PETERBOROUGH NEW HAMPSHIRE

SAFE ROUTES TO SCHOOL TRAVEL PLAN

Peterborough Elementary School

South Meadow Middle School

SafeRoutes
National Center for Safe Routes to School

New Hampshire DOT
Department of Transportation

APRIL 2014

PETERBOROUGH NEW HAMPSHIRE
SAFE ROUTES TO SCHOOL TRAVEL PLAN

The Peterborough New Hampshire School Safe Routes to School Travel Plan is made possible with a Travel Plan Grant (Peterborough, X-A002(275), #22117) from the NH Department of Transportation's Safe Routes to School Program. The Peterborough Safe Routes to School Task Force prepared this Plan with assistance from the Town of Peterborough, Southwest Region Planning Commission (SWRPC) and Hoyle, Tanner & Associates (HTA) for the Peterborough Elementary School and the South Meadow Middle School. The members of this Task Force are listed below. Throughout the planning process, a number of members retired from their professional positions and stepped down from the Task Force. These individuals include Richard Bergeron, former Superintendent of SAU #1, Richard Dunning, former Principal of South Meadow School, and Carol Ogilvie, former Community Development Director for the Town of Peterborough.

Peterborough Safe Routes to School Task Force:

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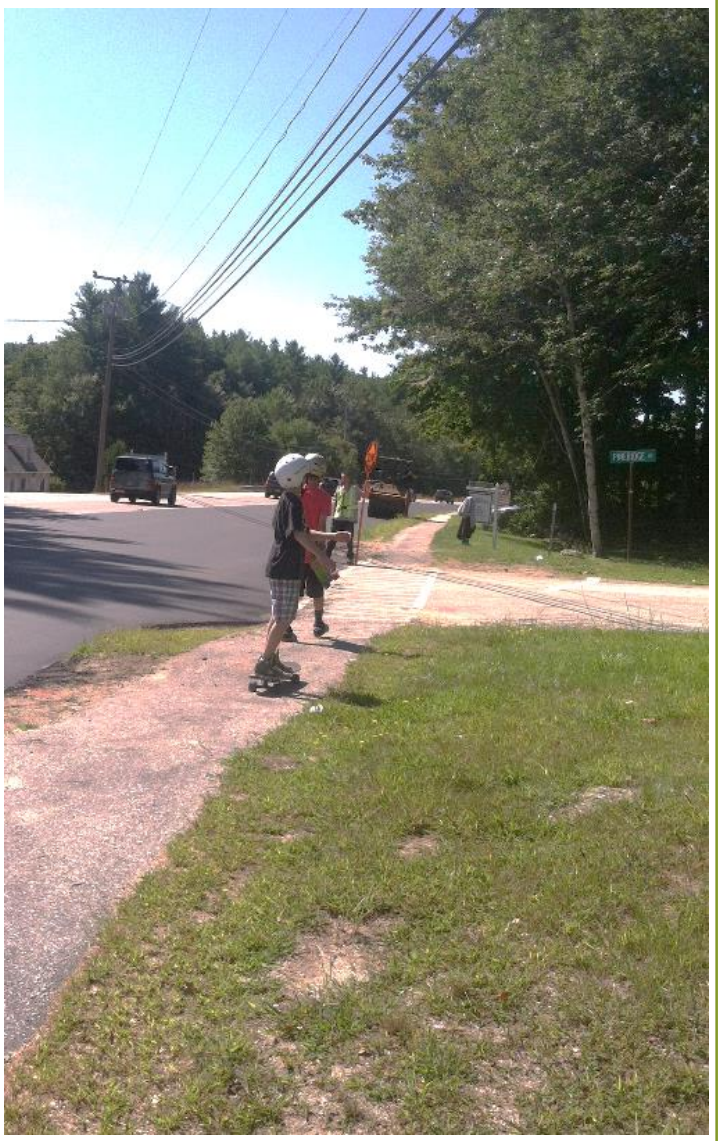
INTRODUCTION

This Travel Plan has been prepared as part of a collaborative effort between the Peterborough Safe Routes School (SRTS) Task Force, the Town of Peterborough, the Southwest Region Planning Commission (SWRPC), and Hoyle, Tanner and Associates Inc. (HTA) to improve the conditions for walking and bicycling to the Peterborough Elementary School (PES) and the South Meadow Middle School (SMS). The SRTS Task Force, which is composed of school administrators, faculty and staff, community members, and Town staff, provided input, guidance and oversight to the Town and SWRPC in the preparation of this document.



The goal of this Travel Plan is to identify recommendations for physical improvements, educational programs and community efforts that will encourage walking and biking with in a two-mile radius of both the Peterborough Elementary School and the South Meadow Middle School.

This document is divided into three components: an introductory section, the PES Travel Plan and the SMS Travel Plan. This introduction provides an overview of the SRTS program and the planning process for this project. The site conditions, safety concerns, and recommendations for improvements at each school are addressed in their respective plan components.

Project Overview

Safe Routes to School (SRTS) is a national program focused on improving the health and wellbeing of children by creating safe opportunities to walk and bicycle to school. SRTS programs examine the conditions around schools and conduct activities to improve safety and accessibility, traffic and air pollution in the vicinity of schools. Communities conducting these programs are encouraged to employ a combination of evaluation, education, encouragement, enforcement and engineering strategies to address the specific needs of their school(s).

This comprehensive approach, called the five (5) E's, is centered on an understanding that the barriers to safe walking and bicycling are both behavioral and physical. Although the focus of this Travel Plan is evaluation, each of the 5 E's (described below) is addressed.

- Evaluation involves monitoring and documenting outcomes, attitudes and trends through the collection of data before and after program activities or projects. These activities help track which strategies would be most or less successful and which should be modified for better results.

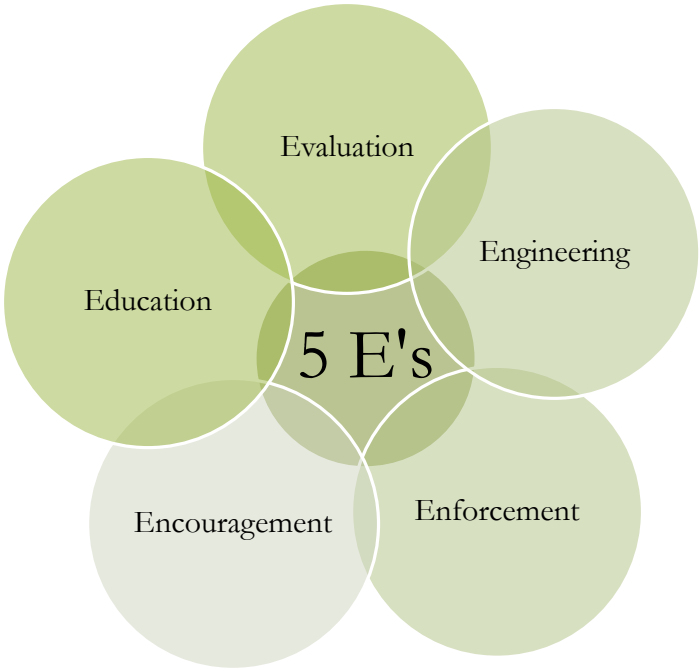
- Education programs include teaching pedestrian/bicyclist/traffic safety and creating awareness of the benefits and goals of SRTS. Education programs can also incorporate health and environmental considerations associated with walking and bicycling.

- Encouragement activities generate excitement and interest in walking and bicycling. Special events, mileage clubs, contests and ongoing activities all provide ways for parents, caregivers and children to discover or re-discover that walking and bicycling are do-able and fun.

- Enforcement programs are focused on deterring unsafe behaviors of drivers, pedestrians and bicyclists, and on encouraging all road users to obey traffic laws and share the road safely.

- Engineering is a broad concept used to describe the design, implementation, and maintenance of traffic control devices or physical measures. These strategies create safer environments for walking and bicycling through improvements to the infrastructure surrounding the schools.

Figure 1. The Safe Routes to School 5 E's



Benefits of Safe Routes to School

SRTS programs create a safer travel environment near schools and serve to reduce motor vehicle congestion at school drop-off and pick-up areas. Students that choose to walk or bike to school are rewarded with the benefits of a more active lifestyle, as well as the responsibility and independence that comes from being in charge of the way they travel. SRTS programs offer additional benefits to neighborhoods by helping to reduce school-related traffic and provide infrastructure improvements that facilitate walking and bicycling for everyone. Identifying and improving routes for students to safely walk and bicycle to school can also help reduce traffic speeds in neighborhoods, reduce traffic congestion on weekday mornings and afternoons at schools, and decrease auto-related pollution around school environments.

