of this project, two public meetings were held prior to the development of this report. The first public meeting, the Local Concerns Meeting, was held April 11, 2011. This meeting was attended by the steering committee, several community members, and VTrans District 8 Personnel. This meeting assisted in developing the Purpose and Need and overall goals of the project. Furthermore, the meeting demonstrated the community's desire for improved bicycle and pedestrian infrastructure along the existing road network, improved connectivity to the nearby Park and Ride Lot, and a comprehensive plan for the development of these facilities within the South Village.

The second meeting was the Alternatives Presentation Meeting, held jointly with the Georgia Planning Commission Meeting on August 23, 2011. At this meeting, the draft alternative alignments were presented and discussed, as well as an evaluation matrix comparing the alternatives. At the time, a draft preferred alignment and prioritization was discussed for the existing road network. Following the meeting, continued investigation coupled with information gathered at the meeting has led to the preferred alignments discussed in Section 2.

The materials presented and resulting meeting minutes from the Local Concerns Meeting and Alternatives Presentation Meeting are included in Attachments A and B, respectively.

1.6 Study Area Segmentation

For the purposes of dividing the study area into manageable analysis regions, the project was broken up along the existing road network. The three main study corridors include:

- Ballard Road from US-7 to Manor Drive / Redeeming Grace Church
- US-7 (Ethan Allen Highway) from Ballard Road to Skunk Hill Road / Exit 18 Park and Ride Lot
- VT-104A (Highbridge Road) from US-7 to Arrowhead Industrial Park / Overlake Drive

In addition, special consideration was given to the US-7 / VT-104A intersection, as well as various crossing locations from the east to the west side of US-7. All segments are shown below in Figure 4.

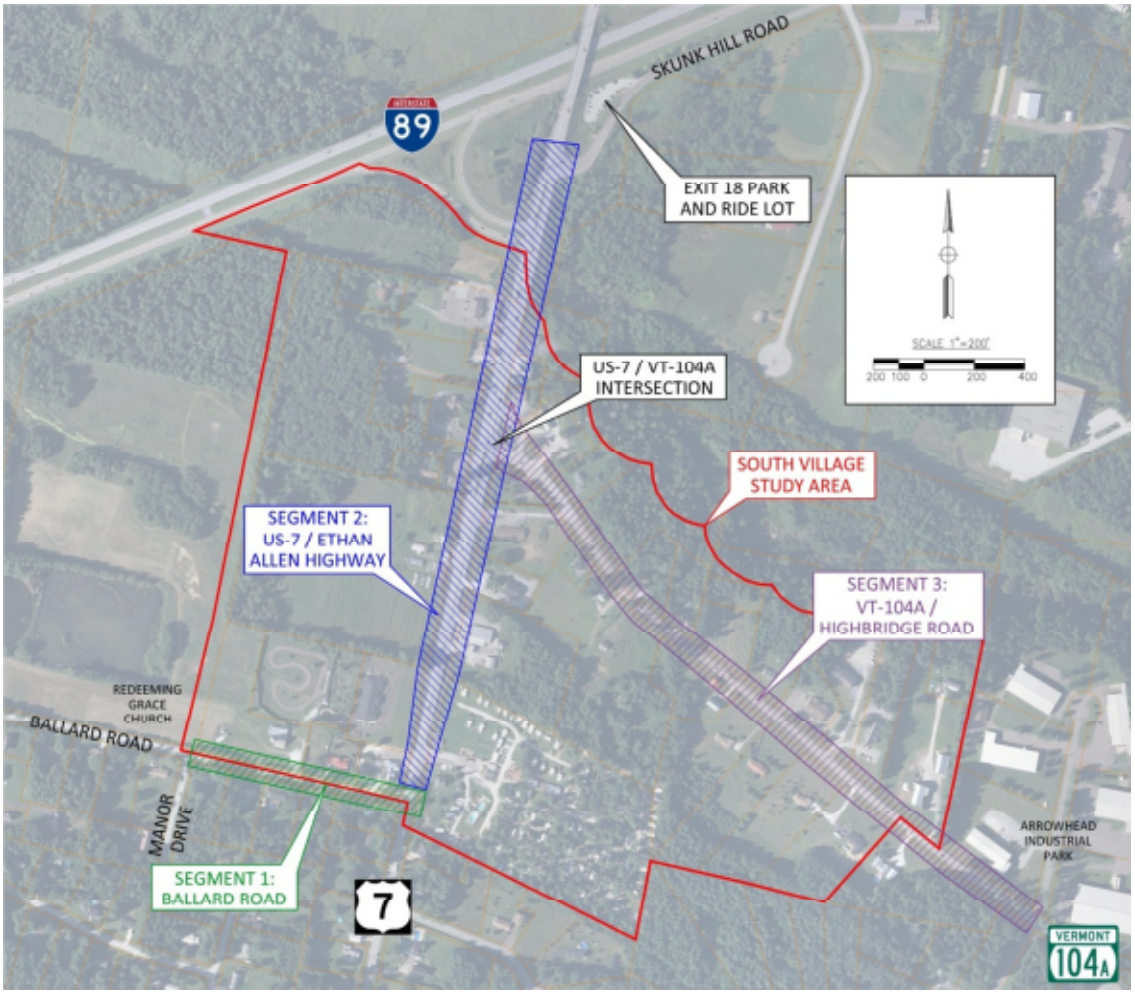


Figure 4: Study area segments near the Georgia South Village.

Section 2 Preferred Alternative

The preferred alternative is summarized below. For a full analysis of impacts of all investigated alternatives, please refer to Section 5. All proposed improvements can be seen in large scale plan view sheets in Attachment F.

2.1 Segment 1 – Ballard Road from Manor Dr to US-7

Estimated Cost: $97,000

The recommended preferred alternative along Segment 1 includes a 5-foot asphalt sidewalk on the north side of Ballard Road. This alternative will tie into the existing concrete segment of sidewalk at Grace Redeeming Church on the west side of the segment, continuing east offset 5 feet from Ballard Road. The northwest corner of the intersection of US-7 and Ballard Road will be reconstructed with a smaller radius, and the sidewalk will continue north along the west side of US-7 to the through driveway of the creemee stand. No curbing is proposed along this segment. The sidewalk will terminate at the north end of the driveway, potentially with a landing and crosswalk across US-7.

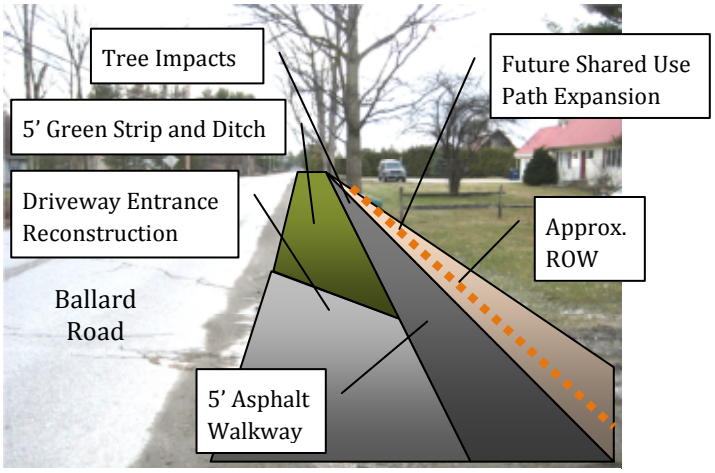


Figure 5: Conceptual sketch of recommended preferred alternative along Ballard Road looking west.

The north side of Ballard Road is preferable to the south side for the following reasons:

- Matches the short segment of existing sidewalk at church
- Directly accesses significant pedestrian activity centers
- Avoids utility poles on south side of road
- Fewer properties and land owners

If necessary, yard drains may be placed in the green strip, flowing to an existing stormwater collection system at the northwest corner of Ballard Road and US-7.

Asphalt is proposed for the walkway material so that the walkway may be expanded to a full width shared-use path as the village center develops. As the southern boundary of the South Village and a significant east-west route connecting the community to the west of I-89, Ballard Road may experience above average bicyclist volumes in the build out condition. Planning for this expansion will improve the future viability of a full-width path.

Widening of the roadway for enhanced shoulders or a marked bike lane is not recommended in this location. As a Class 3 town highway, bicycle traffic is generally expected along the shared traffic lane. Since the future condition of the recommended walkway is to be widened to a shared-use path, separate on-road biking facilities would not be needed to accommodate novice bicyclists.

Potential issues with this alignment:

- The assumed right-of-way is narrow; construction impacts are likely along the route.
- Several stands of trees and hedgerows will likely need to be removed.
- The right-of-way at the intersection of US-7 and Ballard Road is unclear. It is possible the existing roadway extends into private land and a permanent easement may be required.
- In the right-of-way / easement acquisition phase of final design, it would be advisable to seek permanent rights to construct the full 14 foot width path.

Several large trees may be saved if the adjacent land owner would be willing to donate the necessary right-of-way for the path or sidewalk alignment to travel behind the trees. The large tree at the northwest corner of Ballard Road and US-7 may remain by placing curbing along the roadway and moving the sidewalk closer to the road. There is an existing drop inlet along Ballard Road in a driveway near this intersection that may be used to collect the channelized stormwater flow along this new curb.

2.2 Segment 2 – US-7 from Ballard Road to Skunk Hill Road

Estimated Cost: $128,000

The preferred alternative along US-7 consists of a five foot wide concrete sidewalk beginning at the Homestead Campground driveway continuing north along the east side of the road to the intersection with VT-104A at the Franklin West Supervisory Union Office. The sidewalk alignment will follow inside the eastern edge of the state highway right-of-way, offset at least one foot. No curbing is proposed on this alignment. All sidewalks are intended to be constructed at the top of the outside slope of the existing ditches.

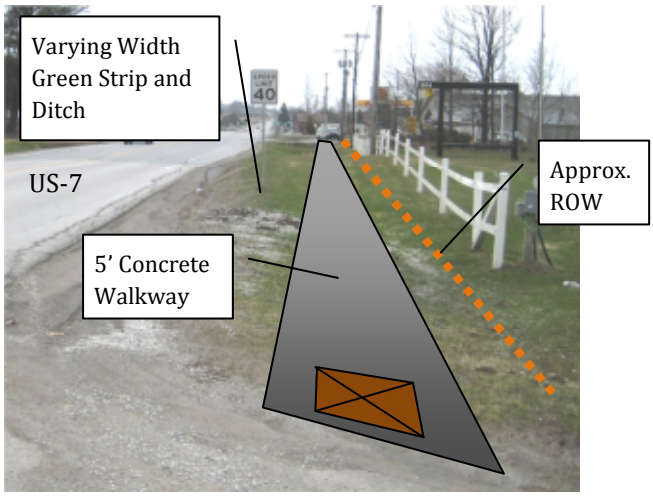


Figure 6: Conceptual sketch of recommended preferred alternative along US-7 looking north.

It is recommended that these ditches also are redeveloped to include bioretention areas or rain gardens as recommended by the Deer Brook Gully Remediation Plan.

As this alternative approaches the Georgia Market, the proposed sidewalk will tie into the sidewalk planned as part of the Market Redevelopment project. The Market Redevelopment project should ensure that the sidewalk constructed in front of the market can reasonably tie into the proposed sidewalk within the state highway right-of-way.

The east side of US-7 is preferable to the west side for the following reasons:

- The west side of the highway is more immediately developable. Any large scale future developments of the west side should include construction of, or at least funding for the construction of a sidewalk along the west side of the US-7 consistent with this plan.
- With the upcoming Georgia Market Redevelopment project, the proposed east side sidewalk will incorporate the Georgia Market sidewalk, connecting the market to points north and south.

No alternatives are proposed north of the US-7 / VT-104A intersection. A sidewalk is feasible on the west side of US-7, however this walk would best be constructed as part of the overall South Village Redevelopment consistent with Section 7. A sidewalk on the east side would require substantial right-of-way impacts with potential septic issues with the adjacent houses.

Due to considerable slope impacts, no access improvements to the existing Park and Ride Lot are proposed as part of this project. The existing park and ride lot is too small and inconvenient for the current transit service to warrant any significant investment on access improvements. In the short term, interim enhancements including a bike rack and small shelter are proposed until a larger, properly designed park and ride lot can be identified.

Potential issues with this alternative:

- The assumed right-of-way should be wide enough to accommodate the proposed enhancements. However, many enhancements are proposed very near the edge of the state highway right-of-way. Several neighboring parcels may have constructed fences, planted landscaping, or otherwise developed outside of their property.
- A crossing location is proposed between the creemee stand on the west to Homestead Campground on the east across US-7. Given the potential for increased pedestrian volume between these activity centers and the conflicts with vehicle traffic, additional visibility enhancements may be warranted. VTrans review and approval for all crossing infrastructure will be needed at this location.
- The US-7 / VT-104A intersection presents several challenges with access management and pedestrian and bicycle accessibility. Any proposed improvements to this intersection should be coordinated and integrated with this proposed sidewalk infrastructure as well as with the existing sidewalk infrastructure on the west side of the highway.

2.3 Segment 3 – VT-104A from US-7 to Overlake Dr

Estimated Cost: $370,000

The preferred alternative for VT-104A includes the restriping of the edge lines and the widening of the roadway shoulders to allow for 11 foot traffic lanes and a 5 foot shoulder in both directions of travel. The existing 12 foot lane and 2 foot shoulder roadway configuration does not meet the minimum standards for the rural minor arterial roadway classification.

In addition to the enhanced shoulders, the preferred alternative along VT-104A includes a five foot sidewalk along the north side of the highway. This sidewalk will be offset from the existing roadway seven feet allowing for a five foot green strip between the sidewalk and planned widening.

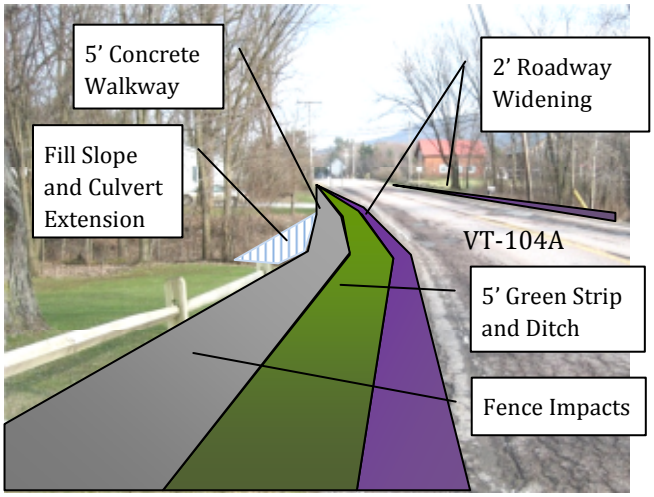


Figure 7: Conceptual sketch of recommended preferred alternative along VT-104A looking east.

The north side alignment is recommended as

preferable for the following reasons:

- There is more existing development on the north side of the road. The northern alignment recommendation will more directly serve these residential, commercial, and industrial properties.
- The proposed sidewalk alignment would terminate at the main driveway to Arrowhead Industrial Park, a significant employment activity center adjacent to the South Village.
- The south side of VT-104A is more viable as a large scale development. As these properties are redeveloped, sidewalk or shared-use path infrastructure should be implemented consistent with this plan.

Potential issues with this alternative include:

- As with the entire corridor, the right-of-way will need to be determined along the length of the highway. It is notably unclear near and surrounding the US-7 intersection.
- The US-7 / VT-104A intersection presents several challenges with access management and pedestrian and bicycle accessibility. Any proposed improvements to this intersection should be coordinated with this proposed sidewalk infrastructure.
- A large stream culvert crossing of a tributary of the Deer Brook exists east of the US-7 / VT-104A intersection that will potentially involve culvert extensions, fill slopes, headwalls, and guardrail. Classified as a stormwater impaired watershed by the Agency of Natural Resources, construction near this waterway will require significant erosion prevention and sediment control, if not additional remediation measures.

2.4 Additional Study Area Enhancements

Estimated Cost: $14,000

The existing Exit 18 Park and Ride Lot has been determined to be ineffective to meet the transportation and transit needs of the community. As part of the overall South Village development, the relocation of the existing lot to a new area with expanded parking and more efficient bus access is recommended. No sidewalk or path infrastructure to the existing facility is recommended. However, a bike rack and covered waiting area are simple and relatively inexpensive structures that may be easily coordinated with the Chittenden County Transit Authority (CCTA) and VTrans, greatly upgrading the existing facility for pedestrians and bicyclists in the interim.

2.5 Potential Phasing of Preferred Alternatives

Due to the large study area, this project is recommended to utilize a phased construction approach to manage the project costs and spread out funding sources. The following construction prioritization is proposed:

1. Segments 1 & 2: Sidewalk along the north side of Ballard Road from Church to US-7, crossing location across US-7, and sidewalk along east side of US-7 from Campground to VT-104A. When constructed, these segments would benefit the greatest number of residents and connect the most activity centers within the South Village.
2. Partial Segment 3: Sidewalk along north side of VT-104A from US-7 to Arrowhead Industrial Park and roadway base preparation for future widening. This sidewalk would connect the eastern district of the South Village to the existing sidewalk network along US-7. Preparation of the roadway base could potentially allow for coordination with the Agency of Transportation for full depth reclamation and paving of the entire roadway when this segment of highway is programmed for improvement.

3. Final Segment 3: The widened aggregate shoulders may be paved within a larger corridor-wide reclamation project to be coordinated and programmed by VTrans. This will allow for the most cost effective paving and restriping of the corridor to the proposed lane and shoulder width.
4. Park and Ride Lot Upgrade: The selectboard and planning board may request at any time for CCTA to install a covered waiting area and bike rack at the existing park and ride lot.

Section 3 Existing Conditions

The project area under consideration in this bicycle and pedestrian feasibility study includes the South Village zoning district in the Town of Georgia, with extensions north to the Exit 18 Park and Ride Lot off Skunk Hill Road and east to the Arrowhead Industrial Park. The existing study area includes the intersection of two state highways: the north-south corridor of US-7, and western terminus of VT-104A. This area is shown in Figure 8.

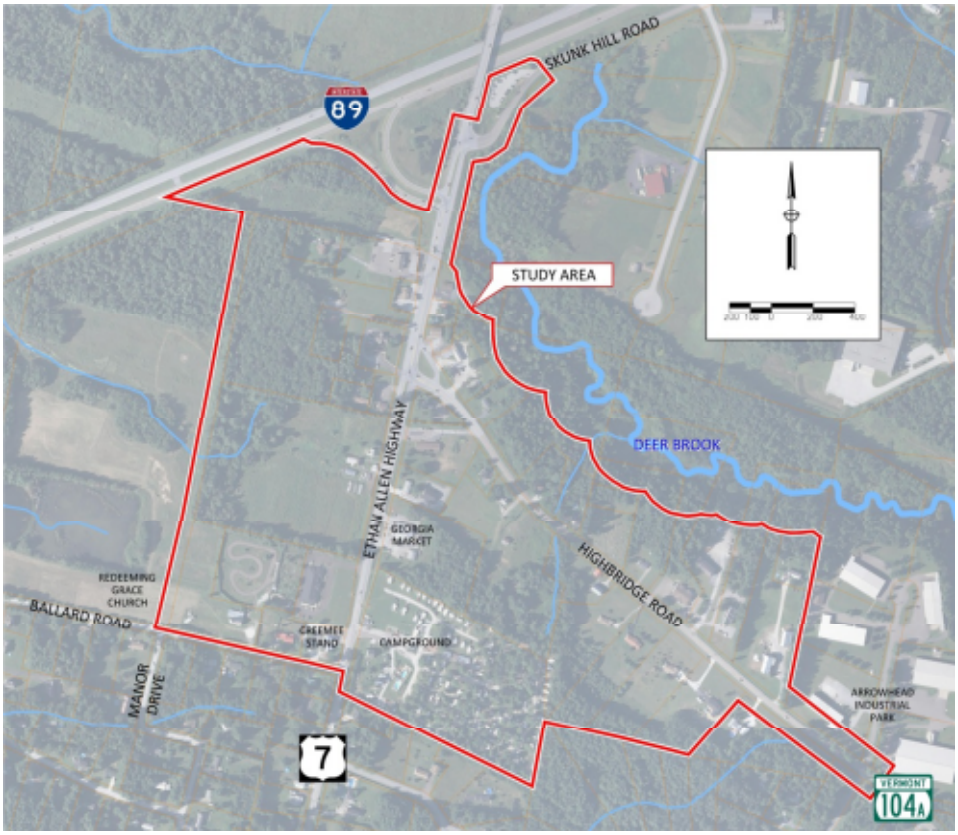


Figure 8: Study Area along the US-7, VT-104A, and Ballard Road corridors in the Georgia South Village.

3.1 Study Area Geography

The Georgia South Village zoning district is primarily composed of flat, historically agricultural terrain. To the south and east of the project area lays Arrowhead Mountain Lake, a manmade body of water created by a dam across the Lamoille River. To the north and east lies the Deer Brook, a southerly flowing tributary of the Lamoille River and Arrowhead Mountain Lake. The Deer Brook carves a steep channel into the northern boundary of the study area.

The north and west of the project study area is bounded by I-89. Beyond I-89, the terrain is primarily agricultural or low - medium density residential parcels. A high voltage Vermont Electric Power Company (VELCO) transmission corridor passes through the northern section of the study area, north of VT-104A and south of the I-89 Exit 18 northbound ramps. A USGS topographical map of the project area is shown in Figure 9.

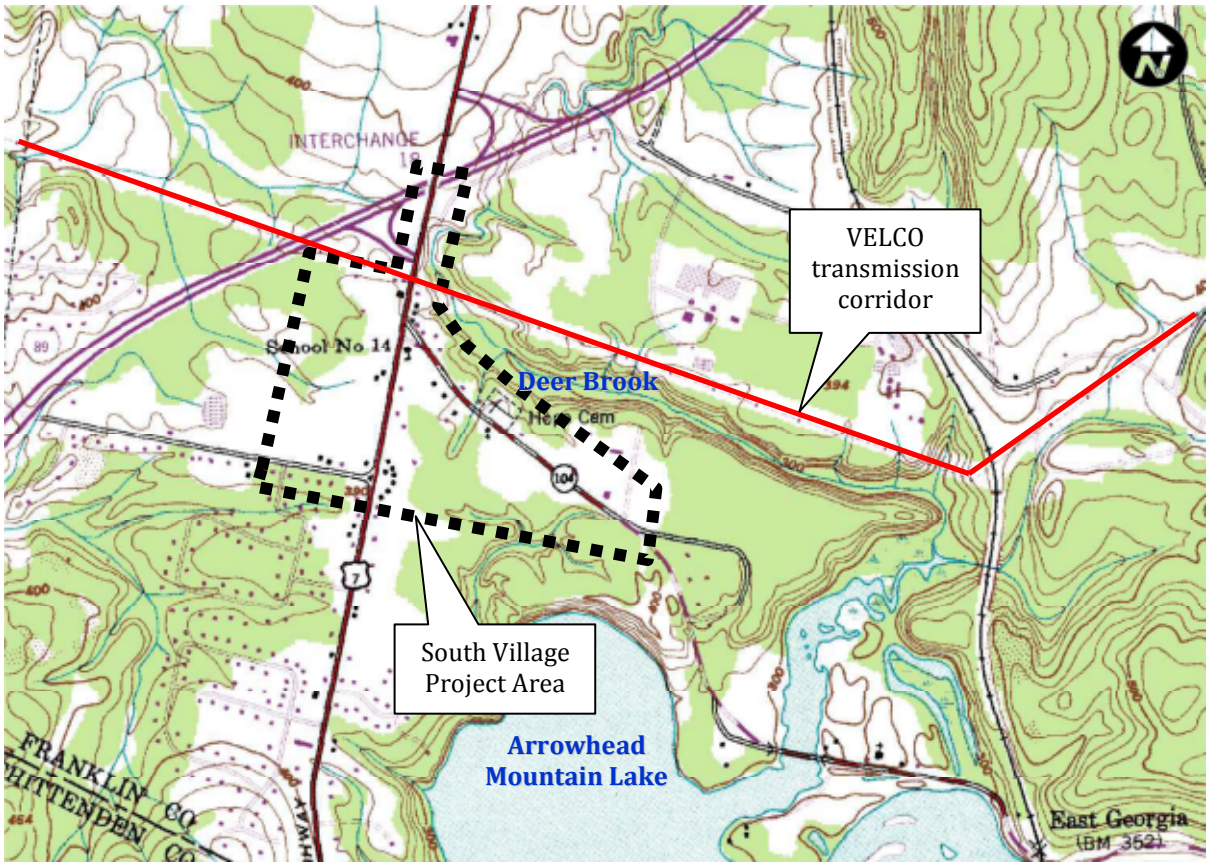


Figure 9: A USGS topographic map highlighting the project area. Each contour represents 20 feet of elevation. (Not to scale)

3.2 Roadway Corridor

As discussed previously, the project area consists of three main existing roadway corridors, including US-7, VT-104A, and Ballard Road. All three of these highways transition from more sparsely developed, low density residential or agricultural rural highways as they approach the South Village zoning district. The posted speed limit is 50 miles per hour outside the project area for US-7 and VT-104A, with transitions to 40 mph near the study area boundary. Ballard Road is posted at 35 mph along the entire length of the town highway.

The US-7 corridor is a State Highway classified as a rural minor arterial. In 2010, US-7 carried an average annual daily traffic (AADT) volume of approximately 9,100 vehicles per day (vpd) north of the VT-104A intersection. South of the VT-104A intersection, US-7 is classified as a rural major collector and carried approximately 6,800 vpd in the same time period.

VT-104A is a State Highway classified as a rural minor arterial along its entire length. This corridor provides an essential link between the Town of Fairfax and points east with I-89 and the rest of the state. The volume of traffic along this corridor is estimated at approximately 4,300 vpd in 2010.

Ballard Road (TH #6+29) is a Class III town highway and a rural minor collector. There is no recent traffic data along this corridor, however nearby counts indicate that approximately 2,000 vpd operate along Ballard Road through the project area.

The roadway grade is generally level, with a dip near the culvert crossing of the tributary of the Deer Brook along VT-104A. The US-7 and Ballard Road segments could both be described as fairly straight, but the VT-104A corridor includes several horizontal curves. These curves, coupled with vegetation close to the roadway, can significantly limit sight distances near the culvert crossing of the Deer Brook Tributary.

According to the most recent VTrans safety data, both US-7 and VT-104A are classified as a High Crash Location segments in the vicinity of their intersection. A complete crash analysis of the corridor is provided later in this section.

The pavement condition is good along US-7 and Ballard Road, and good to poor on VT-104A. The best pavement conditions exist along US-7 and VT-104A near the intersection of these two routes. The poorest pavement condition is near the dip near the tributary of Deer Brook along VT-104A and east, with significant transverse and longitudinal cracking and potholes. As evidenced by failed pothole filling repairs, the pavement has been patched in the past.

Figure 10: Eastbound vehicles navigating the potholed existing surface of VT-104A.

In general, all three routes in the study area are composed of one travel lane in each direction. Ballard Road consists of two 12-foot lanes with no edge line denoting a shoulder. US-7 has two twelve foot lanes, with shoulders varying from six feet towards the south of the project area to 10 feet near the intersection of VT-104A and the Exit 18 ramps. VT-104A consists of two 11-foot lanes with two foot shoulders in each direction, with both the shoulders and travel lanes widening significantly as the roadway nears the US-7 intersection.

At the US-7 / VT-104A intersection, a southbound left turn lane and curbed median is added along US-7, Additionally, a curbed median separates eastbound and westbound VT-104A vehicles. A westbound VT-104A to northbound US-7 slip lane is present as a driveway access road to adjacent properties. It has been redeveloped with a perpendicular entrance to discourage its use by through traffic.

There are two existing drainage networks along the corridor; one along US-7 consisting of a series of ditches, culverts, catch basins, and piping beginning approximately 600 feet south of the US-7 / VT-104A

intersection, flowing into one pipe in the island formed by the intersection and the slip lane, and emptying into the Deer Brook to the north. This stormwater system and outfall has been identified as a contributor to erosion and sediment loading to the Deer Brook. A remediation and treatment report[1] was prepared in 2007 identifying potential stormwater enhancements to improve the water quality entering the Deer Brook.

The second stormwater system begins at the south east corner of the US-7 / VT-104A intersection and following the south side of VT-104A to daylight in the tributary of the Deer Brook. The drainage was noted to be slow with ponded water noted in many ditch locations.

Figure 11: A view eastbound of ponded water in a slow drainage ditch on the south side of VT-104A just east of US-7.

These roadway characteristics are summarized in Table 1 for each corridor.

Table 1: Roadway characteristics by corridor along the study area.

	Ballard Road	US-7 South	US-7 North	VT-104A
Road Surface Condition:	good	good	good	good - poor
Lane Width:	12 feet	12 feet	12 feet	11 feet
Shoulder Width:	n/a	6 – 10 feet	10 feet	2 feet (5 feet near US-7)
Utility Poles:	south side	east side	west side	south side
Guard Rail:	none	none	east and west side	none
Drainage Infrastructure:	slight ditches, no outlet noted	moderate ditches	limited DIs and culverts	limited ditches culverts
Sight distance:	good	good	good	good to poor
North / east side land description:	level, fewer residences, church, farm	level, commercial and farm	level, primarily commercial	moderate slope down to Deer Bk, mixed residential and commercial
South / west side land description:	level, medium density residential	level, primarily commercial	level, primarily commercial	level, primarily residential

[1] Deer Brook Gully Remediation and Stormwater Treatment Summary Report, prepared by EPSC, February 2007

3.3 Existing Pedestrian Infrastructure

There are two non-contiguous segments of existing sidewalk along US-7. Both are located on the west side of US-7, with one section in front of Peoples United Trust Bank and the other just south of the Maplefield's Mobil Gas Station. These two segments are separated by approximately 100 feet of grass.

The Redeeming Grace Church has constructed a short segment of sidewalk through their driveway along Ballard road, unconnected to any other infrastructure. Lastly, the Georgia Market, located on the east side of US-7 south of VT-104A, has planned another non-continuous section of sidewalk through its driveway as part of their overall store redevelopment currently underway.

3.4 Regional Bicycle Routes

There are no designated bicycle routes through the South Village. However, it should be noted that Champlain Bikeways promotes two bicycle tours near the project area, including the Pedal Power Panorama along VT-104 approximately 4 miles to the east, and the Champlain Coast Caper, approximately 3 miles to the north. Departures from these mapped routes into the South Village should be encouraged, particularly as the village grows. These nearby routes indicate that recreational and commuter bicyclists should be expected and planned for on all roadways within the project study area.

3.5 Crash Analysis

A review of the most recent five year crash data from 2006 – 2010 indicates that there have been 34 collisions resulting in 11 injuries along the corridor during that period. There were no reported fatalities or collisions involving bicyclists or pedestrians. The collisions are spread along the US-7 corridor, with concentrations at the VT-104A and Ballard Road intersections. These collisions are illustrated in Figure 12 below.

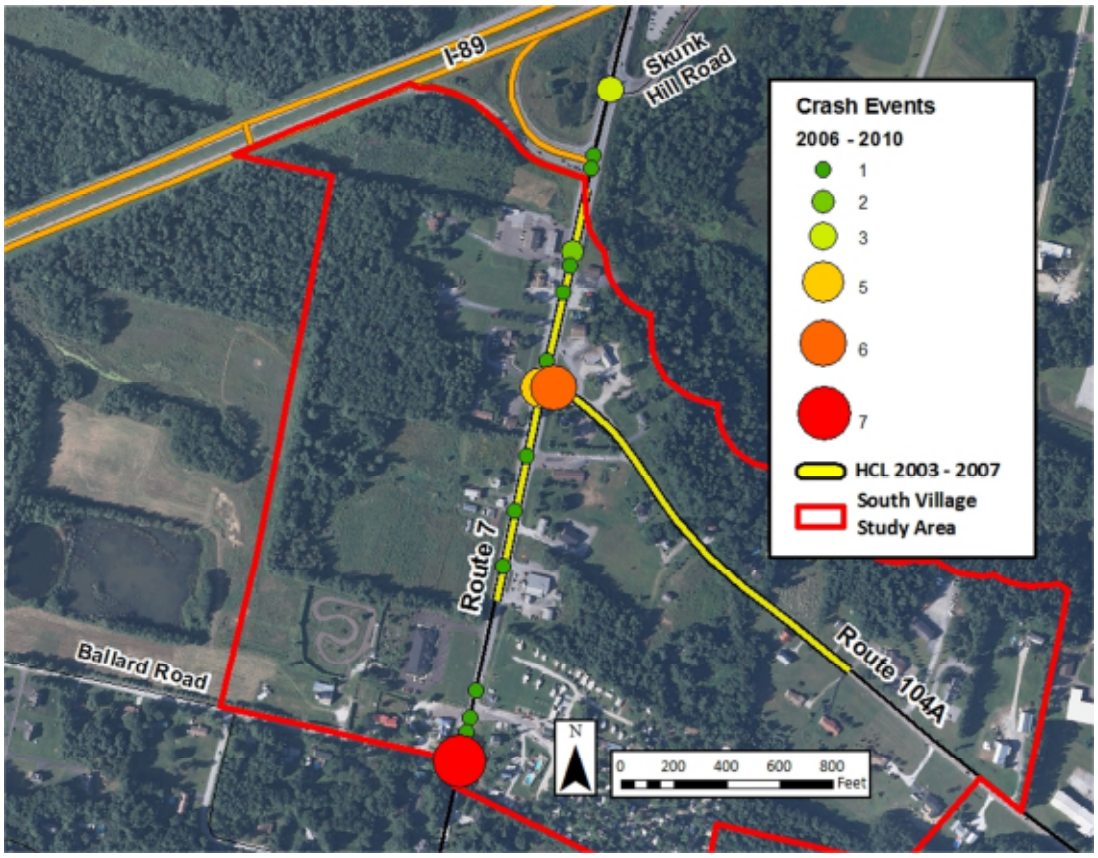


Figure 12: Reported crash events in the South Village project area from 2006 - 2010. Note cluster of collisions at Ballard Road, VT-104A, and Skunk Hill Road.

