Hillsborough Safe Routes to School Travel Plan

Prepared by the Hillsborough Safe Routes to School Committee with assistance from the Central New Hampshire Regional Planning Commission

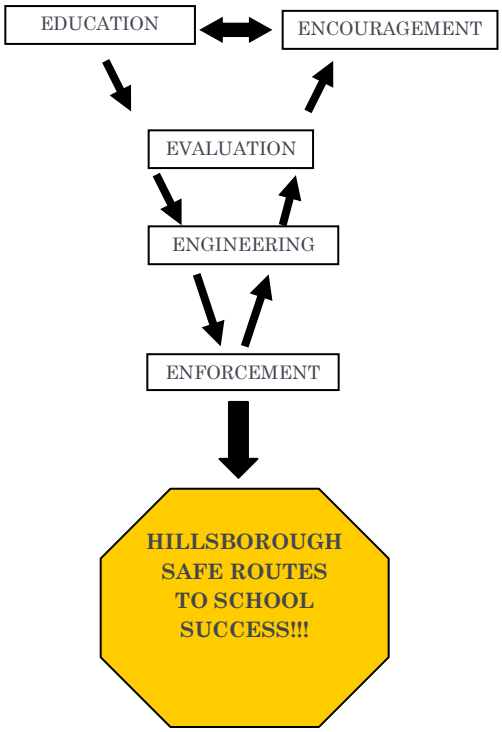
December 2009

Introduction

The purpose of the Hillsborough Safe Routes to School (SRTS) Travel Plan is to identify measures that will encourage more students to bike and walk to school in Hillsborough. The study area includes both the Hillsborough-Deering Elementary School and Hillsborough-Deering Middle School. Although not included as part of this SRTS study, Hillsboro-Deering High School is also located on the shared school campus and its students will benefit from improved access to and from the school campus.

The Hillsborough SRTS Committee has sought and received funding over the last several years in an effort to improve access and safety to the Hillsboro-Deering Campus. The Committee has completed a vast amount of work to date to ensure that access to and from the school campus is improved and that programs that promote the safety of children, and parents alike, is considered to be of paramount importance in all areas of the community. This SRTS Travel Plan aims to compliment the work already undertaken by the Committee, and to highlight the needs of the local community to ensure that the Hillsboro-Deering School Campus becomes a safer, healthier and more sustainable education resource for the town and its surrounding areas.

Hillsborough-Deering Elementary School is located in the southwest corner of the intersection of School Street, Hillcat Drive and Blair Avenue, with primary access points located on Hillcat Drive and School Street, with a secondary access at the corner of Church and Brown Streets. The Middle School is located southwest of the elementary school. Traffic volumes and speed can be high at both of these primary access locations. During the study process a wide array of transportation data were collected, including traffic counts (speed, volume, turn counts) a review of pedestrian and bicycle levels of service (PLOS/BLOS), and the compilation of all known accident data for the area to identify possible accident hot spots. Furthermore, a comprehensive survey was distributed to parents. Survey responses were reviewed and students at the school were asked to discuss their concerns regarding walking and biking to school. The result of the study is a list of potential projects to make walking and biking to school safer and more appealing.



This Travel Plan actively promotes the five E's of a successful SRTS program – education, encouragement, engineering, enforcement and evaluation. These categories provide the framework for the recommendations of the plan. Throughout the study process the five E's have been actively pursued and will continue to be promoted throughout the implementation phase of this SRTS Travel Plan. This SRTS Travel Plan for Hillsborough is funded through a planning grant from the New Hampshire Department of Transportation.

SRTS Recommendations

The SRTS Committee has identified the need for flashing School Zone signs on School Street to the north and south of the Hillsboro-Deering School Campus. The new flashing signs will heighten motorists' awareness of hazards inherent within a school zone, calm traffic and provide children and parents with a perceptible level of security. Furthermore, the SRTS Committee has determined, based on published research, Hillsborough Police Department and town resident input, and observations on the effectiveness of similar signs in school zones throughout the state, that the new school zone speed limit signs should be enhanced with driver feedback capability. Driver feedback signs use radar to record the motorist's speed and report back the speed on a display that states: "Your speed XX mph." These signs are effective in reducing motorist speed and increasing driver awareness of pedestrians in the school zone. The Committee also recommends that these signs be enhanced with brightly colored, roadway markings and striping to enhance driver's awareness that they are entering a school zone.

As a result of this study, the Committee looks toward the possibility of a significant SRTS infrastructure project in the future that might include sidewalk reconstruction along the southern side of Brown Street connecting to Church Street and extending around to the north-side of Walnut Street to create an improved pedestrian environment on the streets immediately south of the School campus. It is also recommended that the Town of Hillsborough engage an engineering consultant and work with the New Hampshire Department of Transportation to complete a comprehensive engineering study of School Street from Hillcat Drive to West Main Street, to investigate the possibility of constructing new and improved sidewalks to improve access to the school campus.

In addition, the Committee has identified a number of locations in Hillsborough where pedestrian safety improvements are needed. Increased crosswalk visibility and the improvement and enhancement of key intersections in Hillsborough Village will greatly improve the pedestrian environment and lead to greater opportunities for students and families to walk safely to and from school.

Further potential infrastructural recommendations, listed in order of priority, are discussed in the Engineering section of this Travel Plan, as well as other general recommendations related to Education, Encouragement and Enforcement. It is the recommendation of the Committee that this Travel Plan serve as a key planning tool in any future infrastructural improvements in Hillsborough Village.

The Hillsborough SRTS Travel Plan has been designed as a living document which can be updated and amended as the Safe Routes program in Hillsborough continues to grow.

Community Organizing Efforts

The Hillsborough Safe Routes to School Committee was formed in 2008 in order to promote safer and more sustainable access to and from the Hillsboro-Deering school campus. The SRTS Committee has met approximately once per month since it was formed. Participants regularly attending include representatives of the School Board and the Town of Hillsborough, school officials, a representative of the Central New Hampshire Regional Planning Commission and several parents and community members. The membership includes a broader list of community members who may attend from time to time, including other interested parents, teachers and representatives from the Board of Selectmen, as well as members of the Police, Fire and Recreation and Highway Departments, who are kept informed of the meeting schedule and the agendas via email.

Throughout the process the Hillsborough SRTS Committee has pursued an open and transparent meeting process in order to enhance public interaction and involvement.

Members of the Hillsborough SRTS Committee:

Name	Affiliation
Barbara Baker	Hillsboro-Deering SAU
Lisa Braiterman	Hillsboro-Deering SAU
Peter Brigham	Office of Youth Services
Noreen McAloon	Hillsboro-Deering Elementary School
Ellen Klein	Hillsboro-Deering Elementary School
Lauralee LoMonaco	Parent, Community Member
Gary Sparks	Resident & Planning Board Member
Matthew Taylor	Planning Department
Kathy Otten	PTO Member, Parent, Community Member
Mark Philibert	Hillsboro Police Department
Paul Plater	Hillsboro-Deering School Board
Paula Simpkins	Parent, Community Member
David Roarick	Hillsboro Police Department
John Stetser	Town Administrator
John Segedy	Hillsboro-Deering School Board
Shane O' Keefe	Planning Department

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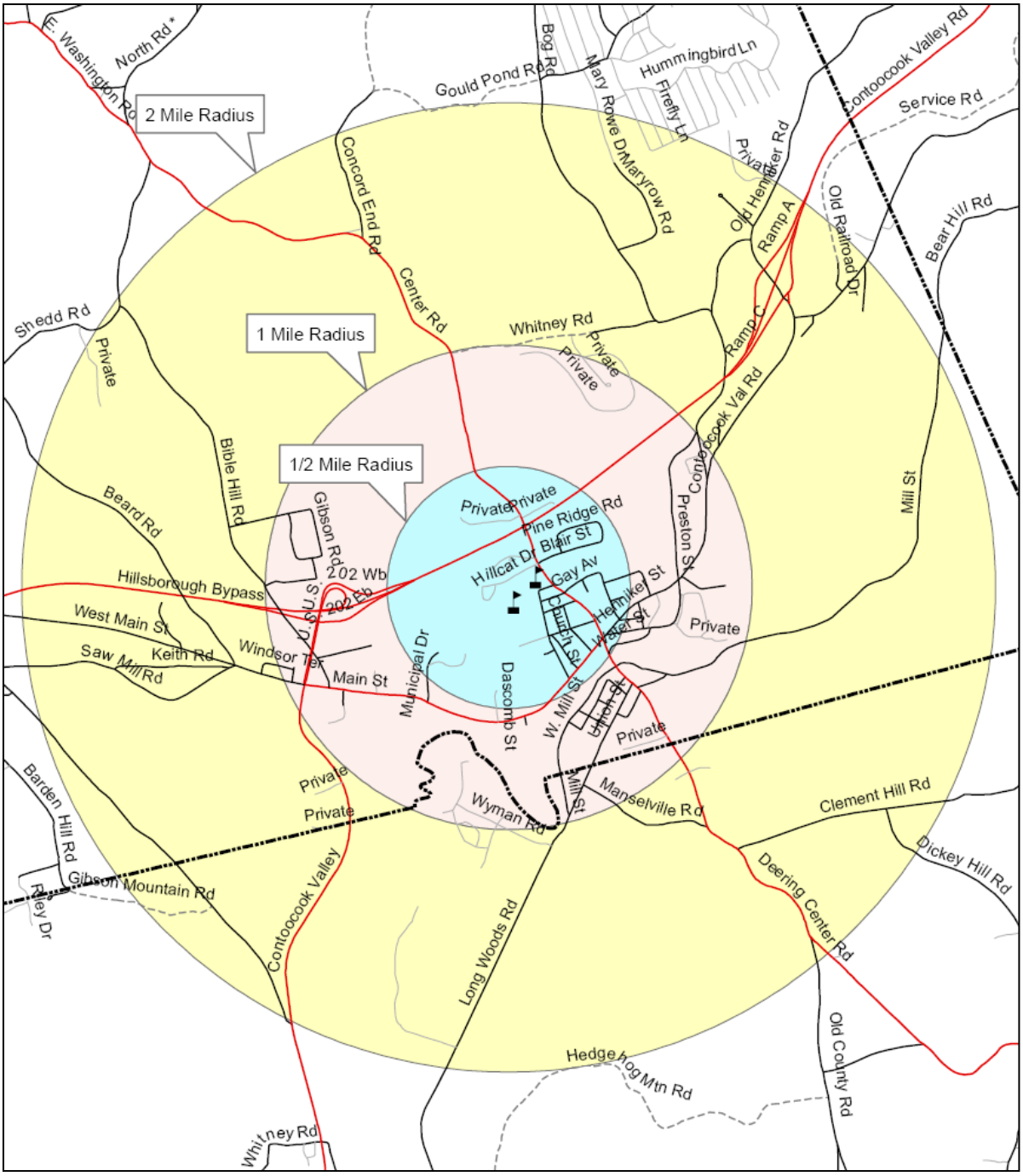
Evaluation