Planning Process

In 2011, the Town of Peterborough worked with administrators and staff from School Administrative Unit 1, PES and SMS to form a SRTS Task Force. The initial focus of this Task Force was to examine and assess the conditions for walking and bicycling in a two-mile radius of both PES and SMS and to develop recommendations for safety improvements at both of these locations. In the fall of 2012, the Town, on behalf of the Task Force, received a Travel Plan Grant from the NH Department of Transportation's (NH DOT) SRTS Program to accomplish this goal. The Town partnered with SWRPC to provide technical assistance and facilitate the travel planning process.

To better understand the walking, bicycling and travel conditions of each study area, SWRPC:

- conducted an analysis of the traffic volumes and speeds along roadways in close proximity to each school;
- completed an analysis of vehicular turning movements near PES;
- reviewed the behaviors and travel patterns of students, buses, and motorists at SMS during peak school hours;
- distributed and analyzed parent and student surveys related to walking and biking behaviors;
- facilitated two community meetings; and,
- assisted the schools with completing walkability and bikeability audits of roadways within each study area.

In addition, SWRPC met regularly with the Task Force to review information, discuss concerns and share ideas for improvements at each school. The SRTS Task Force and SWRPC utilized the information collected from the activities listed above, along with conceptual designs developed by an engineering consultant for the project, HTA, to draft Travel Plans for each school.

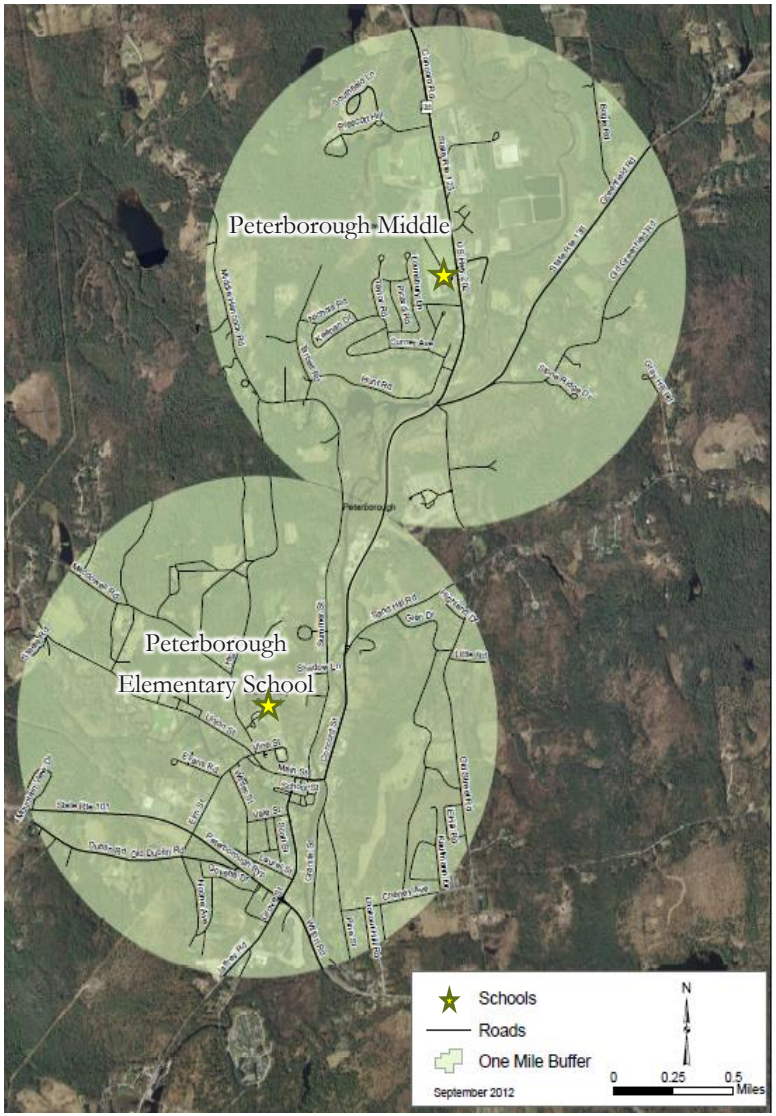


Figure 2. Aerial Image of Travel Plan Study Areas

PETERBOROUGH ELEMENTARY SCHOOL

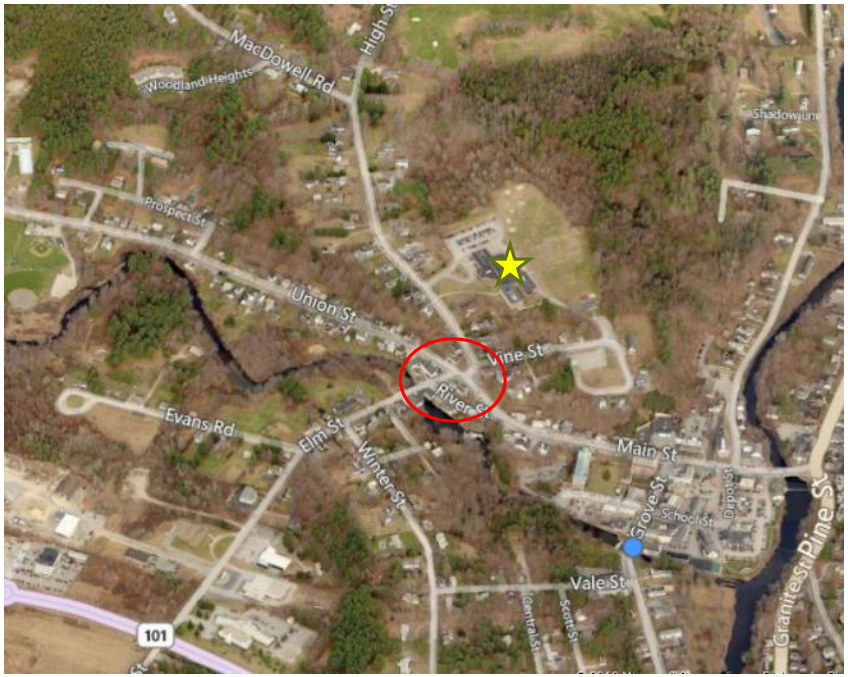
SAFE ROUTES TO SCHOOL TRAVEL PLAN

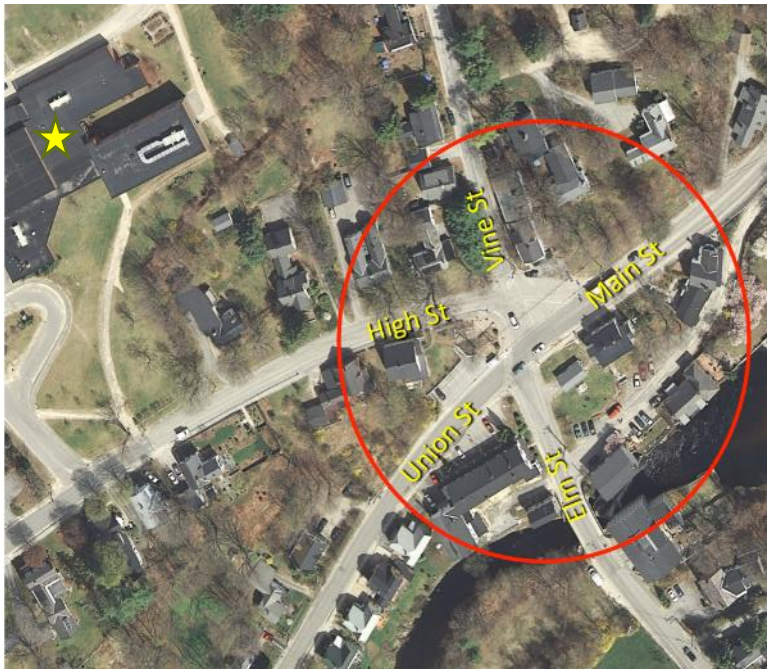
Study Area

The Peterborough Elementary School (PES) is located in a thickly-settled residential neighborhood on High Street, less than 0.5 miles from downtown Peterborough, NH. The school includes grades kindergarten through fourth and enrolled 248 students in the 2013-2014 academic year. In 2012, approximately 32% of the student population (95 students) lived within a two-mile radius of the school. Map 1 displays the extent of the PES Travel Plan study area and the relationship of the school with surrounding residential neighborhoods.

Primary access to PES is from the 5-way intersection of High Street with Elm Street, Main Street, Union Street and Vine Street. This intersection is poorly aligned and confusing to motorists. There are also issues with speeding, primarily along Main and Union Street. For these reasons, the Peterborough Safe Routes to School (SRTS) Task Force has identified this 5-way intersection as a significant impediment to safe pedestrian and bicycle access to school. It is also recognized in the Peterborough Master Plan and in a traffic study conducted for the Town by a private consultant in 2002, as an area of safety concern for the Town. A central focus of this Travel Plan is identifying opportunities to improve vehicular, pedestrian, and bicyclist movement through this intersection.