As shown in Figure 12, the study area includes two High Crash Locations (HCL) sections as defined by the Vermont Agency of Transportation for the years 2003-2007. A HCL section is defined as a segment of highway with an Actual Crash Rate normalized for the number of vehicles traveling on the roadway greater than the Critical Crash Rate, or the expected crash rate for a specific category of highway. This HCL designation along US-7 and VT-104A indicates that the number of crashes occurring is greater than what should be expected for the volume of traffic and classification of the roadway. The US-7 and VT-104A HCL segments rank number 72 and 641 out of 653 in the state, respectively, with an approximated severity index of $23,164 and $37,750 per accident, respectively.

The reported crash types and contributing circumstances for all 34 collisions in the study area are summarized below in Table 2.

Table 2: Reported crash types and contributing circumstances for all 34 crashes in the South Village from 2006 - 2010.

Overall South Village Study Area Crash Data Summary													
		Contributing Circumstances					Crash Type						
Total # Crashes	# of Injuries	Inattention	Followed too closely	Driving too fast/negligence	Failed to yield/Ignored signs	Other	Single Vehicle Crash	Rear End	Head On	Left turn and Thru Movements	Thru Movements Broadside	Same Direction Sideswipe	Other
34	11	3	3	4	16	8	5	5	2	9	5	6	2
% of Total	24%	9%	9%	12%	47%	24%	15%	15%	6%	26%	15%	18%	6%

The two most prominent crash types throughout the study area included left turning and through moving vehicles at 26% of the total crashes, and same direction sideswipes at 18%. These crash types are common at intersections. Of the 34 crashes in five years, 21 (62%) occurred at the main intersections in the study area, including 7 at the US-7 / Ballard Road intersection, 11 at the US-7 / VT-104A intersection, and 3 at the US-7 / Skunk Hill Road intersection.

At the US-7 / VT-104A intersection almost half of the crashes were same direction sideswipes of two vehicles. This may explained by the left turn lane from southbound US-7 to eastbound VT-104A, with through moving vehicles attempting to pass queued left turning vehicles too quickly. Another cause of this type of crash may be attributable to the two lanes of traffic forming at the westbound terminus of VT-104A; as a queue of left turning vehicles forms at this wide single lane, right turning vehicles may attempt to use the additional lane width to jump the queue. Additionally, right-turning trucks require a wide lane to complete the turn; some vehicles may have unknowingly entered the trailer path. Another disproportionate crash type at this intersection was between left turning and through vehicles. VTrans has indicated that snow banks created by plowing activities have limited sight lines at some commercial driveways. A summary of the crash types and contributing circumstances at this intersection is shown in Table 3.

Table 3: Reported crash types and contributing circumstances at the US-7 / VT-104A intersection from 2006 – 2010.

Intersection of Route 7 & Route 104A													
		Contributing Circumstances					Crash Type						
Total # Crashes	# of Injuries	Inattention	Followed too closely	Driving too fast/negligence	Failed to yield/Ignored signs	Other	Single Vehicle Crash	Rear End	Head On	Left turn and Thru Movements	Thru Movements Broadside	Same Direction Sideswipe	Other
11	3	1	1	0	6	3	0	2	0	3	0	5	1
% of Total	27%	9%	9%	0%	55%	27%	0%	18%	0%	27%	0%	45%	9%

In contrast, the intersection of Ballard Road and Route 7 saw seven crashes during the five year time period, but no distinguishable cause was evident. Other common crash types throughout the study area included 15% rear ends, mostly from driver inattention, and 15% single vehicle crashes, from driving too fast or general negligence. The highest cause of crashes is shown to be failing to yield the right-of-way and ignoring signs at 47%.

3.6 Existing Utilities

The Ballard Road, US-7, and VT-104A corridors all provide overhead aerial utility service along the entire route. Primary poles, support poles, and guy wires are generally located on the south side of Ballard Road, the east side of US-7 south of VT-104A, the west side of US-7 north of VT-104A, and both sides of VT-104A.

Beyond the overhead utilities and the previously discussed stormwater networks, there are no other existing utilities along the road network. There are no town sewer collection or water distribution systems. Several underground utility pole drops were noted accessing properties adjacent to the roadway.

3.7 Existing Highway Right-of-Way

As with many historic corridors, the existing public highway right-of-way is difficult to determine. No public record research or highway right-of-way investigation was undertaken as part of this study. To approximate this highway right-of-way, the parcel mapping provided by the Town was analyzed. Using this mapping as a guide, the right-of-way was assumed to be three rods (49.5 feet) along Ballard Road, four rods transitioning to six rods (66 – 99 feet) from south to north along US-7, and four rods (66 feet) along VT-104A. It should be noted that there are several locations where the right-of-way is unclear, specifically along the east side of US-7 north of VT-104A and north of VT-104A just west of the Deer Brook tributary. VTrans District 8 has offered to make available the applicable right-of-way records.

In addition to the current road network, several members of the Selectboard have described a potential unmapped town right-of-way from the US-7 / Ballard Road intersection east through the current campground intersecting with VT-104A. Research into historic maps has not been able to verify this road alignment, but for the purposes of discussion, a four rod (66 foot) right-of-way has been assumed.

As part of the development of the Redeeming Grace Church, an approximately 60 foot right-of-way was granted to the Town along the eastern boundary of the church parcel. This undeveloped road right-of-way, in addition to the existing rights of way and the assumed historic ancient right-of-way are illustrated in Figure 13.

Figure 13: Assumed approximate existing rights of way.

3.8 Project Area Zoning

The existing zoning districts surrounding the project area are shown in Figure 14. The mixed-use core of the South Village is surrounded by a variety of zoning districts, including commercial and industrial to the east, high and medium density residential to the west and south, and business and agricultural to the north. With this variety of uses, many trips through and within the South Village can be expected. Given appropriate planning and development of infrastructure, this variety of uses within and around the South Village project area may serve to encourage non-motorized transportation methods for common trips between work, shopping and home.

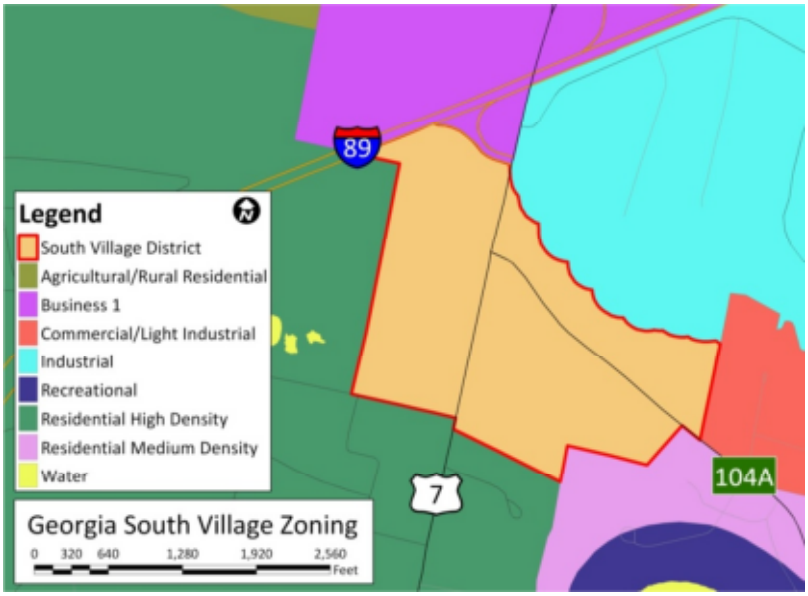


Figure 14: Existing town zoning districts adjacent to the South Village study area.

3.9 Existing Bicycle and Pedestrian Activity Centers

The existing bicycle and pedestrian based origins and destinations were developed based on the existing land use in the project are in conjunction with input from the community at the Local Concerns Meeting. This information was compiled into the illustration below which is reprinted in a larger scale in Appendix H.

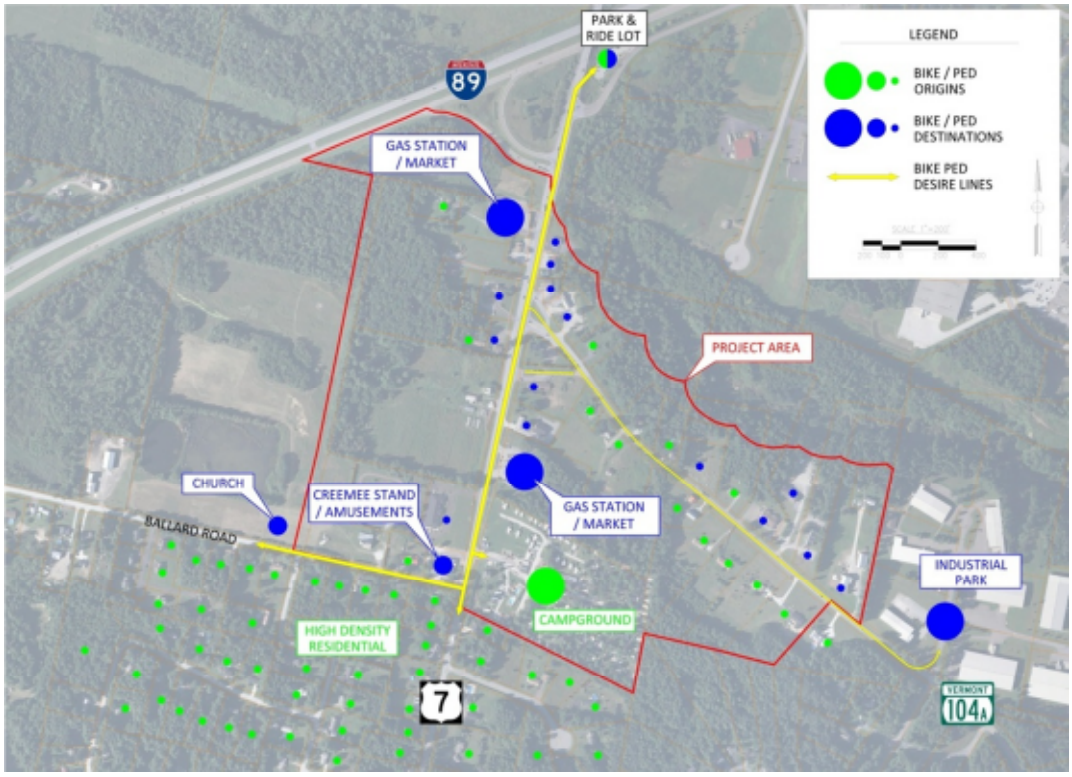


Figure 15: Existing bicycle and pedestrian origins and destinations with associated desired travel paths.

Within the existing development pattern of the South Village, it is expected that the high density residential zoning district to the south of the project area will provide the majority of the bicycle and pedestrian origins in the study area. Seasonally, the Homestead Campground is likely to increase the number of trips originating from or near the study area. The remaining bicycle and pedestrian trips are anticipated to originate from the park and ride lot and remaining existing residential properties.

Two significant bicycle and pedestrian destinations in the study area are expected to be the gas station and convenience store / market located at the north end and south ends of the study area along US-7. Additionally, the industrial park and employment center on the east side of study area is expected to be a primary destination. Secondary destinations include the church towards the west side of the study area and the park and ride lot at the north. Small businesses such as White's Bikes are likely to also provide minor destinations along the corridor.

The majority of primary origin and destination activity centers are clustered along the US-7 corridor, with a substantial set of smaller residential origins to the south and east of the study area. With this information, the primary desire lines, or the most appealing routes between the activity centers, were determined to follow from the church and Manor Drive on Ballard Road to US-7, and along US-7 north to the Park and Ride Lot. A secondary desire path followed VT-104A from US-7 to the industrial park employment center. Additionally, many pedestrians would be expected to cut through the Georgia Auto Parts Store / Storage Units driveway to access US-7 from VT-104A and vice versa.

The expected activity centers are summarized below:

	Origins	Destinations
Primary	Homestead Campground, high density residential zone	Gas station and convenience store / market, industrial park
Secondary	Park and ride lot, remaining residential	Creemee stand / amusements, church, park and ride lot, small businesses

Section 4 Resource Constraints

Given the proximity to the Deer Brook, Lamoille River and associated floodplains, the Georgia South Village is in close proximity to many sensitive resources. This section provides a preliminary assessment of many of these documented or anticipated impacts. Thorough investigation and documentation may be needed for environmental permitting processes.

4.1 Natural Resources

Rivers and Streams

The northern boundary of the South Village zoning district is made up of the Deer Brook. This river flows southeasterly near the project area, discharging into Arrowhead Mountain Lake and the Lamoille River. These water bodies provide many recreational opportunities for many area residents and visitors. There are several smaller unnamed streams in the area, but none directly near the study area. These rivers are mapped in Attachment C – ANR Environmental Interest Locator Output.

From its outlet at the Lamoille River and upstream 2.5 miles through the project area, the Deer Brook is classified as a 303(d) impaired surface water in need of a total maximum daily load (TMDL). A TMDL is "an EPA approved document that attempts to limit and allocate discharge loads among the various dischargers to impaired waters in order to assure attainment with water quality standards." The primary sources of discharge to the Deer Brook are listed as "erosion from stormwater discharge; sand pit; corroding road culverts."

A remediation plan was prepared in 2007 to address significant erosion and sediment loading to the Deer Brook caused by a primary stormwater outfall located within the project area. The remediation project recommended the following solutions to stabilize the gully and reduce stormwater flows and contaminant loading:

- Stone lining protection along the main gully and tributary channels,
- Construct gravity retaining walls along the main channel of the gully,
- Implement live plantings to stabilize the channel wall soils,
- Construct bio-retention areas or rain gardens in the existing ditch systems to assist in contaminant treatment,
- Disconnect minor drain systems (foundation or roof drains) from discharge into gully, and

- Implement a municipal wastewater system to disable on-site wastewater disposal.

Additional detail regarding these recommendations can be found in the 2007 remediation plan.

Wetlands

Utilizing the Vermont State Wetland Inventory (VSWI), three class II wetlands are mapped in or adjacent to the study area. In addition to these mapped wetlands, hydric soils, often an indicator of wetland conditions, are mapped near many of these locations. These mapped wetlands and hydric soil locations are shown in Figure 16.

Wetlands 1 and 2, as noted to the right, have reportedly developed due to blocked drainage culverts near the interstate highway. Wetland 3 is along the floodplain of the Deer Brook. None of these wetlands are near the existing roadway network. Wetland 1 is approximately 150 feet north of Ballard Road.

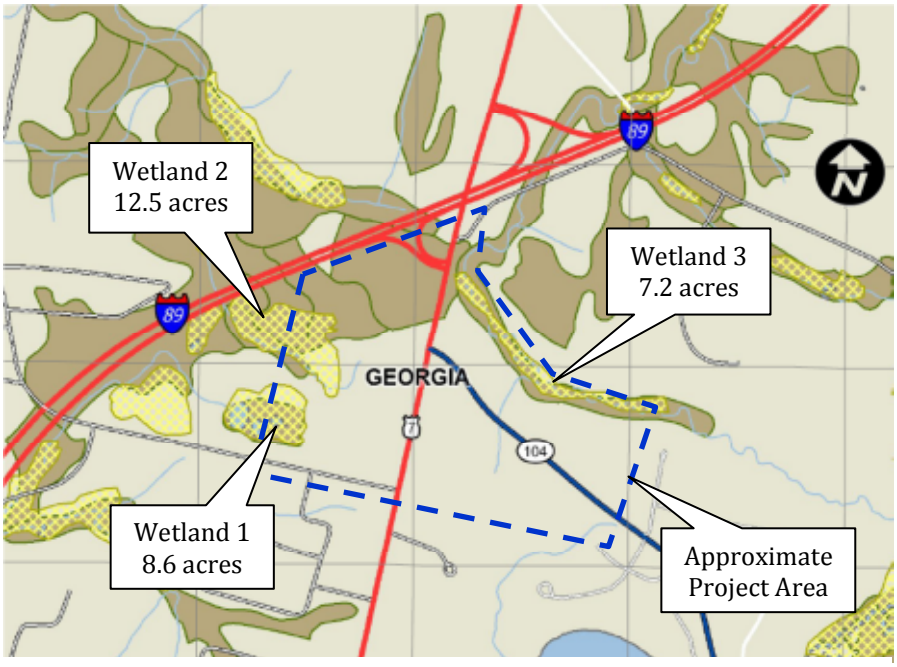


Figure 16: Mapped wetlands (hatched yellow) and hydric soils (solid brown) near the South Village.

Lakes and Ponds

As shown in Attachment C and discussed above, Arrowhead Mountain Lake is located approximately 1000 feet south of the project area. Along the course of the Deer Brook, Arrowhead Mountain Lake is approximate 1.5 miles downstream of the project area. There are no other lakes or ponds near the study area.

Floodplains

Due to the steep slopes leading to the Deer Brook, the flood plain of the Deer Brook is relatively confined to the river area. The level of Arrowhead Mountain Lake is controlled by the outlet dam. The Lamoille River floodplain is located well to the east of the project area. There are no floodplains located in the study area. The Federal Emergency Management Agency flood insurance maps for the study area can be found in Attachment D.

Flora and Fauna

As shown in the previous section, the study area and surrounding lands consists primarily of moderately developed residential neighborhoods, some agricultural lands, and moderate commercial activity along the main roads specifically near the US-7 / VT-104A intersection. Several industrial parks operate to the north and east of the project area. Correspondingly, this variety of land uses includes a variety of vegetation and wildlife common in similar moderately developed areas. South and east of I-89, no critical habitat for animal or plant species was discovered. The Agency of Natural Resources (ANR) Environmental Interest Locator results for the study are included in Attachment C.

4.2 Cultural Resources

Archaeological Resources

Using the worksheet criteria in the Environmental Predictive Model for Locating Precontact Archeological Sites, it is possible that some of the study area is archaeologically sensitive. A considerable portion of VT-104A is within 180 meters of the top of the Deer Brook bank. This, coupled with the nearby Lamoille River floodplain (now flooded by Arrowhead Mountain Lake), several mapped wetlands, and the relatively flat terrain indicates that the study area has a moderate potential for archaeological sensitivity, particularly along VT-104A. These same factors are not as prevalent along the US-7 corridor.

It should be noted that work within the road right-of-way generally has a high likelihood of previously disturbed resources. In any case, a complete Archaeological Resource Assessment of the entire South Village district should be undertaken to ensure any resources are identified and documented. A district wide assessment would be useful for permitting the preferred alignments identified in this report, as well as a valuable resource for developers prior to investing in the Village area.

Historic Resources

There are no historic properties located along the study corridors. The Goodrich Solomon Homestead is listed 3 miles north of the project study area is the nearest registered historic property. Correspondence with the Vermont Division for Historic Preservation is included in Attachment E.

Open Space and Public Lands

There are no open space or public lands in the study area. The establishment of a Town Green has been identified as a goal in the future development of the South Village.

Agricultural Lands

The soils in the project area are classified as either Prime Agricultural (b) or as Farmland of Statewide Importance. The Prime subclassification (b) indicates that the soil is not well draining and its agricultural use is limited.

There is an inactive farm stand along the existing road network, and the primary identified developable land within the South Village consists of former farm fields. The soil classification from the ANR Environmental Interest Locator can be is shown in Figure 17 and also in Attachment C.

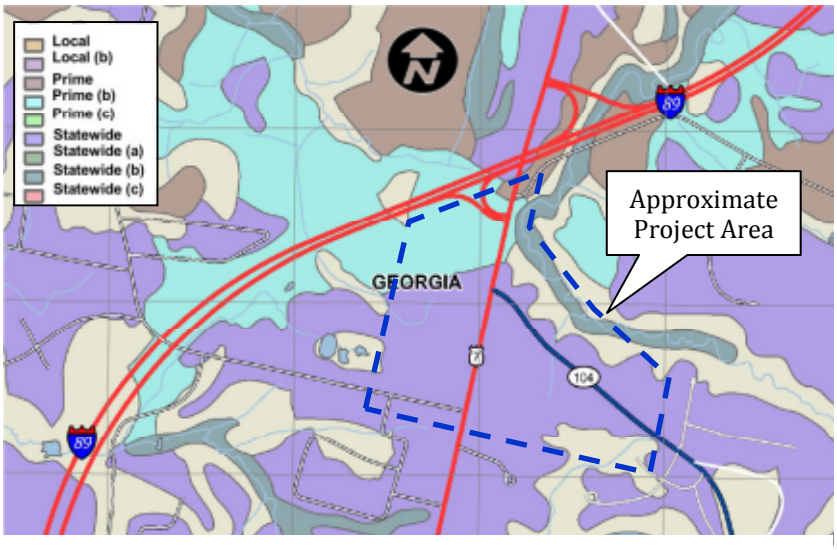


Figure 17: Agricultural soil classification for the South Village study area.

4.3 Local, Regional, and Statewide Planning

The development of bicycle and pedestrian facilities is well supported by many guiding planning documents, including the South Village's own strategic plan, and Town, County, and State documents.

South Village Strategic Plan

In the development of the South Village, the Georgia Planning Commission has placed a great importance on accommodating bicycle and pedestrian traffic. The Strategic Plan, the document guiding development, states that "First and foremost, developments should accommodate safe pedestrian circulation in the form of sidewalks along every street and pedestrian paths that connect sidewalks to building entrances, parking lots, and public spaces." Streetscape elements are directed to include street trees, benches, bike racks, and other elements to enhance the pedestrian and bicyclist experience in the Village.

Town of Georgia Planning

The 2006 Georgia Town Plan notes that the current sidewalk infrastructure within the Town is sparse. The plan discusses the potential to "provide for safer means of pedestrian travel, especially in the "village area" near the intersection of Route 7 and Route 104A. The Town Plan created an objective to "develop a plan for pedestrian access to our commercial and business zones," and sets forth the policy "to support alternative forms of transportation such as bike and pedestrian paths or lanes, particularly in conjunction with new development or road projects, and to connect these systems, where possible, to form a comprehensive network."

Regional Planning Documents

In the 2010 Draft Transportation Plan, the Northwest Regional Planning Commission (NRPC) stated a primary goal to be to "promote transportation in growth centers, downtowns, and village centers that feature bicycle, pedestrian and other non-motorized forms of transportation." Specifically relating to the South Village, the Transportation Plan also notes as strategy to "encourage mixed-use, high-density development within VT Route 104A Corridor." The strategy outlined in the Plan continues:

> *"Support the Town of Georgia in the development of their South Village Core zoning district. This zone, including the area around the VT Route 104A/US Route 7 intersection, promotes a new mixed-use, high-density village center. The addition of streetscape, traffic calming and pedestrian facilities are also supported for this district."*

Additionally, the 2005 VT-104 Corridor Study identifies three recommendations to the VT-104A corridor near the South Village, including:

- *"Develop multimodal plan in conjunction with New Georgia Village*
- *Build sidewalks*
- *Develop design guidelines to improve mobility options"*

State Planning Documents

The 2008 VTrans Bicycle and Pedestrian Design Manual outlines specific statewide policies to enhance non-motorized transportation uses for a variety of reasons, including health, cultural environment, and transportation choice.

Section 5 Alternative Alignments along Existing Roads

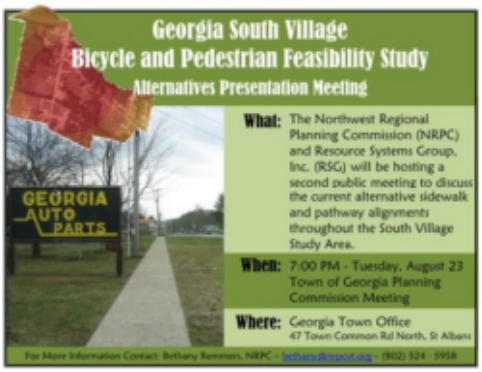
As discussed in Section 1.6, the project has been broken down into three segments:

1. Ballard Road from the Redeeming Grace Church to US-7
2. US-7 from Ballard Road to Skunk Hill Road
3. VT-104A from US-7 to Overlake Drive / Arrowhead Industrial Park

In addition to these three main segments, there are several specific locations that were identified as areas for improvements to the existing bicycle and pedestrian environment. These locations include:

1. The US-7 / VT-104A intersection
2. The Exit 18 Park and Ride Lot
3. Pedestrian crossing areas across US-7

In general, no new curbing is proposed in any of the alternatives. New curbing would require considerable improvements to the stormwater drainage system, potentially including drop inlets, piping, treatment, and outfalls. Aside from the additional cost of this infrastructure, the permitting required to establish this system would complicate the otherwise relatively simple first steps to improving the pedestrian network outlined in this section.



When the Georgia South Village full build out is realized, streetscape enhancements such as lighting, benches, bike racks, and trash receptacles will be included. Therefore the minimal improvements recommended in this section serve as interim facilities. Recommendations for enhancements for the entire South Village sidewalk and bike path infrastructure are included in Section 7.

All of the alternatives discussed in this section were presented in the Alternatives Presentation Meeting held August 23, 2011. The materials presented at that meeting are included in Attachment B.

5.1 Segment 1: Ballard Road

Between US-7 and the Redeeming Grace Church / Manor Drive, the Ballard Road segment was investigated with sidewalks on the north and south sides of the street. Both sidewalks were analyzed as a five-foot wide path with a five-foot separation from the roadway. As a Class 3 town highway with limited traffic, it was determined that bicycle traffic can safely travel on the roadway without a bicycle lane, widened shoulders, or an off-road path.

Between these two alternatives, the permitting and construction cost requirements were about the same. In determining a preferred alternative, the following critical differences were noted:

- Impacted Properties: While both of the actual sidewalks are designed to be within the existing Town right-of-way, construction easements are likely along the corridor. The north side of the road has three properties, compared to five on the south. Fewer properties results in fewer driveway crossings and a less complicated right-of-way process.
- Aerial Utility Poles: The utility poles carrying the overhead wires are located on the south side of the road. As utility poles are generally just within the Town right-of-way, there are likely to be conflicts between the sidewalk location and existing utility poles. These conflicts are absent on the north side of Ballard Road.
- Direct Access to Activity Centers: The church and creemee stand represent two substantial bicycle and pedestrian activity centers, both located on the north side of the road. While many residential homes are on the south side of the road, sidewalks connecting these two destinations would serve a greater number of pedestrian trips.
- Long-Term Planning: The north side walkway could be planned and constructed to easily enable widening to a 10-foot bike path. The ultimate plan of the South Village bicycle and pedestrian network should include an east-west bike route, and this sidewalk should be the first step.

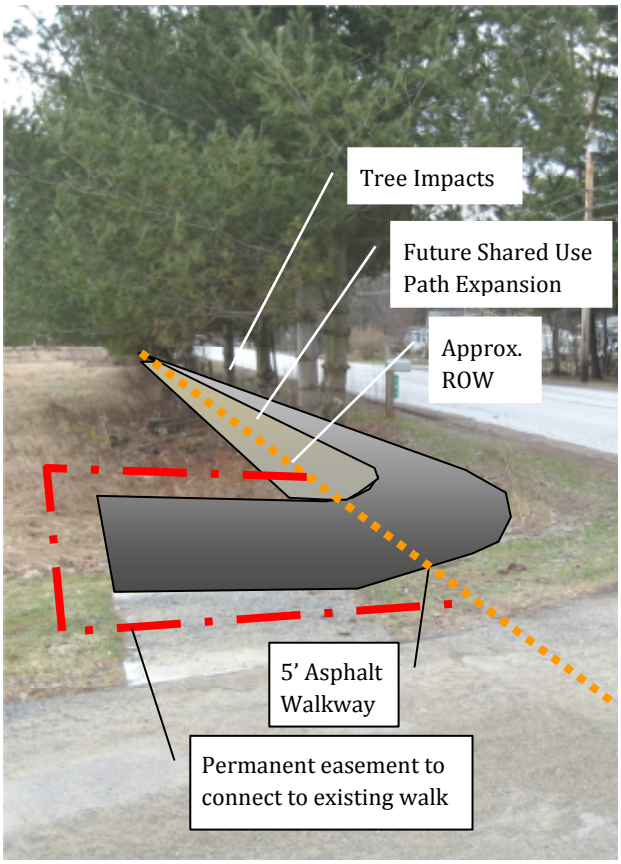


Figure 18: Alignment of preferred Ballard Road improvement with some issues highlighted. Looking east from church driveway.

These four issues point to the north-side bituminous asphalt sidewalk being selected as the preferred alignment, as noted in Section 2.1. The following potential issues have been identified with this alignment:

- The assumed right-of-way is narrow – there are likely construction impacts along the entire route.
- Several stands of trees and hedgerows of trees will likely need to be removed.

- The right-of-way at the intersection of US-7 and Ballard Road is unclear. It is possible the existing roadway extends into private land and a permanent easement may be required.
- The sidewalk at the church appears to be on private land. A permanent easement would likely be required to connect the proposed asphalt walkway to the existing concrete sidewalk.
- In the right-of-way / easement acquisition phase of final design, it would be advisable to seek permanent rights to construct the full 14 foot width path.

5.2 Segment 2: US-7

Between Ballard Road and Skunk Hill Road, the US-7 segment was investigated with sidewalks on the east and west sides of the highway. Both sidewalks were analyzed as five-foot wide paths just inside the assumed state right-of-way, providing a minimum of five feet separation from the roadway. The existing shoulder of US-7 was determined to be acceptable for bicycle traffic, so enhanced shoulders or off-road paths were not investigated along this segment.

The US-7 / VT-104A intersection lies in the middle of this segment. Specific treatments for this intersection are discussed in Section 5.4. The US-7 segment was further broken into southern and northern segments with this intersection as the border between these areas.

US-7 South Segment

The southern US-7 segment is assumed to transition from a 4-rod (66 foot) right-of-way to a 6-rod (99 foot) right-of-way in front of the Homestead Campground and Medical Offices. The proposed sidewalk alignments follow 3-feet inside this right-of-way and transition, allowing for the greatest space between the highway and sidewalk. In addition, this space allows for considerable snow storage, drainage ditches, and potential stormwater remediation enhancements as recommended by the Deer Brook Gully Remediation Plan.

For the US-7 south segment, the permitting and construction cost requirements were about the same for a sidewalk constructed on either side of the highway. In determining a preferred alternative, the following critical differences were noted:

- Connectivity to Planned Sidewalks: The Georgia Market, on the east side of US-7, has planned to build a sidewalk along the frontage of its parcel as part of a redevelopment permit. A sidewalk on the east side of US-7 could be coordinated to ensure a continuous pedestrian network between this activity center, Ballard Road, and VT-104A.
- Existing Development Pattern: Overall, the existing development on the east side of US-7 supports a greater likelihood of pedestrian activity. This development includes the campground, market, and several retail and commercial establishments.
- Opportunity to Provide a Crossing Location: As discussed later in Section 5.6, an unsignalized pedestrian crossing location is best suited between the creemee stand and campground. This location provides connectivity between the Ballard Road preferred alignment and the eastern side of US-7.
- Development Potential of the West Side of US-7: As a frontage to the most immediately developable property, the west side of US-7 could later be constructed with a sidewalk as part of a South Village Development permit condition.

The four points noted above noted above indicate that a sidewalk on the east side of US-7 from the campground parking lot to the VT-104A intersection is the preferred alignment for the US-7 south segment. The sidewalk material most suited for this location would be 5-inch concrete, with 8-inch concrete at commercial and high-use driveways. The following potential issues have been identified with this alignment:

- Construction easements may be needed, although most should be able to be avoided.

- If a marked crosswalk is installed between the creemee stand and the campground, there may be benefit to additional visibility enhancements, such as a pedestrian activated rectangular rapid flashing beacon (RRFB, see Figure 19) with crossing instructions.

Figure 19: A RRFB mounted on a pedestrian crossing sign. (www.spotdevices.com)

US-7 North Segment

The right-of-way for the northern US-7 segment is poorly defined along the east side of the highway. While the west side right-of-way appears to follow a relatively linear path, the east side right-of-way is reportedly on the edge of the roadway starting just north of VT-104A and continuing just outside of the actual highway until the guardrail appears near the Deer Brook. Beyond the pavement, the area between the roadway and the existing structures is reportedly the location of the property's septic system. Considering the right-of-way restrictions on the east side of US-7, no alignment was studied north and east of the US-7 / VT-104A intersection.