The evaluation completed during the SRTS study process included a review of survey responses, the compilation of traffic count data, as well as accident data and an analysis of current pedestrian and bicycle levels of service in Hillsborough Village. All data discussed in this SRTS Travel Plan concerns the area consisting of a radius of approximately two miles around the Hillsboro-Deering School Campus.

Map 1: Hillsborough SRTS Travel Plan Study Area



Surveys

The SRTS Committee, in partnership with the Elementary and Middle Schools and the Central New Hampshire Regional Planning Commission, undertook a comprehensive survey of parents whose children attend either of the two schools, using standard forms and procedures for SRTS programs through a web-based survey platform known as Survey Monkey (http://www.surveymonkey.com). The results of this November 2008 survey revealed strong parental support for transportation enhancements in Hillsborough which create increased opportunities for children who wish to walk or bike to school.

Predictably, safety issues are of highest concern to parents in considering whether to allow their children to walk or bike to school. For example, 65% of parents identified the speed and volume of traffic in Hillsborough Village as a reason why they do not allow their children to walk/bike to or from school. To the same question 56% said that the reason was the condition of sidewalks/pathways.

The responses to the question "Would you let your child walk or bike to/from school if these problems were changed or improved?" highlight that specific transportation improvements would result in more favorable conditions for children to walk or bike to school. Just over 58% of respondents said yes if sidewalks or pathways were improved, and 54% agreed that reductions in traffic speed in the area would result in them looking more favorably on their children walking or cycling to the Hillsboro-Deering School Campus. Potential attitudes toward these issues helped to frame the SRTS Committee's discussions and form a basis for the projects targeted for development through each phase of Hillsborough's SRTS applications.

It's just too unsafe. I would love to let my kid walk or bike to school but only if it was safe for them. The way things are now….NO WAY!!! – Hillsborough Elementary School Parent – SRTS Survey 2008

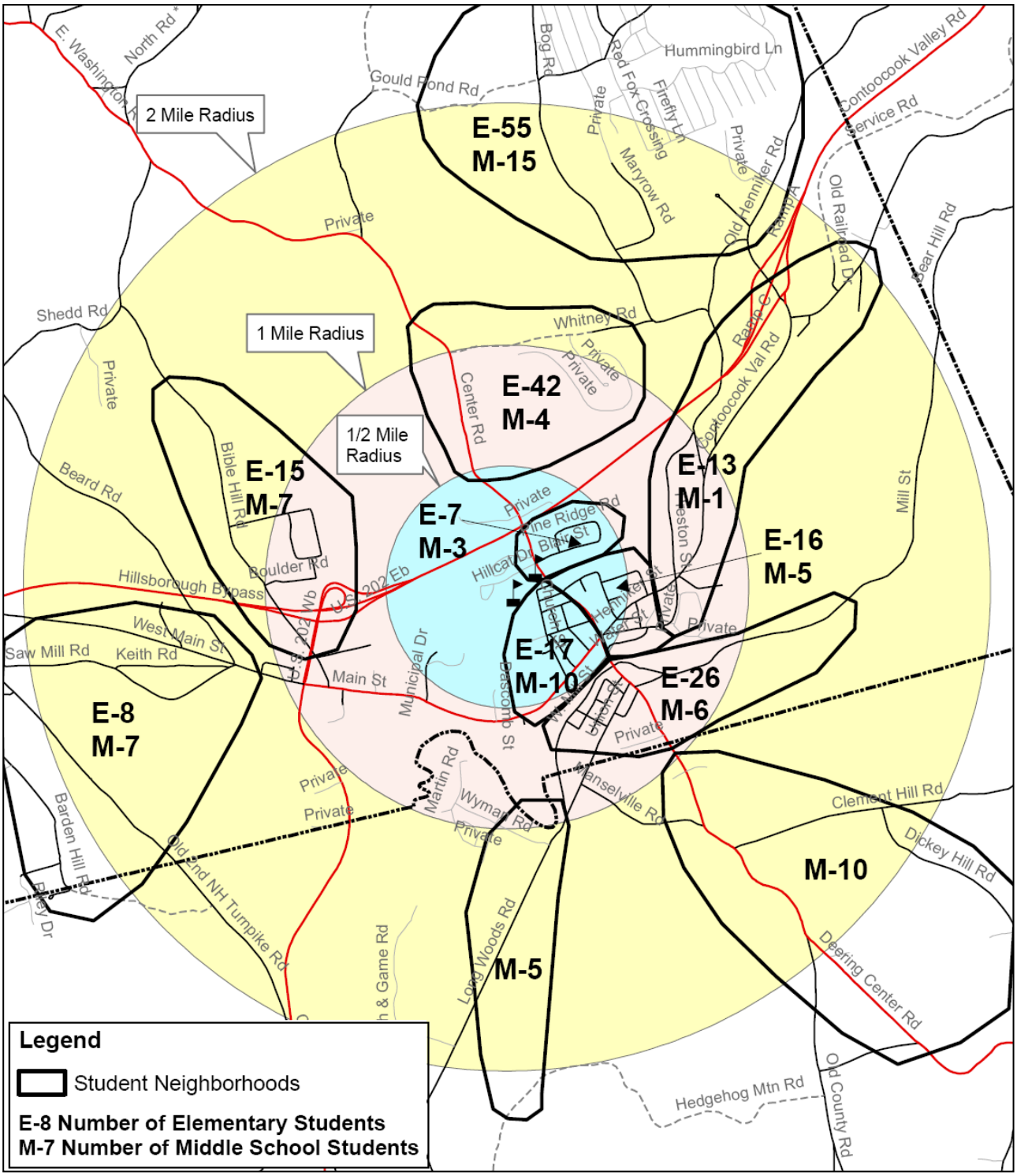
In August/September 2009, teachers in both the elementary and middle schools completed one week walking/biking classroom tallies using the standard forms and procedures for SRTS programs. In addition, CNHRPC staff met with groups of students to further discuss the issues surrounding walking/biking to school.

The survey responses reveal that, despite the relatively short distance from home to both schools for the majority of students, most have not or are not allowed to walk/bike to school. Almost 50% of respondents identified the school bus as their preferred transportation option for getting to school. This was followed by private family vehicles at 35%. Almost 10% of students walk to school. However, not one respondent indicated that biking is the preferred choice of transport for their children. This clearly indicates that facilities for biking, and to a lesser extent walking, are in sub-standard condition in Hillsborough Village and do not present a good perception of safety. Similar results were recorded for the transportation mode of choice on leaving school.

Even though walking or using a bicycle to get to school is rare, over 30% of parents said that their child asked them for permission to walk or bike either to or from school at some time in the last year. And over 80% of parents said it would be healthy or very healthy for their child to walk or bike to school. Clearly, removing barriers to biking and walking would be beneficial in the minds of most parents.

Follow up surveys and traffic studies will be conducted after the infrastructure improvements are made and the results will be used to measure success and to guide an action plan for continued improvements.