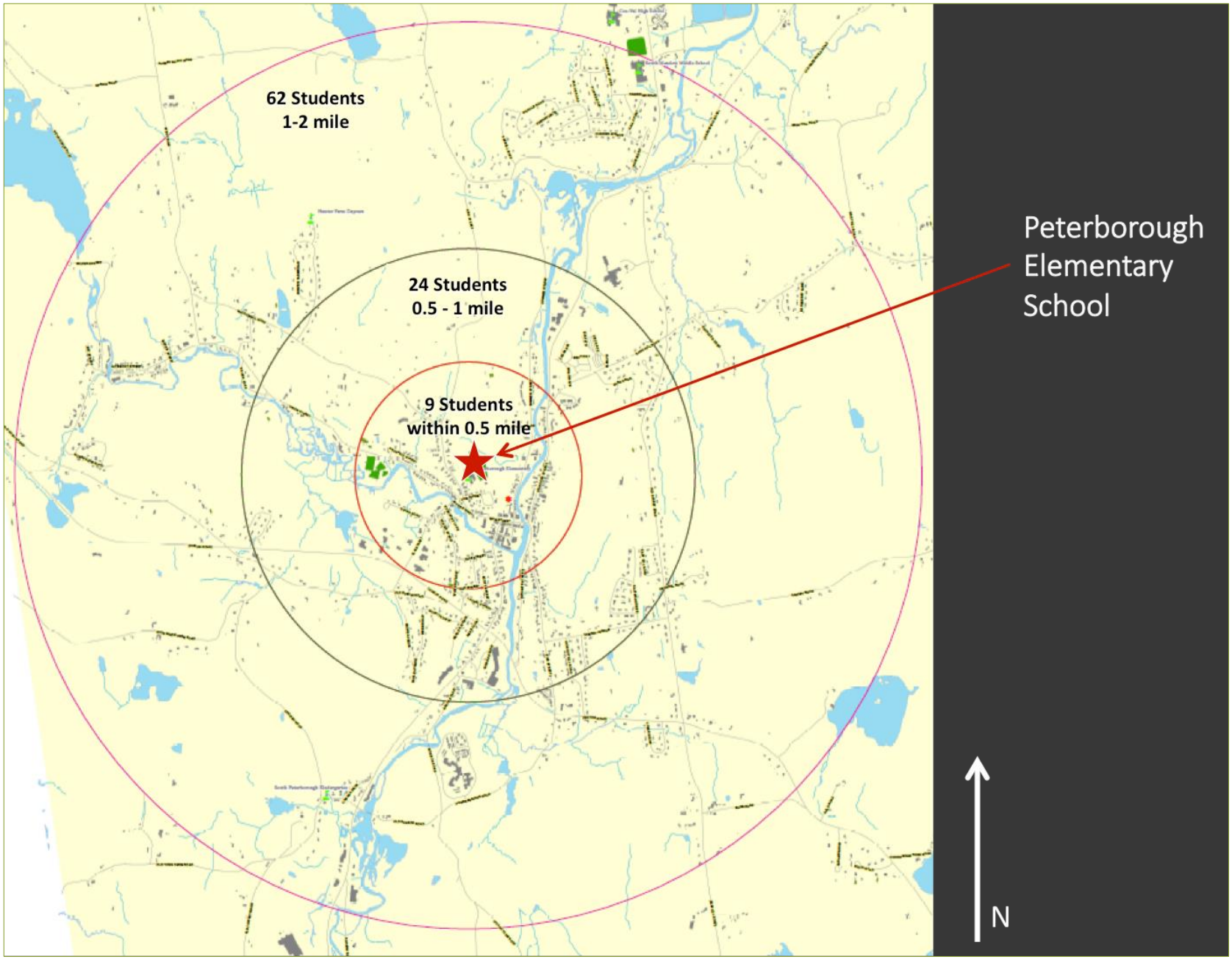
The aerial images below feature the location of the school in proximity to the 5-way intersection.





★ = Peterborough Elementary School ⬭ = 5-way Intersection of Elm, High, Main, Union, and Vine Streets ● = Downtown Peterborough

Map 1. Peterborough Elementary School Travel Plan Study Area



Evaluation of Existing Travel Conditions

The Peterborough SRTS Task Force worked with the Southwest Region Planning Commission (SWRPC) to evaluate the walking and biking conditions within a two-mile radius of PES. SWRPC conducted a survey of students and parents about current methods of travel to school, assessed the conditions of primary routes to and from neighborhoods and the school, and facilitated community meetings to discuss potential safety improvements to the 5-way intersection leading to the school. A review of these observations and analysis is included in the sections below.

School Arrivals & Departures

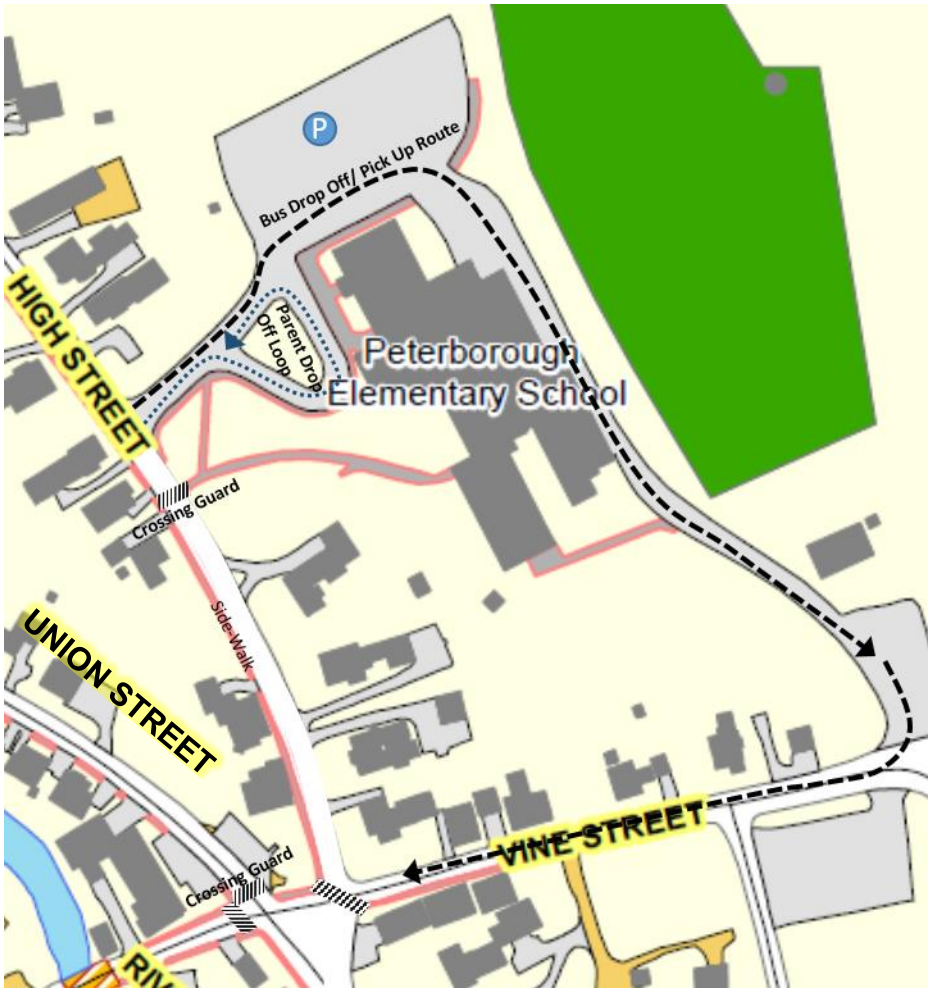
School begins at 9:00 a.m. and ends at 3:15 p.m. There are two walking attendants present between 8:25-8:55 a.m. and 3:00-3:30 p.m. to assist the students walking across Union Street to High Street and across High Street to the entrance of the school. In the afternoon, students walking home from school are escorted by a staff member to the crosswalk located outside the school entrance on High Street. There is a 20 mph school speed limit sign on High Street near the 5-way intersection.

Buses that transport students to PES from surrounding neighborhoods enter the school from its entrance on High Street and drop students off at the rear of the school. All buses exit the school via Vine Street.

Parents or guardians driving children to/from school use the Drop-Off Loop in front of PES's main entrance. Children are dropped off in the morning between 8:40 a.m. and 8:50 a.m.

Currently, the school discourages students from riding their bicycles independently to school as the roads near PES are not viewed as safe for young bicyclists. Third and fourth grade students using bicycle helmets may ride their bicycles with written parent permission.