On the west side of US-7 north of the VT-104A intersection, several segments of sidewalk exist, notably at the Peoples United Trust Bank and the Maplefield's Gas Station and Convenience Store. These sidewalk segments are disconnected by approximately 100 feet of grass. It appears that both of these segments of sidewalk were constructed on private property outside the highway right-of-way. To connect these segments of sidewalk in a straight line using public funds, a permanent easement would likely be required along the entire length of this walkway. Understanding this easement requirement, the logical connection of these sidewalks may need to wait until the current landowner grants the right-of-way to the Town or the parcel is redeveloped.

North of the gas station and convenience store, the state right-of-way widens considerably to accommodate the Exit 18 interchange and Skunk Hill Road intersection. Sidewalks are proposed to this area to serve the Exit 18 Park and Ride Lot. While this would be a favorable pedestrian connection to regional transit service, the existing park and ride lot is poorly designed and over capacity. In addition, the ultimate South Village concept should include an updated and modern park and ride facility and transit stop. It is unlikely that the current location would serve that function, so the large capital expense to provide a pedestrian connection to the existing, poorly functioning lot is unadvisable.

Given the above discussion, the preferred alignment for the US-7 north segment is the no-build alternative.

5.3 Segment 3: VT-104A

From the US-7 intersection to Arrowhead Industrial Park / Overlake Drive, the VT-104A segment was investigated with sidewalks on the north and south sides of the highway. Both sidewalks were analyzed as five-foot wide walkways just inside the assumed state right-of-way, providing a minimum of five feet separation from the roadway. In addition, shoulder enhancements were considered to provide a widened paved shoulder to better accommodate bicycle traffic along the corridor.

One particular difference evident between the two alignments is illustrated in the assumed right-of-way. Based on the parcel mapping, there is an irregularity just west of the Deer Brook tributary on the north side of the road. At this location, the parcel mapping indicates that the right-of-way extends considerably into the roadway. While it is understood that parcel mapping is a rough approximation of the actual rights of way, irregularities such as this may indicate that the actual right-of-way is also irregular at this location.

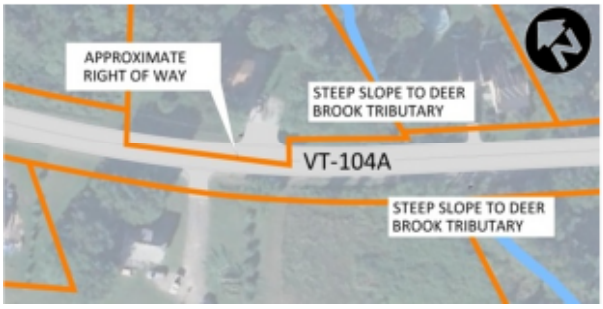


Figure 20: Right-of-way irregularity noted in the parcel mapping provided by the town.

Any widening of the roadway or addition of sidewalk

or path infrastructure will necessitate new fill slopes and culvert extensions, potentially including rock stabilization and headwalls at the Deer Brook tributary crossing. Given the proximity to the nearby Dear Brook, additional erosion prevention and sediment control measures are likely in this area.

Aerial utility poles are present on both the north and south side of the highway. Both the northern and southern sidewalk alignments have the potential for conflicts with these utilities.

Between the two sidewalk alternatives, the permitting and construction cost requirements were about the same. In determining a preferred alternative, the following critical differences were noted:

- Existing Development Pattern: Overall, the existing development on the north side of VT-104A supports a greater likelihood of pedestrian activity. This development includes the industrial park, a greater number of commercial establishments, Hope Cemetery, and a planned fitness club.
- Development Potential of the South Side of VT-104A: As a frontage to a more developable group of parcels, the south side of VT-104A could later be constructed with a sidewalk or bike path as part of a South Village Development permit condition.

Given the above noted issues, a sidewalk on the north side of VT-104A is preferred.

In addition to the north-side sidewalk, the overall pavement width was evaluated. The existing lane and shoulder width for both directions of travel was 12-feet and two feet, respectively. This is less than the Vermont State Design Standards minimum width of an 11-foot lane and five foot shoulder for the roadway class and traffic volume along VT-104A. Aside from the non-conformance to design standards, a wider shoulder would provide greater bicycle accommodation along the highway. An overall width increase of two feet on both sides of the highway is preferred to improve vehicular safety and service, as well as enhancing the bicycle environment.

To achieve this proposed 11/5 lane/shoulder section, construction in two stages is proposed. The first stage of construction will place two foot gravel shoulders, resulting in a 12/4 lane/shoulder section, with the shoulder half paved, half gravel. The second stage would entail a full-depth reclamation of the existing asphalt surface including the new gravel shoulders. This will provide a new asphalt surface for the entire roadway, while also allowing the white edge line to be replaced to mark an 11-foot lane with a five foot shoulder. If properly coordinated with the Vermont Agency of Transportation, this re-paving could be programmed into the statewide paving plan for minimal cost to the town. In the interim, the roadway could be restriped to an 11/3 section after the next paving project.

The sidewalk may be constructed separately, before or after the roadway shoulders are widened and paved. If the sidewalk is constructed prior to the development of the enhanced shoulders, the sidewalk should be placed with a minimum of seven feet of clearance from the roadway to ensure the ultimate roadway section will provide a five-foot green strip between the shoulder and walkway. Additionally, the elevation of the sidewalk should be designed to ensure that the green strip slope between the sidewalk and ultimate roadway is 1:4 or flatter.

The two most critical issues to be considered along this corridor include the poorly defined right-of-way and the crossing of the Deer Brook Tributary. In addition, the interaction with the sidewalk with the intersection of US-7 and VT-104A, including the slip lane from westbound VT-104A to northbound US-7, needs to be addressed.

5.4 US-7 / VT-104A Intersection Improvements

The US-7 / VT-104A intersection has been identified as a critical barrier to enhancements to the pedestrian and bicycle environment, and as a High Crash Location, there are demonstrated conflicts. Currently, an intersection study is being undertaken to review the options for improvements at this location. To be consistent with this study, it is advised that any recommended improvements to the intersection contain for the following characteristics:

- Minimize pedestrian crossing distances,
- Use design elements to enhance motorist yielding behavior to bicyclists and pedestrians,
- Provide marked pedestrian crossings where appropriate,
- Allow for bicycle through and turning movements,
- Allow for future transit circulation,
- Allow for future expansion of an eastbound leg into the intersection, and
- Provide pedestrian access to all four quadrants of the intersection.

The final improvements of the above study should accommodate a sidewalk and crossings at all four future legs of the intersection.

5.5 Existing Exit 18 Park and Ride Enhancements

As noted in Section 5.2, the existing park and ride lot is over capacity and poorly designed. The ultimate South Village redevelopment should incorporate an enhanced, easily accessible park and ride lot for commuters and transit providers alike. In the interim, two relatively inexpensive treatments can be added to enhance the existing park and ride lot and encourage bicycle commuting. A covered waiting area will provide respite from the elements as commuters wait for the bus, and a bicycle rack will provide a secure place to store a bicycle if the bus bike rack is full. Both of these enhancements can easily be coordinated with VTrans and CCTA at a relatively low cost, and these features can also be removed and reused at a new location when the ultimate South Village park and ride lot is in operation.

5.6 US-7 Pedestrian Crossing Locations

By analyzing the origins and destinations of the pedestrian and bicycle activity centers, two primary crossing locations are evident: one at the US-7 / VT-104A intersection, and the other between the Campground / Georgia Market and the creemee stand / Ballard Road. It is assumed that the pedestrian crossing at the US-7 / VT-104A intersection will be addressed in the intersection analysis currently underway.

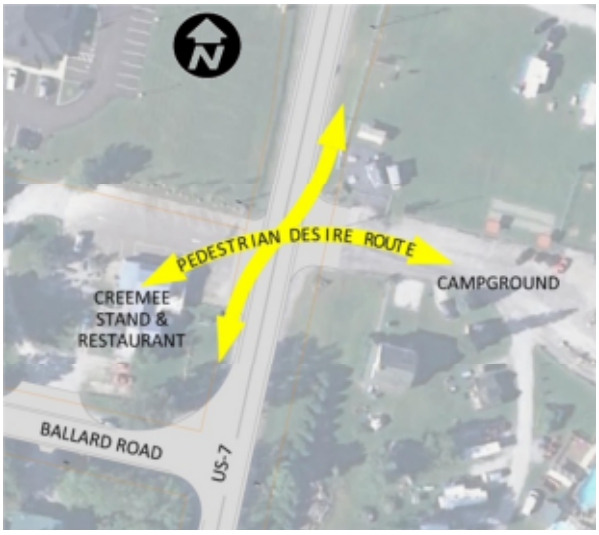
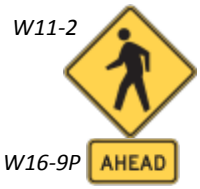


Figure 21: Pedestrian crossing desire routes near the US-7 / Ballard Road intersection.

Given the origin – destination pair between the campground and the creemee stand, a crossing makes most sense between these two locations. This crossing is contingent on a number of factors, such as the available sight distance and motorist traveling speeds. As the primary entrance point to the campground for both vehicles and pedestrians, the crossing location should be near the campground driveway. Lastly given the proximity to the Ballard Road intersection, the crossing location should be north of the campground driveway, giving motorists on US-7 the most time to recognize potential conflicts before or after the actual crossing.



It is unlikely that this location will meet the warrants required for a marked pedestrian crossing. In addition, a marked crossing has been shown to be no safer than an unmarked pedestrian crossing. At this time, no crosswalk markings are recommended, however the pedestrian sign (MUTCD W11-2) with an "AHEAD" plaque (W16-9P) is recommended approximately 500 feet upstream of the crossing location in both directions.

If a marked crosswalk is pursued, additional enhancements may be warranted, such as a post-mounted pedestrian-activated rapid rectangular flashing beacon as discussed in Section 5.2.

Section 6 Conceptual Estimate of Probable Construction Costs

To evaluate the different alignments along the existing roads and assist in choosing a preferred alternative, an Alternatives Presentation Matrix was developed and is included in Attachment B. This matrix included a planning level cost estimate to roughly approximate the difference in costs between the alternatives discussed and presented in Section 5.

6.1 Estimated Construction Costs

With the selection of a set of preferred alternatives, the planning level cost estimate was refined into a Conceptual Estimate of Probable Construction Costs. These costs are summarized below for the following construction phases, and the full estimate can be found in Attachment G. The phases are described in greater detail in the following sections.

Segment:	Estimated Cost:
Ballard Road to West US-7 Crossing	$ 97,000
East US-7 Crossing to VT-104A	$ 128,000
VT-104A Sidewalk	$ 270,000
VT-104A Gravel Shoulder	$ 64,000
VT-104A Full-Depth Reclamation	$ 36,000
Park and Ride Lot Enhancements	$ 14,000
Total for all improvements in study area	$ 595,000

It should be noted that the estimated costs above are conceptual and do not include costs associated with right-of-way investigation and acquisition. A 30% contingency has been included to address unforeseen issues that may arise through the design and construction of this project.

6.2 Estimated Annual Maintenance Costs

Regular maintenance operations would include mowing the green strip through the summer, plowing the sidewalk through the winter, occasional trash removal, and annual maintenance and rehabilitation of prematurely deteriorated sections. For the snow removal estimate, it is assumed the Town has the necessary equipment to plow the sidewalks. The initial capital expense for a sidewalk plow is not

included, and the Town may initially choose to contract the sidewalk plowing operations to a private entity, or to not plow the sidewalks at all.

The VTrans maintenance department has indicated that the District 8 maintenance team will mow and remove litter once per year along state highways. Additional maintenance will be the Town's responsibility.

Regular Mowing

Assume monthly mowing from May to November, for 6 mowings per year. At $100 per mowing, the annual mowing cost will be approximately $600 per year.

Snow Removal

Assume 40 days of snow removal a year will be necessary. At $75 per day, the annual snow removal cost is estimated to cost $3000. Snow removal may be optional based on Town sidewalk plowing programs.

Annual Repairs and Maintenance

The annual repair and maintenance cost for the sidewalks, drainage devices, and associated features are estimated to be approximately $1500 per year.

Overall Maintenance Cost

Regular Mowing and Trash Removal	$ 600
Snow Removal	$3000
Repairs	$1500
Total	$5100

Section 7 Continued Development of the South Village Network

The 2009 South Village Strategic Plan has laid the ground work for the development of the South Village core as a mixed-use "settlement of small scale commercial, civic, and residential uses in a traditional Vermont village setting." This development strategy is intended to conform to the Vermont Statutes definition on smart growth, reprinted to the right. To achieve this mixed-use smart-growth vision, a pedestrian and bicycle friendly streetscape must be planned into the fabric of the development. Several specific recommendations relating to bicycle and pedestrian planning from the Strategic Plan are summarized below:

- Regulations in the South Village zoning district should be developed to require sidewalks or paths on all streets.
- All building entrances, parking lots, and public spaces should be connected with safe pedestrian circulation to the network of paths and walkways.
- All new streets in the South Village Core District should create an interconnected grid transportation network.
- Traditional crosswalks, raised crosswalks, and other traffic calming devices should be integrated into high traffic areas.
- Bike lanes should be included in the street cross section where appropriate.
- Bike racks should be provided at significant destinations and throughout the village.
- Green strips should be utilized, where appropriate, with trees to soften the landscape and provide a buffer between the street and sidewalk.
- Trees should be "deciduous, salt resistant, long-lived, and shade giving" and be planted at least every 40 feet.

From the Vermont State Statutes: (Title 24, Chapter 76A, §2791)

"Smart growth principles" means growth that:

A. Maintains the historic development pattern of compact village and urban centers separated by rural countryside.

B. Develops compact mixed-use centers at a scale appropriate for the community and the region.

C. Enables choice in modes of transportation.

D. Protects the state's important environmental, natural and historic features, including natural areas, water quality, scenic resources, and historic sites and districts.

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E. Serves to strengthen agricultural and forest industries and minimizes conflicts of development with these industries.

F. Balances growth with the availability of economic and efficient public utilities and services.

G. Supports a diversity of viable businesses in downtowns and villages.

H. Provides for housing that meets the needs of a diversity of social and income groups in each community.

*I. Reflects a settlement pattern that, at full build-out, is **not** characterized by:*

(i) scattered development located outside of compact urban and village centers that is excessively land consumptive;

(ii) development that limits transportation options, especially for pedestrians;

(iii) the fragmentation of farm and forest land;

(iv) development that is not serviced by municipal infrastructure or that requires the extension of municipal infrastructure across undeveloped lands in a manner that would extend service to lands located outside compact village and urban centers;

(v) linear development along well-traveled roads and highways that lacks depth, as measured from the highway.

- Sidewalks, green strips, and street furnishing areas should be wider along central streets with storefronts and high levels of pedestrian traffic.
- On-street parking should be incorporated into future side streets and allowed for along Ballard Road.

7.1 Recommended Typical Cross Section

The Strategic Plan recommended two typical roadway cross sections: one for side streets, and a second for main streets. Both recommend 11 foot lanes and 2 foot shoulders in both directions, with 10 foot on-street parking lanes where appropriate. On state maintained roads, the minimum combined shoulder and lane width is 14 feet for plow clearance. The state will not plow any on-street parking areas. The main difference between the two Strategic Plan cross sections is found beyond the curb. The side street section recommends a green strip width between 4 feet to 6 feet, with a sidewalk between 6 feet and 10 feet. The main street section recommends a green strip and sidewalk width of 6 to 10 feet and 8 to 10 feet, respectively. In addition, the street right-of-way width will vary correspondingly with this cross section, between 50 feet and 100 feet. This typical cross section is reprinted from the Strategic Plan below in Figure 22.

The Strategic Plan typical cross section remains appropriate for future development of sidewalks through the village. There are several specific features not mentioned that should be incorporated into future Village development plans:

1. *Keep crossing distances minimal.* At intersections and mid-block crossing locations, bulb-outs or curb extensions should be used to minimize the pedestrian crossing distances. Curb radii at intersections should be no larger than 20 feet, provided adequate emergency vehicle and delivery truck maneuvering.

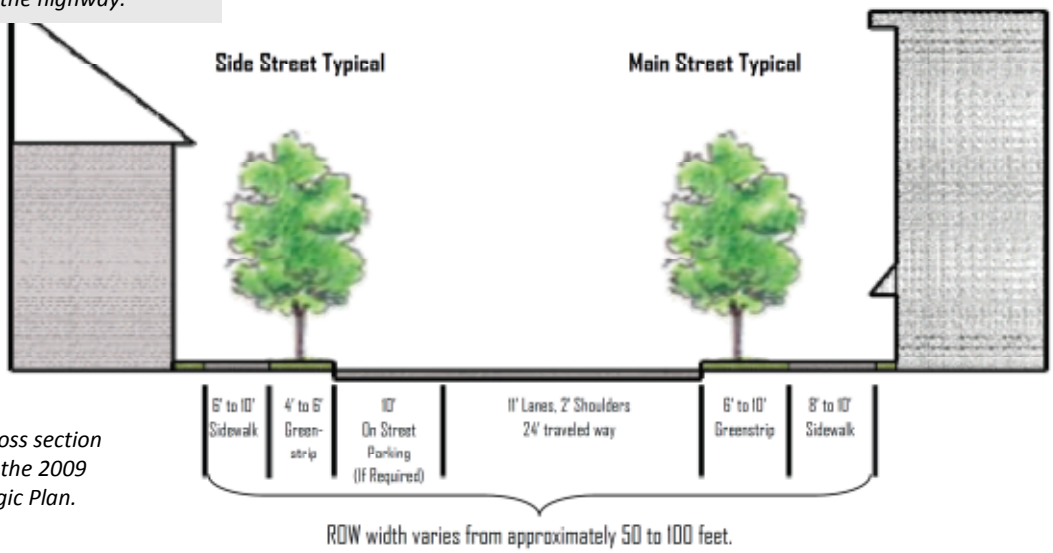


Figure 22: Typical cross section recommended from the 2009 South Village Strategic Plan.

2. *Consider higher density on-street parking*. Along main streets where parking is critical, back-in angled parking spaces will increase the storage capacity of the street while also adding to the traffic calming environment. Care should be taken in providing for bicycles adjacent to this feature.

Figure 23: Back -in angled parking (cc – Richard Drdul).

3. *Ensure street trees are planted and will thrive*. Beyond providing a more inviting streetscape, street trees are a visual cue to drivers that assist in traffic calming. As described in the Strategic Plan, the correct tree must be chosen for the location. Additionally, for trees to succeed in the streetscape, tree pits with a suitable soil mixture must be provided and the adjacent soils should not be overly compacted. Care should be taken to place these trees so they do not restrict sight lines.

4. *Provide additional buffer between store fronts and shared-use paths.* If a planned shared-use path is adjacent to a high-use activity center or commercial area, provide an additional wide area of contrasting material, such as brick pavers, to delineate a more leisurely area for walking and window shopping. The through path use should remain relatively unimpeded.

5. *Keep pavement widths as narrow as practical*. On side streets, if on-street parallel parking is provided, consider reducing the width of the parking aisle and shoulder to minimize the width of the street. The narrow street will still accommodate the local traffic, but high speeds will not be comfortably attained. An empty, long, uninterrupted parking aisle may encourage higher speeds; consider breaking up parking aisles greater than 400 feet in length with curb extensions, bulb-outs, or landscaped chokers.

6. *Provide properly placed shared lane markings, or sharrows (at right), on side streets that are too narrow for bicycle lanes*.

7. *All sidewalks, shared-use paths, and other infrastructure adjacent to existing highways should be constructed within the existing right-of-way.* Permanent easements to connect existing, non-contiguous sections of sidewalk should be sought to complete a linear, convenient, and integrated sidewalk network.

8. *In new or phased construction developments, provisions should be made to ensure that any sidewalk and paths are planned within the network, and that these facilities will be integrated into the overall system*. Permanent easements, maintenance agreements, and operational understandings should be discussed between to the Town, developer, and VTrans as appropriate.

9. *Additional traffic calming measures should be considered as appropriate.* These may include raised crosswalks, textured and brick pavement options, chicanes, and lateral shifts. All internal vehicle intersections should be analyzed as roundabouts, all-way stop signs, and traffic signals. All additional enhancements should be evaluated on their impact to walking, bicycling, and visually impaired pedestrians. It should be noted that many of these features will reduce plowing efficiency and may be subject to a shorter lifespan due to plowing activities. Plowing and drainage considerations are critical to all proposed enhancements.

Figure 24: Raised and textured crosswalk with curb extensions (www.pedbikeimages.org /Dan Burden)

7.2 Proposed Street and Bike Path Network

The Strategic Plan proposed a conceptual plan of future a future road network. At the Alternatives Presentation Meeting, a separate expanded draft network was presented for the purposes of discussing potential bike routes through the South Village. The Strategic Plan conceptual road network is reprinted in Figure 25 and the expanded conceptual network is presented in Figure 26.

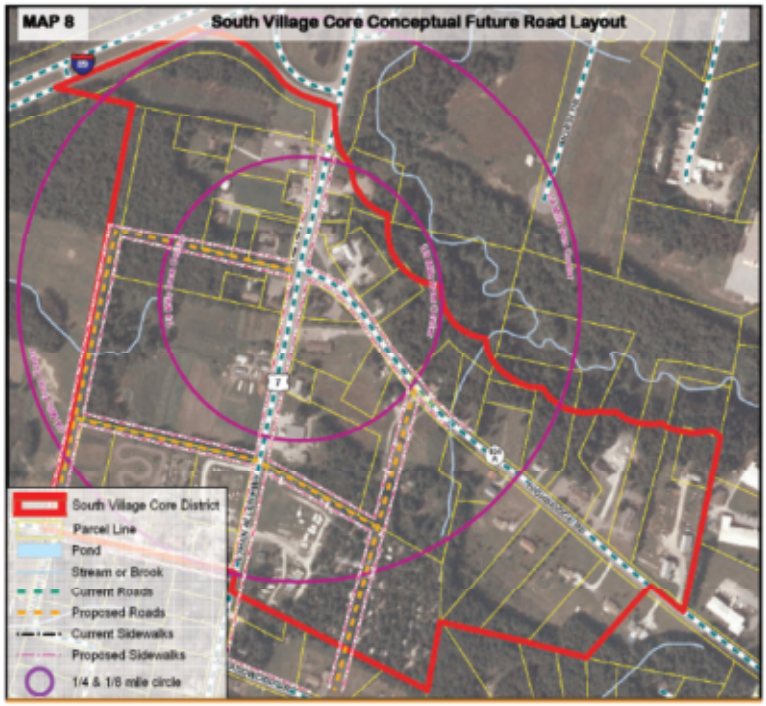


Figure 25: The conceptual map of the South Village future road network as presented in the Strategic Plan.

Figure 26: Expanded conceptual South Village road network presented during the Alternatives Presentation Meeting. Potential new roads and off-road paths are solid red and yellow, respectively. Note the potential Village Green and Park and Ride lot locations. All streets should be constructed with either a sidewalk or path on both sides of the road.

As discussed in the Strategic Plan, the road networks illustrated above are intended to provide an interconnected grid network. In addition, a secondary network of off-road shared use paths shown in Figure 26 are intended to create an east-west route, as well as connect all routes into the Village by a network of bicycle facilities. Lastly, if completed as shown above, the shared-use route could provide a two-mile recreational facility for use by all visitors and residents of the Village.

The off-road shared use paths were placed in Figure 26 to accomplish the following goals:

- Provide bicycle accommodations along all primary roads not served by a bicycle lane or wide shoulder.
- Provide bicycle access to the Village Center and Park and Ride Lot.
- Provide a loop to circle the Village for recreational and fitness routes.

Lastly, throughout this plan, several discussions have centered on the relocation of the existing park and ride lot. In accordance with the smart growth principals of the South Village, an expanded transit center and park and ride lot would be critical to promoting choice in transportation modes. The ideal location for this facility would be convenient, but not dominating, within the Village. The lot should be easily accessible to commuters from many directions, and also served directly by bicycle facilities. The key to siting the facility is to make it safe and convenient to access by pedestrian, bicyclist and driver, quick for the bus to board and alight passengers, close to activity centers, but not an eyesore for the community.

In Figure 26, this facility is shown placed under the existing Vermont Electric Power Company, Inc (VELCO) transmission lines. The intention in this location is to work with VELCO to combine uses, using this otherwise vacant, centrally located parcel as the main parking location for the transit center. The primary commuter access would be through a new leg into the VT-104A intersection. The greatest benefit of this location is the possibility of the transit busses accessing passengers from a pull-off on US-7, thereby eliminating the need to enter the congested lot. This also allows for the bus to continue south and potentially use the redesigned US-7 / VT-104A intersection to turn around, either in a roundabout or by performing a u-turn at a signalized intersection. The lot and transmission lines could be masked through strategic landscaped plantings. VELCO would have the benefit of easier, paved access to their transmission towers, and potential tax benefits for leasing the land to the Town. This potential park and ride lot location has not been formally discussed with VELCO, but has been received positively by the regional transit provider, Chittenden County Transportation Authority (CCTA). Correspondence with CCTA is included as Attachment I.

7.3 Conformance of Preferred Alternatives to South Village Plan

The selection of the three preferred alternative segments along the existing road network were discussed in Section 5. All three alternatives considered the ultimate South Village development in the selection process. It is intended that all of the preferred alternatives will continue to be critical pieces of the overall South Village bicycle and pedestrian network as it continues to develop. Each alternative will integrate into the future development as follows:

Segment 1: Ballard Road

As shown on Figure 26, an off-road shared use path has been planned for the north side of Ballard Road, ultimately providing a direct path to VT-104A along the southern boundary of the South Village. To ensure that the preferred alternative is relevant in the completed South Village, the initial walkway is proposed to be constructed of bituminous asphalt completely within the existing town highway right-of-way. As the South Village develops, the Town should seek the additional right-of-way to the north of Ballard Road to construct the full width path, potentially to include on-street parking.

It should be noted that the construction of the preferred alternative walkway within the existing right-of-way may complicate the addition of on-street parallel parking in the future. To fully accommodate a future shared-use path and on-street parking with curbing and street trees, additional rights of way

beyond the existing highway would be required. The preferred alternative as presented is a reasonable compromise balancing the future Village plans within the existing corridor and transportation needs.

Segment 2: US-7

The preferred alternative sidewalk along the east side US-7 would acceptably serve the future sidewalk network of the South Village. The preferred alternative proposes a 5 foot wide concrete sidewalk. Along US-7, it should be expected that this area may be redeveloped as a "Main Street" section. The South Village "Main Street" typical section suggests that the sidewalk is constructed at a width of 8 – 10 feet. As the South Village develops, this sidewalk can be expanded the additional 3 to 5 feet as appropriate. The narrower sidewalk being proposed as the preferred alternative is a reasonable facility for the existing land use.

Additionally, the proposed crossing location north of the campground would likely be relocated to the intersections as the future road network develops. These intersections may or may not be controlled; as the road network evolves these crossing locations will need to be evaluated.

Segment 3: VT-104A

The north side of VT-104A is one of the developed sections of highway in the study area. As such, it provides the least initial redevelopment potential in the South Village. The preferred alternative along the existing road network proposes a five foot wide sidewalk and enhanced shoulders along the highway. Similar to the US-7 alternative, this sidewalk may be expanded the additional 3 to 5 feet as the Village develops. In the interim, this alternative would serve the existing development pattern acceptably and provide an essential sidewalk link.

Section 8 Implementation

The implementation of these recommendations entails two main objectives: pursue construction of the preferred alternatives discussed in Section 2, and update the planning strategy and zoning ordinances to realize the South Village bicycle and pedestrian vision outlined in Section 7. The implementation strategy, recommended project approach, anticipated permits, and potential funding sources, and proposed next steps are documented in this section.

8.1 Permit Background Investigations

The following additional documentation will benefit the grant applications for funding the improvements along the existing roads, while also providing additional background information for potential developers regarding the South Village project area.

1. Right-of-way Documentation

   The right-of-way shown on all plans and illustrations has been approximate to this point. Plat research and deed investigations will need to be done to determine the exact width of the highway right-of-way. All proposed hardscaping elements, including sidewalks, drainage infrastructure, signs, and site furnishings will need to be on public land for all state and federally funded projects.

   In addition, developers will need to provide vehicle access to these highways. A thorough understanding of the highway rights of way will enable the necessary communication between the town, VTrans, and developers to assess the needed roadway infrastructure and ensure the bicycling and pedestrian enhancements outlined in this report are addressed.

2. Site-Wide Archaeological Resource Assessment (ARA) and Historic Property Survey Report (HPSR)

   Only the impacts to historic and archaeological resources along the roadways have been broadly reviewed up to this point. A qualified historic and archaeological expert will need to review the entire project area to ensure no resources will be impacted through the construction of this project. By producing a single report that covers the entire project area, the proper documentation can be assembled for both the preferred alternative projects as well as the South Village developments.

3. Wetland Delineation

   Several mapped wetlands were discussed in Section 4. These wetlands are unlikely to impact the preferred alternatives; however documentation of the classification, size, and value of these wetlands may clarify the potential impact to the overall development of the South Village.

8.2 Recommended Phasing for Construction on Existing Roads

In an effort to manage construction costs and break the sidewalk development into a more realistic set of projects, several constructible phases have been developed. To ensure that the sidewalks that are constructed within a sensible network, it is important to develop the infrastructure between logical end points. The following construction phasing and potential funding sources have been identified and may be undertaken separately.

1. Ballard Road & US-7 Sidewalk Segments (Preferred Alternative Segments 1 & 2)
   As described in Sections 2.1 and 2.2, these two sidewalk segments would immediately link the church and high density residential area on the south end of the project area to the market and main village.
2. VT-104A Shoulder Enhancements (Partial Preferred Alternative Segment 3)
   Widened gravel shoulders along both sides of VT-104A. Dual benefits of improving bicycle facility, plus bringing the roadway in conformance with VTrans standards.
3. VT-104A Sidewalk (Partial Preferred Alternative Segment 3)
   North side sidewalk between the US-7 intersection and Arrowhead Industrial Park, linking employment center with the main village area.
4. VT-104A Paving (Partial Preferred Alternative Segment 3)
   Coordinate roadway re-paving with Agency of Transportation projects to incorporate full depth reclamation along entire VT-104A route. Restripe edge line to provide 11-foot lanes and 5-foot shoulders.
5. Park and Ride Improvements
   Coordinate installation of waiting area shelter and bike rack with VTrans and CCTA.

The order in which these phases are listed represents the recommended priority of the project features. However, this phasing could be completed in any order, except that the paving (Phase 4) must follow the shoulder redevelopment (Phase 2). In addition, it would be logical to complete Phase 2 and 3 simultaneously. These phasing concepts are illustrated in Attachment J.

8.3 Permitting

The following permits have been considered and their application to the preferred alternatives phases listed above is presented below. Phase 5, the park and ride improvements, was not considered. The permitting process for Phase 5 is anticipated to be simple, requiring only a VTrans right-of-way permit.

		Applicable:			
Permit:	When Triggered:	Phase 1:	Phase 2	Phase 3	Phase 4
Act 250	Municipal development greater than 10 acres, or at elevation 2500 or greater	No	No	No	No
401 Water Quality	Water quality certification required if there is involvement with Waters of the US, usually related to 404 Permit below	No	No	No	No

Permit:	When Triggered:	Applicable: Phase 1:	Phase 2	Phase 3	Phase 4
404 Corps of Engineers Permit	Required with federal projects impacting Waters of the US	No	No	No	No
Stream Alteration	Projects involving work in jurisdictional streams	No	No	No	No
Conditional Use Determination	CUD required when project impacts Class I or II wetlands, including indirect stormwater discharge effects	Unlikely	Maybe	Maybe	No
Storm Water Discharge	2 acres of new impervious area	No	No	No	No
Shoreland Encroachment	Work in a public lake or pond	No	No	No	No
Threatened & Endangered Species	Projects that adversely affect threatened and endangered state-listed species – ANR determination	No	No	No	No
VTrans ROW Permit	Project within state owned ROW	Yes	Yes	Yes	Yes
State Historic Preservation Office Clearance	Pending investigation of HPSR, impacts to any historic properties are affected by the project	Unlikely	Unlikely	Unlikely	Unlikely
NEPA Category	Depends on project impacts	Categorical Exclusion (CE)	CE	CE	CE

8.4 Right-of-Way Acquisition and Easements

Almost every adjacent property along the northern side of Ballard Road and VT-104A will need a temporary construction easement, and permanent easements may be needed to connect the walk to the Church sidewalk and along the northwest corner of the Ballard Road / US-7 intersection. Conversations should begin with all adjacent landowners as soon as practical. Receiving letters of support from the actual landowners documenting their willingness to allow construction near their property, although informal and not binding, may assist in future grant applications.

In any case, significant effort will be needed to legally grant the temporary construction and permanent rights anticipated on the properties along the corridors.

8.5 Funding

The preferred alternatives selected through this study represent a planned investment in bicycle and pedestrian infrastructure well into the future. These preferred alternatives, coupled with the South Village Strategic Plan and Future Development Recommendations presented in Section 7 indicate a continued and thoughtful infrastructure program dedicated to providing transportation options for the community. Given this, traditional funding sources for bicycle and pedestrian improvements are well suited for the preferred alternatives. These grant programs, managed by VTrans under the Local Transportation Facility Program (LTF) include:

- Transportation Enhancement (TE) Grants
- Bicycle and Pedestrian Program Grants

The maximum grant amount is capped at $300,000, which would likely account for the combined total of Phase 1 at approximately $225,000. Using this funding structure, a 20% local match is required, with at

least 10% in cash. Grant applications are generally started in June, with the final application deadline in August. The Northwest Regional Planning Commission should be able to assist with the application schedule, materials, and matching funds requirements.