Map 2: Where Students Live

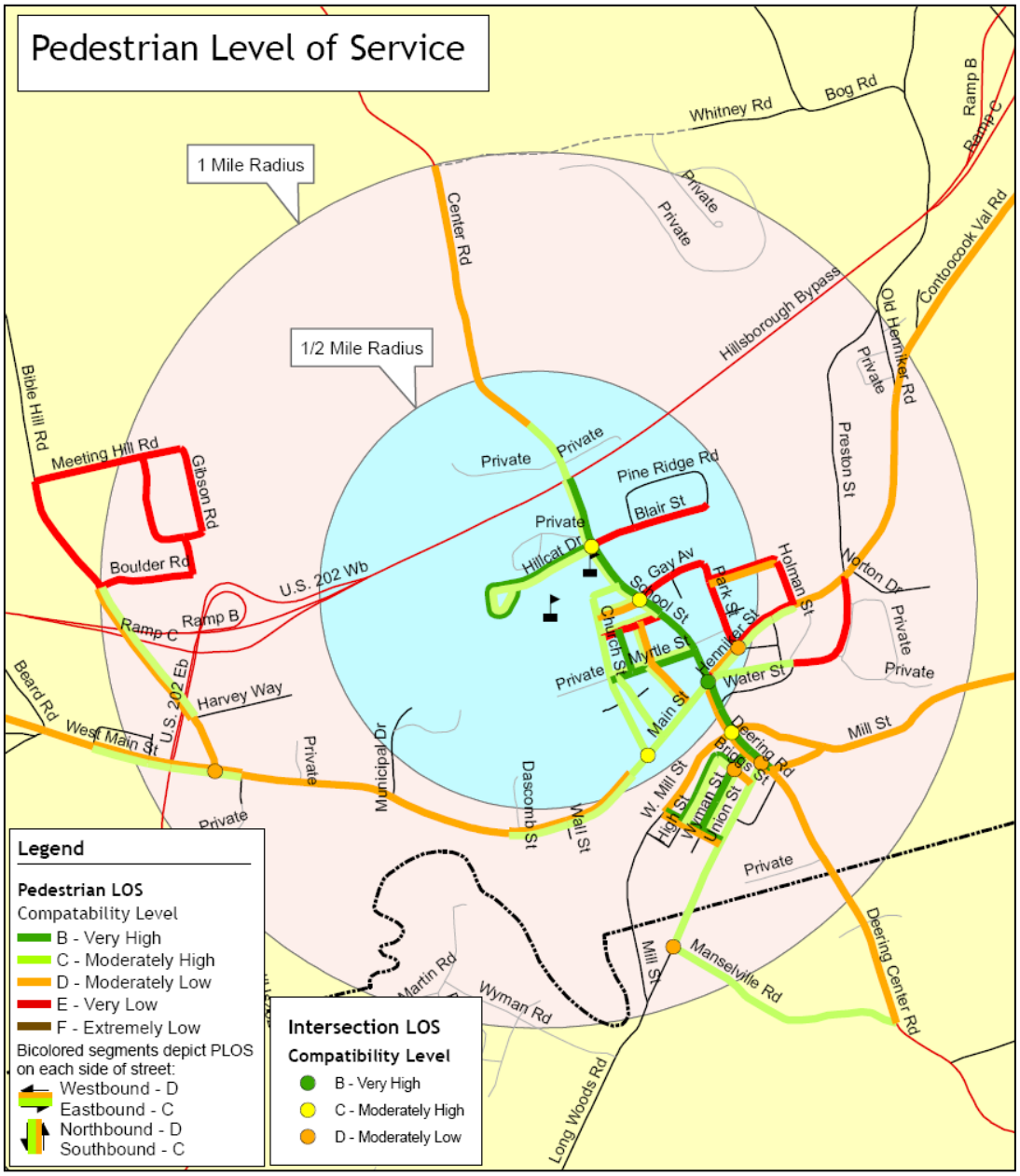


Level of Service

The pedestrian level of service (PLOS) map below illustrates the existing sidewalk locations within the study area with their respective grade and evaluation. The PLOS calculates the walker's perception of comfort and safety. Factors that increase the perception of safety for the walker include:

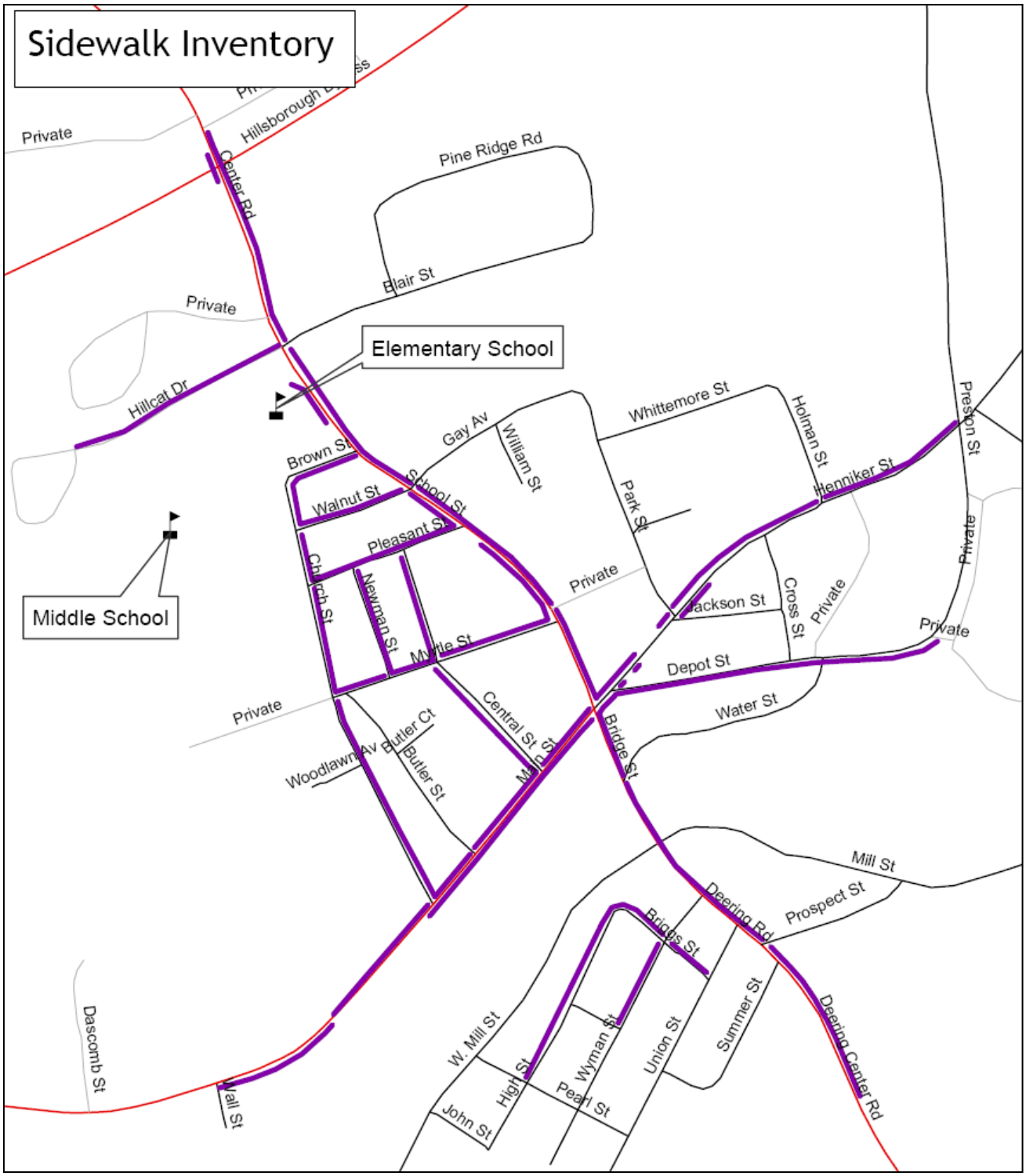
- Presence of a sidewalk
- Lateral separation from motor vehicle traffic
- Barriers and buffers between pedestrians and motor vehicle traffic
- Motor vehicle traffic volume and speed
- Driveway frequency and access volumes

Map 3: Pedestrian Level of Service



Sidewalk placement and condition is the single most important criteria in determining PLOS. In most cases, where a very low rating is received it is because the absence of a sidewalk. The map below highlights the existing sidewalk inventory for Hillsborough Village.

Map 4: Sidewalk Inventory



Pedestrian Accommodation Index

CNHRPC staff preformed a Pedestrian Accommodation Index in order to better quantify the "friendliness" of intersections to pedestrians throughout the study area. Based on a set of specific characteristics such as crosswalk condition (or availability), approach grade, sight distance, intersection design and lighting, select intersections within the study area were analyzed and scored according to how accommodating the intersection is to pedestrians. The index ranges from A to F, with level A representing the highest level of pedestrian accommodation and level F representing the lowest level of pedestrian accommodation.

The results of this pedestrian accommodation index are reflected below. Except for the intersection of School Street and West Main Street, all intersections received grades of C or lower. No intersections on School Street received a grade of less than C which highlights that in general intersections in Hillsborough Village are in average condition.