Figure 3. PES Arrival and Departure Travel Patterns



Parent and Student Surveys

The SRTS Task Force and SWRPC staff worked with PES faculty and administration to conduct the National SRTS Parent and Student In-Classroom Surveys at the start of the 2012-2013 school year. These surveys helped to generate an understanding of the number of students currently biking and walking to school and identified some of the barriers to preventing parents from allowing their children to walk or bike to school. Copies of both surveys are included in Appendix A and B of this document.

A total of 98 households completed the Parent Survey. Of this sample, 71% of parents indicated that they are not comfortable with their child walking or biking to school at any age. 14% of parents who completed the survey stated that they would feel comfortable allowing their child walk or bike to school starting in the fourth or fifth grade.

Parents cited numerous factors that influence their decision to either allow or not allow their child to walk/bike to/from school. The most commonly noted factor influencing parents is distance (noted by 32% of survey respondents). Among the parents surveyed, 79% live greater than 1 mile from PES, and 49% live greater than 2 miles away.

Other significant factors identified by parents include the amount of traffic along roadways; the lack of sidewalks or pathways; the safety of intersections and crossings; and, speed of traffic along travel routes. Table 1 illustrates parent responses to this survey question in greater detail.

Some of the general comments shared by parents on this survey are included on the following page. Many of these comments indicate that distance, age of the student, topography, and lack of safe walking/biking infrastructure such as sidewalks and bike lanes as the primary reasons walking and biking to school are not viable options.

Table 1. Factors Influencing Decision to Allow Child to Walk/Bike to School

Influencing Factor	% Respondents
Distance	32%
Amount of Traffic Along Route	21%
Condition/Availability of Sidewalks or Pathways	21%
Safety of Intersections and Crossings	21%
Speed of Traffic Along Route	20%
Violence or Crime	10%
Weather or Climate	9%
Timing	8%
Having Adults to Walk or Bike With	8%
Presence of Crossing Guards	6%
Child's Before or After School Activities	5%
Convenience of Driving	0%

Table 2. Distance of Student Home from School

Distance from School	# Students	% Students
Less than 0.25 mile	9	9%
Between 0.25 - 0.5 mile	5	5%
Between 0.5 - 1 mile	7	7%
Between 1 - 2 miles	30	31%
Greater than 2 miles	46	47%
Don't Know	1	1%
Total	**98**	**100%**

Comments from Parent Survey:

"If we lived closer we would definitely want to walk to school."

"I do not walk my child due to living across town, but as he gets older, he may want to bike to middle school/high school. He will be older and closer."

"We would walk if we were closer and as long as no one would be walking alone."

"I want my children to be an appropriate age to ride or walk to school, so they know how to react to certain situations to keep them safe."

"Walking/biking to school are great if you have access to sidewalks. I will not allow my children to walk or bike along Route 101. It is dangerous due to traffic."

The Parent Survey was also used as a tool to better understand how many students living within a 2 mile radius of PES currently walk or bike. Table 3 displays the number of students that arrive or depart school via bicycle, walking, school bus, carpool, or parent vehicle as indicated on the Parent Survey. This table also shows the distance of students' homes from the school. Not all parents completed this portion of the survey. A total of 96 households responded to the question of arrival mode and 94 responded to the question of departure mode.

The predominant mode of student travel to and from school is school bus. Approximately 65% of parents noted that their child arrives to school by bus. Of these students, 56% live greater than 2 miles from the school. A greater percentage of students (72%) depart school via bus. The second most common arrival and departure mode is parent vehicle (respectively 26% and 17% of survey responses).

Few students currently walk and bike to school, as is evident from the Parent Survey and In-Classroom Survey. In both surveys, only 1 student was reported biking to and from school. The Parent Survey indicated that 8 students walk to or from school.

Table 3. Student Mode of Travel to School

ARRIVAL MODE	# Students	DEPARTURE MODE	# Students
Bicycle	**1**	**Bicycle**	**1**
Less than 0.25 mi	0	Less than 0.25 mi	1
Between 1-2 mi	1	1-2 mi	0
Walk	**8**	**Walk**	**8**
Less than 0.25 mi	3	Less than 0.25 mi	2
Between 0.25 mi - 0.5 mi	1	Between 0.25 mi - 0.5 mi	1
Between 0.5 mi - 1 mi	1	Between 0.5 mi - 1 mi	1
Between 1 mi - 2 mi	2	Between 1 mi - 2 mi	4
Greater than 2 mi	1	Greater than 2 mi	0
School Bus	**62**	**School Bus**	**68**
Less than 0.25 mi	2	Less than 0.25 mi	5
Between 0.25 mi - 0.5 mi	2	Between 0.25 mi - 0.5 mi	2
Between 0.5 mi - 1 mi	5	Between 0.5 mi - 1 mi	3
Between 1 mi - 2 mi	18	Between 1 mi - 2 mi	20
Greater than 2 mi	35	Greater than 2 mi	38
Carpool	**0**	**Carpool**	**1**
Between 1-2mi	0	Between 1-2mi	1
Parent Vehicle	**25**	**Parent Vehicle**	**16**
Less than 0.25 mi	4	Less than 0.25 mi	0
Between 0.25 mi - 0.5 mi	2	Between 0.25 mi - 0.5 mi	2
Between 0.5 mi - 1 mi	1	Between 0.5 mi - 1 mi	3
Between 1 mi - 2 mi	8	Between 1 mi - 2 mi	4
Greater than 2 mi	10	Greater than 2 mi	7

The In-Classroom Survey reported an average of 6 students arriving to school via walking and 11 students departing school on foot. This survey was administered by every classroom at PES in early October 2012. Teachers surveyed students each morning and afternoon on their travel mode of arrival and departure for three consecutive days (Tuesday – Thursday). On average, 151 students shared their arrival modes over the course of three days and 134 shared their departure modes. The disparity between the two numbers is due in part to field trips and students leaving early for the day. The survey results were consistent with the Parent Survey, showing that the majority of students arrive and depart school via bus and/or parent vehicle.

Traffic Volumes & Speeds

To better understand vehicular travel conditions near PES, SWRPC conducted both traffic volume and speed counts at the 5-way intersection near the school. In September of 2012, traffic counters were placed on High Street, Vine Street, Elm Street, Main Street, and Union Street for a week. SWRPC calculated the average number of vehicles that traveled on each road segment for the Tuesday, Wednesday, and Thursday of the week that roads were monitored.

Figure 4 identifies the location of traffic counters at the 5-way intersection. Table 4, which corresponds with Figure 4, displays the average daily traffic volume experienced along each road segment. This table also identifies the average traffic volume during peak morning (6:00 a.m. - 9:00 a.m.) and afternoon (2:00 p.m. - 5:00 p.m.) travel times.

The majority of traffic volume for each road segment occurred during these peak travel times. All roadways, experienced greater traffic volume in the afternoon (2:00-5:00 p.m.) than in the morning. This was especially true for Union Street, which experienced 40% of its average traffic volume in the afternoon, compared to 25% in the morning.

The most heavily traveled road segments are Main Street, with an average daily traffic volume of 4,735 vehicles, and Elm Street, with 3,211 average daily vehicles. Of the five roadways examined, Vine Street is the lesser traveled, with only 228 average daily vehicles. Much of the traffic along Vine Street is for 'School Kids in Peterborough,' a childcare center located on Vine Street. The road is also used to access St. Peter's Church and residences.

SWRPC staff also examined the average speed of motorists at these traffic counter locations. Areas where speeding is most prevalent are Union Street near the 5-way Intersection and High Street near PES. Table 5 outlines the average number of vehicles exceeding the speed limit by 5 mph or greater at each traffic counter location. On average, 57% of vehicles exceeded the posted speed limit of 20 mph by 5 mph or greater in the area of High Street near PES.