In addition to these traditional sources, a number of opportunities exist to assist in potentially offsetting the local match requirements. The Bikes Belong Coalition (http://www.bikesbelong.org/), for example, may be able to provide grants that could be applied as part of the local match. More information on many additional grants can be found from the Vermont League of Cities and Towns (VLCT), the National Transportation Enhancement Clearinghouse (http://www.enhancements.org), the NRPC, and the VTrans LTF and TE coordinators.

Being a High Crash Location Segment, the shoulder enhancements along VT-104A may qualify for safety improvement funding. Potential funding sources may include Section 148 Highway Safety Improvement Funding and the Vermont Statewide Transportation Improvement Program (STIP). The NRPC may be able to assist in navigating the requirements to receive these funding sources for this project.

As the South Village continues to develop, the Georgia Planning Commission should evaluate the funding mechanisms to construct the overall bicycle and pedestrian network. Several key questions to be evaluated will include:

- Will the future road network be public or private?
- Who should be responsible for the initial construction of these roads, sidewalks, and paths?
- Who maintains, plows, mows, and repairs the future roads, sidewalks, and paths?

The answer to these questions will direct the funding and fee structure for the development process. If the responsibility is to fall on the Town, the Town will need to evaluate the potential for impact fees, developer escrow accounts, and other revenue assessments. Otherwise, the developer will need to address the initial construction and on-going maintenance and operational costs associated with the development.

8.6 Construction and Schedule

If grant applications were prepared for submittal in summer of 2012, awards will likely not be announced until winter of 2013. If the project was awarded sufficient funding, engineering design, reporting, permitting, agency reviews and the right-of-way process can easily take over two years from that point. Construction on the first phase could begin as early as spring 2015, with completion in the fall of 2015. At four years per phase, the sidewalk corridor may take 8 years or more complete.

8.7 Next Steps

To help ensure the sidewalk moves forward, the following steps should be undertaken by the Town:

1. **The Georgia Planning Commission and Selectboard should approve and endorse this plan.** With formal approval, this plan provides the project scoping documentation for Transportation Enhancement and Bicycle - Pedestrian grant opportunities. In conjunction with the Strategic Plan, this Feasibility Report will also se t the groundwork for the features and character of the future South Village streetscape.

2. **Request a formal review by the VTrans District Transportation Administrator (DTA).** The DTA has been involved and invited to meetings throughout the development of this report, including review of the draft document. Their review, comments, and insight is critical to the success of highway related projects. The project area lies within VTrans District 8. The DTA is David Blackmore. (802-524-5926, David.Blackmore@state.vt.us)

3. **The Georgia Planning Commission should contact all potentially impacted landowners for the anticipated construction phases**. This will reduce the potential for right-of-way conflicts. In addition, citing adjacent landowner support, including support from the Agency of

Transportation, along the route may be helpful in the grant application process. This may also be a good time to address and discuss the best location of snow plow banks to avoid creating a sight distance restrictions.

Adjacent landowners may support the new sidewalk connection to the Village, a safer walking environment for their children, the locally directed and managed effort, and a potential boost to their property values with the improved infrastructure. VTrans may support the improved drainage facilities, the wider shoulders, the reduced vehicle – bicycle – pedestrian conflicts, and improved corridor safety. In each case, the committee should document any support from all impacted parties.

4. **The Planning Commission and Selectboard should seek to complete the recommended additional studies.** By completing the right-of-way, ARA / HPSR, and wetland studies for the entire South Village study area, the Town will be showing a commitment to developing a comprehensive network of infrastructure. This commitment will show the grant selection committees that the South Village is planning a comprehensive network, while also providing clear permitting background information for future developers.
5. **The Planning Commission, Selectboard, and Town residents should contact their legislative representatives**. The boards, steering committee, and all interested community members should petition their elected leaders that these sidewalks are important to not only the community in which it would be built but the entire Town. These committee members can write letters to the local newspapers in support of this phased approach to connecting communities and smart growth in healthy, walkable environments**.** Letters of support from elected officials are invaluable in grant applications.
6. **The Planning Commission should work with the NRPC to seek out and apply for grant construction funding**. Judging by community support and attendance at the meetings throughout this planning process, the town has a large base to help move this sidewalk development project forward. A committee should be formed of these enthusiastic supporters to oversee the following steps to ensure the project progresses.
7. **The Georgia Planning Commission and Sidewalk Steering Committee should stay involved through the grant application, consultant selection, final design, and construction process of the project**. Once the first phase is completed, veteran members of the Planning Commission and Sidewalk Committee will have gained an important understanding of the locally managed, federally funded sidewalk construction process. This experience will be valuable as the following phases proceed, culminating the overall smart growth development of the South Village.

ATTACHMENT A

Local Concerns Meeting Materials and Minutes

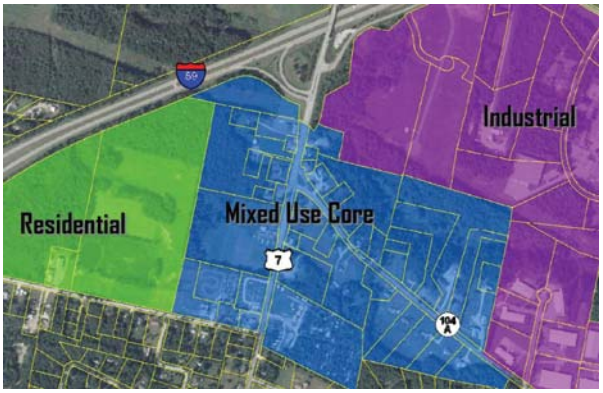
PUBLIC MEETING

Georgia South Village Sidewalk Feasibility Study

What: The Northwest Regional Planning Commission (NRPC) and Resource Systems Group, Inc. (RSG) will be hosting a public meeting to discuss bicycle and pedestrian planning in the South Village along existing roads and the development of design standards for future construction.

When: Monday, April 11th
6:00 p.m.

Where: Community Room
Georgia Town Library
1697 Ethan Allen Highway



For More Information Contact:

Bethany Remmers – Northwest Regional Planning Commission
bethany@nrpcvt.org, (802) 524-5958

GEORGIA SOUTH VILLAGE BICYCLE AND PEDESTRIAN FEASIBILITY STUDY

Local Concerns Meeting – Monday April 11, 2011 – Draft Agenda

1. Introductions 6:00 PM
    a. Resource Systems Group, Inc
    b. Northwest Regional Planning Commission
    c. Steering Committee
    d. Members of Public
2. Basics of a Bicycle and Pedestrian Feasibility Study 6:05 PM
    a. Local Input ⇦
    b. Alternatives Development
    c. Impact Assessment
    d. Alternatives Presentation (Next Public Meeting: early to mid May)
    e. Report Preparation
3. Identify Community Issues 6:15 PM
    a. Safety, mobility, accessibility, connectivity, cost
4. Identify Community Goals 6:30 PM
    a. Sidewalk / Path connections
    b. On-road improvements
    c. Intersection improvements
    d. Intercommunity connectivity
5. Identify Current and Future Activity Centers 6:45 PM
    a. Existing Origins and Destinations
    b. Development Potential
6. Working with What We Have 7:00 PM
    a. Existing Road Network
    b. Existing Sidewalks
    c. Planned Sidewalks
7. Planning for What We Want 7:15 PM
    a. Roadway section in future developments
    b. Sidewalk, curbs, on-street parking, etc
8. Next Steps 7:25 PM
9. Adjourn 7:30 PM

60 Lake Street, Unit 1E ▪ Burlington, Vermont 05401
TEL 802.383.0118 ▪ FAX 802.383.0122 ▪ www.rsginc.com

SUBJECT: Georgia South Village Bicycle and Pedestrian Feasibility Study
Local Concerns Meeting

DATE: 11 April 2011 – 6:00 PM

LOCATION: Town of Georgia Public Library, Georgia, VT

ATTENDEES:

George Bilodeau	Town of Georgia Planning Commission, Steering Committee
Peter Pembroke	Town of Georgia Planning Commission, Steering Committee
Ray Bouffard	Resident, Steering Committee
Steve White	Resident, Steering Committee
David Lang	Resident
Becky White	Town of Georgia Planning Commission
Vinton Gaudette	Resident, Steering Committee
David Blackmore	Agency of Transportation, Highway Maintenance
Bethany Remmers	Northwest RPC, Project Manager
Corey Mack	Resource Systems Group, Consultant Project Manager

DISCUSSION:

1. **Introduction**

   Bethany opened the meeting with a round of introductions. The meeting was attended by members of the community, elected officials, the project steering committee, Agency of Transportation personnel, and the project managers.

2. **Basics of a Bicycle and Pedestrian Feasibility Study**

   Corey described the typical Bicycle and Pedestrian Feasibility Study process. The general steps follow local input, alternatives development, impact assessment, alternatives presentation, and report production. This meeting provides a portion of the local outreach and input to direct the project.

   Bethany stated that this project will address potential improvements along the existing state highways as well as propose alternative design standards for future development within the village. Corey added that the report produced at the end of the project will outline the analyzed alternatives, the locally preferred alternative, and the proposed infrastructure design standards.

   Corey stated that the next public meeting, the Alternatives Presentation meeting, will likely be held in mid May. The meeting will be publicly warned at least two weeks in advance.

3. **Community Issues and Goals**

   The meeting agenda listed four potential community issues, including safety, mobility, accessibility, connectivity, and cost. More specifically, the main issue brought up by the meeting

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DISCUSSION:

group was the bisecting nature of US-7 through the village. Providing safe crossing conditions for pedestrians between the east and west at the north and south end of the project areas (the VT-104A / US-7 intersection and campground / creemee stand locations, respectively) were identified.

Proposed improvements should be focused on alternative modes of travel, including bicycle and pedestrian, as well as providing links to interregional services, such as the CCTA Link Express stop at the Park and Ride lot. All improvements on the existing infrastructure should be compatible within the ultimate vision of the South Village.

4. Current and Future Activity Centers

Several key existing activity centers were identified during the meeting, including:

- Campground,
- Creemee Stand,
- Church,
- Georgia Market,
- Maplefield's,
- Park and Ride Lot,
- Business Park,
- Proposed Fitness Center, and
- Medical Clinic and Offices.

Three significant developable areas were identified:

- North of Ballard Road and west of US-7,
- The campground, and
- South of VT-104A.

Three potential road alignments in the ultimate South Village were identified:

- North from Ballard Road just east of the church,
- East from the end of Ballard Road, through the campground a historic Georgia Town Road,
- West from the US-7 / VT-104A.

5. Potential Improvements on Existing Highways

Ballard Road: Shoulders on both sides of road and sidewalk on north side between US-7 and the church. The church already has a short segment of sidewalk.

US-7: Sidewalks on both sides of US-7. Large ditches with no direct outlet present challenges. Any curbing would require a new storm water drainage system and associated permits. Two potential crosswalk locations were discussed across US-7 at the creemee stand / campground and at the US-7 / VT-104A intersection.

VT-104A: Right of way and terrain is more constrained along 104A, particularly at stream crossing.

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DISCUSSION:

US-7 / VT-104A Intersection: Access management, the curbed median islands, and the westbound – northbound slip lane were identified as issues. Potential pedestrian improvements should incorporate ultimate intersection design as best possible.

There was some discussion about potentially relocating the Park and Ride Lot to a larger location, such as beneath the overhead electric lines toward the north end of the project area.

6. Potential Design Standards

Several potential future roadways were discussed in section five. Draft cross sections of these roadways with the following features will be prepared:

- Curbed and uncurbed roadways,
- Green strips,
- Sidewalks,
- Off-road paths,
- On-street parking, and

7. Open Discussion

David B stated that VTrans is often reluctant to assume the maintenance and liability requirements of many improvements within the state right of way. David B added that curbing potentially complicates storm water conveyance and treatment, and may require additional infrastructure such as drop inlets and a storm water system. For any identified improvements to be constructed, the Town, NRPC, and citizens need to advocate for the project to the Agency.

The sidewalk under development at the Georgia Market has been proposed on the west side of the ditch closer to the road.

8. Next Steps

The next meeting will be the Local Concerns meeting and is anticipated in mid-May. The meeting will be publicly warned at least two weeks in advance.

These notes are the understanding of the preparer. Please contact the preparer to correct any discrepancies within the notes.

Prepared By: Corey Mack
April 18, 2011

DRAFT

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ATTACHMENT B

Alternatives Presentation Meeting Materials and Minutes

TOWN OF GEORGIA PLANNING COMMISSION
TUESDAY, AUGUST 23, 2011
47 Town Common Road
Saint Albans , T05478
Phone:802-524-9794 - Fax 803-524-3543

Planning Commission Members Present: Suzanna Brown, George Bilodeau, Maurice Fitzgerald, Tony Heinlein, Peter Pembroke,

Planning Commission Members Absent: Geoffrey Sweeney, Becky White

Staff Present: Heidi-Britch Valenta, Planning Coordinator; Joan Jordan, Secretary Others Present: Sam Ruggiano, Jim and Mark Burnett, Corey Mack, Esther Lotz, Clinton Morse. Ray Bouffard, Vinton Gaudette,

Approved: 9/23/11

The Georgia Planning Commission meeting of August 23, 20111 was called to order at 7:00 p.m. by Chairman Peter Pembroke at the Georgia Municipal building.

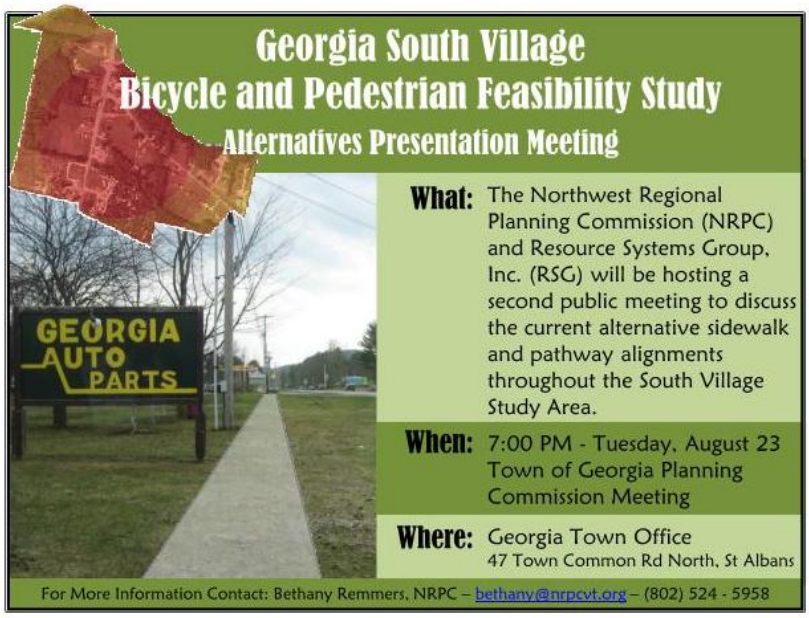
1. Approval of Minutes of August 9, 2011 were tabled.

2. Public Hearing
   Site Plan Review - PC - 010-11 Owner: Clinton Morse Applicant: Burnett Scrap Metal, LLC

BACKGROUND

Chairman Pembroke explained the procedure and read the following background: Burnett Scrap Metal, LLC, hereafter referred to as the Applicant, is requesting Site Plan Approval to construct a 10,400 sq ft recycling center on Lot #4 of the Morse Industr s a parking area for the business. The pr or Heavy Industry in the I-I District.

Sam Ruggiano of Ruggiano Engineeri linton Morse and the applicants, Jim and Ma Planner's Report that it was mentione developing Lot 4 at this time with a 1 h of the building and trailer parking and st ding will be off Morse Drive. Trucks will grade...These could be large trucks or pper wire. The recycling that's going to ha . All storage is within the building. People get an invoice. They pay right on the spot a



Alternatives Presentation Meeting announcement flyer

Mr Ruggiano- There are some tractor n there are interior loading docks for lo orges around the area Mainly they truck it t ance is mostly for exit for trucks going back ity Wastewater Disposal System that was d It has been built and certified with the State. We're also showing the proposed drilled well located to the west of the property. It's shown on the plan. It will service the building. Again, there's a Community Storm Water Drainage System. The park right now has. a detention pond that's constructed that was certified every year as

to its workings and that it's being maintained and that there's no excess erosion or anything else that is happening. We're going to be using that detention pond and tying into the system at the headwall. It goes through the pond and then discharges into Deer Brook.

Mr Ruggiano - Grading on the site generally grades from the back to a swale that's being picked up by a catch basin in a pipe that is discharged into a swale that is brought around to the head of the pond. So we're not short-circuiting the pond. It's going through the pond's entire length. The reason for the catch basin and piping...you'll notice this little bulbous .area is a Class III wetlands. Those wetlands formed at the time of constructing the pond, believe it or not. ....What was used was a conservation mix that had Reed Canary grass in it, which is a wetland vegetation. A few years ago when they came out and looked at the pond they said, "That's a wetlands area". and we had to show that wetlands area even though they are wetlands that .technically we made. So even though it's a Class III wetland ,there are hoops you have to jump through to be able to impact those wetlands.. At this point in time we decided that we were not going to impact those wetlands. We stayed away. We put in a catch basin and piping and are not impacting those Class III Wetlands at this point. Now we may go back and talk with the wetlands people and see if there is a possibility of grading the site so that we have a swale instead of a catch basin and pipe. But at this point in time Julie Foley is on maternity leave and we couldn't get a quick answer. The reality of it is for right now we're looking for approval for that pipe and a catch basin. We may be back to you to try to have that removed if we can sign off with her quickly enough.

Mr Ruggiano-We have to get an Act 250 Permit. We have to revise or amend the Wastewater Disposal Permit. We have to amend the Storm Water Permit and we're filing for a Construction General Permit. because we're disturbing more than an acre of property. I believe you have a view of the building in your packets. On the site we're proposing no yard lighting. All the lighting will be on the building itself at the entrance as illustrated on the Site Plan. They're all wall- mounted lights on the building. With that I'll field any questions. The Chair addressed the question of parking in the report. I know Tony has some questions. I haven't read this but according to the Conditional Use permit it's stated that there will be 9 employees? Mr Ruggiano- Correct - Maximum. Chair- But then you have 7 parking spots and then 2 additional spots that are handicapped? Mr Ruggiano-Yes. Chair-So what do you propose for that? Mr. Ruggiano- This is the first I've ever heard of that - as far as distinguishing parking spots between handicapped and regular parking spots, but if that's a problem for the board we have. ample room to provide 2 more parking spaces. Chair-Okay.

Mr Ruggiano-I'd rather not create more impervious but if that's what you're looking for
we can do that. Chair-Sure Mr Ruggiano- I try to keep impervious out as much as I can. We could show some parking maybe over on this side - a couple spaces or whatever. We have room to place parking where we need it to go. Chair-Okay. Tony? Mr Heinlein-I was a little confused but maybe it's straightened out. On page 1 down near the bottom it says -"There will be no storage of scrap material outside the structure." Then I read over on the bottom of page 2, "Any storage outside the building will be contained in box trailers or Dumpsters." Is it in the building? Is it out of the building? Is it both? Mr Ruggiano-Where are you seeing that? Chair-
On the second page it's the last sentence.

Mr Ruggiano-My understanding - and by all means speak up - is that all the recyclable materials are going to be within the building. Those parking spaces should be containers for tractor trailer parking, right? Mr. Burnett-Yes. Mr Ruggiano- They're for empty Dumpsters and box trailers.

Mr Bilodeau. That was my question. What's in those trailers outside? You're saying they're going to be empty? Mr Burnett-Yes. Box trailers are covered and they may have material in them. The Chair noted they seemed to be in kind of a waiting situation.-You load them and stick them over there, he asked. Mr Burnett-Yes. The Dumpsters are on the outside. Mr Heinlein asked if they were the sea-shipping containers that have no wheels. Mr Burnett-No. They're box trailers. The Dumpsters are throw-off Dumpsters. Mr Bilodeau -So

you're saying there will be no storage of scrap metal to be seen outside the building. Mr Heinlein-And the Dumpsters are just there to be filled and then they're removed, I take it? Mr Burnett explained they would bring the Dumpsters to an area inside where they filled them -or they would use them to go from there to pick up from customers located up north or down in this area. At that point they were shipped back to the yard in Hinesburg and shipped up to Montreal directly..

Mr Bilodeau-Your next door neighbor has a Dumpster that's 17 yards. We, as citizens of Georgia, can go and dump metal anytime we want. Is that the type of Dumpster you're talking about out there? You can't see it. It's 8' or 9' high actually. It's not the type of Dumpster you're talking about. Mr Burnett- They're 22' long. There are a 40 yard and 30 yard dumpster. They're 6 or 8 ft high. Mrs Brown asked if they could open up the ends on them. Mr Ruggiano said yes, adding that it was not set up so the general public could go through them. Mr Heinlein - It's temporary storage, I guess. They're there. You fill them and you haul them away. Mr Burnett-Yes. Mrs Brown-You were talking about adding more parking and more impervious. This is all paved. Is that right? Mr Ruggiano-Yes. It's all paved. My thought was I didn't want to add more impervious area. What we could do is provide some .parallel parking spaces maybe in the front here and make up the two spaces. We've got plenty of room to stripe it off if we need to do that.

Mrs Brown asked why there was so much pavement if they were concerned about putting in more pavement. Mr Ruggiano-The majority of that pavement is for tractor trailers to be able to maneuver in and out of the building That's why that's there. Mrs. Brown asked if the Class III wetland had a buffer. Mr Ruggiano-No. Mrs. Brown observed that their drainage looked like it was draining right into it even though they said they were draining to a catch basin.- I don't understand. The catch basis runs into a pipe and that pipe goes underground somewhere, she asked. Mr Ruggiano- It discharges here and goes underground, yes. Mrs Brown- It discharges there? Mr Ruggiano-Yes. Mrs Brown- So where's the pond? Mr Ruggiano- The pond is right here. Mrs Brown -So part of what is marked off as the wetland is the pond? Mr Ruggiano-Yes. The wetland... is the result of ...constructing the pond. Chair- Does anyone have a comment to add. There's really no one here from the public so I'm guessing you guys don't have much comment.

Audience member- I have one question ...Are you required to have a larger spot as far as tractor trailers? Mr Ruggiano-The parking spaces are larger. It's 12' x 40' is what we're showing. The Chair said he wasn't actually sure that was written into their regulations right off the top of his head.- if there's a distinction between one type of parking spot and another. Planning Coordinator-I'm thinking that there is. Chair-But if you look in Architectural Graphic Standards, obviously they always have something separate for those turning radiuses and whatever else. Mr Heinlein-This is being built on Lot 4 and 2? Mr Ruggiano- Lots 4 and 2.- They're buying both lots and the parking that's being put on Lot 2 instead of doing a lot line relocation line, we're using that area through an easement at this point in time. Mr Heinlein-Why don't you do a lot line adjustment for the entire thing as one lot? Mr Ruggiano-Number one, I don't think it's necessary. Number 2, I think they have plans for further development also. Mr Heinlein-What size does that reduce Lot 2 down to? Mr Ruggiano- Lot 2 right now is 2.59 acres The easement area is .39.

Mr Heinlein-Are there any lot size requirements in that park or restrictions? Planning Coordinator-That's a great question. It was previously subdivided. Mr Ruggiano- This area - and I think what you're getting at, Tony, is at the top of the bank, which is this area here, is an undisturbed buffer. We can't develop these lots in this area because it drops off. ... Planning Coordinator- There's a 2 acre minimum in that district. Mr Ruggiano-Lot 2 has the smallest of all the buffers on it because the property line jogs right there. That has the least restriction. Mr Heinlein- What I'm wondering is if you're creating a lot now. You're reducing Lot 2 to an unusable lot. Mrs Brown-It sounds like it-but not quite. Chair- Not quite, By the map I don't think so. Mrs Brown- But that was a good question.

The Planning Coordinator said she was a little curious about the data on the number of motor vehicle trips per day. She asked if that was something that was specific to the project. Mr Ruggiano- That data, when the park

was originally permitted for a Act 250, they allocated a certain number of trips based on the wastewater disposal capacity. That's what we use for the number of trips because there's a limit to the number of employees that can be in the park. Those employees equate to a .truck generation. With that there was a total number and when we exceed that number we have to go back to the Agency of Transportation and they review it again. At this point in time if you'll notice I believe I submitted that with the Conditional Use - the actual breakdown of what businesses in that park have trip allocations. At this point in time there's still an excess left. We're probably getting very close to the next one or two lots where we're going to have to reevaluate that.

The Planning Coordinator said it was still unclear to her. "So 26 trips per day -That's something that was calculated...?" Mr Ruggiano-It was 276 trips divided by the park total - 53 p.m. peak hour trips. So during that time frame there was a breakdown that I provided .that Exit 18 equipment had 41 daily trips - 6 p.m. trip hours. Liquid Measurement, Lot #5, had.60 daily trips with 11 p.m. peak hours. Northwest Solid Waste Management District, Lot #6, had 35 daily trips, 11 peak hour trips. These have all been approved. Based on the ITE Trip Generation Manual, Burnett Scrap Metal is looking to have 26 daily trips on average and 10 peak hour trips. That brings us up to a total of 162 daily trips and 38 p.m. peak hour trips, which gives us 38 and 53; 10 to15 trips from triggering a review by the agency, which is probably one more lot.

The Planning Coordinator noted that it was 26 trips per day for Burnett. She asked if the neighboring businesses were far greater - 35 and 60 trips? Mr Ruggiano- Yes. It's based on what the Trip Generation Manual says they were and what they were approved for. Mrs. Brown -Is this similar to your place in Hinesburg? Mr Burnett said they ran two types of operations in Hinesburg - one ferrous metals and non - ferrous metals. (partially inaudible) Mrs Brown-So for trips per day - do you have any idea what it is?. Mr Burnett said as an estimate it would probably be 50 customers a day We have 2 operations. Mr Ruggiano-That sounds about right. Mr Bilodeau- So actually it's just one lot Liquid Management owns that lot to the south? Mr Ruggiano said it was an undeveloped vacant lot but they owned it . Mr Bilodeau-So Lot 3 is the only one that's left? Mr Ruggiano- We've got 4 lots left to be developed, counting Lot #2 Mr Bilodeau-Right**. The Chair invited a motion to close the hearing. Mr Bilodeau-"So moved." Seconded by Mr Heinlein. (Unanimously in favor). Chair- We are closed. Thank you for coming and we'll send you the usual response.**

Mr Ruggiano-I just got a signature tonight for the Act 250 Wastewater Disposal so we'll be submitting the Act 250 by this week. The application for Site Plan Approval is pending. Chair Are you guys ready? Mr.Ruggiano-We're ready to go.

3. Public Hearing

Appearing before the board was Corey Mack, an engineer with Resource Systems, a transportation firm in Burlington . He identified a diagram he had submitted to the board entitled **Georgia South Village Bicycle and Pedestrian Feasibility Study (Preliminary Alternative Alignments Evaluation Matrix**) Mr Corey's detailed presentation involved him working back and forth between his two easels containing local maps and addressing a TV Access camera as well as the Planning Commission. audience. He began by explaining to the board the ground he hoped to cover for the evening By way of background he said he had been reading the South Village Bicycle and Pedestrian Feasibility Study to analyze the alternatives for both the existing infrastructure and the proposed infrastructure. . Mr Mack said this was the alternatives presentation meeting where he would be discussing the alternatives and where they stand now and some of the impacts - the impacts of the Evaluation Matrix. The alternatives I'm going to be discussing are going to be on the existing infrastructure. As part of the study, as I was saying, there's going to be the future conditions of the future road network - and how all that is. going to integrate, but that's not something where I can evaluate the alternatives at this point because that's so far out into the future. - so that can best be approached in the actual report that

we're going to discuss i.e. what a typical cross section would like; what types of on- street parking; do you want a green strip; do you want street lighting; what type of green character is there. Actually that's very well addressed in the strategic plan. So I don't want to reinvent the wheel. I kind of just want to coordinate everything.

So not to try to reinvent the wheel, but just trying but to put everything into a comprehensive package - so when somebody comes along to develop a large swath of land, this is the document that we approved to have the Town standards for this mixed use Smart Growth area

Mr Mack said he had circulated to the Steering Committee a while ago the base alternatives. He indicated that South Village was a red area. He said they discussed some draft alternatives like a sidewalk on the north side of Ballard Road; sidewalks along both sides of Route 7; and sidewalks on both sides of VT 104A. He said those were obvious alternatives. There's not too much really different between what makes sense on the north side and on the south side. As we evaluated that, we took some of the previous information we put together for the origins and destinations and the way that the land use is currently - where people are going to be walking from or they're going to be walking to. - what make the most sense for immediately constructable alternatives - so we don't want to build a sidewalk that goes nowhere.

Mr. Mack-In addition to that, I will also be analyzing what's currently out there now since there are already some segments of sidewalks. I know that Ray Bouffard is planning on building some segments of sidewalk. So what would make the most sense to integrate into that as well as what can be integrated. Some of it, like the sidewalk in front of the new bank, is in their ROW. So if I was to propose something, it would be on the State ROW so one segment would be like 5' inside the ROW, and one segment would be like 5' outside the R0W. So you'd have this kind of non-continuous segment. That's kind of rare. We're coming up with a further alignment. It makes sense to utilize the funding that you get where it will make a further alignment, like a straight alignment - and the other areas can be developed with sidewalks as that development progresses with the village. But we're going to do existing infrastructure right now along the road before all this and you kind of want to do whatever makes the best sense at that time. Included, he said, they had looked at the intersection here, and looked at the Park & Ride. They also had looked at a little bike path alignment along here for what the potential was going to be but he noted that obviously was near the campground so it was not really a feasible immediately-constructable alternative.

Mr Mack said he was moving into some alignments. He said the first one was along Ballard Road and was pretty simple. He said what he was basically proposing here was a 5' green strip on the north side of the road and a 5' sidewalk. He said he was not proposing curbing because with curbing came the installation of storm drainage. He, recalled that at their last meeting, when V-Trans had been present, they had advised the board that road drainage construction could lead to a very hard permitting project. His proposal was to work within the existing drainage patterns. Some sections of Ballard Road have a nice ditch and some sections do not, he said. .It can be an opportunity to work within the existing infrastructure. He said that basically the segment of sidewalk as shown on the easel would serve from the church down to Route 7. He noted there were a couple of driveways along the way but he commented that it was good opportunity for development of the area. He saw no utility impacts. They weren't exactly sure where water lines were and no wells were shown, he said. He identified the appearance of color coding on the easel He said the darker the red, the worse it was and the brighter the green the better it was.. Ballard Road showed a darker red, he said, and here it was indicating more landscaping impact. He noted there were two corners of Ballard road where there were ROW encroachments. He said he didn't think that was necessarily the case. In that regard he said he was kind of working on tax mapping which isn't 100 percent certain. Also this corner of Ballard Road right here has excessive .pavement so if that's where the ROW is now, it's already an encroachment. Mrs Brown - I was thinking if you take 10' from where that pavement is it's going to be in that house. Mr Mack-Yes. One of the features of this is they'd be reducing the radius there. It would clean it up quite a bit.

With pages of the easel flipped to what Mr Mack called the southern segment of Route 7 on the easel and which also showed the western side of Route 7, the 104A intersection and Ballard Road where we just were. Mr Mack-I'm showing a sidewalk that goes from that corner where there's pavement all the way up. It starts at the current campground and goes all the way out to 104A. Among some of the notable features here on the east side is Ray's Market. I kind of threw away an alignment there. That's kind of up in the air based on his site plan and what his intentions are for that lot. He's been having conversations with V-Trans and I'm not exactly sure how that will work out but it should be coordinated together. He's got the two driveway access points so you can really end it on the side of the driveway access points and then and have a sidewalk through the driveway or whatever makes the most sense for room for vehicles and customers and everything. I'm kind of showing here is large ditches on the west side of the road. Then kind of turn and venture west by the farm stand - the Clover Leaf farm right there. That's kind of where the main drainage pattern goes. I'm showing the sidewalk off to the edge of the ROW and hoping to minimize impacts to those ditches; also by getting people away from the road, which makes it a more pleasant environment. You don't want to be walking next to Route 7 if you don't have to. That makes it easier for maintenance on Route 7 with plows throwing all their snow covered with dirt and salt and sand. You kind of have a buffer between those activities.

Mr Mack-It's the same with both of them. So they're both kind of on the outside of the ROW. I kind of tried to where like fence line along campground is and try to stay inside that. I show utility poles which are all along the west side of the sidewalk. So that's the basics of that. It gets more complicated as you get past Finnian's Auto Parts and then into the Supervisory Union. There's a big ditch there and a tight corner. There's really not a good, clean way to approach that intersection. But as we discussed - put all the alignments together. So while it's not the cleanest ending as it's shown, there are opportunities to make that right. I'm also showing on the west side - the sidewalk kind of comes up. This is the new bank right here and this is the hair salon. It kind of comes up on the inside of the ROW - but the sidewalk is on the outside of the ROW. That's where I'm talking about. If you need to use public funds to build a sidewalk, it has to be public land. So if you try to build that sidewalk, it has to align perfectly and you're going to get into a lot of issues trying to acquire that land. Personally I wouldn't be too happy if it were my property. That's something to consider. I'll come back to this alternative matrix. (In the interest of shortening the minutes, I'll change gears and move on to the discussion between the board and Cory Mack.)