Table 2: Intersection Pedestrian Accommodation Index Results

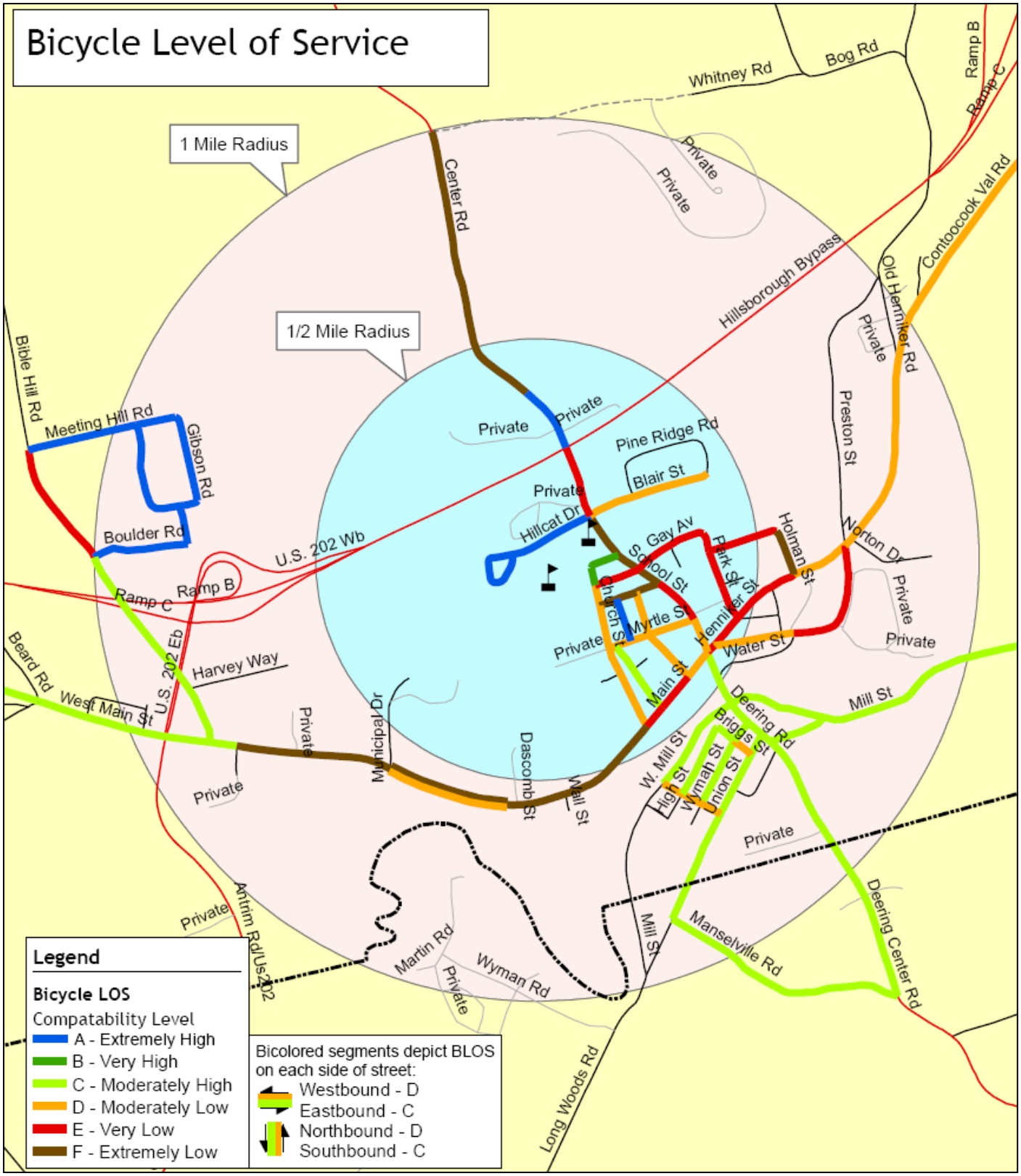
Intersection	Grade
Bridge St. and Wyman St.	D
Bridge St. and Mill St.	C
Bridge St. and Union St.	D
School St. and Walnut St.	C
School St. and Hillcat Dr.	C
School St. and W. Main St.	B
W. Main St. and Bible Hill Rd.	D
W. Main St. and Church St.	D
Henniker St. and Park St.	D
Union St. and Manselville Rd.	D

The SRTS Committee has raised concerns about the grades achieved at certain intersections. The pedestrian accommodation index relies on a standardized set of variables to quantify the "friendliness" of an intersection. However, at times due to certain traffic conditions and the time that the analysis was carried out, the results recorded may not accurately reflect the true condition of an intersection. The Committee has stated that the intersection of School Street and West Main Street is closer to a C grade, while the intersection of Bridge Street and Mill Street is closer to an F grade due to issues that the Committee has observed over a long period of time. This local knowledge has proven to be very valuable in formulating recommendations to improve the safety of the pedestrian environment in Hillsborough.

Bicycle Level of Service

A BLOS analysis was also undertaken by CNHRPC staff in shared roadway environments. The analysis used criteria such as volume and composition of traffic, pavement condition, curb side lane width, presence of parking, presence of bike lanes, presence of drainage structures and traffic speeds. As indicated in the map below, there is considerable room for improvement within the study area. Biking conditions along School Street are ranked extremely low, very low, or moderately low. Although Hillcat Drive has good biking conditions, BLOS is in the low range on the sections of streets connecting to School Street.

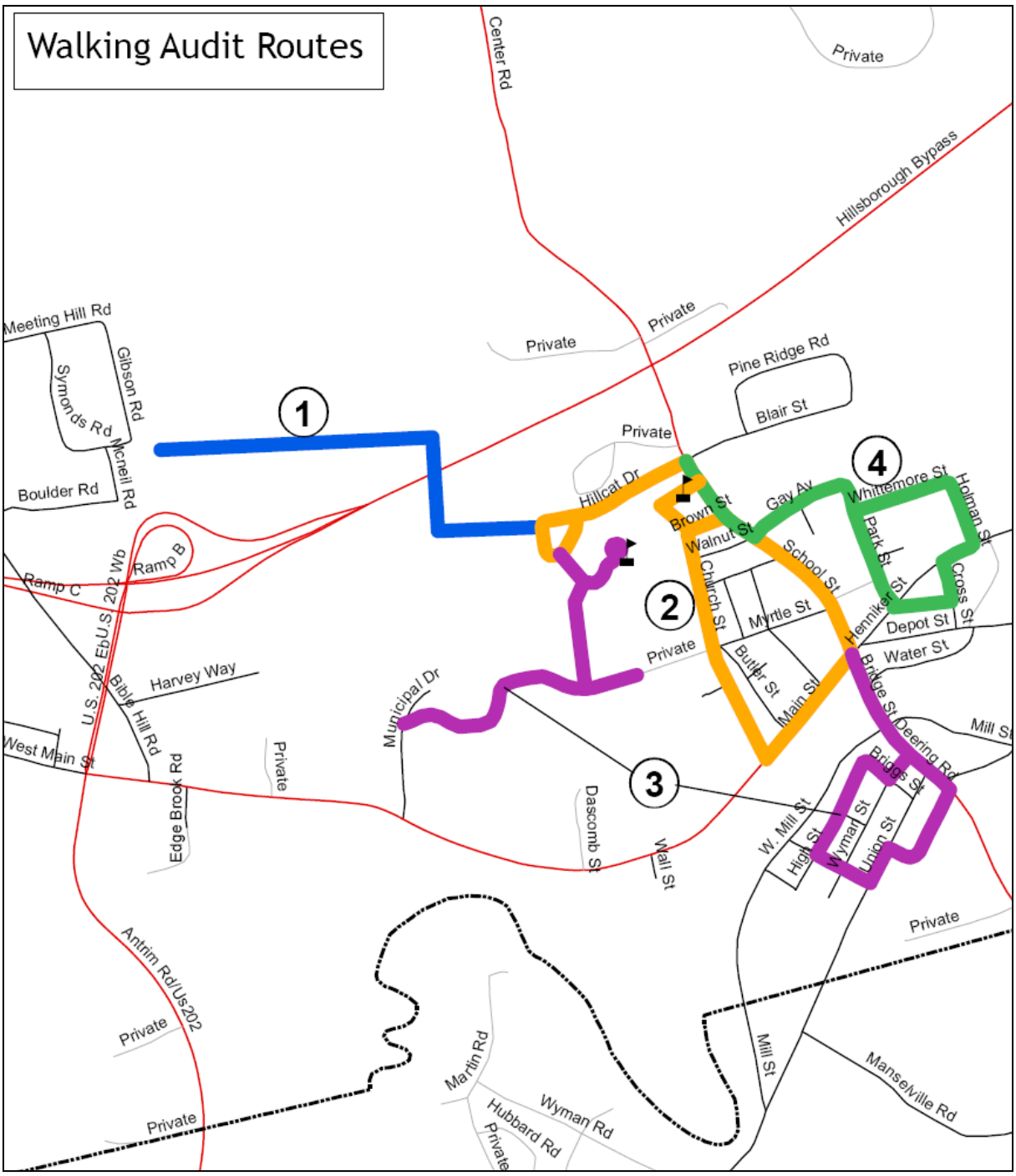
Map 5: Bicycle Level of Service



Walking Audit

In August 2009, the SRTS Committee, accompanied by staff from the Central New Hampshire Regional Planning Commission, carried out a comprehensive walking audit in Hillsborough Village to examine and discuss the safety of existing and potential routes to school. The committee broke into four separate teams; with each team designated a particular route, which are depicted in the map below.

Map 6: Walking Audit Routes



Factors considered during the audit were:

- Sidewalk continuity or lack thereof
- Sidewalk condition
- Pedestrians walking in the path of traffic due to missing or inadequate sidewalks
- Handicap accessibility
- Sight lines for both pedestrians and drivers
- Crosswalks adequately placed, visible and clearly marked
- Traffic signals adequately placed and equipped with pedestrian buttons
- Lack of traffic calming and/or lighting
- Lack of crossing guards

Each of the teams came up with a specific set of recommendations covering the 5 E's of the Safe Routes to School Program. These recommendations were then discussed in detail at a SRTS Committee Meeting. The most relevant and important recommendations were identified by the Task Force and graded in order of priority: High, Medium, and Low. The results of the walking audit are incorporated into the recommendations contained in this Travel Plan, both general recommendations and those specifically relating to engineering.