Table 4. Average Traffic Volume at 5-way Intersection

Traffic Counter ID	Daily*	AM* (6-9 AM)	PM* (2-5 PM)
A. Elm St	3,211	714	1,130
B. Union St	2,265	563	911
C. High St	1,643	418	488
D. Vine St	228	74	88
E. Main St	4,735	1,081	1,646

**Data Collected Week of 9/17/12-9/24/12 by SWRPC*

Figure 4. Location of Traffic Counters in Study Area

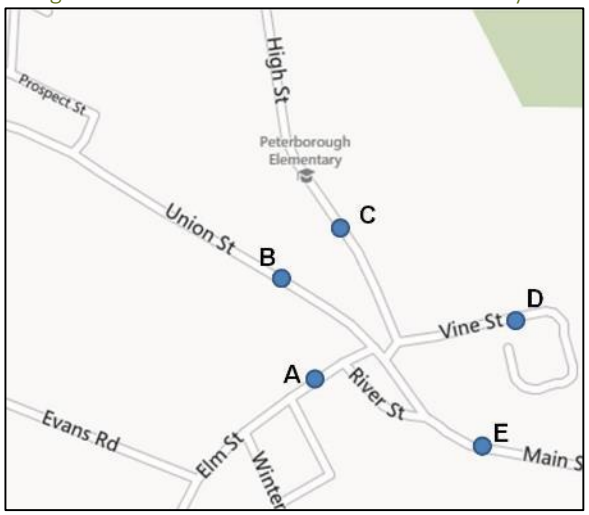


Table 5. Average Traffic Volume at 5-way Intersection

Location & Posted Speed Limit	Average # Vehicles > 5 mph Over Speed Limit*	% Vehicles > 5 mph Over Speed Limit*	Average # Vehicles / Day*
Elm St (30 mph)	3	0.09%	3,211
Union St (25 mph)	891	33%	2,665
High St (20 mph)	943	57%	1,643
Main St (25 mph)	207	4%	4,735

**Data Collected Week of 9/17/12-9/24/12 by SWRPC*

Turn Count Analysis

To gain a better understanding of traffic patterns and motorist behavior near PES, SWRPC staff conducted turning movement counts at the 5-way intersection of Elm Street, High Street, Main Street, Union Street and Vine Street. In September of 2012, SWRPC staff observed and documented the pattern of vehicular and pedestrian movement through this 5-way intersection during peak morning (6:00 a.m. - 9:30 a.m.) and afternoon (2:00 p.m. - 5:30 p.m.) hours. Figures 5 and 6 illustrate the results of this analysis. Each figure highlights the primary travel patterns of motorists at this intersection during morning and afternoon peak travel hours. The dotted black line and number in a circle represent the direction of crossing and the total number of pedestrians moving across each roadway during the observed hours. The number next to each solid arrow indicates the total number of vehicles moving in the direction of the arrow through the intersection during the observation time period.

In the morning there was a high volume of pedestrians crossing Union Street (52 individuals) and Elm Street (24 individuals). This is the location of a high school bus pick-up location, which may be the reason for such high pedestrian counts. Much of the traffic moving through this intersection in the morning was either traveling straight through the intersection from Union Street to Main Street (175 vehicles) or turning left onto Elm Street from Main Street (124 vehicles). Another noticeable travel pattern was the number of vehicles (101) that turn from Main Street onto High Street. Only 1 vehicle turned left onto High Street from Union Street during this time period.

Similar travel patterns were observed in the afternoon; however, there was greater volume of vehicles moving through the intersection during this time period. Much of the vehicle movement was east-west traffic along Union Street and Main Street. There continued to be a high volume of vehicles turning left onto Elm Street from Main Street (249) and turning right onto High Street from Main Street (139). In the afternoon, many more vehicles traveled from High Street to either Elm Street or Main Street than was observed in the morning.

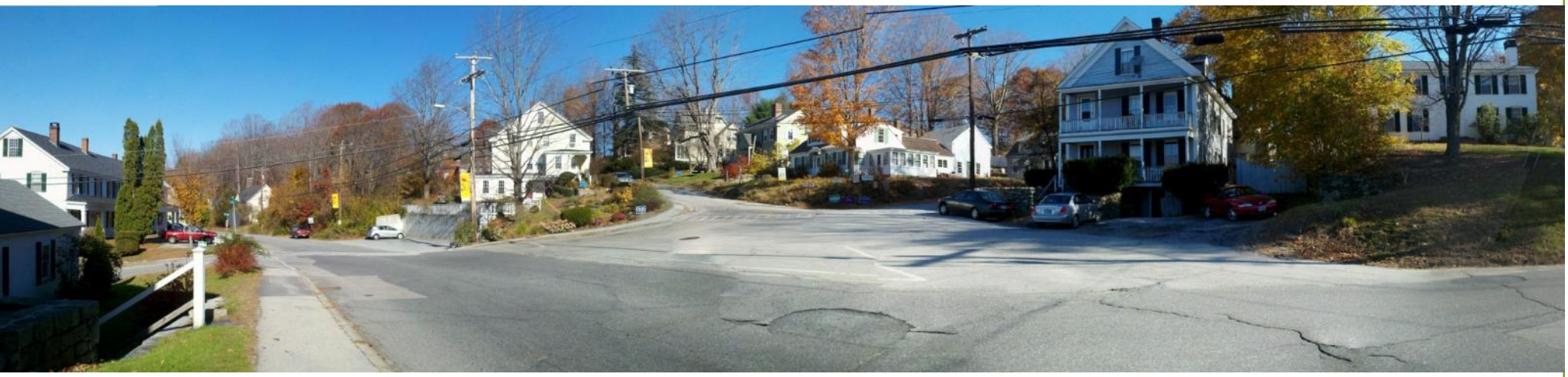


Figure 5. Morning (6:00-9:30 a.m.) Turning Movement Analysis

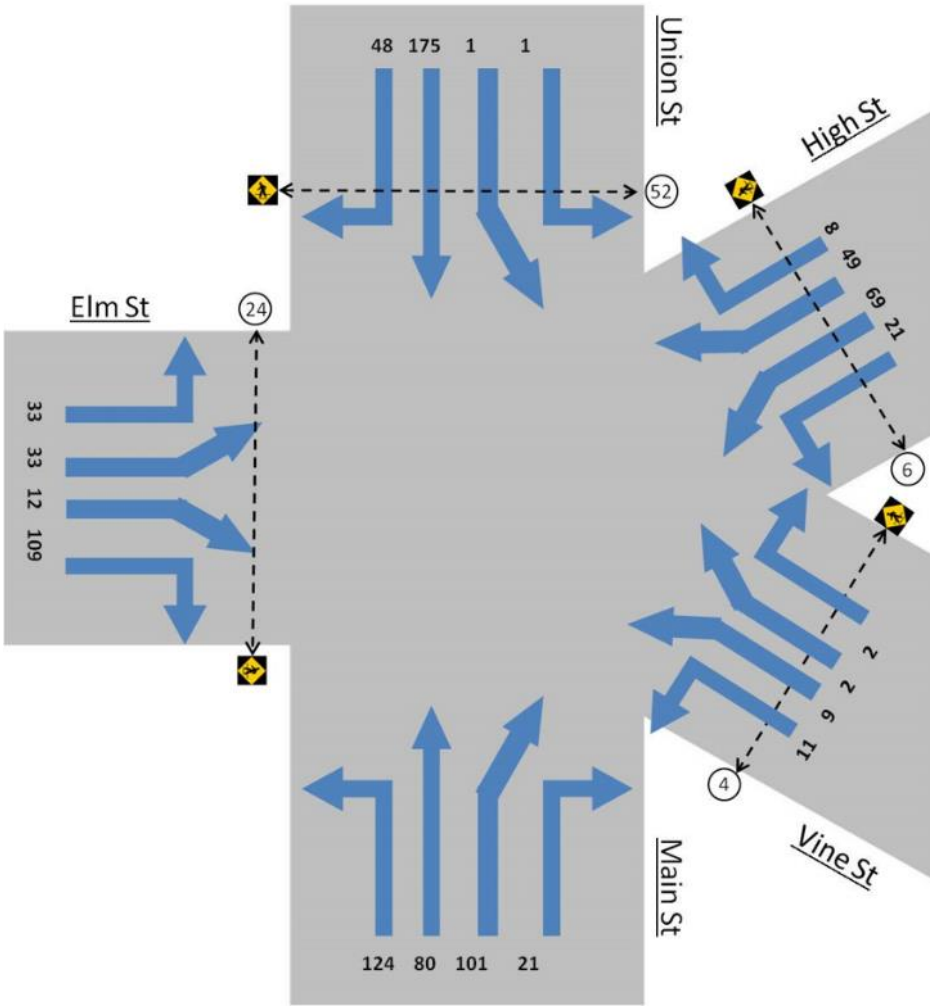
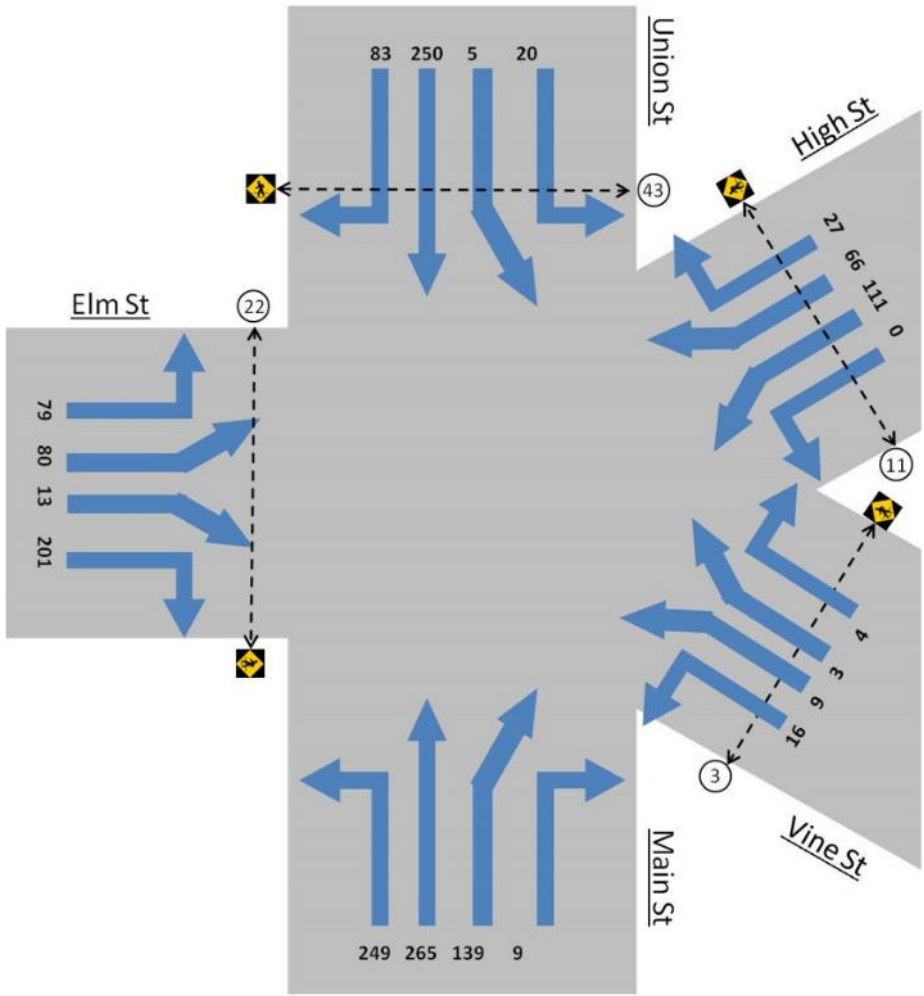