4. Discussion With Mr Mack

Chair- What are you looking for from us tonight? Mr Mack - Whether or not you're approving of the general way I've been talking about sidewalks along Route 7. Do you want it to be curbed? Do you want to proceed with some sort of document- preferred alternative, or else let's make it a more urban feel or do you want to try to make it work with the existing infrastructure as much as possible. The way I've been proceeding with some sort of alternative in my head, the most reasonable would be from the church to Route 7 and parking lot - then up Route 7 on the west side until about the Creemee Stand and the parking lot .and then some sort of crossing over the campground and then up on the west side and then kind of coordinate with Ray's plans to develop all of that. So basically the sidewalks would go...along, but the east side of Route 7 and the north side of Ballard Road and then the potential for widening of 104A - but maybe not the whole sidewalk development at this point - but coming up with a preferred section for future development if that does come about.

Mr Bilodeau posed a question in regard to the information Mr Mack had given the board this evening. He said in the past with many studies they had done, at a later date they had been able to use that information - in cases such as wastewater studies etc. He asked if this information Mr Mack had provided was something they could use to sell this kind of program to either the public or V-Trans or the State of Vermont to get grants. Mr Mack-Absolutely. This is the backbone of the future of a Transportation Enhancement grant. This is what we're selecting for an alignment. We take a look at all the impacts. We know what's kind of out there.

You've discussed it - that it fits in with the community character and with the purpose and need and what the idea is of what infrastructure is needed. That's what will be brought to the next level to get your final studies done and you do a conceptual design and then you take that to the engineering design. Mr Mack- That's one part of the study. The other part of the study is setting it up for future development and guidance so that if we say this is going to be a 5' asphalt path through here- but that the purpose of the 5' asphalt path is that someday it will be a bike path that goes all the way along to 104A; or as a potential network of pathways that go through the South Village - that the idea is that it's all interconnected and it provides some mechanism to ensure that it's a comprehensive development of the sidewalks.

Mr Mack -So there are two parts. There are the immediate constructable- alternatives which I was focusing the presentation on today and then also the future development strategy of the comprehensive network That's sort of up in the air. I don't expect anything will be decided tonight. I proposed that I would come up with a preferred alternative centered around your Steering Committee, have them approve it and have that written up in the draft report. I will present the draft report again to the Planning Commission .but you'll have a chance to read and comment on it and consider whether to proceed. In the end of the document we'll talk about the next steps.
The final steps of where this is going will be identified and identifying funding sources to construct the preferred alternative. You can look into tax incremental financing to leverage this developable area to get other infrastructure improvements. You need to do the super system. I know that's a big issue in this area; but also to do infrastructure improvements to entice more development. There's always the chicken and the egg scenario. What is the public going to provide and what's going to be provided by the developers So there's the .idea of the scoping center and this is kind of getting beyond the scope, but the idea is there will be a working document that you can then take to the next level.

<u>Feedback</u>
Chair-I'll give you my feedback and the rest of the board can also give you theirs. The Chair said from a conceptual standpoint he thought it was good. He said that obviously it was not a big area that they were talking about and it wasn't doing something like the City of Winooski. He said what was presented made sense and he could envision they would pick pieces of it when they decided to go for a grant. For instance, instead of doing both sides of Ballard Road, they would do one side, and maybe only one side of 104, or whatever. "But in your experience of doing these and when it gets to the grant portion of it, do you just go for as much as you can and hope for the best?" Mr. Mack said the larger grant that comes out is $300,000. He said they kind of looked at these numbers...Ballard Road is $300,000. That's a pretty obvious one - and that's the east side of Route 7 - which are the two alternatives of pushing forward- which are my preliminary preferred ones. Those are both under $300,000 so those could be two separate Transportation management grants. They do other grant funding sources that are detailed and sometimes they combine them and can get some certain things to happen, but it's uncommon.

Chair-As a comparison, do you know, for example how Milton funded all of theirs and how all of that transpired? Mr Mack-I could not tell you that right now. Those funding sources will be evaluated. The Chair asked if the taxpayers had paid some of it and had there been others also. Mr Mack said that most likely it would be a matching grant of a certain percentage. Kind of like Safe Routes To School Funding. That doesn't require a 20 percent match and a lot of the safety funding, which is kind of on the drawing-up side of funding sources, doesn't require 20 percent. It depends on the source;. like if it's Federal, you've got a better chance of getting 100 percent If it comes through the State then you've got the 20 percent match, or a lot of communities like Middlebury who just did that bridge. There are roadway improvements right now that are 100 percent funded by taxpayers, and they have a nice college there.. If you want the best you've got to do your own money, but if you want it done with Federal dollars, it's going to take more money. You have to break it up into bite-sized chunks and reasonable, thoughtful things. You can't just build like say this section of sidewalk here and it's going to be $300,000. "Let"s build that," but there's no sidewalks on it. That will not happen.

Chair- When you go back for a grant repeatedly is that copasetic with them? They don't say, "Oh, You've already been here." Mr Mack-They will weigh it to some degree. but it's not rare to get grants over and over again. It depends on political relationships and it depends a number of things. If you have a well-defined plan and also if the community has shown its support for building this larger thing and comes up with its own funding and developing like with impact fees that pay for certain aspects of it; then that may hold some sway to say that this is a comprehensive plan and it might make it more likely - rather than saying, I only want to build a small segment and maybe do the rest later. That would probably happen less. Mr Bilodeau-It was used and I'm trying to think of which. Ballard Road! was #1. Ballard Road is walked up and down even more than Route 7. The west side of Route 7 would be #2, and the east side of Route 7 would be #3. After that I don't know, but those areas are the areas that people are walking right beside. Actually, coming down Ballard Road. - They're going over to Ray's or the Campground. Chair-One thing to build on that - one thing that we didn't really discuss - and it's kind of out of the scope here - is Laura's Woods, which is a rather large development, and is just on the other side of the interstate - like if you keep going down Ballard Road and you duck under the interstate, there's a big housing development there. - It was not built with the idea of people walking around the development. There's no sidewalks and there's this enormous boulevard of road that encourages people to just go. But that aside, it could be a source of pedestrian and bicycle traffic into this area.

Mr Bilodeau- This says Nottingham Drive and Round's Road are as big as Laura's Woods itself and that's where the people are coming from. Mr Mack-Getting to your comment, George. about the west side and the east side, I think the way that I was looking at both the land use and the destination of pedestrians or a cow path or a sidewalk or some sort of a structure. But the reason is I was thinking this would be the more direct route for a pathway or a sidewalk or some sort of a structure. The reason why I think that the east side makes more sense is because this would look like a big chunk of developable land that you can use to leverage when there's a large development coming in. So you don't have to pay for that - whereas this side has already got a bunch of established businesses that are probably going to be the last ones to be redeveloped. That's why I was thinking that this side is something that can be used for medical or...

Mr Bilodeau-My thoughts are that you seem to have people walking up that side and exercising. The guys on the east side are actually going to the campground, to Ray's or to the Auto Parts Store, or what have you. Mr Mack- I'm not sure where they're coming from but they might just be walking on this side because they're going to the Maplefields, or something. Mrs. Brown- There are people who walk all the way down to the bridge. Mr Bilodeau--And the library. Mrs. Brown-And they keep right on going. They walk their dogs to crazy places to exercise. Audience member-And there are a lot of joggers... Mr. Mack- I don't know if their ultimate destination is on that side of the road and that's why they're staying on that side of the road - but maybe if there was a sidewalk on the other side of the road.... Mrs Brown- Yes. I think they would use the sidewalk if it was on the other side. Mr Mack- I don't want to unnecessarily cross so if that becomes an issue of where they're coming from - Are they walking on this side because that's where they're going to or coming from? Never mind. So keep that in mind. Mr Mack-The next steps I was going to discuss a little bit. .l am going to be taking these alternatives and a couple of modifications of what we were talking about and what I think are the main things and then putting that into a report and write up all these alignments and kind of weigh the pros and cons and hopefully narrow it down to a preferred set of immediately constructable-alignments. That's not to say that a sidewalk on the east side or the west side of Route 7 or the east or west side of 104A isn't going to be built' but just that it's not going to be a priority. So then I will prepare that and write up the grant report and circulate .it to the project's Steering Committee, which is some half the people here. They will get the initial comments. I'll represent it here and we can do it over again. The final report will be to the Selectboard.

Question: What about the round about? You say the traffic is going to increase. There's a lot of truck traffic on 104. What about trucks getting around there? Mr. Bilodeau-They should be able to. Answer- Should and

can are two different things. Mr .Mack-This cross-hatched area is sort of a paved island. I didn't really design this to the degree that I should have. Usually what we do is run like little model trucks. We drop them in and it shows the actual path of the truck, and the off- tracking of the trailer is based on the largest size that is typical, which I imagine could be found on any highway. This will be designed as a center island. Then you have these spliter islands that will be designed to be either mountable or there will be enough shoulder there so a truck can get through it. Mr Bilodeau said that from a certain corner there was only one lane coming off of 104A. He said that people invariably had overtaken a tractor trailer and driven their cars up on its side. The driver cannot see that car. They have run over the cars. They do it all the time. Mrs Brown - The road is so wide. That's why they do it. The comment was made that it was a high-crash location. Mr. Mack- This intersection, though. I'm not going to be studying it much more than this right here. This is just to show the possibility of crosswalks here. As Heidi was saying, there's a study specifically about the intersection alignments It maybe signalized or a round about as well as a concrete bridge. Another issue is the slip lane here that I'm showing. now because it's going to be grass. That would potentially clear up the way that traffic progresses. The Chairman said the slip lane was not really a slip lane. Mr Mack-No, it isn't. Chair- It's black. Mr Mack-Yes. Mr Mack said this brought him to one of his favorite parts of this - the Park & Ride and the possibility of this walk here. The buses could come off I-89, pull in here, let people on and off really quickly and go through the round about and turn around.

Right now I don't even know how they do that. The Chair said they went down to the Morse Industrial Park and do a three point turn down there. Then they come back to the existing Park & Ride. Mr Mack-The operators - the bus system - the CCTA, they don't really like pull -offs like that because they have to try to reenter the traffic stream. And also at peak periods this might be a little bit of a cue and take a little longer to get into the traffic lanes - but probably not much longer than it currently takes them to pull out of Skunk Hill Road. The Chair agreed that they got stuck there. I actually had a 104 question, but I also wanted to ask you a question on the Park & Ride, but it's sort of unrelated. He said on 104A Mr Mack had shown the sidewalks. You were talking about closer to the existing travel lane rather than pushing the envelope of the ROW? Mr. Mack-Yes. The Chair said he was just wondering if they wouldn't want to consider pushing it to the envelope of the ROW in case they want to widen 104A larger. Mr Mack said that had been considered with these alternatives to say - like they had put these sidewalks so that there would be a 5' shoulder on 104A.

Mr Mack said that was considered so it wouldn't be so shown where they are. He said he was not expecting 18' lanes and 10' shoulders or a huge highway. He said he could imagine 11' lanes and a 5' shoulders which would be a nice sized road that would provide great bicycle access and really good safety features. I think it is optimal for the volume - the existing volume -and current functional classification of the roadway. I would say right now I'm kind of thinking of a 12' lane and a 2' shoulder, or something, but I was kind of considering for it to be the ultimate width, or something.. Chair- That's good. The Chair invited the audience to add their input.

Audience member- This is good. The only question I have is does the utility ROW impact on the placement of sidewalks? Mr Mack.- Yes. You don't want to impact utilities because then you start to get into the question of who pays for them and the poles. It's usually easier to leave them where they are. Often the .utilities are in the ROW. It's a V-Trans project and if V Trans wants them to be moved they'll be moved. On this alternative matrix I have utility impacts. It's very simple right here - "More" or "Less" and "Moderate" - Looking at Ballard Road, it's "less" and 104A is the one where it's at because on Route 7 the roadway is so wide that the poles are on the outside. You've got a lot of room in between to work with. There are issues with ditches, etc. You should be able to work with it. That's why I have it at "less". It's not, " No impacts". There might be something, but It's less likely to be a game- changer; whereas on 104A there are a lot more of those possibilities. On 104A, you have crossing the road back and forth, you have guy wires; you have all kinds of things that could get in the way.

Mr Heinlein-What do you carry for roadway ROW on Route 7 for width? Mr Mack-It's 100' is what I was having through here. .And it tapers I think you can kind of tell for some reason. The point I'm showing is the orange line in the ROW on parcel mapping, and from the parcel mapping and the width on those, I kind of inferred a typical number and so it's like close to 100', which is typical. I mean it's a 6 rod roadway. Mr Heinlein- It is right out here. It's 6 rods. It goes down the Ballard Road 6 rods but it's not the Ballard Road portion that you're showing. That portion I believe is only 3 rods. Mr Mack- Yes. I show it as it goes down the Ballard Road. Mr Heinlein- That 6 rod layout came about when the road was first laid out and that portion of Route 7 is not the original. That road was out here. (More than one voice speaking)

There was a little conflicting information among board members as to the exact location of the old Route 7. Mr Bilodeau advised that NW Regional Planning had that information. Chair-And it's pretty whacky. Audience member-It's very wide. It's like 170' or something wide. It's like 85' or 86' on my side of the road. Mr Heinlein-When they built the interstate did they buy the additional ROW? Audience member-Yes. They bought all of that. The board touched on the availability of old maps from the State. The Chair invited any closing input (None)

5. Chair-I'll take a motion to enter Deliberations. Mr Bilodeau moved to come out of open session and enter Deliberative Session. Seconded by Mr Heinlein. Chair-All in favor? (Unanimously in favor.) Motion Carries

Following deliberations the board made the following motion.

Maurice Fitzgerald made a motion to approve the Burnet Metal Site Plan with the following conditions:

. The number of parking spaces for employees and patrons would be increased by 5 to a total of 14 car spaces. The number of truck spots can remain the same.

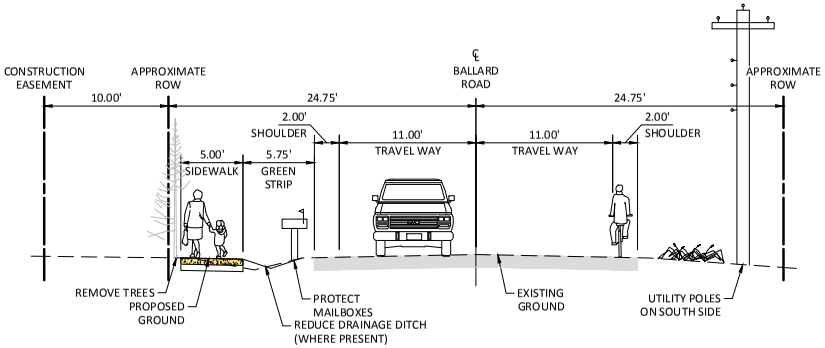
. The screening around the truck parking area will enclose the area from view from Morse Drive as well as Skunk Hill Road.

. Outside storage will be in designated box trailers or Dumpsters. Dumpsters will be emptied when full. No permanent outside storage permitted.

Motion seconded by Mr Bilodeau. No discussion All in favor. Motion Carried.
The open session portion of the meeting ended at 8:45 p.m.
The meeting adjourned at 9:40 p.m.
Respectfully submitted,
Joan Jordan

DRAFT

DESIGN STUDY ONLY



BALLARD ROAD IMPROVEMENTS TYPICAL SECTION

LOOKING EAST ALONG BALLARD ROAD
NOT TO SCALE

LEGEND

- EXISTING ROADWAY / SIDEWALK
- APPROXIMATE EXISTING RIGHT - OF - WAY
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY IMPROVEMENTS
- PROPOSED TURF RE-ESTABLISHMNET

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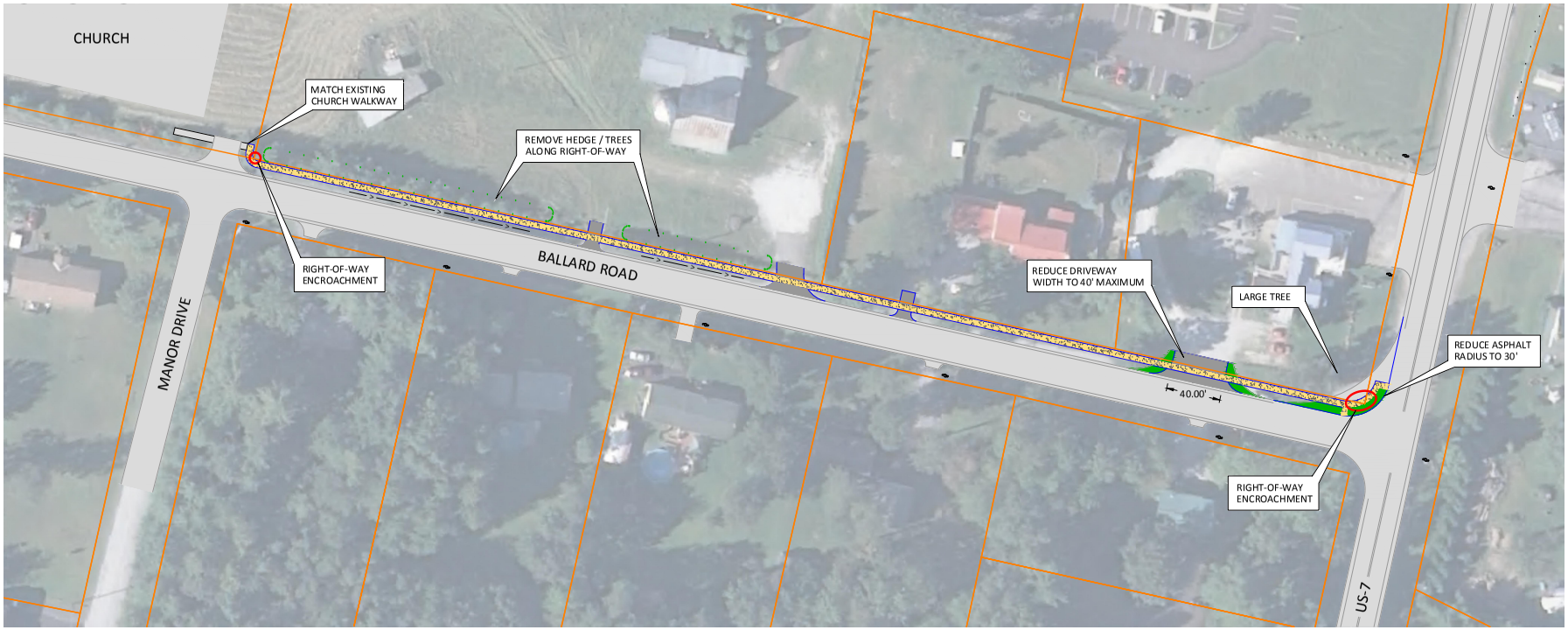

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SOUTH VILLAGE BICYCLE AND PEDESTRIAN FEASIBILITY STUDY

GEORGIA, VT

BALLARD ROAD IMPROVEMENTS

REVISIONS		
DATE	DESCRIPTION	BY

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DES BY: CDM	1
CHKD BY: -	OF
DATE: 7/21/11	9
PROJ #: 10261	

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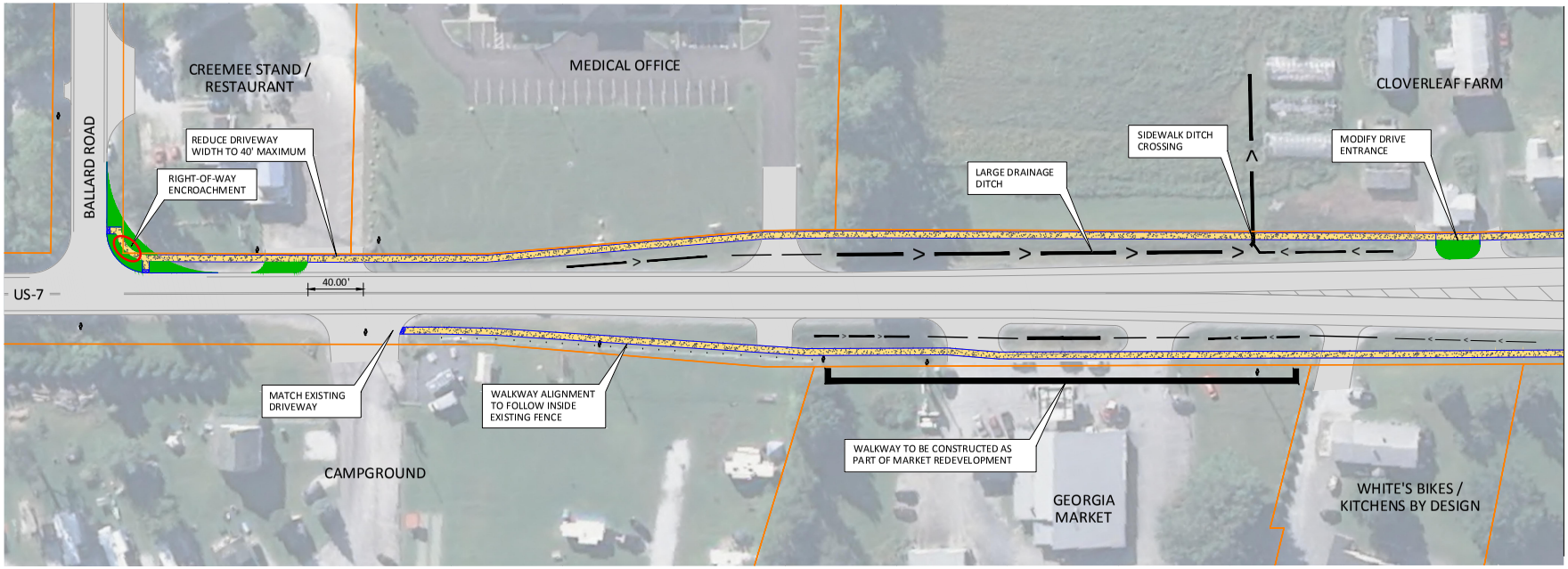

LEGEND

- EXISTING ROADWAY / SIDEWALK
- APPROXIMATE EXISTING RIGHT - OF - WAY
- UTILITY POLE
- DRAINAGE DITCH
- CULVERT
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY IMPROVEMENTS
- PROPOSED TURF RE-ESTABLISHMNET

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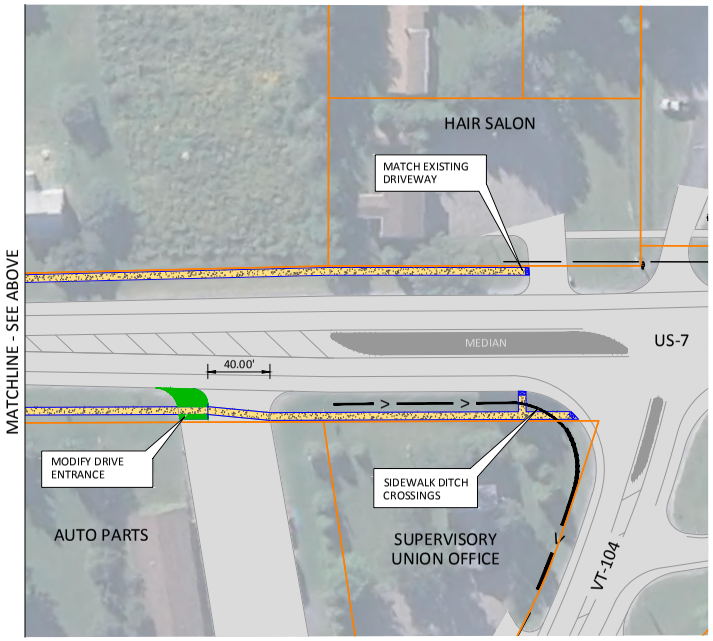

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SOUTH VILLAGE BICYCLE AND PEDESTRIAN FEASIBILITY STUDY

GEORGIA, VT

US-7 IMPROVEMENT OPTIONS - SOUTH SECTION

REVISIONS		
DATE	DESCRIPTION	BY

SCALE: 1"=40'	SHEET
DES BY: CDM	2
CHKD BY: -	OF
DATE: 7/21/11	9
PROJ #: 10261	

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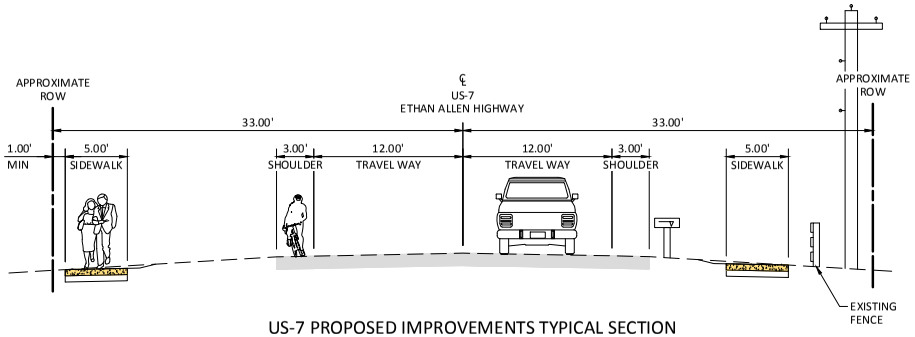
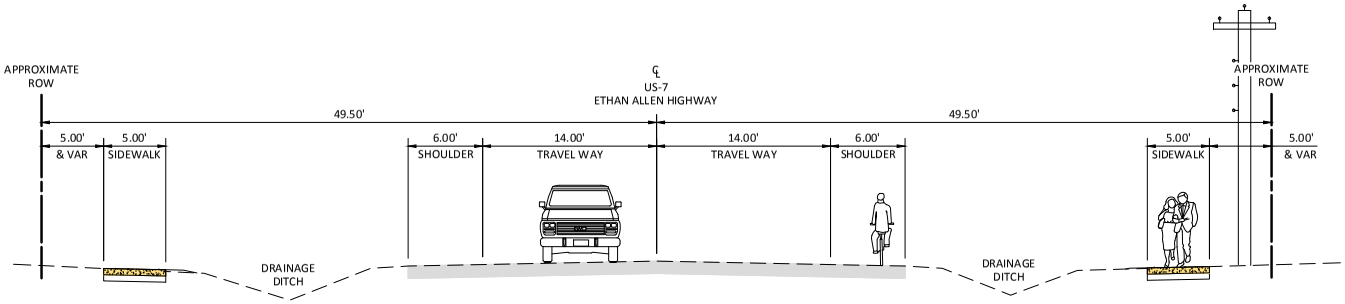
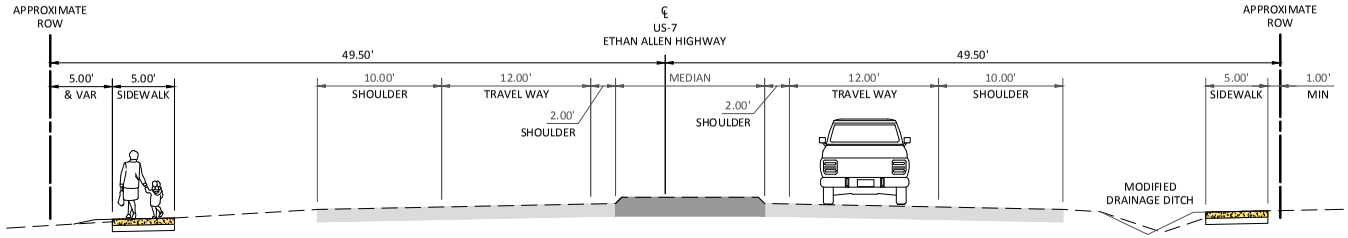


US-7 PROPOSED IMPROVEMENTS TYPICAL SECTION
4 ROD ROW, 2 LANE ROADWAY
LOOKING NORTH ALONG US-7 NEAR CAMPGROUND
NOT TO SCALE



US-7 PROPOSED IMPROVEMENTS TYPICAL SECTION
6 ROD ROW, 2 LANE ROADWAY
LOOKING NORTH ALONG US-7 NEAR GEORGIA MARKET
NOT TO SCALE



US-7 PROPOSED IMPROVEMENTS TYPICAL SECTION
6 ROD ROW, 2 LANE ROADWAY WITH MEDIAN
LOOKING NORTH ALONG US-7 NEAR SUPERVISORY UNION OFFICE
NOT TO SCALE

DRAFT

DESIGN STUDY ONLY

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Northwest Regional Planning Commission
155 Lake Street
St. Albans, VT 05478
(802) 524 - 5958

SOUTH VILLAGE BICYCLE AND PEDESTRIAN FEASIBILITY STUDY

GEORGIA, VT

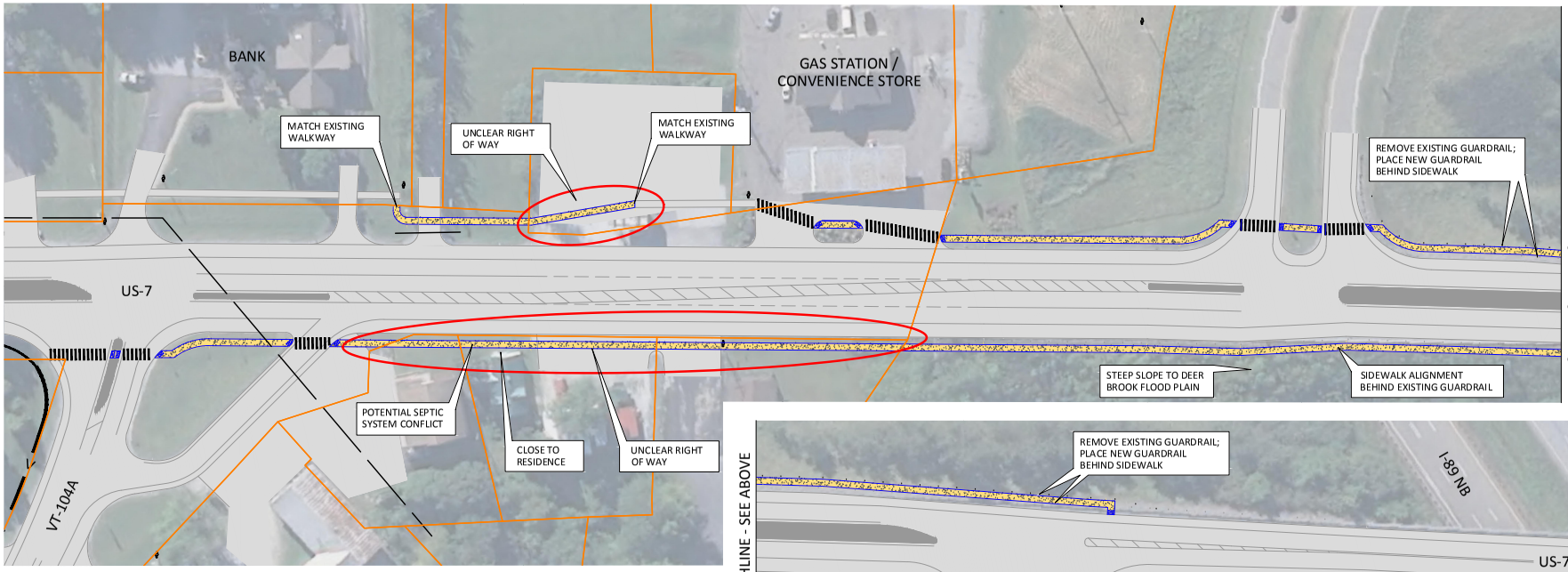
US-7 IMPROVEMENT OPTIONS - SOUTH TYPICAL SECTIONS

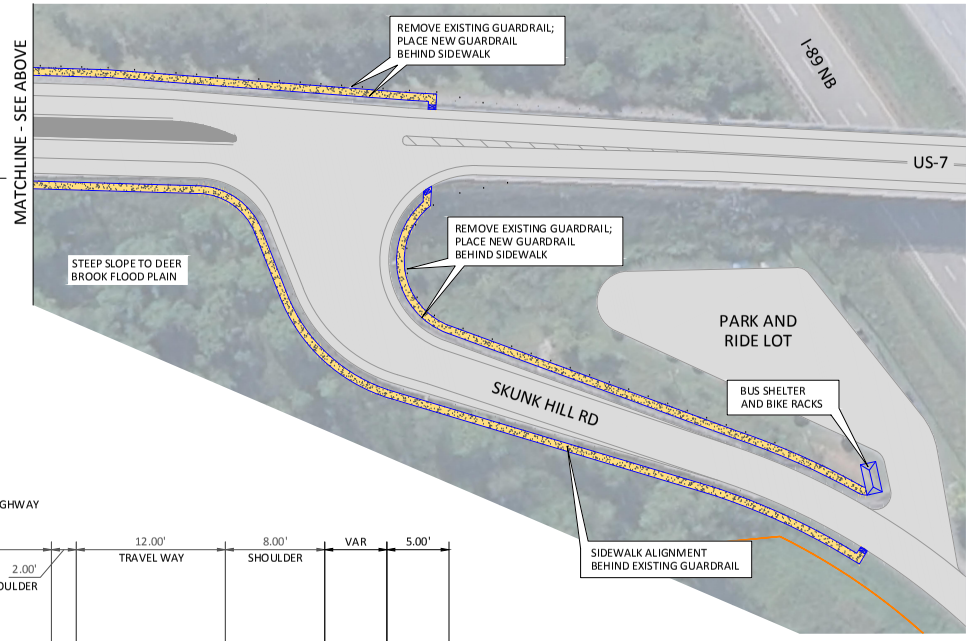
REVISIONS

DATE	DESCRIPTION	BY

SCALE: NTS	SHEET
DES BY: CDM	3
CHKD BY: -	OF
DATE: 7/21/11	9
PROJ #: 10261	

V:\Projects\Georgia - South Village Sidewalk Study - 10261\CAD\10261 - US-7 - SW West.dwg