Traffic Volumes

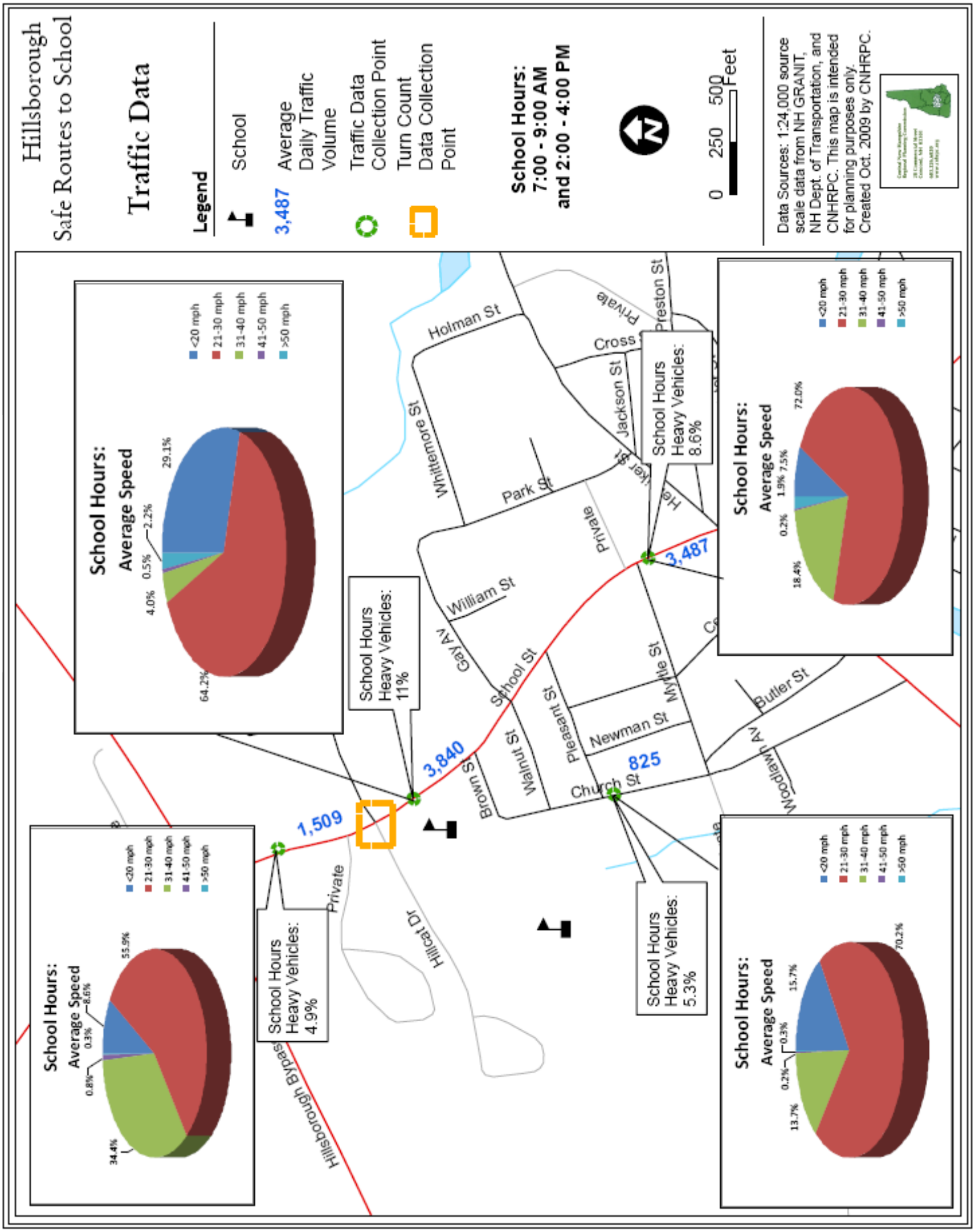
Motor vehicle traffic volumes in the study area closest to the school campus were collected during a five day period in early June 2009 when school was still in session. These figures are represented below in Map 7. Average Daily Traffic (ADT) counts in the vicinity of the school campus are in excess of 3,800 vehicles. The greatest total volume counts were observed on School Street at the count locations south of Hillcat Drive and south of Myrtle Street. These two locations also have the highest percentage of heavy vehicles. Heavy vehicles account for 11% of the total number of vehicles during school hours on School Street south of Hillcat Drive. This is a clear safety concern given the current condition of School Street and its sidewalks.

Speed Counts

The speed count data shown in Map 7 was also collected during the five day period in early June 2009. Of key interest is the high number of cars traveling above the 25mph posted speed limit on the upper section of School Street.

While the overall number of vehicles traveling above the posted speed limit was lower in the other count locations, it is still a concern to have so many vehicles traveling in excess of the posted speed limit in any areas surrounding the school zone.

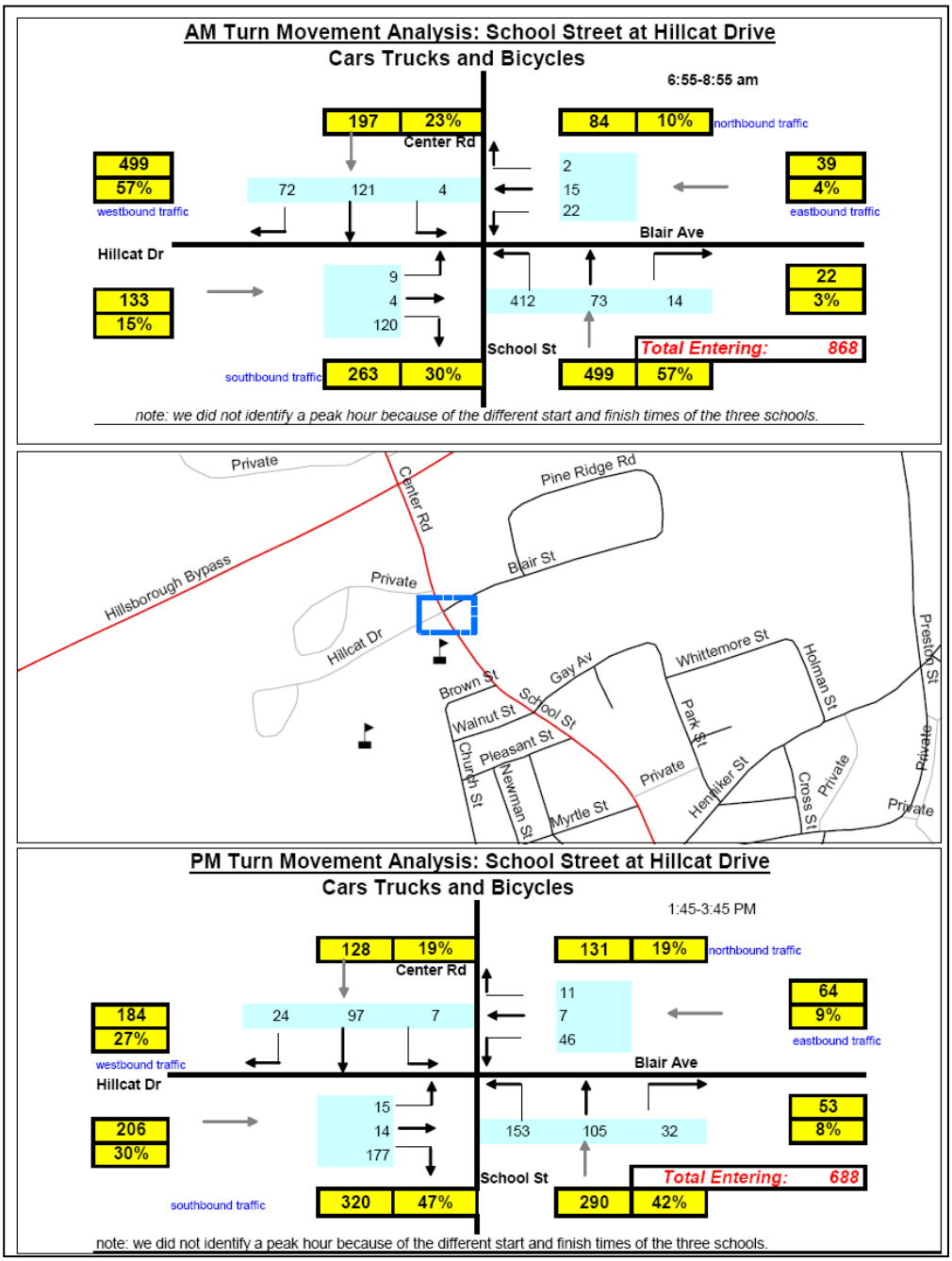
Map 7: Traffic Volumes



Turn Count Analysis

The results of a vehicle turn count analysis within the study area undertaken by CNHRPC staff are provided below. Map 8 represents all AM and PM turn movement analysis for cars, trucks and bicycles at the busiest intersection in the vicinity of the school campus. Major turn volumes were seen in the vicinity of the school campus, with the highest AM and PM volumes recorded on Hillcat Drive and School Street.

Map 8: Overall Turn Movements



Accident Data

Detailed vehicle accident data for the study area was collected from NHDOT and Hillsboro Police Department reports from 2003-2007. No traffic fatalities were recorded. Vehicular accidents were most common on the main roads through town – W. Main Street, Henniker Street, Bridge Street and School Street. Ten accidents occurred along School Street, nine of which were during daylight hours. School Street ranks third in terms of total accidents behind West Main Street and Henniker Street. More detailed accident analysis is contained in Table 3 on the following page.