Figure 6. Afternoon (2:00-5:30 p.m.) Turning Movement Analysis



Reported Accidents

Between 2002 and 2010, there was a total of 833 vehicle accidents within one-mile of PES. Table 6 displays the total number of crashes that occurred in each year as reported by the NH Department of Transportation (NH DOT). Along the roadways leading into the 5-way intersection, there was a total of 15 crashes between 2002 and 2010. Eight of these incidents involved a vehicle crashing into another vehicle and seven involved a vehicle crashing into a fixed object. Figure 7 displays the locations of these accidents near the 5-way intersection. Table 7 outlines the total number of crashes by road segment.

Table 6. Accidents Within 1 Mile of PES*

Year	# Crashes
2002	82
2003	117
2004	133
2005	94
2006	69
2007	81
2008	81
2009	85
2010	91

**Source: NH DOT Crash Records*

Table 7. Accidents Near 5-Way Intersection*

Location	# Crashes	Type of Crash
Elm St	3	Another Car
Main St	1	Another Car
Union St	2	Another Car
Elm St	2	Fixed Object
High St	4	Fixed Object
Union St	3	Fixed Object

**Source: NH DOT Crash Records*

Figure 7. Accident Locations within 1 Mile of PES between 2002 and 2010

Community Meeting

In November 2012, SWRPC and PES staff facilitated a community meeting at the school to discuss the safety concerns of parents and community members related to pedestrian and bicyclist travel through the 5-way intersection. This intersection was referred to by locals as a "no man's land." A summary of the concerns expressed by parents and community members as well as their ideas for improving the safety of pedestrians, bicyclists, and motorists at this intersection is listed below.

Above photo: This is a view of the intersection from Union Street facing Main Street. The visibility of vehicles or pedestrians entering the intersection from High and Vine Streets is significantly limited.

Above photo: This is a view of the intersection from the corner of Vine Street and Main Street looking at High Street. The alignment of High and Vine Streets can be confusing for motorists to navigate.

<u>Summary of Safety Concerns with 5-way Intersection</u>

- *Speeding is a major concern at the intersection.*
  - There are concerns with vehicles speeding while traveling from Main Street to Vine Street, which is not heavily traveled.

- *It is difficult to navigate through the intersection as a motorist.*
  - Traveling from Elm Street to High Street is viewed as the worst part of the intersection for vehicles to navigate.
  - Navigating through the intersection is extremely difficult due to the need to avoid vehicles coming in all directions as well as poor visibility.
  - The intersection is confusing for all users.
  - There is confusion about who has the right-of-way when approaching from Elm Street to High Street.
  - It is unclear where vehicles should stop along High Street before entering the intersection.

- *There is limited visibility at the intersection*
  - The bus traffic from Vine Street inhibits visibility for motorists.
  - The visibility of the crossing guard is poor in all directions at the intersection.
  - Sometimes the crossing-guard has trouble with vehicles not paying

attention while children are crossing. It was noted that the Peterborough Police Department has provided assistance when needed to address this issue.

- *Other areas of concern in the study area:*
  - The intersection of Pine Street and Granite Street, also known as Route 202 is an area where a crossing is challenging due to limited visibility at the crosswalk and speeding vehicles.

<u>Suggested Safety Improvements at 5-way Intersection</u>

- *It was agreed upon that the triangular "no man's land" needs to be addressed.*
  - It was suggested that an island be built in the middle of the intersection or another type of physical barrier. Many noted that a physical barrier would impede crossing, decrease visibility, and make it difficult for large vehicles (i.e. school buses and emergency response vehicles) to turn.
  - It was suggested to repaint the intersection; however, it was noted that paint disappears quickly.
  - There was expressed opposition to the idea of a "round-a-bout" at the intersection.
- *Realign intersection to better demarcate Vine Street and High Street and to decrease the amount of space in the intersection.*
- *Create a walking/biking trail that bypasses the intersection for students.*
  - Reroute bicyclist onto Vine Street and relocate bicycle racks at PES.
  - Create a walking trail from the People's United Bank on Main Street to the rear of school.
- *Add a dedicated bike lane that is visible and clear to connect students from the school to neighborhoods in the study area.*
- *Improve the signage at the intersection to help motorists navigate through it.*

Above photo: This is a view of the intersection of High and Vine Streets and the "no man's land" triangle in the center of the intersection.

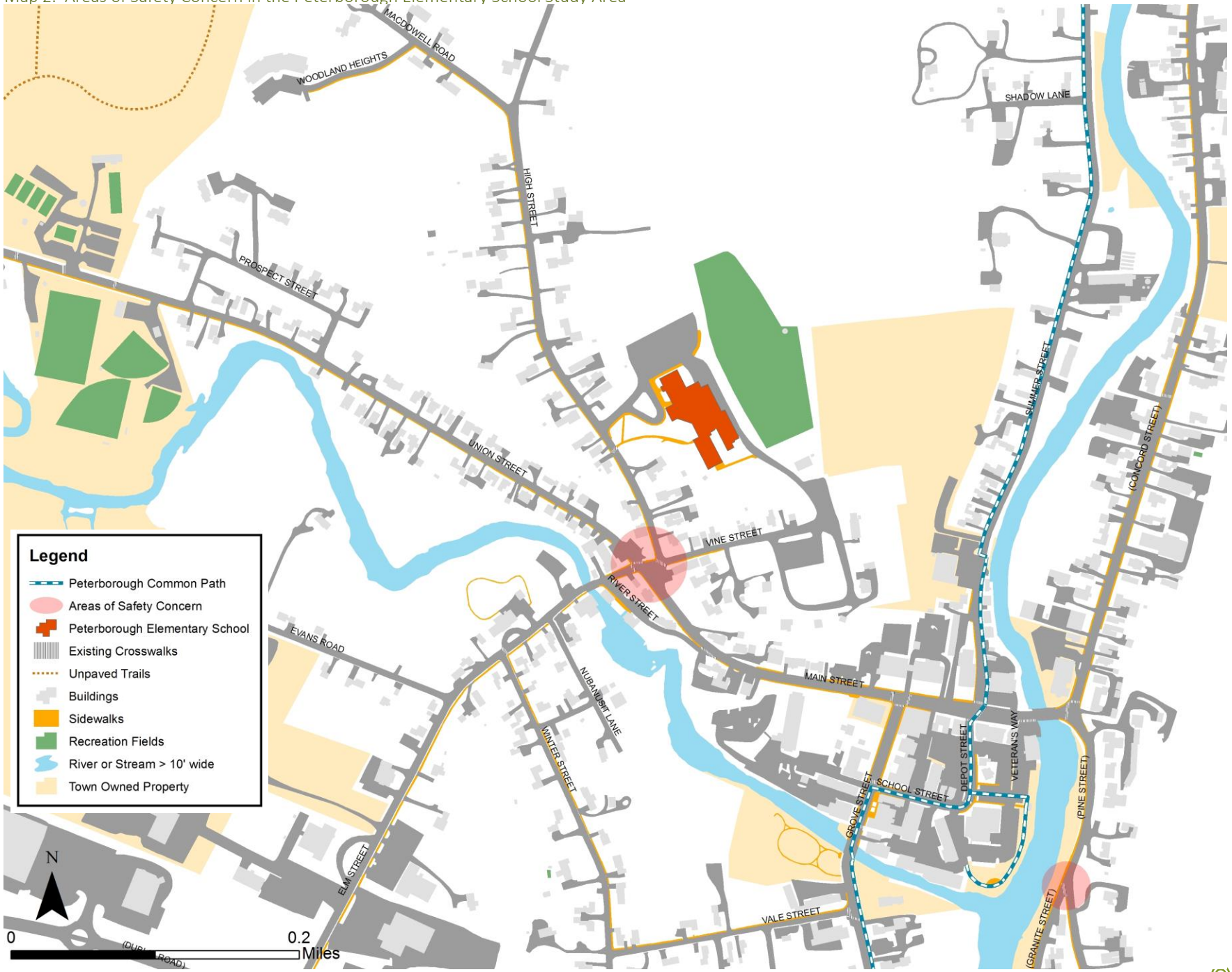
Above photo: This is a view of the intersection from Main Street looking at Union Street . It can be challenging for vehicles entering from Elm Street to navigate to High or Vine Streets.