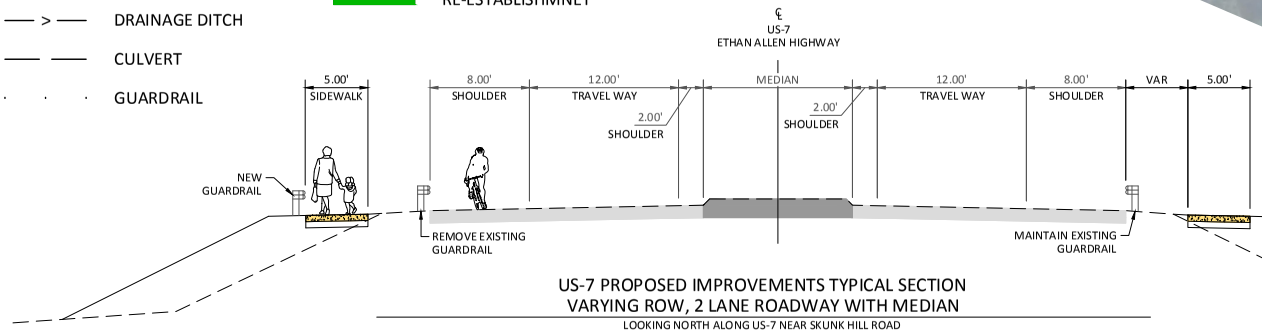


SCALE 1"=40'

40 20 0 40 80

LEGEND

- EXISTING ROADWAY / SIDEWALK
- APPROXIMATE EXISTING RIGHT - OF - WAY
- UTILITY POLE
- DRAINAGE DITCH
- CULVERT
- GUARDRAIL
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY IMPROVEMENTS
- PROPOSED TURF RE-ESTABLISHMNET



US-7 PROPOSED IMPROVEMENTS TYPICAL SECTION
VARYING ROW, 2 LANE ROADWAY WITH MEDIAN

LOOKING NORTH ALONG US-7 NEAR SKUNK HILL ROAD
NOT TO SCALE

DRAFT

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SOUTH VILLAGE BICYCLE AND PEDESTRIAN FEASIBILITY STUDY

GEORGIA, VT

US-7 IMPROVEMENT OPTIONS - NORTH SECTION

REVISIONS		
DATE	DESCRIPTION	BY

SCALE: 1"=40'	SHEET
DES BY: CDM	4
CHKD BY: -	OF
DATE: 7/21/11	9
PROJ #: 10261	

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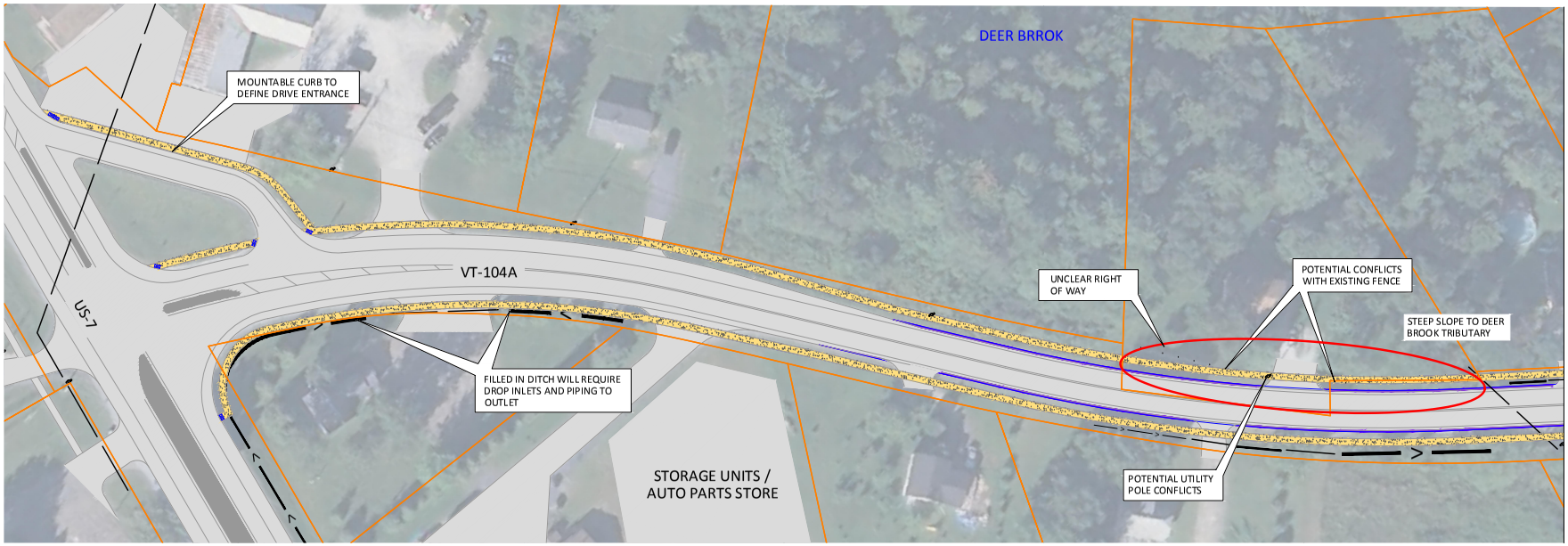


LEGEND

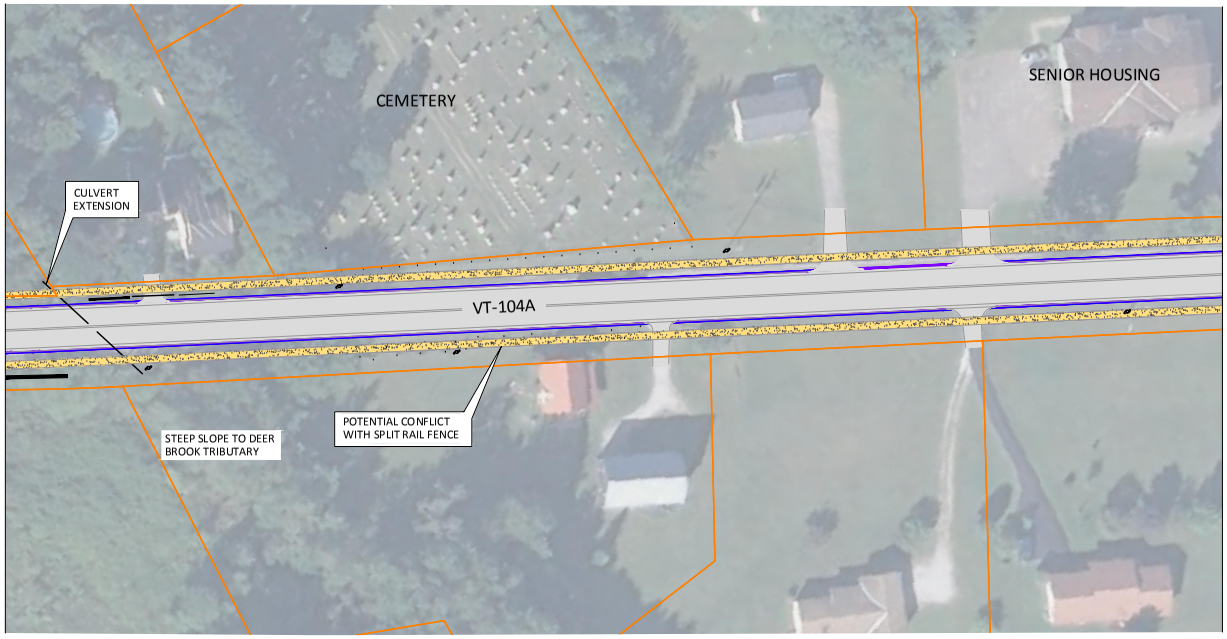
- EXISTING ROADWAY / SIDEWALK
- APPROXIMATE EXISTING RIGHT - OF - WAY
- UTILITY POLE
- DRAINAGE DITCH
- CULVERT
- GUARDRAIL
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- PROPOSED TURF RE-ESTABLISHMNET

DRAFT

DESIGN STUDY ONLY

SCALE 1"=40'

40 20 0 40 80



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SOUTH VILLAGE BICYCLE AND PEDESTRIAN FEASIBILITY STUDY

GEORGIA, VT

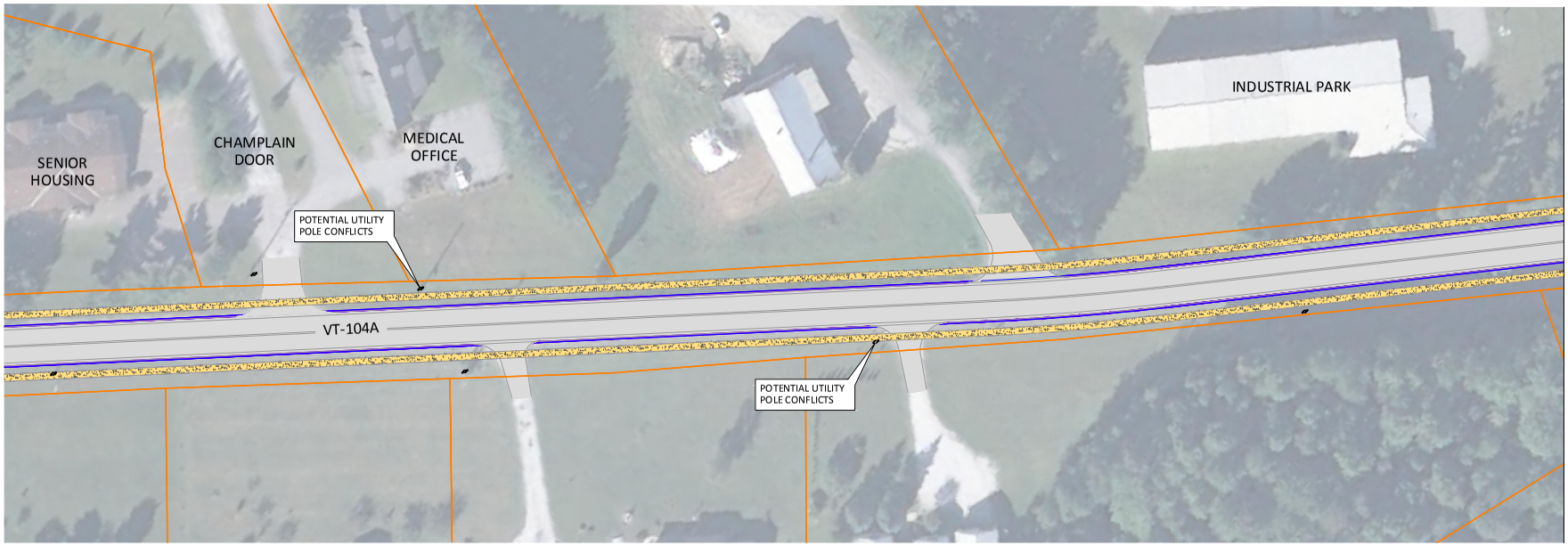
US-7 IMPROVEMENT OPTIONS - NORTH SECTION

REVISIONS

DATE	DESCRIPTION	BY

SCALE: 1"=40'	SHEET
DES BY: CDM	5
CHKD BY: -	OF
DATE: 7/21/11	9
PROJ #: 10261	

V:\Projects\Georgia - South Village Sidewalk Study - 10261\CAD\10261 - US-7 - SW West.dwg

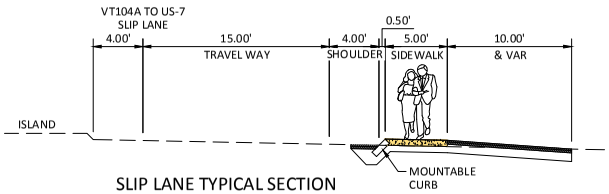


LEGEND

- EXISTING ROADWAY / SIDEWALK
- APPROXIMATE EXISTING RIGHT - OF - WAY
- UTILITY POLE
- DRAINAGE DITCH
- CULVERT
- GUARDRAIL
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- PROPOSED TURF RE-ESTABLISHMNET

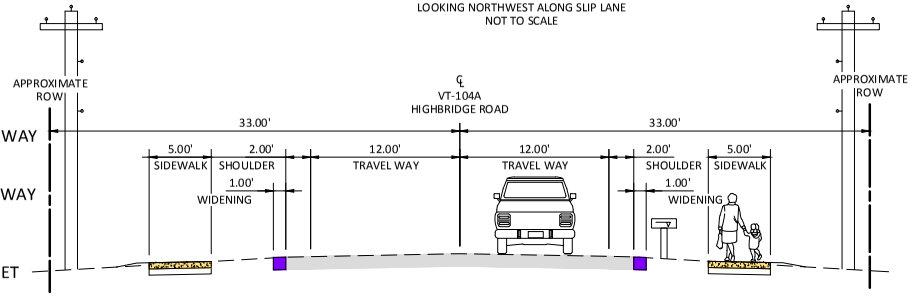
SCALE 1"=40'

40 20 0 40 80



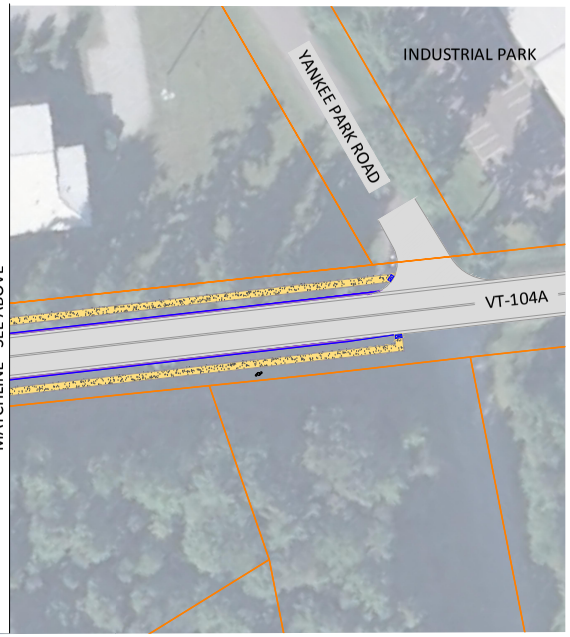
SLIP LANE TYPICAL SECTION
VT-104A TO US-7

LOOKING NORTHWEST ALONG SLIP LANE
NOT TO SCALE



VT-104A PROPOSED IMPROVEMENTS TYPICAL SECTION
4 ROD ROW, 2 LANE ROADWAY

LOOKING SOUTHEAST ALONG VT-104A (HIGHBRIDGE ROAD)
NOT TO SCALE



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SOUTH VILLAGE BICYCLE AND PEDESTRIAN FEASIBILITY STUDY

GEORGIA, VT

US-7 IMPROVEMENT OPTIONS - NORTH SECTION

REVISIONS

DATE	DESCRIPTION	BY

SCALE: 1"=40'	SHEET
DES BY: CDM	6
CHKD BY: -	OF
DATE: 7/21/11	9
PROJ #: 10261	

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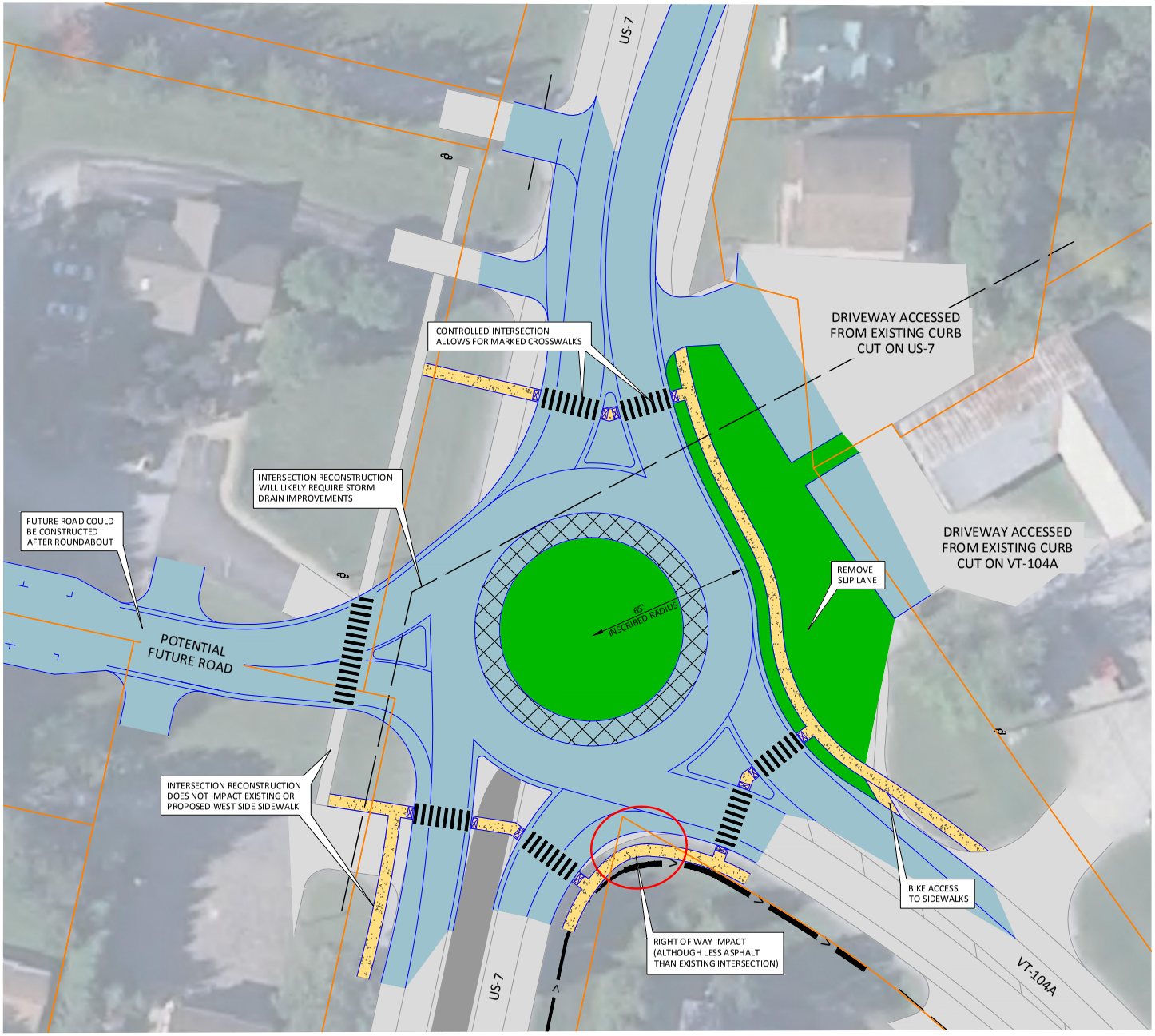

EXISTING ROADWAY / SIDEWALK

APPROXIMATE EXISTING RIGHT - OF - WAY

UTILITY POLE

DRAINAGE DITCH

CULVERT

GUARDRAIL

PROPOSED SIDEWALK

PROPOSED ROADWAY IMPROVEMENTS

PROPOSED TURF RE-ESTABLISHMNET

SCALE 1"=20'

20 10 0 20 40

DRAFT

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SOUTH VILLAGE BICYCLE AND PEDESTRIAN FEASIBILITY STUDY

GEORGIA, VT

US-7 / VT-104A INTERSECTION IMPROVEMENTS - ROUNDABOUT

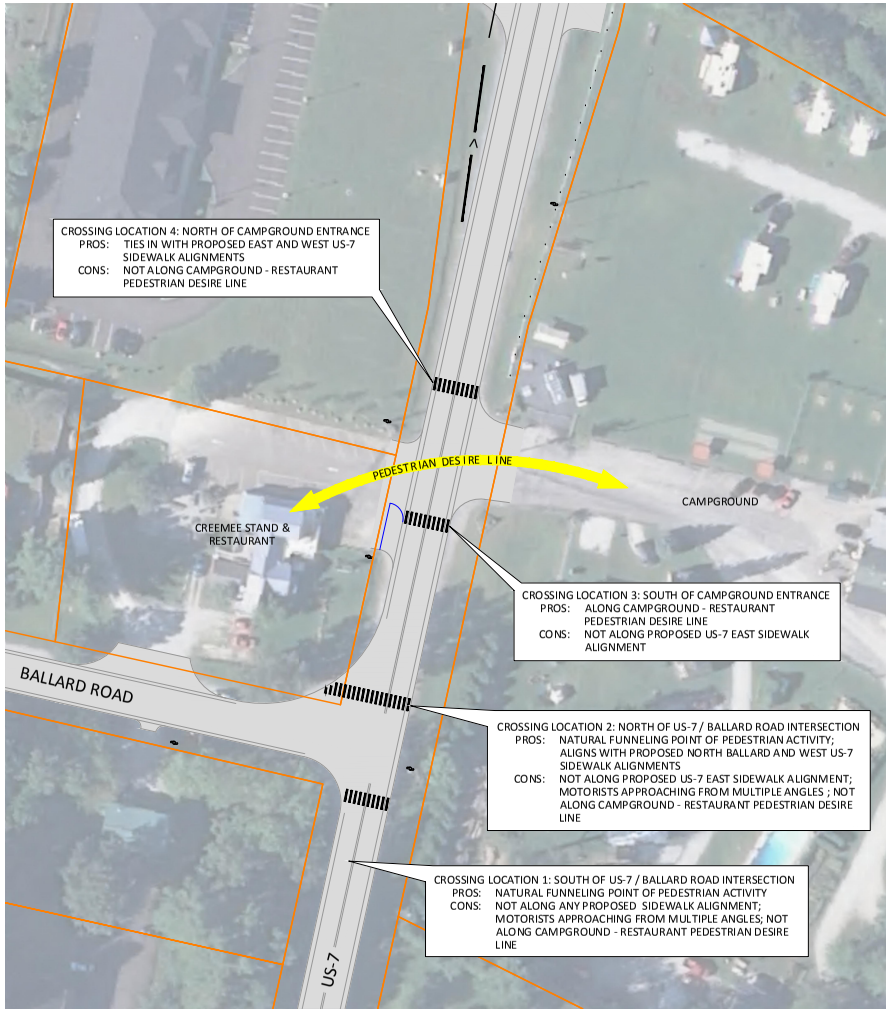
REVISIONS

DATE	DESCRIPTION	BY

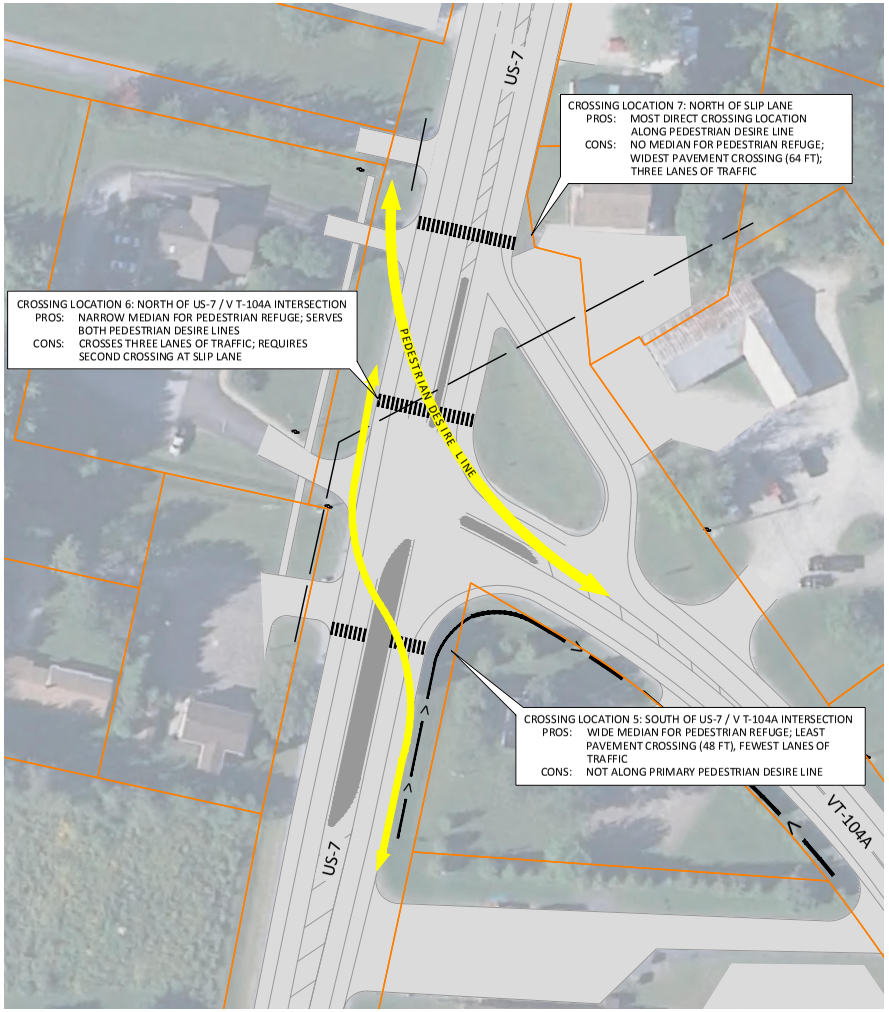
SCALE:	1"=20'
DES BY:	CDM
CHKD BY:	-
DATE:	7/21/11
PROJ #:	10261

SHEET 7 OF 9

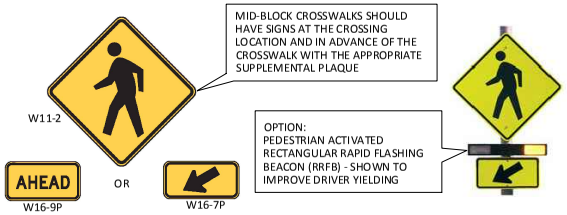
V:\Projects\Georgia - South Village Sidewalk Study - 10261\CAD\10261 - US-7 - SW West.dwg



US-7 SOUTH POTENTIAL CROSSING LOCATIONS



US-7 NORTH POTENTIAL CROSSING LOCATIONS



LEGEND

- EXISTING ROADWAY / SIDEWALK
- APPROXIMATE EXISTING RIGHT - OF - WAY
- UTILITY POLE
- DRAINAGE DITCH
- CULVERT
- GUARDRAIL
- PROPOSED CROSSWALK MARKING
- ANTICIPATED PEDESTRIAN DESIRE LINE

SCALE 1"=20'

20 10 0 20 40

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SOUTH VILLAGE BICYCLE AND PEDESTRIAN FEASIBILITY STUDY

GEORGIA, VT

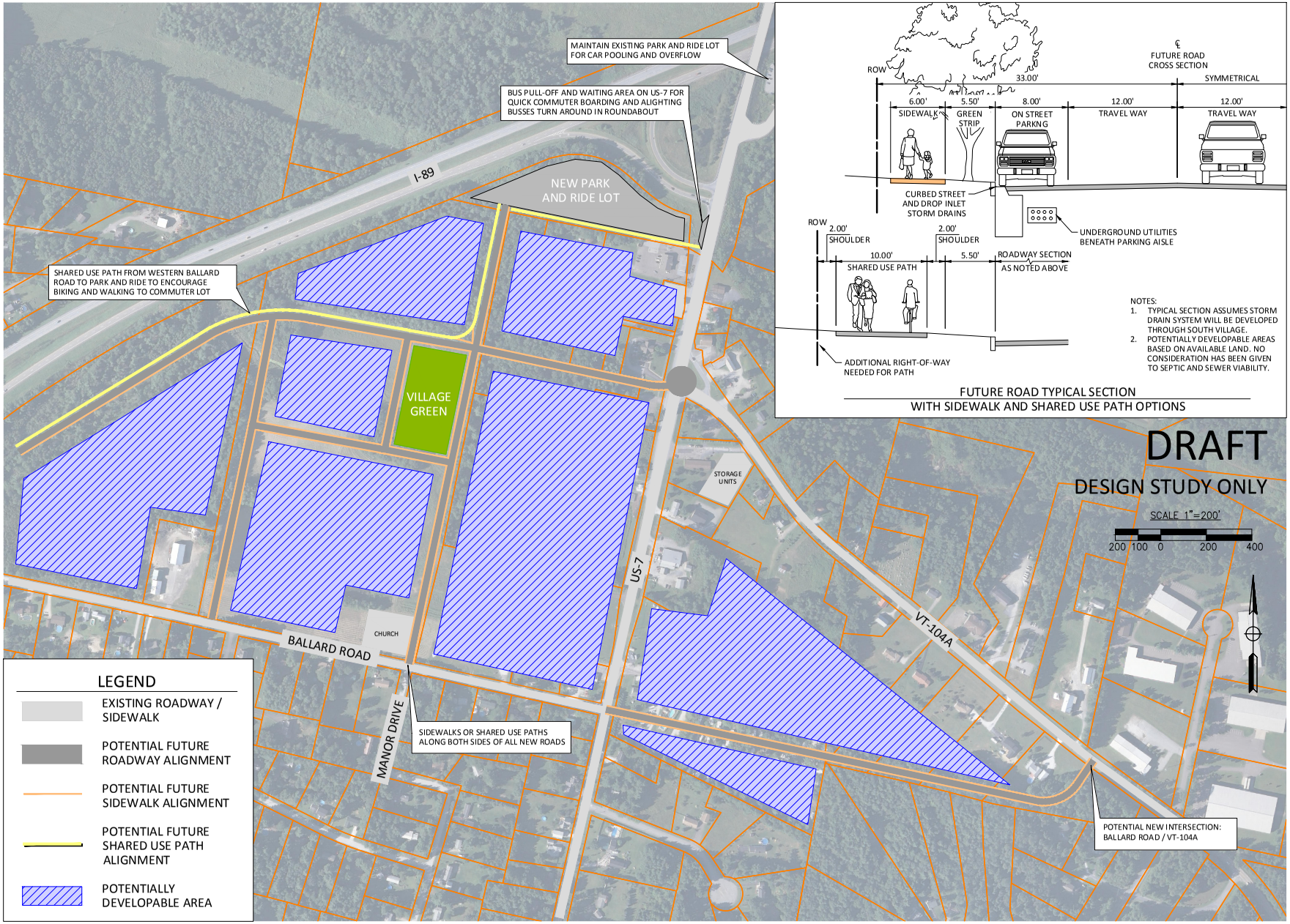
POTENTIAL MARKED CROSSING LOCATIONS

REVISIONS

DATE	DESCRIPTION	BY

SCALE: 1"=20'	SHEET
DES BY: CDM	8
CHKD BY: -	OF
DATE: 7/21/11	9
PROJ #: 10261	

V:\Projects\Georgia - South Village Sidewalk Study - 10261\CAD\10261 - US-7 - SW West.dwg



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SOUTH VILLAGE BICYCLE AND PEDESTRIAN FEASIBILITY STUDY

GEORGIA, VT

POTENTIAL FUTURE TRANSPORTATION INFRASTRUCTURE

REVISIONS		
DATE	DESCRIPTION	BY

SCALE: 1"=200'	SHEET
DES BY: CDM	9
CHKD BY: -	OF
DATE: 7/21/11	9
PROJ #: 10261	

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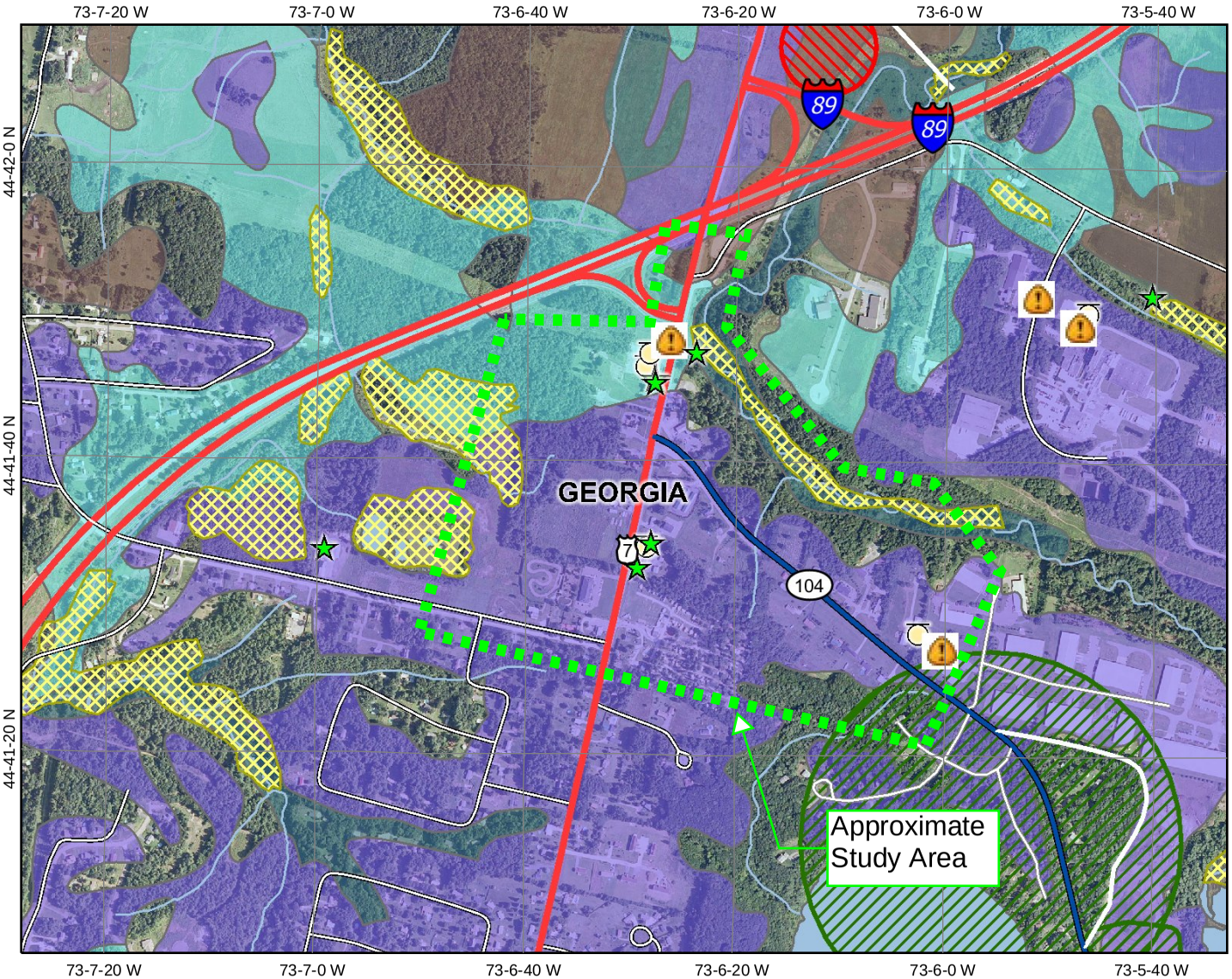
ATTACHMENT C

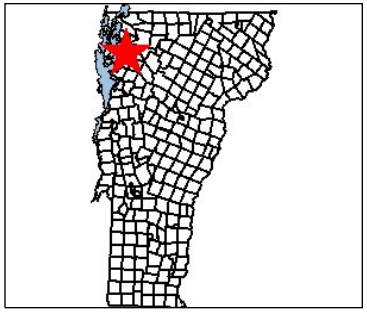
Agency of Natural Resources Environmental Interest Locator Output

ANR Environmental Interest Locator

Vermont Agency of Natural Resources (ANR)

Georgia South Village





Legend

- Hazardous Waste Site
- Hazardous Waste Site Generator
- Underground Storage Tank

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

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

Stormwater Impaired SubWatershed

Stormwater Impaired Watershed

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

Soils - Prime Agricultural

VT State Plane Meters (NAD83)

N

Scale: 1:13,651

0 1300 2600 3900 ft.