Map 9: Accident Locations

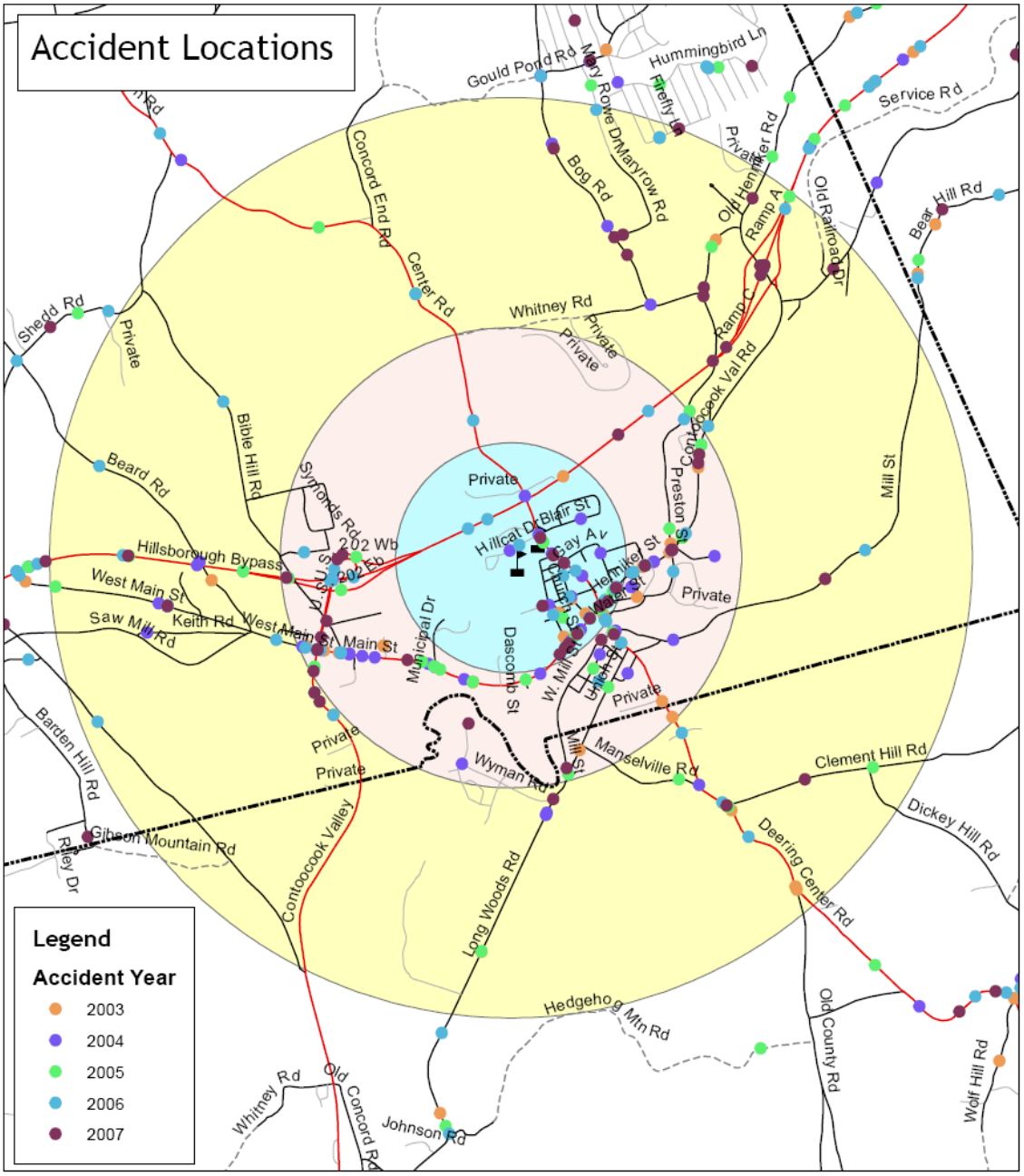


Table 3: Study Area Accidents and Observations 2003-2007

Location	Accidents 2003-2007	Observations and Common Conditions
Antrim Exit	1	Collision between one vehicle and an animal. Road conditions were unknown. Surface conditions were dry. There were no injuries.
Bridge St.	9	Collisions between one and three vehicles involving other vehicles or fixed objects. Road conditions were normal, except in one accident where it was described as worn. Surface conditions were mostly dry, with some conditions described as wet, snow/slush, or ice. Most accidents occurred in daylight, with two occurring at dark with street lights on. There was one reported injury, and it was not pedestrian related.
Butler St.	2	Collisions between two vehicles involving a fixed object or a pedal cycle/moped. Road conditions were normal. Surface conditions were either dry or snow/slush. One accident occurred in daylight and one at dark with street lights on. There was one reported injury, and it was not pedestrian related.
Center Rd.	2	Collisions between one vehicle and animal. Road conditions were normal. Accidents occurred either in daylight or at dark with no streetlights. There were no injuries.
Central St.	5	Collisions between one or two vehicles. Road conditions were normal. Surface conditions were dry, except in one case where they were wet. All accidents occurred in daylight. There were two reported injuries, and they were not pedestrian related.
Church St.	6	Collisions between one or two vehicles, with one vehicle striking a telephone/electric pole. Road conditions were normal. Surface conditions were either dry, wet, or snow/slush. Most accidents occurred in daylight and one at dark with no street lights. There were three reported injuries, and they were not pedestrian related.
Depot St.	3	Collisions between two vehicles. Road conditions were normal. Surface conditions were dry. Accidents occurred in daylight. There was one reported injury, and it was not pedestrian related.
Exit 149	1	Collision between one vehicle and an animal. Road conditions were unknown. Surface conditions were dry. There were no injuries.
Henniker St.	14	Collisions between one or two vehicles, one involving a pedestrian and one a pedal cycle/moped. All road conditions were normal. Surface conditions were dry. Accidents occurred in daylight or at night with street lights on. There were three injuries.

Table 3: Study Area Accidents and Observations 2003-2007 contd.

Location	Accidents 2003-2007	Observations and Common Conditions
Park St.	1	Collision between two vehicles. Road conditions were normal. Surface conditions were dry. Accident occurred at dusk. One injury was reported.
Myrtle St.	3	Collisions between two vehicles, one in which involved a parked motor vehicle. Road conditions varied. Surface conditions were dry. Accidents occurred in daylight or at night with street lights on. No injuries were reported.
Pine Ridge Rd.	1	Collision with a fire hydrant. Road conditions were normal. Surface conditions were dry. It was dark and there were no street lights. No injuries were reported.
School St.	10	Collisions between one or two vehicles, involving various fixed objects. Road conditions were normal. Surface conditions were either dry or wet. Accidents occurred in daylight, except for one which occurred at dark with the street lights on. Four injuries were reported, none of which involved pedestrians.
Walnut St.	1	Collision between two vehicles. Road conditions were normal. Surface conditions were wet. Accident occurred in daylight. No injuries were reported.
W. Main St.	18	Collisions between one, two, or three vehicles. Road conditions were normal. Surface conditions varied between dry, wet, snow/slush, and ice. Accidents occurred in daylight, except for one which occurred at dark with the street lights on. Seven injuries were reported.
Total:	80	

Pedestrian/Bicyclist Related Accident Data

Between 2003 and 2007, there were a total of three reported accidents involving pedestrians or bicyclists, with one each occurring in 2003, 2005, and 2006. Two of these accidents occurred on W. Main Street and one occurred on Henniker Street, the streets on which the most accidents involving only vehicles occurred, and all of the accidents occurred at intersections. Of the three accidents, two involved pedestrians and one involved a bicyclist. All three of the accidents occurred at intersections during dark hours with street lights on with dry and normal road surface conditions. Three injuries were incurred and no fatalities resulted from these accidents. In light of these accidents, and traffic volumes recorded along these routes, proposed safe routes should be designed to minimize travel along these roads.

Table 4: Study Area Pedestrian and Bicycling Accidents 2003-2007

Location	Accidents 2003-2007	Description
34 Henniker St.	1 in 2003	A two vehicle/pedestrian accident at the intersection of Park Street. The road alignment was "straight and level" and the road was in normal condition. Surface conditions were dry and lighting conditions were dark with the streetlights on. There was one pedestrian injury.
25 W Main St.	1 in 2005	A two vehicle/pedestrian accident at the intersection of Central Street. The road alignment was "straight and grade" and the road was in normal condition. Surface conditions were dry and lighting conditions were dark with the streetlights on. There was one pedestrian injury.
321 W Main St.	1 in 2006	A two vehicle bicyclist accident at the intersection of Child's Way. The road alignment was "straight and level" and the road was in normal condition. Surface conditions were dry and lighting conditions were dark with the streetlights on. The cyclist was injured.

Encouragement, Education & Enforcement

Encouragement, education and enforcement are key elements in the process of changing people's perception of, and behavior toward walking and biking to school. The following is a summary of these activities in Hillsborough.

Education

The educational element of Hillsborough's SRTS program has been based on partnerships within the community. As indicated in the parental survey, the overwhelming majority of parents are reluctant to let their children walk/bike to school given current conditions. Therefore, the Committee realized that it was necessary to work with parents to show them the benefits of walking and biking to school. This was accomplished in a number of different ways. First, both schools worked with the CNHRPC to develop attractive flyers and

pamphlets that explained the health benefits for children of walking and biking more. Secondly, the CNHRPC works directly with the school district through their Program for Alternative Transportation and Health (PATH). PATH encourages and offers incentives for the use of healthier transportation options to single occupancy vehicles (SOVs) in the 20 community region and provides people with the tools to live healthier as individuals and as parents. These efforts, which are ongoing, include setting up bicycling, walking and carpooling groups and providing emergency rides home when parents use one of those travel options to work.