Areas of Safety Concern in the Study Area

Map 2 displays sidewalks, crosswalks, and areas of safety concern as noted by students, parents and community members within 0.5 miles of PES. Due to limited visibility of pedestrians and concerns for speeding vehicles, the primary areas of safety concern identified in the study area are the 5-way intersection of Elm Street, High Street, Main Street, Union Street, and Vine Street and the crossing and sidewalk infrastructure where Pine Street and Granite Street (U.S. Route 202) intersection.

Most of the more heavily traveled roadways on this map have sidewalks on at least one side of the roadway. There are numerous crosswalks that connect pedestrians to destinations such as the recreation fields on Union Street, PES, and areas within downtown Peterborough. The Peterborough Common Path is a pathway that runs for nearly 7 miles from the south end of Peterborough north to Hancock. The trail is a combination of asphalt and gravel and follows an old railroad right-of-way along the Contoocook River. While the pathway does not directly connect to PES, it can be used by students traveling via bicycle or on foot to bypass heavily trafficked roadways such as the intersection of U.S. Route 101 and NH Route 101.

Map 2. Areas of Safety Concern in the Peterborough Elementary School Study Area



Education, Encouragement, Enforcement Strategies

Education Strategies

The SRTS Task Force intends to use this Travel Plan as an opportunity to educate the school community about the benefits of walking and biking to school and on safe travel behavior for students and parents. Education is viewed as an essential component of improving safe walking and biking conditions in the study area and has been a core component of the travel planning process. The Task Force used the distribution of the SRTS In-Classroom and Parent Surveys as an opportunity to raise awareness about the importance of building and maintaining safe routes for students to travel to and from school. In addition, the community meeting in the fall of 2012 was an opportunity to engage in discussion with parents and community members about their concerns regarding pedestrian/bicyclist safety and their ideas for potential safety improvements.

Additional strategies proposed by the SRTS Task Force to enhance education and awareness of the importance of and need for safe walking and bicycling routes to school are described below.

- Share information on student bicycle and pedestrian safety with the PES school community via the school's website and newsletter.
- Continue to offer lessons on pedestrian safety as part of the health curriculum.
- Work with the local police departments to collect and repair unclaimed lost and stolen bicycles. These bicycles could be raffled off or given away to students or be used to establish a bicycle share program.
- Work with the local police department and/or organizations such as the Bike Walk Alliance of New Hampshire to hold an event for students on bicycle safety and the rules for bicyclists in New Hampshire.
- Develop and distribute an easy-to-read map for students and families to use to identify routes in a one-mile radius of the school that are safe for walking and bicycling.
- Research the availability of credible videos and other resources that share information on safe walking and bicycling behavior and consider incorporating these resources into school curriculum.

Encouragement Strategies

PES currently encourages students to practice safe walking habits by organizing field trips in walking distance of the school. The ideas to further encourage and promote safe walking and bicycling shared by the SRTS Task Force are described below.

- Apply for grant funding (e.g. NH DOT SRTS Start Up Grant) and/or seek donations from businesses/organizations for prizes, such as bicycles, bicycle locks and helmets, and sneakers, to distribute as awards or raffle items to incentivize and increase student interest in walking and bicycling.
- Organize a walking school bus or rolling bicycle train with parents and community members. The walking school bus could begin at a central destination such as Adams Playground, near PES, or at the Peterborough Town House on Grove Street. A walking school bus could be organized to enhance the safety of students crossing the intersection of Pine Street and Granite Street.
- Organize a walking story book, where pages of a story are posted along a walking route. Students are given a route map and are guided along the route to find and read the pages to the book.
- Hold and participate in events that promote walking and bicycling such as national Bike to School Day (typically in early-mid May) and national Walk to School Day (typically in October).
- Utilize the National Safe Routes to School website (www.saferoutesinfo.org) and the NH DOT SRTS program (www.nh.gov/dot/org/projectdevelopment/planning/srts) as resources to identify ideas and opportunities for additional encouragement activities.

Enforcement Strategies

As part of the development of this Travel Plan, the Task Force worked with SWRPC, the Peterborough Police Department, School Administrative Unit #1, and PES to identify locations where speeding and traffic congestion are most problematic within the study area. The SRTS Task Force consulted with the Peterborough Police Department about opportunities for improving the safety of students walking and bicycling the study area. The ideas shared by the Police Department and by the SRTS Task Force for enforcing safer travel behaviors in the study area are listed below.

- Continue to include Union Street near the 5-way intersection as a location to periodically display the Peterborough Police Department's radar speed trailer. This device alerts motorists of their passing speed and records data on vehicle volume and speed. It can be used as a tool to slow vehicles and deter speeding in the vicinity of the school.
- Continue to enforce the PES policy requiring students to wear a helmet when bicycling to school.
- Continue to work with the Peterborough Police Department to have periodic police presence at the crosswalk that connects Union Street to High Street during morning arrival and afternoon dismissal times.
- Work with the Peterborough Police Department and other partners to provide training on safe crossing techniques to crossing guards and to ensure that crossing guards wear high visibility, reflective vests.