Map center: 451767, 243924

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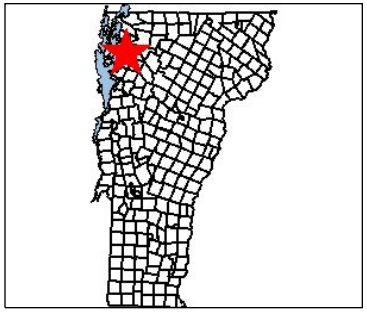
URL: http://maps.vermont.gov/imf/sites/ANR_NATRESViewer/jsp/launch.jsp

8/18/11

ANR Environmental Interest Locator

Vermont Agency of Natural Resources (ANR)

10261 - Georgia Wetlands



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
- Hydrography Lakes and Ponds (VHD 5k)
- Hydrography (VHD 5k)
- VT County Boundary
- Hydric Soils
- Hydric Soils
- VT Town Boundaries (No Fill)
- VT State Boundary (Fill)

VT State Plane Meters (NAD83)

Scale: 1:16,101

0 1500 3000 4500 ft.

Map center: 451796, 243958

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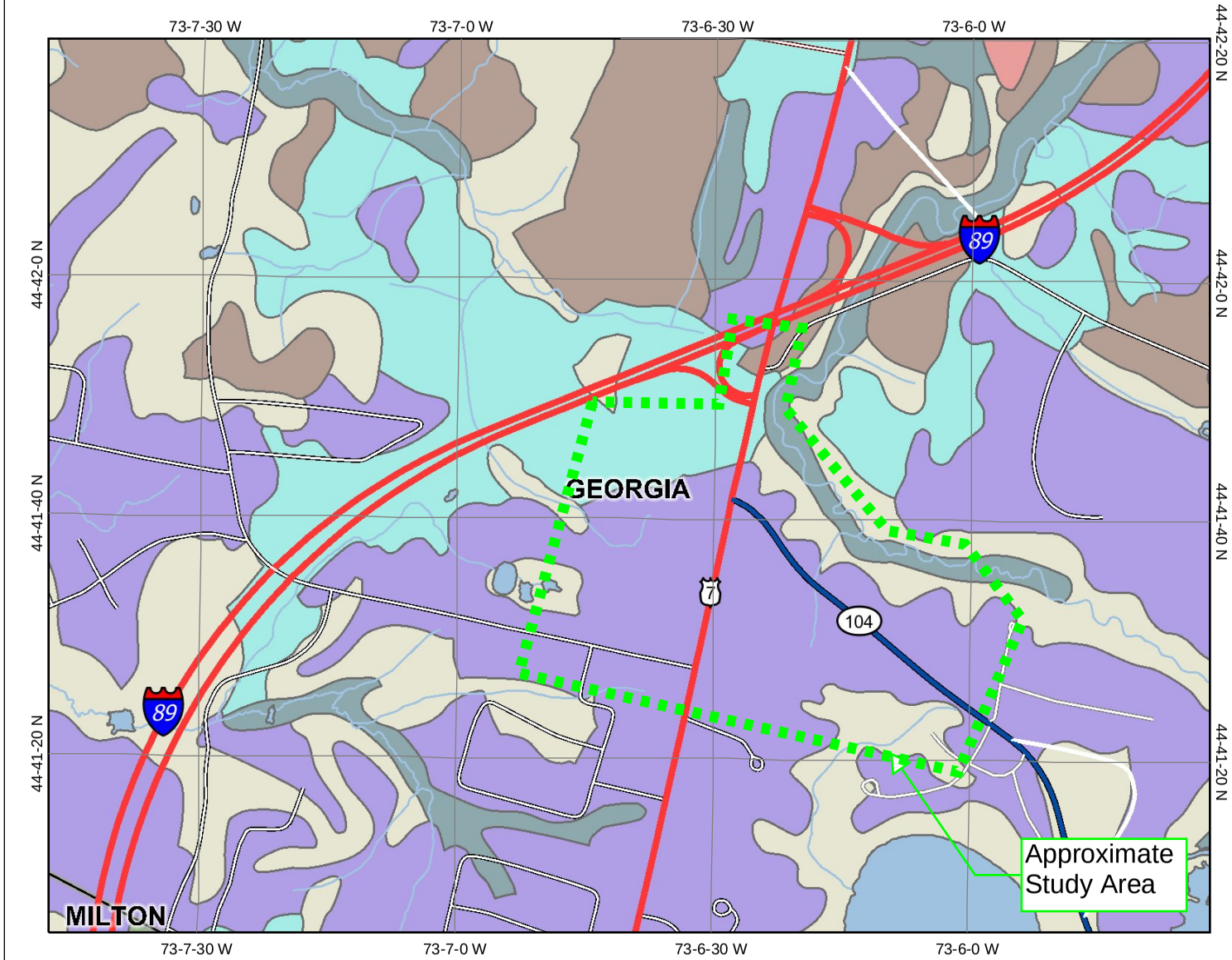
URL: http://maps.vermont.gov/imf/sites/ANR_NATRESViewer/jsp/launch.jsp

11/14/11

ANR Environmental Interest Locator

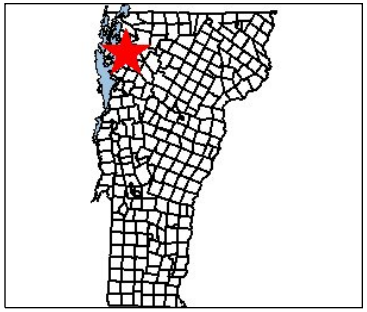
Vermont Agency of Natural Resources (ANR)

10261 - Georgia Agricultural Soils



0 1500 3000 4500 ft.

Map center: 451564, 244070



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
- Hydrography Lakes and Ponds (VHD 5k)
- Hydrography (VHD 5k)
- VT County Boundary
- Soils - Prime Agricultural
- Local
- Local (b)
- Prime
- Prime (b)
- Prime (c)
- Statewide
- Statewide (a)
- Statewide (b)
- Statewide (c)
- VT Town Boundaries (No Fill)
- VT State Boundary (Fill)

VT State Plane Meters (NAD83)

N

Scale: 1:16,101

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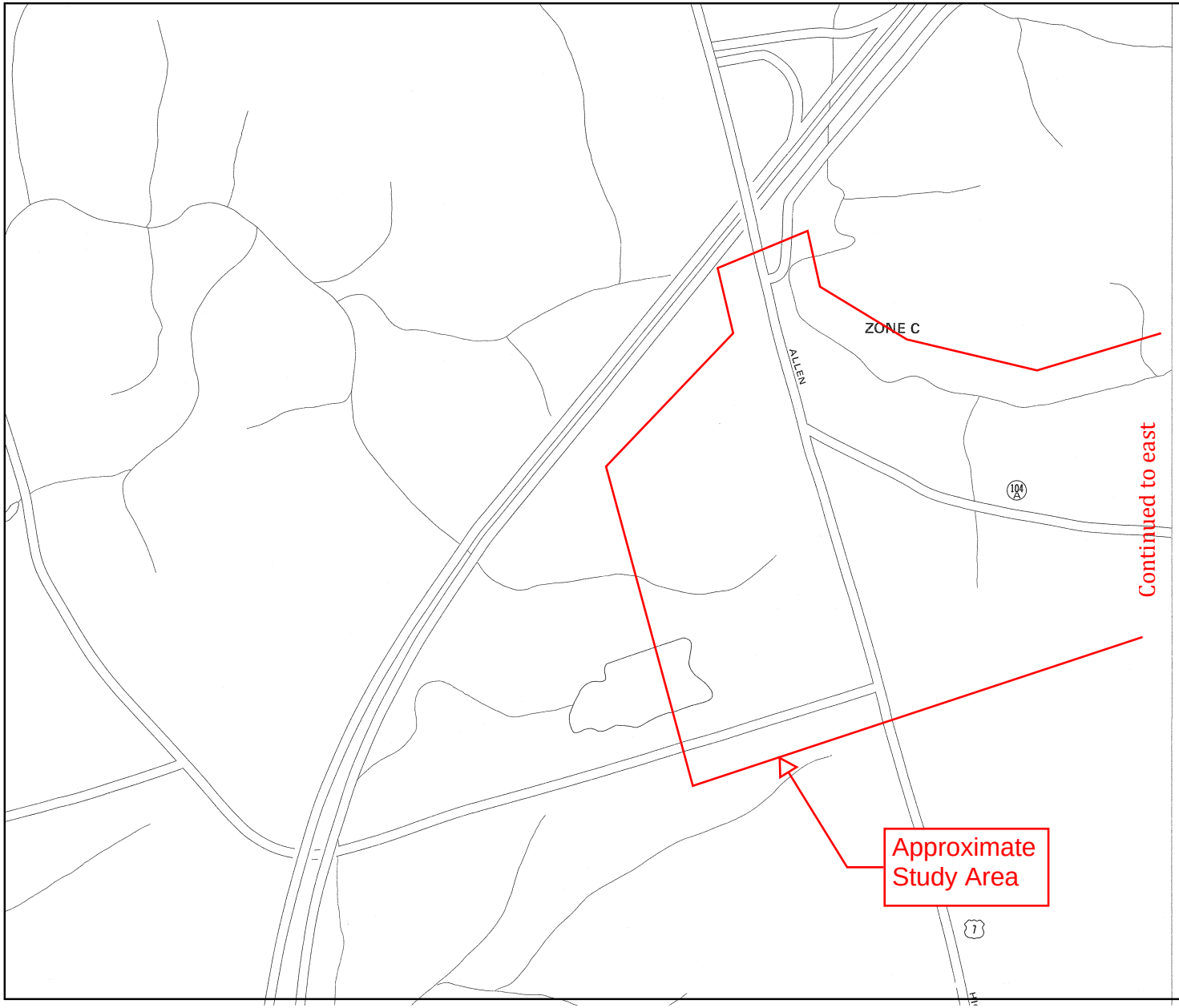
URL: http://maps.vermont.gov/imf/sites/ANR_NATRESViewer/jsp/launch.jsp

11/14/11

ATTACHMENT D

Federal Emergency Management Agency Flood Insurance Maps



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Refer to t
date shown
structures i
established.

To determi
contact you
Program at (

APPROXIMATE SCALE

600 0 600 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

TOWN OF
GEORGIA,
VERMONT
FRANKLIN COUNTY

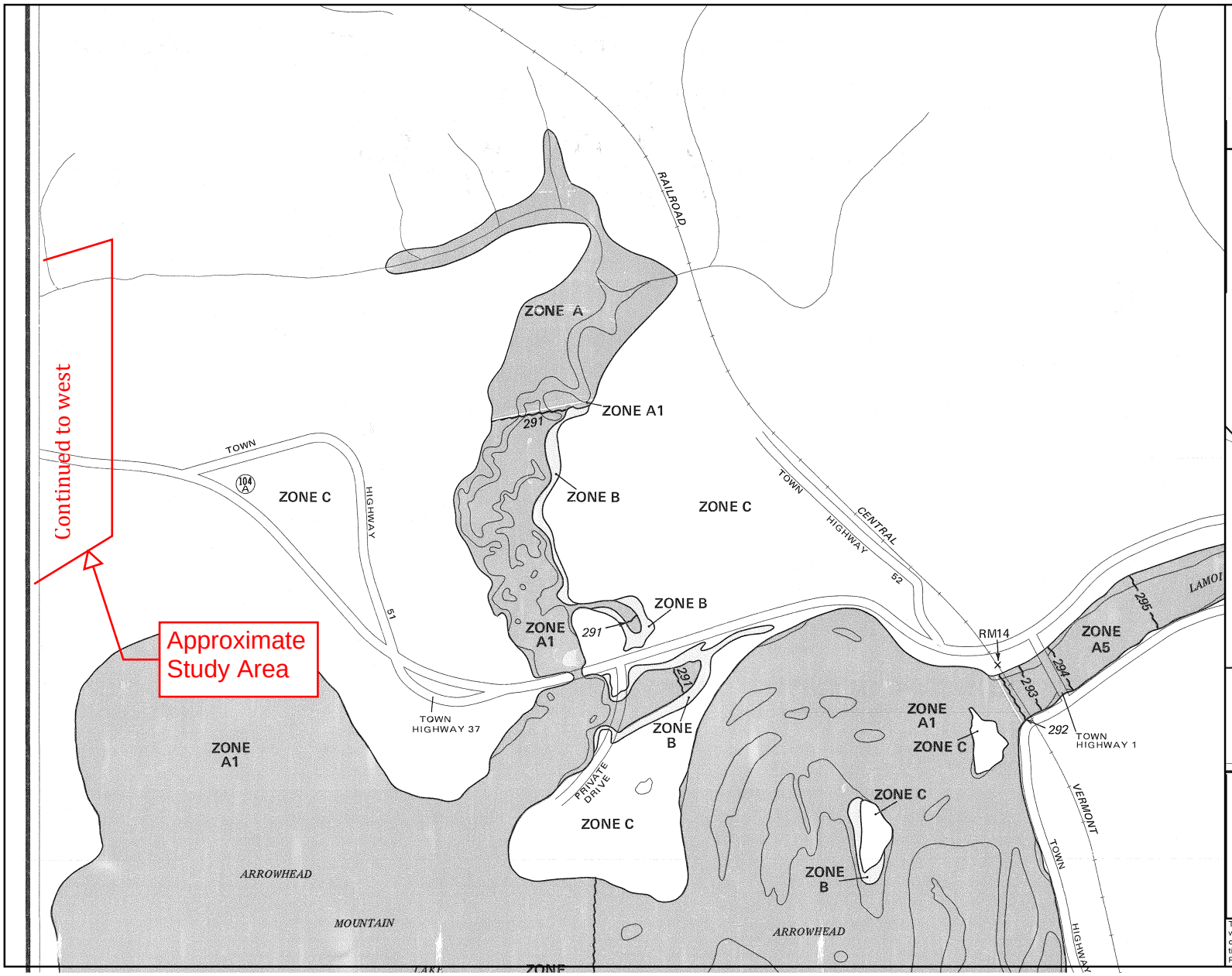
PANEL 7 OF 9
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
500217 0007 A

EFFECTIVE DATE:
SEPTEMBER 16, 1981

federal emergency management agency
federal insurance administration

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



APPROXIMATE SCALE

600 0

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

TOWN OF
GEORGIA,
VERMONT
FRANKLIN COUNTY

PANEL 8 OF 9
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
500217 0008 A

EFFECTIVE DATE:
SEPTEMBER 16, 1981

federal emergency management agency
federal insurance administration

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

ATTACHMENT E

Correspondence with Historic Preservation and Fish and Wildlife

Corey Mack

From: McInerney, Diane [Diane.McInerney@state.vt.us]
Sent: Thursday, November 10, 2011 9:25 AM
To: Corey Mack
Subject: RE: Historic Properties along US-7 / VT-104A in Georgia, VT
Attachments: Georgia Plains 2011 (3).pdf

Corey,
Attached is a map of the Georgia Plains Village Historic District. This district seems to be north east of the area you are concerned with, but I thought you might be able to use it for future reference. The only property that is out that way on the National Register is the Goodrich Solomon Homestead on the Ethan Allen Hwy, but it seems that it is past that area as well.

Diane McInerney

Historic Preservation Executive Grant Program Coordinator
Division for Historic Preservation
One National Life Drive, Floor 6
Montpelier, VT 05620-1501
(802)-828-3540
diane.mcinerney@state.vt.us

From: Corey Mack [mailto:Corey.Mack@rsginc.com]
Sent: Wednesday, November 09, 2011 3:45 PM
To: McInerney, Diane
Subject: Historic Properties along US-7 / VT-104A in Georgia, VT

Hi Diane,

Thank you for help finding the historic district boundary in relation to my recent project in Bristol. The information you gave me was very helpful.

I was hoping you could help me in another Bicycle and Pedestrian Feasibility Study I have undertaken. This study is in the Town of Georgia along US-7 and VT-104A, bounded roughly by I-89, the Deer Brook, and Ballard Road. The area is best shown here:

http://maps.google.com/maps/ms?msid=203881809672547038493.00049fdf65868b8382d79&msa=0

I was wondering if it would be possible for you to tell me if there are any properties listed on the state or national register of historic places near this study area. Once again, I appreciate your assistance – thank you very much! Please let me know if this is something you can do and / or if you have any questions.

Regards,
Corey

ATTACHMENT F

Preferred Alignments

DRAFT

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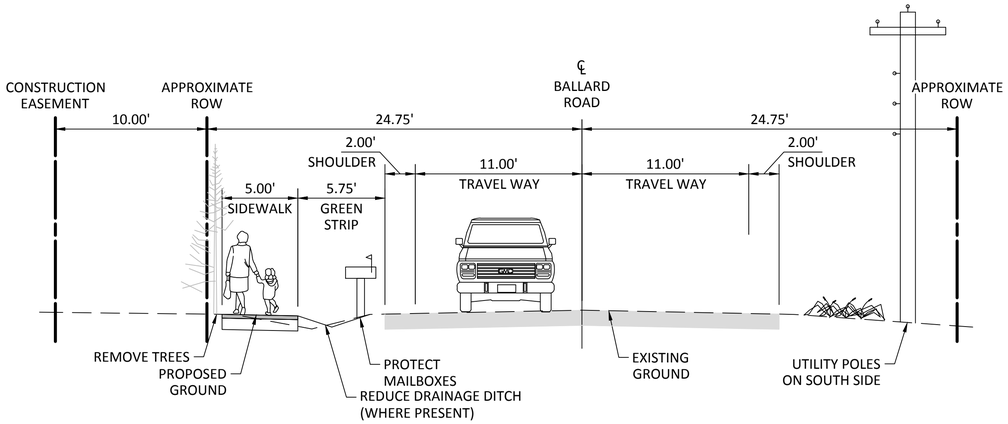
www.rsginc.com

Northwest Regional
Planning Commission
155 Lake Street
St. Albans, VT 05478
(802) 524 - 5958



BALLARD ROAD IMPROVEMENTS TYPICAL SECTION

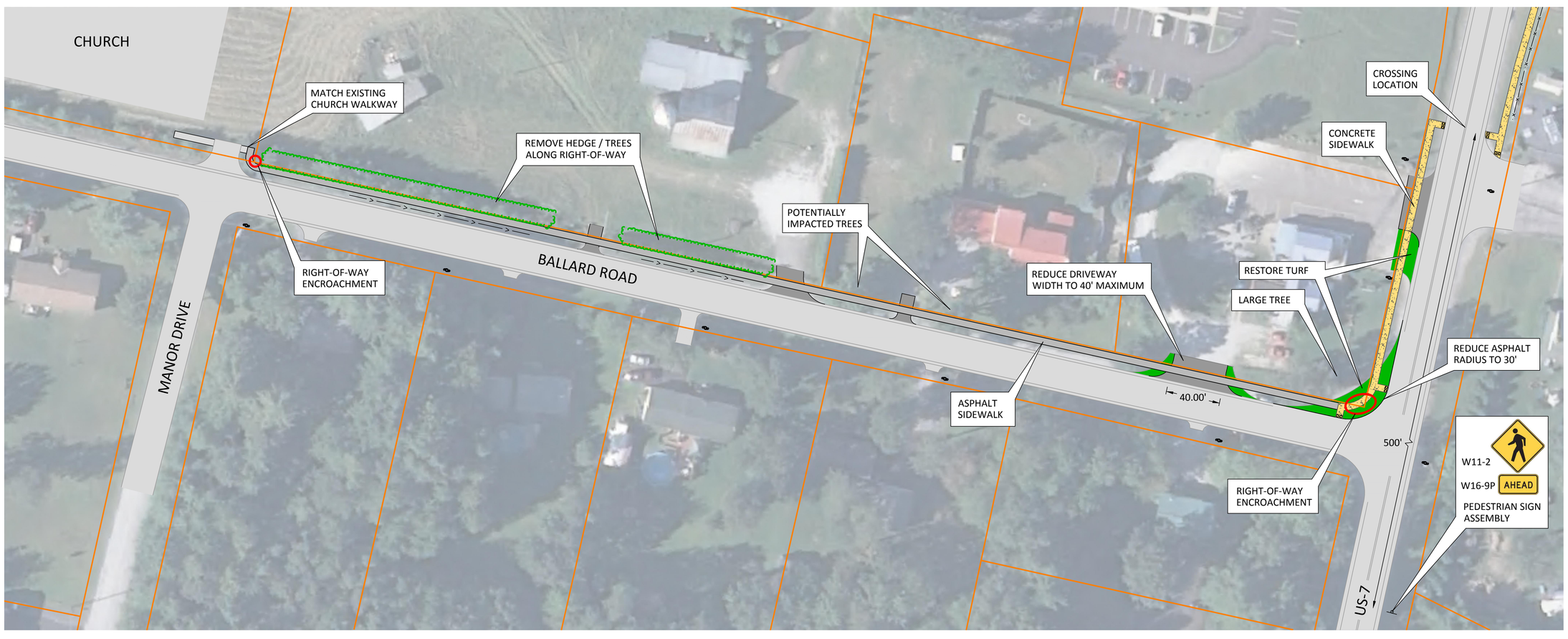
LOOKING EAST ALONG BALLARD ROAD
NOT TO SCALE

LEGEND

- EXISTING ROADWAY / SIDEWALK
- APPROXIMATE EXISTING RIGHT - OF - WAY
- PROPOSED CONCRETE SIDEWALK
- PROPOSED ASPHALT SIDEWALK
- PROPOSED DRIVEWAY IMPROVEMENTS
- PROPOSED TURF RE-ESTABLISHMNET

SCALE 1"=40'

40 20 0 40 80



SOUTH VILLAGE BICYCLE AND PEDESTRIAN FEASIBILITY STUDY

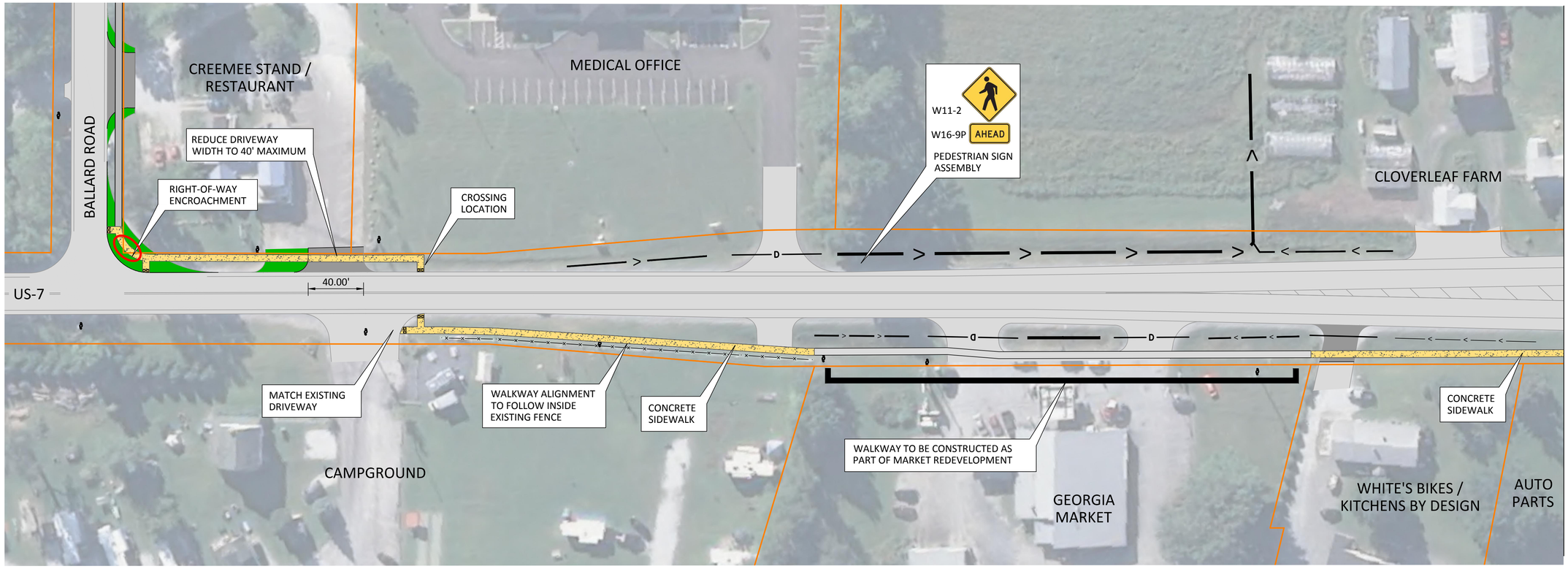
GEORGIA, VT

PREFERRED ALTERNATIVE - BALLARD ROAD SECTION

REVISIONS		
DATE	DESCRIPTION	BY

SCALE: 1"=40'	SHEET 1 OF 4
DES BY: CDM	
CHKD BY: -	
DATE: 11/23/11	
PROJ #: 10261	

V:\Projects\Georgia - South Village Sidewalk Study - 10261\CAD\10261 - Georgia Preferred Alternative - Final.dwg



LEGEND

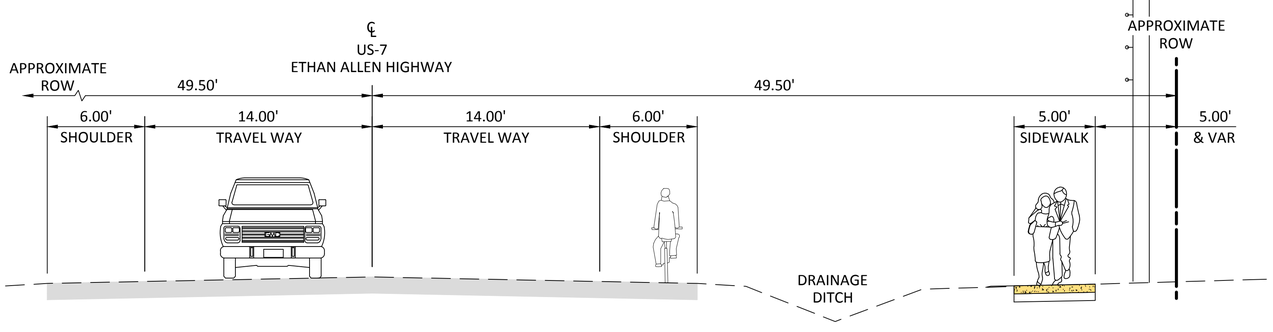
- EXISTING ROADWAY / SIDEWALK
- APPROXIMATE EXISTING RIGHT - OF - WAY
- UTILITY POLE
- DRAINAGE DITCH
- CULVERT
- PROPOSED CONCRETE SIDEWALK
- PROPOSED ASPHALT SIDEWALK
- PROPOSED DRIVEWAY IMPROVEMENTS
- PROPOSED TURF RE-ESTABLISHMNET

DRAFT

DESIGN STUDY ONLY

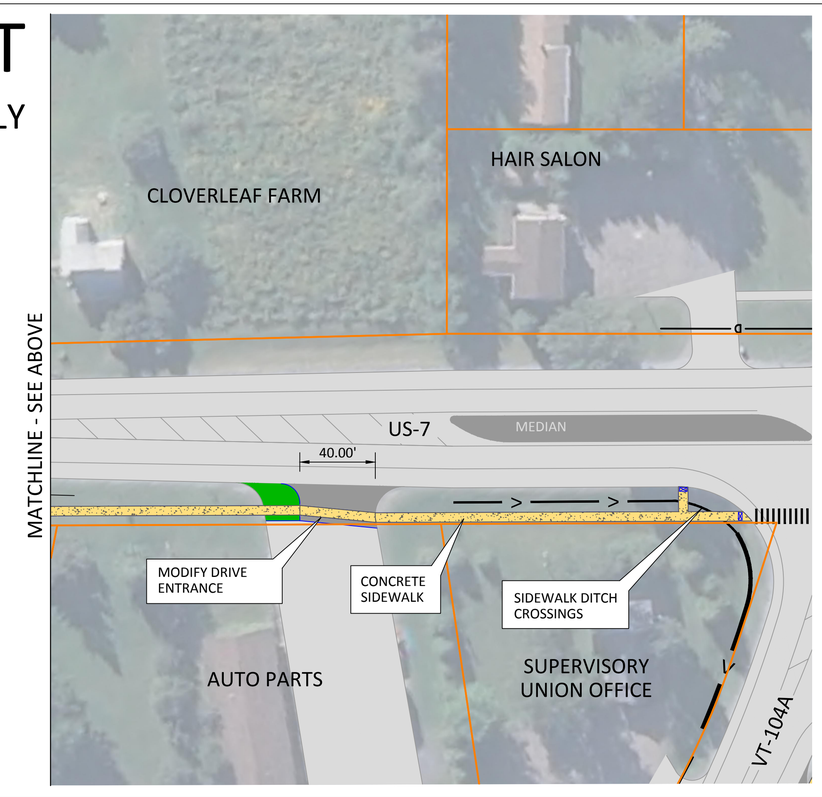
SCALE 1"=40'