Preceding the formation of the SRTS Committee, the Hillsboro Police Department has worked tirelessly to ensure that all students are adequately trained in safe walking and biking practices by offering both general and advanced bike safety instruction through both schools. The Police Department has employed a School Resource Officer as well as hiring and training a school crossing guard who offers daily guidance on safe pedestrian activities.

The SRTS Committee also has plans to work with the Director of the New Hampshire Bike Walk Alliance, who is a nationally certified instructor with the League of American Bicyclists to teach both students and parents safe riding techniques, how to identify safe routes and how to wear the proper equipment for safe cycling. This will reinforce the excellent work already undertaken by the Police Department. In addition, the schools have plans to work with the Center for Health Promotion and the New Hampshire Hospital Association to gather and present data on the health benefits of walking and bicycling to/from school.

The school will also host assemblies for students and parents as the infrastructure improvements are being made to help them to understand how to use the enhanced and new sidewalks and crosswalks in the study area.

Encouragement

Particularly given that parents perceive traffic speeds and the lack of sidewalks to be among the greatest impediments to safe pedestrian and bicycle access to the Hillsboro-Deering School Campus, the development of infrastructure will go a long way toward encouraging walking and biking to the school campus.

The SRTS Committee will work with the Hillsboro Police Department and a local bicycle shop in Concord, to provide bike helmets, locks and pedometers at low or no cost to students and parents. Pedometers can create a friendly competition among the students and faculty to see who can walk or bike the most in a given time. At the discretion of both the elementary and middle school principals, students will be sent home with bicycling and walking logs and offered prizes depending on the levels to which they participate. For students who live outside of the school's two mile radius, other incentives could include how much a family walks/bikes on weekends, etc. Events will also come in the form of "bike rodeos" and "walking school buses" to make walking and biking interesting and exciting. Committee members will lead "walking school buses" and will also work with Physical Education Teachers to walk and bike with students on the new infrastructure improvements similar to a "nature trail."

The Parent Teacher Organizations (PTO) of both schools plan to hold monthly walk to school days, and the group is also planning to celebrate the National Walk to School Day. These events include incentives to students to participate such as healthy snacks, certificates and arrival breakfasts and hot chocolate. The PTO also holds an annual fundraiser event for families in the community called the "Wheel-a-thon;" children collect pledges and complete laps in a non-motorized wheeled vehicle. This will be a great event to spread the importance

of more healthy and sustainable modes of travel to and from school and will be an excellent form of encouragement for students and parents alike.

In addition, a number of local groups are planning on participating in "walk to" events from the elementary school during this school year. The following is a brief summary of these events:

- Smith Congregational Church
  - Winter Carnival Games January 2010
  - Fabulous, Fun Fridays March 5, 12, 19, 26 2010

  Adults leading these events will plan to pick up the students and walk to the downtown church location as "walking buses." Typically, these groups have in excess of twenty students. This church location can be reached by walking the Church St. or School St. routes.

- Hillsborough United Methodist Church

  This group has planned some Friday events after school such as movie afternoons. Again, responsible adults will collect the students from school and walk to the location which can be reached via School St. or Gay Ave.

- Fuller Public Library

  Parent groups are already walking from the front of the school release area two days a week with large groups of kids going to the library for reading and activities. This takes the form of a "walking library bus". The library may plan additional afternoon activities for these groups in the future.

- Hillsboro-Heritage Historical Museum

  The museum plans to hold special quarterly presentations on transportation within Hillsborough. This will be complemented by the Living History Event Steering Committee providing trivia about walking and biking to school in Hillsborough. For these events it is planned to hold supervised walks from school to the museum.

The SRTS committee has also applied for an additional SRTS Mini-grant that will provide funding for a number of incentivized events which will use student creativity and leadership skills to increase safe walking and bicycling to school. The committee aims to establish three student leadership groups, one in each of the schools located on the Hillsboro-Deering School Campus (Elementary, Middle, and High School). Each of these school leadership groups will be adult supervised. It is planned to have the student leadership groups meet separately once a month, and then jointly, to brainstorm ways to make walking and biking more appealing. Specific tasks could include advertising community walking and biking events, drafting letters to Town officials to request specific improvements to make walking and biking safer and more enjoyable and working with a local bike shop in Concord to acquire and distribute safety aids such as reflective strips to make students more visible.

If successful in achieving funding through the mini-grant the Committee plans to purchase library books on topics such as health, safety, exercise, walking and biking. By increasing safety and demonstrating safe walking practices at the events listed above it is hoped that the students will utilize these techniques in their daily walk to and from school.

Enforcement

The town's commitment to enforcement has been evidenced by the close relationship the School District and SRTS Committee maintain with the Hillsboro Police Department. In addition to participating on the SRTS Committee, the Police Department has a strong history of working with the School District to promote safety for its students on the way to and from school. The Hillsboro Police Department is also extremely proactive with traffic enforcement, covering existing conditions in the school area, and being particularly keen to assist students traveling along the proposed new infrastructural enhancements to ensure maximum use.

The Police Department diligently enforces the school speed zone. The addition of two radar speed signs planned for late 2009 on School St. will further aid the Police Department with enforcement. The radar signs will have a traffic calming effect by reminding drivers when they are exceeding the speed limit in the school zone. The radar signs will also have data collection capabilities compatible with StreetSmart software. This will allow the department to analyze the data to determine the most appropriate times for enforcement activities.

The Police Department also set up radar posts where they will have numerous officers in an area. If an unacceptable speed is observed, that vehicle will be waved over and the driver will be spoken to. At a minimum, the police officer will explain to the operator why they have been stopped and the importance of traveling at a safe speed in that area. This will also tie into the educational element of this SRTS Travel Plan.

Engineering

The following are engineering recommendations to improve walkability and biking opportunities to the Hillsboro-Deering School Campus. While a number of recommendations relate directly to areas adjacent to the school campus, several relate to Hillsborough Village and surrounding neighborhoods. The walking and biking audit carried out in August 2009, along with concerns noted in the surveys and discussions with students, influenced the recommendations, generated specific concerns with School Street, Hillcat Drive and West Main Street. The projects are listed in order of priority.

At a SRTS Committee meeting on 09/15/2009 the Committee approved the following priority recommendation for the engineering section of this SRTS Travel Plan:

> *Improve existing and install new sidewalks starting at the Hillsboro-Deering School Campus and working southward. Traffic calming measures will be a high priority throughout the study area.*

All engineering recommendations contained in this plan will work toward achieving and enhancing this priority goal and ultimately improving safety and accessibility for students and parents going to and from the Hillsboro-Deering School Campus.

Priority Projects

Brown Street – Church Street – Walnut Street Sidewalks

The existing sidewalk loop on the south-side of Brown Street, east-side of Church Street and north-side of Walnut Street is in poor condition with no clear delineation between the sidewalk and the road. This is a major concern as it is a heavily used sidewalk being closest to the school campus. A large number of students have the potential to arrive at and leave the school campus via the intersection of Church Street and Walnut Street which has sub standard sidewalk conditions. School Street is a natural continuation of this loop immediately south of the school campus. Curbstones and the sidewalk surface are extremely

low in many areas of School Street and present considerable obstacles to safe walking and biking activity.

Recommendations

Improve the sidewalk on the south-side of Brown Street, onto Church Street and connecting with the north-side of Walnut Street. All sidewalk improvements will be ADA compliant and use granite curbing to ensure clear delineation between the sidewalk and roadway where applicable.

Church Street Existing Conditions

Church Street Potential Improvements

School Street Engineering Study

School Street is the primary access road to the Hillsboro-Deering School campus, and a natural continuation of the above loop immediately south of the school campus. Curbstones and the sidewalk surface are extremely narrow and low in most areas of School Street and present considerable obstacles to safe walking and biking activity. The Committee has expressed the need to complete this loop onto School Street to ensure a complete and unbroken sidewalk network in the area immediately south of the school campus. As School Street is a state highway and subject to joint maintenance from the New Hampshire Department of Transportation and the Town of Hillsborough, it would be premature to recommend specific engineering improvements on the street.

School Street Existing Conditions

Recommendations

It is recommended that the Committee/School District/Town of Hillsborough investigate possible engineering projects covering right of way issues, drainage, design, construction and cost in the form of a comprehensive engineering study for School Street from Hillcat Drive to West Main Street.

School Street Hillsborough Engineering Study

Note: No separation between sidewalk and roadway

Traffic Calming

The SRTS Committee has identified high speeds and the need for traffic calming measures as a key issue in Hillsborough Village. The data compiled in this travel plan reinforces these points. Speeds are a concern throughout the village. As seen through the examination of speed count data, it is clear that significant improvements can occur with regard to speed. While police enforcement has worked to slow traffic in Hillsborough Village, permanent traffic calming measures are recommended. As discussed previously, traffic calming measures will be considered a high priority throughout the study area.

Recommendations

The SRTS Committee has identified a clear program of pedestrian safety infrastructure enhancements on existing routes to school which include the following:

- Striping for eleven crosswalks with special treatment for enhanced visibility
- Twelve permanent crosswalk signs
- Five portable, on-street crossing signs
- Two permanent radar speed signs.

It is recommended by the Committee that the surface of crosswalks be painted a prominent color. Permanent crosswalk signs will be installed and standard specifications will be used.