40 20 0 40 80



US-7 PROPOSED IMPROVEMENTS TYPICAL SECTION
6 ROD ROW, 2 LANE ROADWAY

LOOKING NORTH ALONG US-7 NEAR GEORGIA MARKET
NOT TO SCALE



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(802) 524 - 5958

SOUTH VILLAGE BICYCLE AND PEDESTRIAN FEASIBILITY STUDY

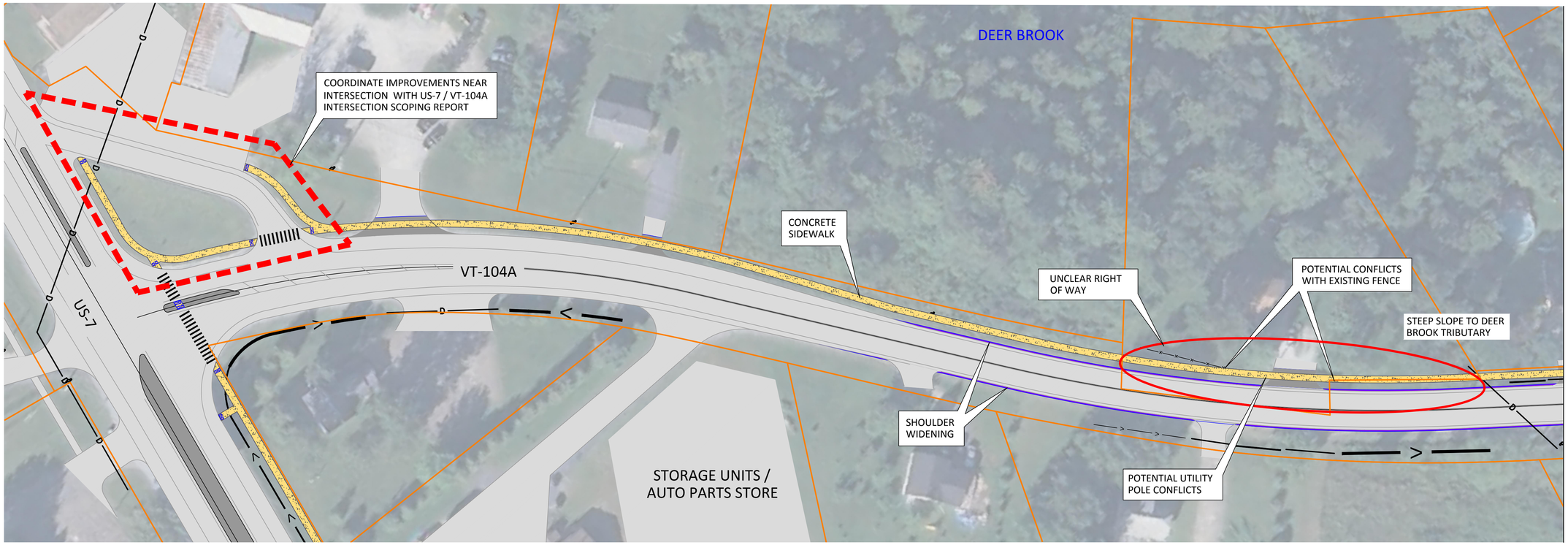
GEORGIA, VT

PREFERRED ALTERNATIVE - US-7 SECTION

REVISIONS		
DATE	DESCRIPTION	BY

SCALE: 1"=40'	SHEET 2 OF 4
DES BY: CDM	
CHKD BY: -	
DATE: 11/23/11	
PROJ #: 10261	

V:\Projects\Georgia - South Village Sidewalk Study - 10261\CAD\10261 - Georgia Preferred Alternative - Final.dwg



LEGEND

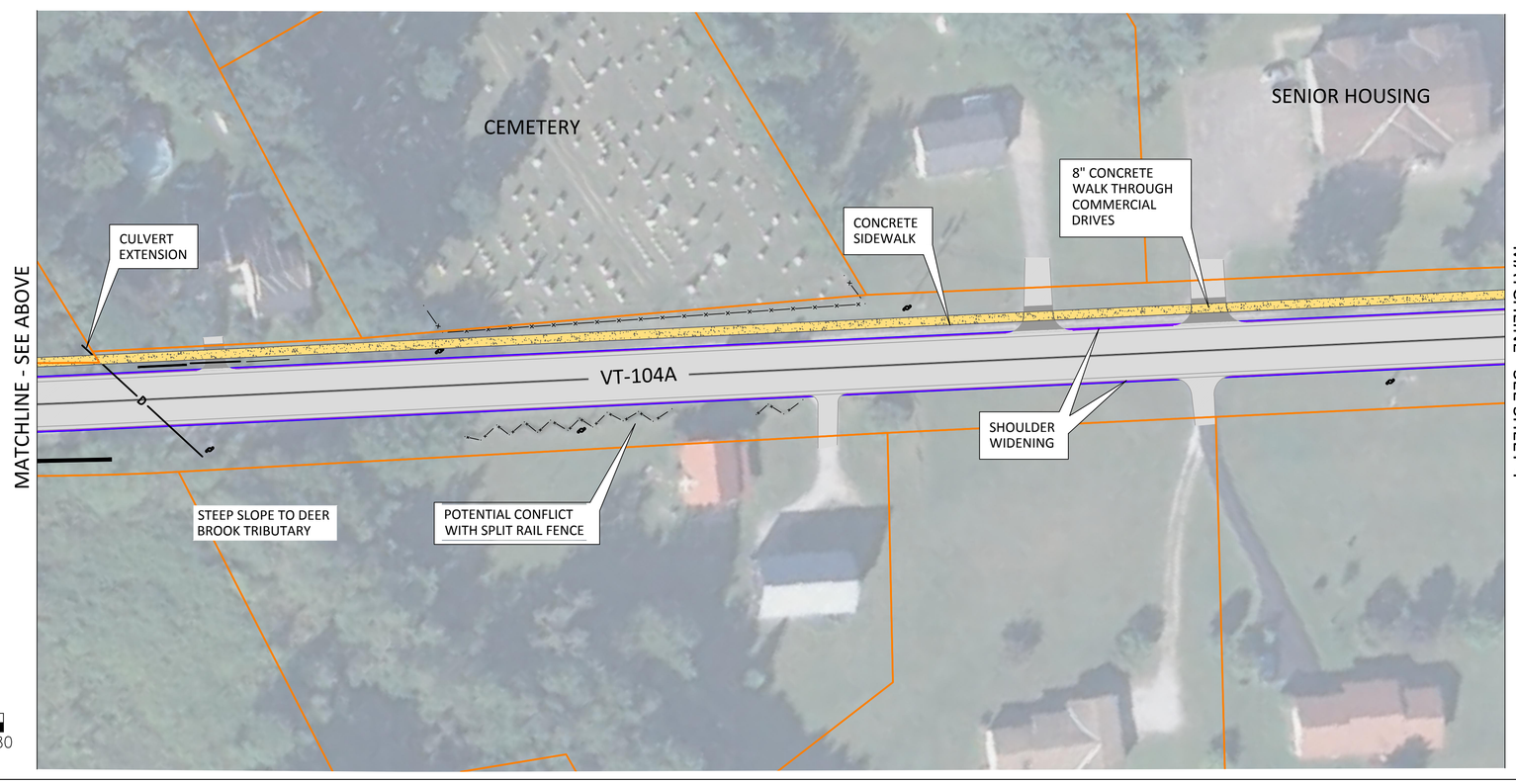
- EXISTING ROADWAY / SIDEWALK
- APPROXIMATE EXISTING RIGHT - OF - WAY
- UTILITY POLE
- DRAINAGE DITCH
- CULVERT
- GUARDRAIL
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- PROPOSED TURF RE-ESTABLISHMNET

DRAFT

DESIGN STUDY ONLY

SCALE 1"=40'

40 20 0 40 80



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SOUTH VILLAGE BICYCLE AND PEDESTRIAN FEASIBILITY STUDY

GEORGIA, VT

PREFERRED ALTERNATIVE - VT-104A WEST SECTION

REVISIONS		
DATE	DESCRIPTION	BY

SCALE: 1"=40'	SHEET 3 OF 4
DES BY: CDM	
CHKD BY: -	
DATE: 11/23/11	
PROJ #: 10261	

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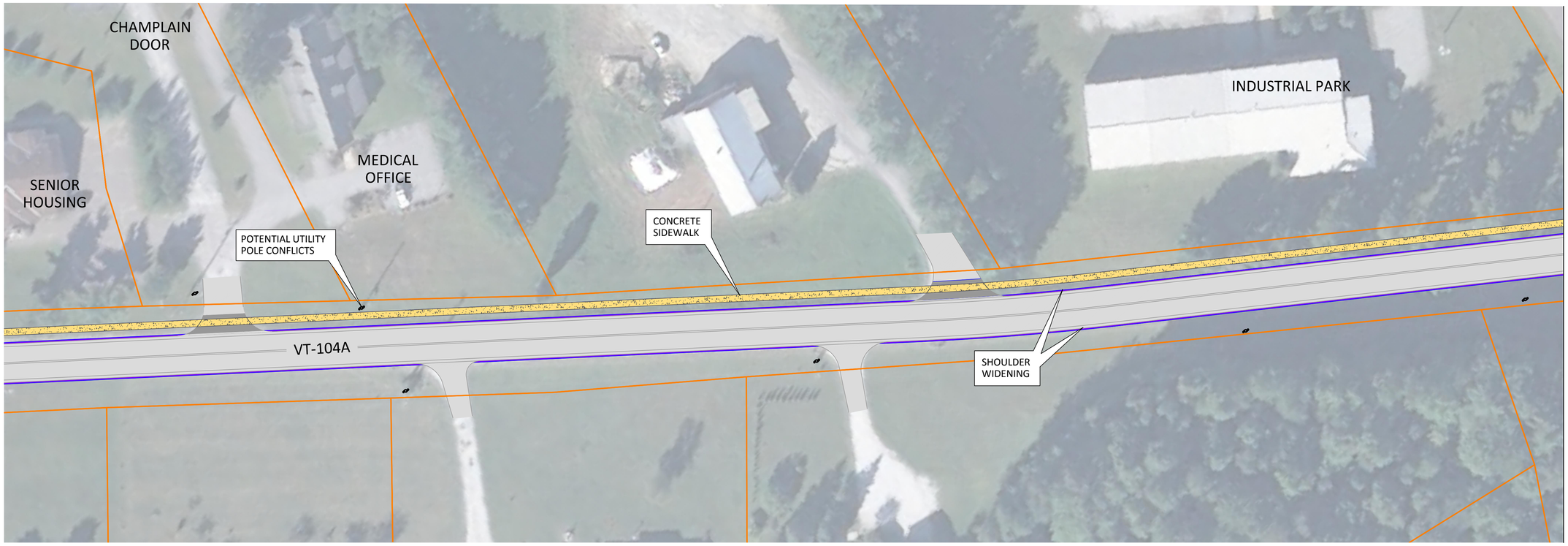
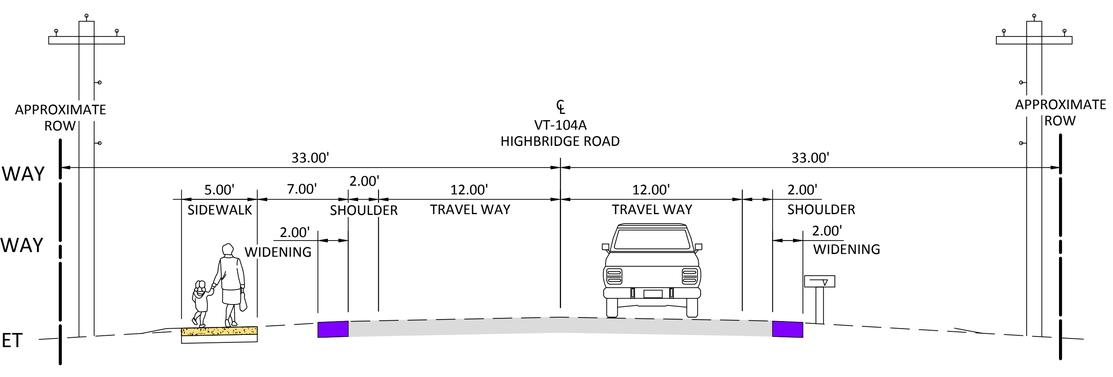


LEGEND

- EXISTING ROADWAY / SIDEWALK
- APPROXIMATE EXISTING RIGHT - OF - WAY
- UTILITY POLE
- DRAINAGE DITCH
- CULVERT
- GUARDRAIL
- PROPOSED SIDEWALK
- PROPOSED DRIVEWAY IMPROVEMENTS
- PROPOSED ROADWAY WIDENING
- PROPOSED TURF RE-ESTABLISHMNET

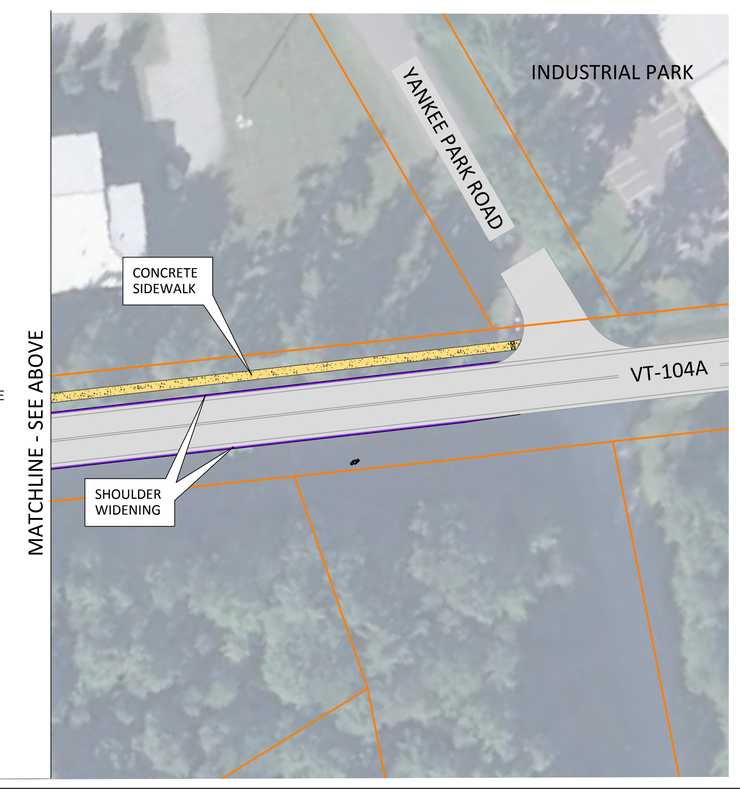
SCALE 1"=40'

40 20 0 40 80



VT-104A PROPOSED IMPROVEMENTS TYPICAL SECTION
4 ROD ROW, 2 LANE ROADWAY

LOOKING SOUTHEAST ALONG VT-104A (HIGHBRIDGE ROAD)
NOT TO SCALE



DRAFT

DESIGN STUDY ONLY

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SOUTH VILLAGE BICYCLE AND PEDESTRIAN FEASIBILITY STUDY

GEORGIA, VT

PREFERRED ALTERNATIVE - VT-104A EAST SECTION

REVISIONS

DATE	DESCRIPTION	BY

SCALE: 1"=40'	SHEET 4 OF 4
DES BY: CDM	
CHKD BY: -	
DATE: 11/23/11	
PROJ #: 10261	

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ATTACHMENT G

Conceptual Estimate of Probable Construction Costs

RSG INC.
RESOURCE SYSTEMS GROUP, INC.

PROJECT: Georgia South Village Bicycle and Pedestrian Feasibility Study
- Preferred Alternative Cost Estimate

CALCULATED BY: CDM DATE: 11/18/11
CHECKED BY: MJS DATE: 11/18/11

QUANTITY CALCULATIONS

NO.	DESCRIPTION	Unit	Unit Cost	Quantitites by Segment: Segment 1 Ballard	Segment 2 US-7	Segment 3 VT-104A Walk	Segment 4 VT-104A Shldr	Segment 5 VT-104A Pave	Segment 6 P&R EH	Costs by Segment: Segment 1 Ballard	Segment 2 US-7	Segment 3 VT-104A Walk	Segment 4 VT-104A Shldr	Segment 5 VT-104A Pave	Segment 6 P&R EH	Corridor Totals: Total Quantity	Total Cost
201.10	CLEARING AND GRUBBING	LS	VAR	1	1	1	1			$ 5,000.00	$ 2,000.00	$ 5,000.00	$ 2,000.00			4	$ 14,000.00
203.15	COMMON EXCAVATION	CY	$ 10.00	250	250	790	960			$ 2,500.00	$ 2,500.00	$ 7,900.00	$ 9,600.00			2250	$ 22,500.00
301.35	SUBBASE OF DENSE GRADED CRUSHED STONE	CY	$ 30.00	110	110	290				$ 3,300.00	$ 3,300.00	$ 8,700.00				510	$ 15,300.00
402.10	AGGREGATE SHOULDERS, IN PLACE	CY	$ 45.00				160						$ 7,200.00			160	$ 7,200.00
490.30	SUPERPAVE BITUMINOUS CONCRETE PAVEMENT*	TON	$ 100.00					110						$ 11,000.00		110	$ 11,000.00
601.0915	18" CPEP	LF	$ 60.00			15	15					$ 900.00	$ 900.00			30	$ 1,800.00
613.11	STONE FILL, TYPE II	CY	$ 35.00			25	25					$ 875.00	$ 875.00			50	$ 1,750.00
618.10	PORTLAND CEMENT CONC. SIDEWALK, 5 INCH	SY	$ 55.00		520	1470					$ 28,600.00	$ 80,850.00				1990	$ 109,450.00
618.11	PORTLAND CEMENT CONC. SIDEWALK, 8 INCH	SY	$ 65.00		80	170					$ 5,200.00	$ 11,050.00				250	$ 16,250.00
618.15	BITUMINOUS CONCRETE SIDEWALK	TON	$ 250.00	90						$ 22,500.00						90	$ 22,500.00
618.30	DETECTABLE WARNING SURFACE	SF	$ 50.00	16	24	16				$ 800.00	$ 1,200.00	$ 800.00				56	$ 2,800.00
635.11	MOBILIZATION / DEMOBILIZATION	LS	VAR	1	1	1	1	1	1	4644.4	$ 6,177.20	$ 13,186.80	$ 3,000.80	$ 1,640.00	$ 560.00	6	$ 29,209.20
641.10	TRAFFIC CONTROL	LS	VAR	1	1	1	1	1		$ 2,000.00	$ 5,000.00	$ 8,000.00	$ 8,000.00	$ 2,000.00		5	$ 25,000.00
646.20	4" WHITE LINE	LF	$ 1.00					5150						$ 5,150.00		5150	$ 5,150.00
649.31	GEOTEXTILE UNDER STONE FILL	SY	$ 5.00			70	70					$ 350.00	$ 350.00			140	$ 700.00
651.15	SEED	LB	$ 15.00	17	21	54	19			$ 255.00	$ 315.00	$ 810.00	$ 285.00			111	$ 1,665.00
651.20	AGRICULTURAL LIMESTONE	TON	$ 450.00	1	1	2	1			$ 450.00	$ 450.00	$ 900.00	$ 450.00			5	$ 2,250.00
651.25	HAY MULCH	TON	$ 750.00	1	1	2	1			$ 750.00	$ 750.00	$ 1,500.00	$ 750.00			5	$ 3,750.00
651.35	TOPSOIL	CY	$ 30.00	60	70	180	70			$ 1,800.00	$ 2,100.00	$ 5,400.00	$ 2,100.00			380	$ 11,400.00
652.XX	EROSION CONTROL PLAN AND DEVICES	LS	VAR	1	1	1	1			$ 1,500.00	$ 3,000.00	$ 5,000.00	$ 5,000.00			4	$ 14,500.00
900.XX	RECLAIMED STABALIZED BASE*	SY	$ 5.00					470						$ 2,350.00		470	$ 2,350.00
900.XX	HAND PLACED BITUMINOUS, DRIVES	SY	$ 40.00	180	320	670				$ 7,200.00	$ 12,800.00	$ 26,800.00				1170	$ 46,800.00
900.XX	BIKE RACK	EA	$ 2,000.00						1						$ 2,000.00	1	$ 2,000.00
900.XX	TRANSIT SHELTER	EA	$ 5,000.00						1						$ 5,000.00	1	$ 5,000.00
900.XX	CROSSING ENHANCEMENTS**	EA	$ 20,000.00	0.5	0.5					$ 10,000.00	$ 10,000.00					1	$ 20,000.00
									Subtotal by Phase	$ 62,699.40	$ 83,392.20	$ 178,021.80	$ 40,510.80	$ 22,140.00	$ 7,560.00		$ 394,324.20
									Additional Studies	$ 2,000.00	$ 2,000.00	$ 4,000.00	$ 1,000.00	$ 1,000.00	$ 1,000.00		$ 8,000.00
									Local Administration 8%	$ 6,000.00	$ 7,000.00	$ 15,000.00	$ 4,000.00	$ 2,000.00	$ 1,000.00		$ 32,000.00
									Engineering 10%	$ 7,000.00	$ 9,000.00	$ 18,000.00	$ 5,000.00	$ 3,000.00	$ 1,000.00		$ 40,000.00
									Contingency 30%	$ 19,000.00	$ 26,000.00	$ 54,000.00	$ 13,000.00	$ 7,000.00	$ 3,000.00		$ 119,000.00
									TOTAL PROBABLE ESTIMATE OF CONSTRUCTION COSTS BY PHASE	**$ 96,699.40**	**$ 127,392.20**	**$ 269,021.80**	**$ 63,510.80**	**$ 35,140.00**	**$ 13,560.00**		**Study Area Total $ 593,324.20**

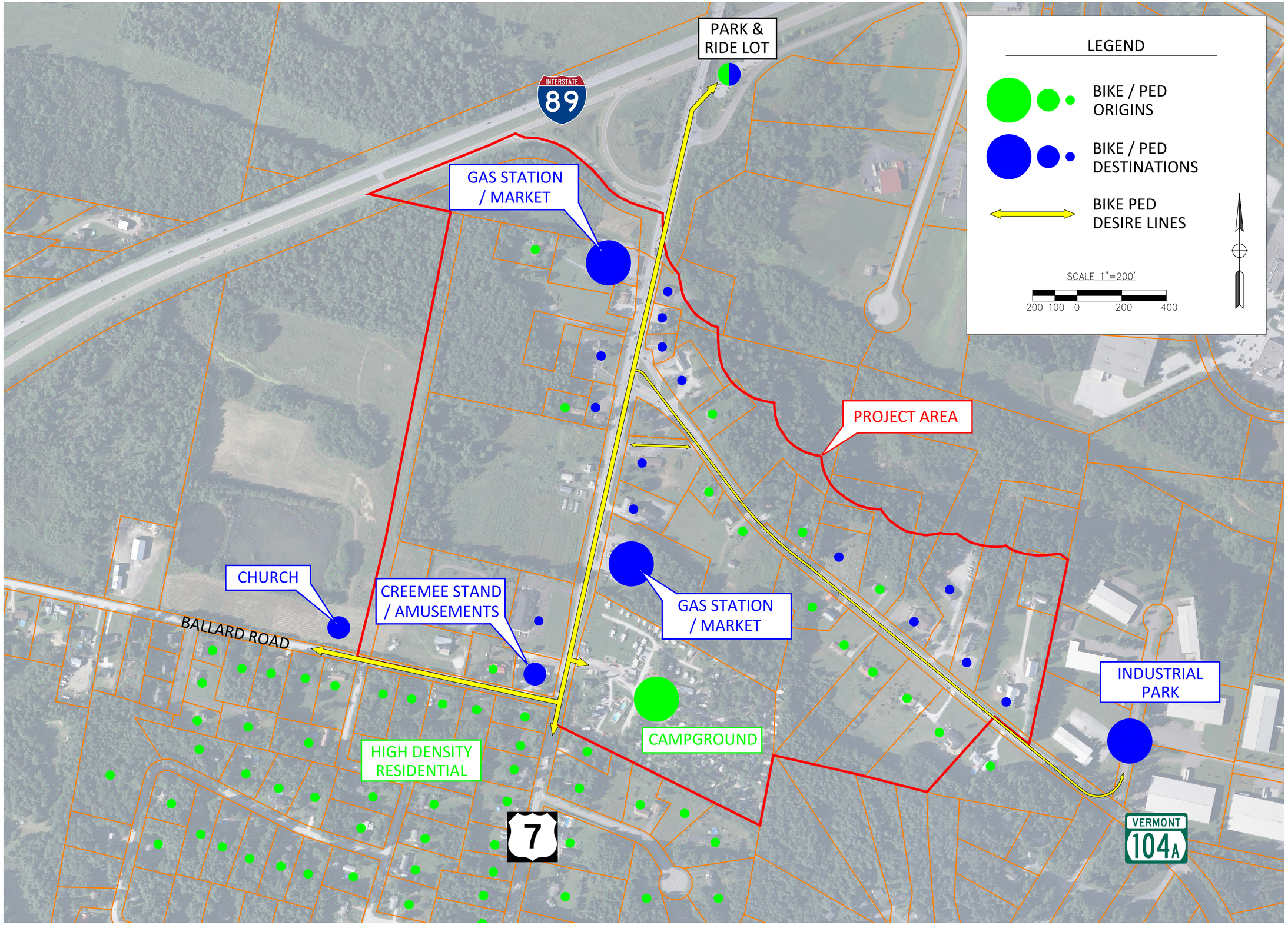
This estimate does not include cost of acquiring temporary and permenant right of way easements

* Superpave and reclaimed stabalized base quantity is estaimated on the redeveloped shoulder proportion of the overall highway; does not include quantity for redevelopment of existing paved surfaces

** Crossing enhancements include additional signs, striping, and / or flashing beacons

ATTACHMENT H

South Village Pedestrian Activity Centers



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SOUTH VILLAGE BICYCLE AND PEDESTRIAN FEASIBILITY STUDY

GEORGIA, VT

BICYCLE AND PEDESTRIAN BASED ORIGINS & DESTINATIONS

REVISIONS

DATE	DESCRIPTION	BY

SCALE: 1"=200'	SHEET
DES BY: CDM	1
CHKD BY: -	OF
DATE: 11/14/11	1
PROJ #: 10261	

V:\Projects\Georgia - South Village Sidewalk Study - 10261\CAD\10261 - Georgia Base.dwg

ATTACHMENT I

Correspondence with the Chittenden County Transportation Authority

Corey Mack

From: Aaron Frank [afrank@cctaride.org]
Sent: Friday, September 02, 2011 3:59 PM
To: Corey Mack
Subject: FW: FW: Potential Improvements to the Exit 18 / Georgia Park and Ride Facility

Corey,

We would welcome improvements to the Georgia Park and Ride.

a) CCTA would provide a bike rack, pad and instillation thereof. VTrans would maintain it thereafter, although there really is not any maintenance.

b) CCTA has provided VTrans with used shelters but not new shelters for use outside Chittenden County. GMTA which is now legally part of CCTA, might be willing to provide a new or used shelter based on availability in our capital budget, and other competing needs. GMTA would rather contribute a shelter to a park and ride with significant capacity and proper bus accommodations like the one proposed under the power line than the existing undersized facility.

c) An appropriately sized roundabout with an appropriate radius may be easier to turn around at than a giant U at a traditional intersection.

We also welcome the idea of a park and ride adjacent to the convenience store as you have proposed.

Thanks for thinking of transit!

My apologies for taking so long to get back to you.

Aaron

From: Corey Mack [mailto:Corey.Mack@rsginc.com]
Sent: Thursday, August 18, 2011 5:08 PM
To: Aaron Frank
Subject: Potential Improvements to the Exit 18 / Georgia Park and Ride Facility

Hi Aaron,

We discussed a study I'm working on several months ago, but I haven't reached out to you yet - I'm leading a feasibility study for pedestrian improvements to the Exit 18 area, also called the Georgia South Village. So far in this study, I've discussed some improvements to both the existing Park and Ride, and a ***very*** potential / future Park and Ride location and I was hoping to run some of these ideas by CCTA staff before my public meeting on Tuesday.

The project study area is roughly here:
http://maps.google.com/maps/ms?msid=203881809672547038493.00049fdf65868b8382d79&msa=0

For the existing Park and Ride, I've put together some very conceptual designs for sidewalks from the VT-104A / US-7 intersection to the park and ride. Overall, these are unlikely, due to the large fill slopes, nearby river and guardrail along the road. But a simpler idea that I've floated is providing better bicyclist amenities at the P&R, specifically a bike rack to lock your bike in case the bus rack is full, and a shelter. These improvements would be within the existing footprint of the P&R. Understanding that the specific location of this shelter and rack hasn't been discussed, is something like this within the realm of possibilities? Is this VTrans' facility? Who would coordinate this construction? Does CCTA fund any improvements to the P&R lots?

For the conceptual future P&R lot, please refer to the attached PDF. This shows a new lot being built behind the Maplefield's in what is currently a power line corridor. The idea with this drawing is that CCTA can pull into the buss pull off on the southbound US-7 shoulder before the Maplefield's, pick up and drop off passengers, then proceed south, enter a new roundabout (or u-turn at a signalized intersection to be designed to accommodate this maneuver…) and head back north on US-7 to re-enter I-89. The P&R lot would have direct access to this pull-off on US-7. Obviously, many of these features are in VTrans' ROW. Operationally though, can CCTA provide a comment on this type of design, with the pull-off and connection to large commuter lot, and utilization of the intersection for a turn around?

The overall goals of the South Village are a mixed-use development in line with many of CCTA's goals. I was hoping to coordinate many of these transit features of the Village Plan into this sidewalk study, even if it is conceptual at this point. Please contact me with any questions.

Thank you,
Corey

Corey Mack, P.E. | Associate

Resource Systems Group, Inc.

60 Lake Street, Suite 1E | Burlington, VT 05401

Office 802.383.0118 | Fax 802.383.0122 | www.rsginc.com

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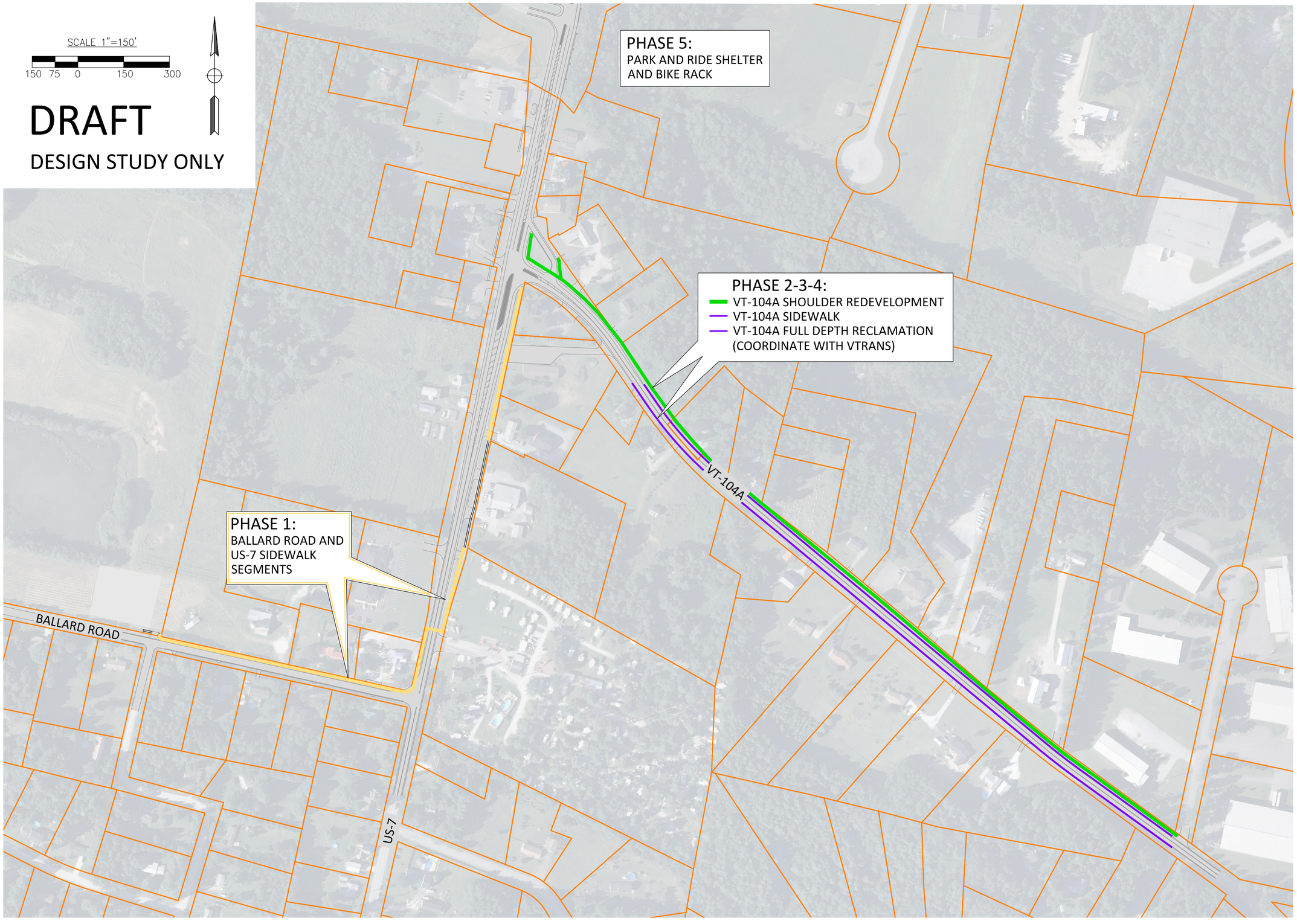
Meredith Birkett | Acting General Manager

CCTA | 15 Industrial Parkway | Burlington, VT 05401

ATTACHMENT J

Phasing Concepts



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SOUTH VILLAGE BICYCLE AND PEDESTRIAN FEASIBILITY STUDY

GEORGIA, VT

PREFERRED ALTERNATIVE - RECOMMENDED PHASING

REVISIONS		
DATE	DESCRIPTION	BY

SCALE: 1"=150'	SHEET 1 OF 1
DES BY: CDM	
CHKD BY: -	
DATE: 11/23/11	
PROJ #: 10261	

V:\Projects\Georgia - South Village Sidewalk Study - 10261\CAD\10261 - Georgia Preferred Alternative - Phasing.dwg