The following table of improvements displays the specific location of each planned improvement and corresponds to Map 8 titled *SRTS Project Map.*

Table 5: Traffic Calming Recommendations

Location ID	Location Description	New Crosswalk with Enhanced Visibility	Permanent Crosswalk Signs (2 per location)	Portable On-street Crosswalk Sign	Radar Speed Sign
1	School Street, north of campus				X
2	Intersection of School Street & Hillcat Drive	X	X		
3	School Street at the Elementary School	X		X	
4	School Street, south of campus				X
5	School Street at the library	X		X	
6	Intersection of School Street & Myrtle Street	X	X		
7	Intersection of Church Street and Brown Street	X			

Table 5: Traffic Calming Recommendations contd.

Location ID	Location Description	New Crosswalk with Enhanced Visibility	Permanent Crosswalk Signs (2 per location)	Portable On-street Crosswalk Sign	Radar Speed Sign
8	Intersection of Church Street & Myrtle Street	X	X		
9	Intersection of Church Street & West Main Street	X	X	X	
10	Intersection of Central Street & West Main Street	X	X	X	
11	Intersection of Hoyt Lane & West Main Street	X			
12	Henniker Street at Depot Street intersection	X			
13	Depot Street at Henniker Street intersection	X	X	X	
14	Intersection of School Street & West Main Street	X			

Improved crosswalk visibility will better alert motorists to the potential for pedestrians in the roadway and thereby have a traffic calming effect. Additional signs at locations with high pedestrian and automobile traffic will improve safety. On-street, portable crosswalk signs placed at key locations will discourage drivers from gaining too much speed and will allow pedestrians to cross roadways safely.

<u>Radar Speed Signs on School Street North and South</u>

The SRTS Committee was fortunate to receive funding for the installation of two radar speed signs on School Street. To ensure maximum benefit from these signs the Committee is anxious to complement the signs with roadway striping and markings to further alert motorists to the potential for pedestrian and bicycle traffic.

Recommendations

Work with NHDOT and the Hillsboro Police Department to determine the best location for the radar signs on School Street. Subject to agreement with the NHDOT, investigate the possibility of providing brightly colored roadway striping and markings to further alert motorists that they are entering a school zone. The exact design and layout of these

markings would be subject to a further engineering study for School Street as discussed above.

Hillsboro House Driveway

Hillsboro House occupies the middle of the block between Brown Street and Walnut Street. The driveway leading to the parking lot for Hillsboro House has the potential for high pedestrian traffic due to its proximity to the school campus. There is very little delineation between the driveway and the road, and parking on the roadside is a considerable problem. The existing asphalt surface is in relatively good condition and does not require resurfacing.

Recommendations

Subject to agreement with NHDOT, delineate a stripped and clearly visible walkway across the entrance driveway to the Hillsboro House parking lot. Erect adequate signage and roadway markings to alert motorists to the possibility of pedestrian traffic on the route.

Hillsboro House Existing Conditions

Hillsboro House Potential Improvements

Intersection of Bridge Street & Mill Street

The intersection of Bridge Street and Mill Street was identified by the SRTS Committee as being quite dangerous due to the presence of a building directly abutting the sidewalk which creates a blind spot for motorists who may be unaware of the presence of the crosswalk. The existing sidewalk on the eastern side of Bridge Street is particularly narrow with little or no definition between the roadway. These factors could be improved to increase pedestrian safety.

Intersection of Bridge Street & Mill Street

Recommendations

One possible action discussed by the Committee could be to move the centerline of the roadway on Bridge Street to the west and both widen and delineate the sidewalk on the eastern side of Bridge Street, improving its surface and adding granite curbing to create a clear definition between the roadway and sidewalk. This project will require some complex engineering. It is recommended that an engineering study be carried out to discuss a list of possible options for this intersection.

Sidewalk at intersection of Church Street & West Main Street

The existing sidewalk on West Main Street at the intersection of Church Street has no clear delineation as it meets the roadway.

Recommendations

Add granite curbing to the sidewalk on West Main Street at the intersection of Church Street. As the curbing will raise the surface of the sidewalk it is recommended to also resurface the sidewalk.

Dump Road Pathway

The pathway located on Dump Rd. leading to the back of the school campus is used by a number of students as a shortcut to get to the school and the ball fields. This route is frequently used by construction vehicles and does not represent an ideal walking environment. However, as noted by the committee, students will continue to use this route to get to and from the campus. Therefore, some forms of pedestrian enhancements are recommended along this route.

Recommendations

Investigate the possibility of erecting signage along the route to alert motorists to the potential for pedestrians. Other possible solutions could be lighting and widening the walking surface. Ensure that the pathway is regularly monitored to maintain a clear and level walking surface.

School Bus Collection & Drop Off On Bible Hill Road

The Committee raised concern with regard to the current school bus collection and drop-off procedures in the Bible Hill Road area. Students are collected at multiple points along this route and in many cases have no option but to stand on the road when waiting to be collected. This is an obvious safety concern and it is felt that one safe and centrally located drop off point may be an option to increase safety.

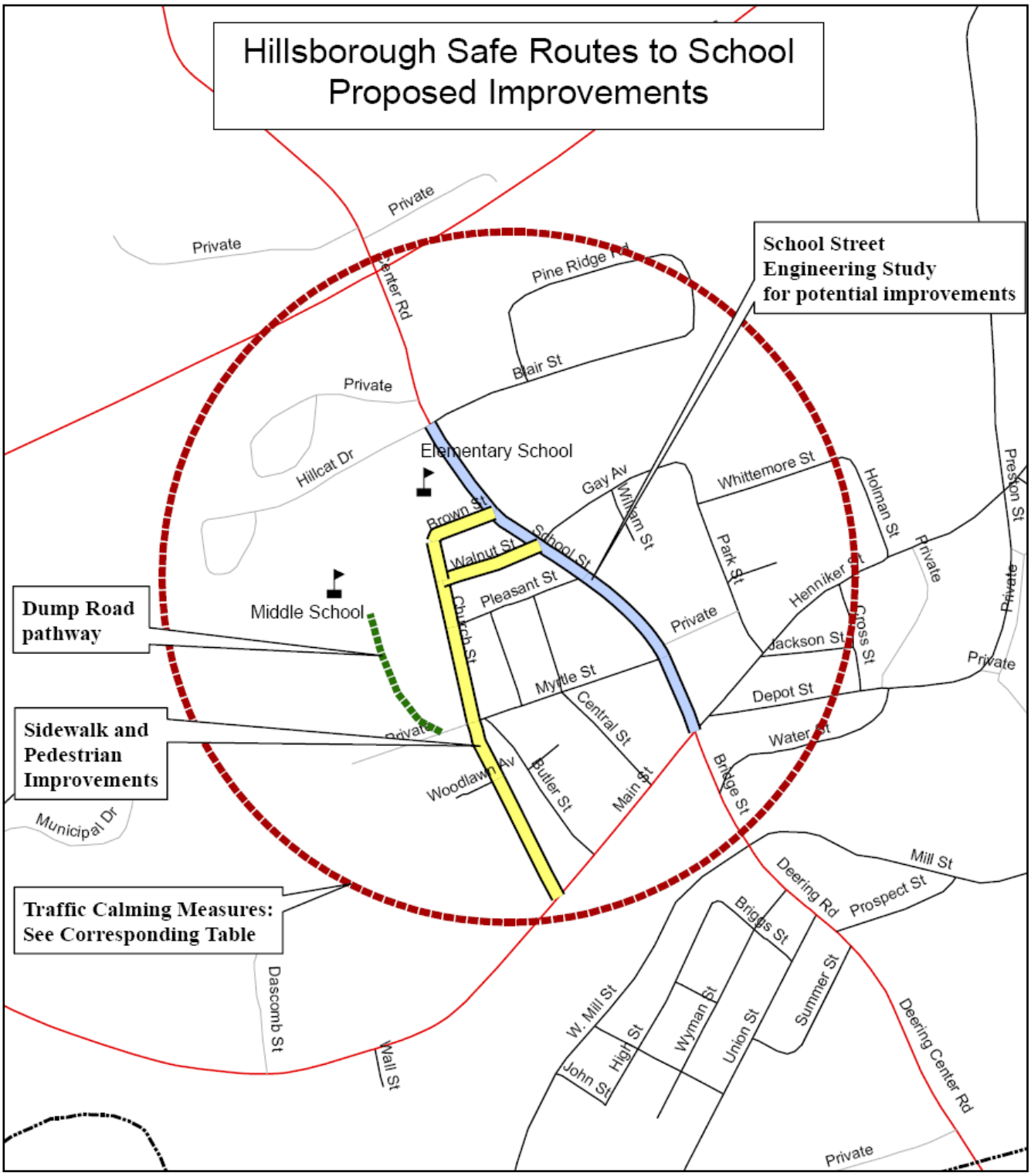
Recommendations

Investigate the possibility of consolidating school bus collection and drop off points in the Bible Hill Road area. Possible options to be explored may include the construction of a paved and sheltered centrally located facility where students could congregate safely.

Sidewalk on northern-side of Gay Avenue

There is no existing sidewalk on Gay Avenue. However, due to the low number of students living on Gay Avenue there is likely to be low pedestrian activity on this route. In addition, traffic volumes and speed recorded during the study process were not identified as an issue. The Committee agreed that this issue should be of low priority as a new sidewalk on Gay Avenue would be expensive to construct and would not be heavily used.

Hillsborough SRTS Project Map

Map 10 displays potential infrastructural improvements in the study area. The red dashed circle highlighting traffic calming measure should be viewed in conjunction with Table 5: Traffic Calming Recommendations.

Map 10: Hillsborough SRTS Project Map