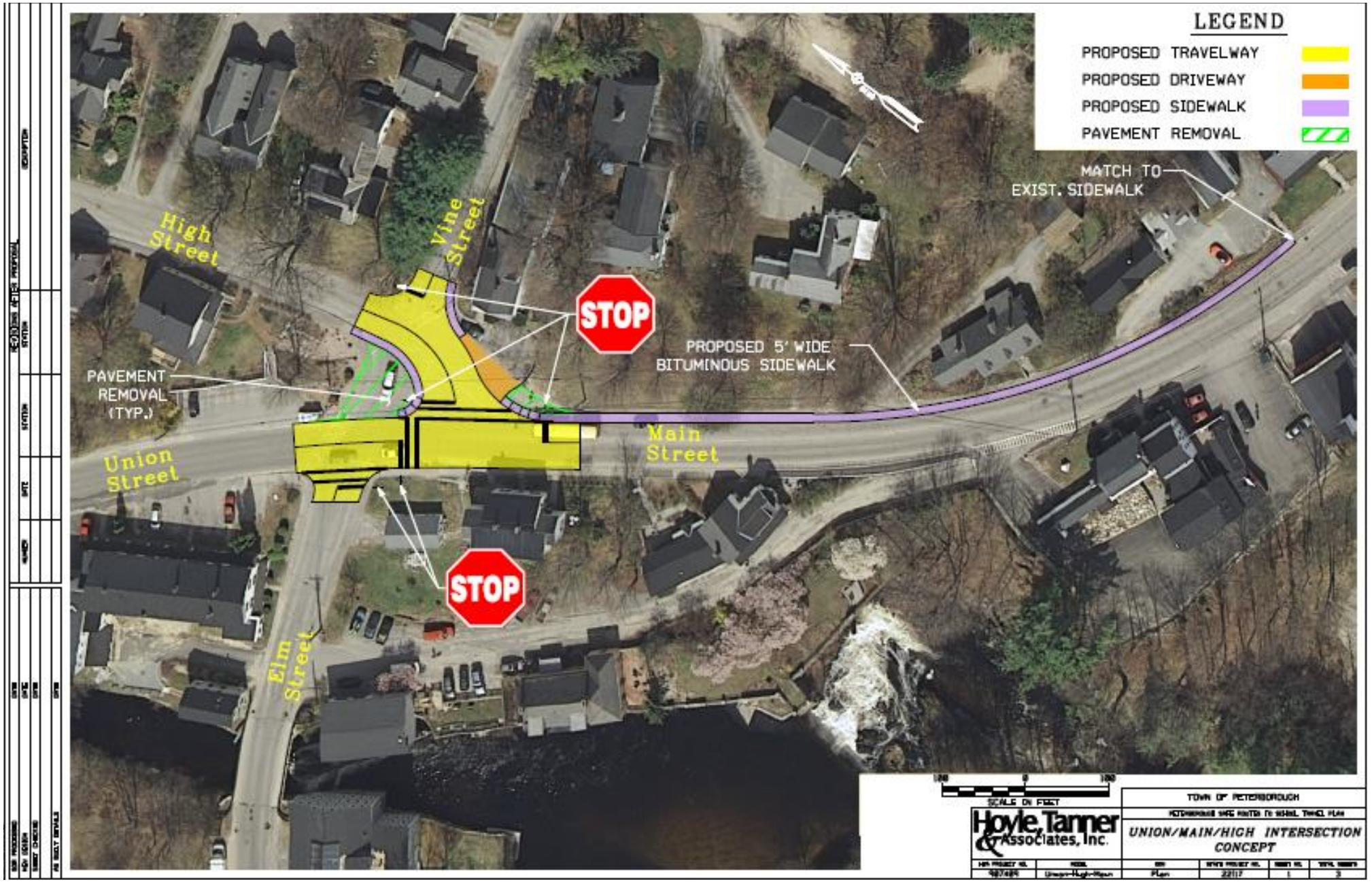
Engineering Strategies

There are currently multiple issues at the existing 5-way intersection of Union, High, Elm, Main, and Vine Streets including numerous pedestrian/vehicular conflict points, limited pedestrian visibility at crossing locations, and limited pavement markings and signage for clarifying vehicular right-of-way. The SRTS Task Force contracted with Hoyle Tanner & Associates, Inc. (HTA), an engineering and planning firm located in Manchester, NH, to identify and develop conceptual designs of potential improvements to this intersection that address the issues described while still providing functionality for all users.

The improvements proposed by HTA are illustrated in figure 8. This concept proposes to realign High Street so that it forms a T-intersection with Union Street and Main Street. Each of the approaches to this intersection will be stop controlled. This configuration will help reduce conflict points by eliminating a crossing for pedestrians coming from PES, who are destined for the Main Street and Elm Street sidewalks. Additionally, the Union Street crossing will now be located closer to the roadway high point, which will improve pedestrian visibility in the crosswalk. The new intersection will help clarify vehicular right-of-way by reducing excess pavement and providing clear signage and pavement markings. Elm Street will continue to be stop controlled at Union Street but will no longer be part of the larger intersection. A new sidewalk may also be constructed along the north side of Main Street which will further aid in eliminating required pedestrian crossings and will reduce the pavement width on Main Street to help calm traffic. There are also opportunities for additional signage and traffic calming features that could be included in the final design of the intersection to further improve pedestrian signage. HTA estimates that these improvements would cost approximately $142,400. A detailed breakdown of costs estimates for these improvements prepared by HTA is included in Appendix C.

The SRTS Task Force has discussed piloting the proposed concept at the intersection during the Union Street Rehabilitation project, which is scheduled to begin in the summer of 2014. This project will involve rehabilitating existing pavement and reconstructing sidewalks along 3,650 feet of road from Briggs Road to Adams Playground and on an additional 2,550 feet from Adams Playground to Elm Street.

Figure 8. Proposed Safety Improvements to 5-way Intersection of High Street, Elm Street, Main Street, Union Street, and Vine Street



RECOMMENDATIONS

The table below outlines strategies proposed by the SRTS Task Force to improve safe walking and bicycling conditions in the PES study area. It identifies potential partners to assist the SRTS Task Force with pursuing and undertaking these recommended action items and it notes potential funding resources to support these efforts. This is intended to be a dynamic list of recommendations that are revisited and updated to address completed improvements and identify opportunities that were unforeseen at the time of its development.

Table 8. Proposed Strategies to Improve Walking/Biking Conditions in the PES Study Area

	Strategy	Potential Partners	Funding Resources
ENGINEERING / EVALUATION	**1.a.** Realign 5-way Intersection of Elm Street, High Street, Main Street, Union Street and Vine Street to improve visibility of pedestrians at crossing locations, signage to clarify vehicular right-of-way, and to address numerous pedestrian/vehicular conflict points. Extend sidewalk along the northern side of Main Street from the intersection to downtown Peterborough. **1.b.** Consider 'pilot-testing' the concept prepared by HTA to improve the intersection during the reconstruction of Union Street in 2014.	Town of Peterborough; HTA; PES; SAU #1	NH Transportation Alternatives Program; NH Highway Block Grant Aid
	2.a. Improve pedestrian visibility and safety at the crossing along Pine Street and Granite Street (U.S. Route 202) and improve the condition of the sidewalk that connects this crosswalk to Main Street. **2.b.** Encourage the Town to research and incorporate safety improvements for this crossing and sidewalk as part of the Main Street Bridge Reconstruction project.	Town of Peterborough; NH DOT; SWRPC	Incorporate as part of NH DOT Project #14772A (Main Street Bridge Project); NH State Aid Highway Program; NH Transportation Alternatives Program; NH Highway Safety Improvement Program; NH Highway Block Grant Aid
	3. Investigate potential safety improvements to enhance the visibility and safety of pedestrians and cyclists at the intersection of NH Route 136, U.S. Route 202, and Old Street.	NH DOT; Town of Peterborough; SWRPC	NH Transportation Alternatives Program; NH State Aid Highway Program; NH Highway Block Grant Aid; NH Highway Safety Improvement Program
	4. Explore the development of walking trails that would connect PES to downtown Peterborough and PES to Adams Playground.	PES; Peterborough Recreation Department; Peterborough Conservation Commission	NH Recreation Trails Program; NH DOT Transportation Alternatives Program

Table 8 (Continued from page 24). Proposed Strategies to Improve Walking/Biking Conditions in the PES Study Area

	Strategy	Potential Partners	Funding Resources
EDUCATION	**5.** Share information on student bicycle and pedestrian safety with the PES school community via the school's website and newsletter.	PES administration and staff; PES Parent Teacher Organization (PTO); SAU #1	NH SRTS Start Up Grant
	6. Offer lessons on pedestrian and bicyclist safety as part of the PES curriculum.	PES administration and staff; NH DOT SRTS; BWANH; Healthy Eating Active Living (HEAL)	NH SRTS Start Up Grant Program; BWANH
	7. Collect and repair unclaimed lost and stolen bicycles to raffle off to students as prizes for walking or biking to school.	Peterborough Police Department; Eastern Mountain Sport (EMS); PES; SAU #1	
	8. Hold event(s) for students on bicycle safety and the rules for bicyclists in New Hampshire.	Peterborough Police Department; Bike Walk Alliance of New Hampshire (BWANH); PES; SAU #1	NH SRTS Start Up Grant Program
	9. Develop and distribute an easy-to-read map for students and families to use to identify routes in a one-mile radius of the school that are safe for walking and bicycling.	Town of Peterborough; PES; SAU #1; PES PTO; Monadnock Community Hospital	NH SRTS Start Up Grant Program; HEAL Community Grant
	Strategy	**Potential Partners**	**Funding Resources**
ENCOURAGEMENT	**10.** Apply for grant funding and/or seek donations from businesses/organizations for prizes, such as bicycles, bicycle locks and helmets, and sneakers, to distribute as awards or raffle items to incentivize and increase student interest in walking and bicycling.	PES; SAU #1; EMS	NH SRTS Start Up Grant
	11. Organize a walking school bus or rolling bicycle train with parents and community members.	PES administration and staff; PES PTO; Peterborough Recreation Department	NH SRTS Start Up Grant
	12. Organize a walking story book, where pages of a story are posted along a walking route.	PES administration and staff; Peterborough Town Library	NH SRTS Start Up Grant
	13. Hold and participate in events that promote walking and bicycling such as national Bike to School Day (typically in early-mid May) and national Walk to School Day (typically in October).	PES; Peterborough Recreation Department; SAU #1; Monadnock Community Hospital; Town of Peterborough	NH SRTS Start Up Grant
	Strategy	**Potential Partners**	**Funding Resources**
ENFORCEMENT	**16.** Continue to include Union Street near the 5-way intersection as a location to periodically display the Peterborough Police Department's radar speed trailer. This device alerts motorists of their passing speed and records data on vehicle volume and speed. It can be used as a tool to slow vehicles and deter speeding in the vicinity of the school.	Peterborough Police Department; Town of Peterborough	
	17. Continue to enforce the PES policy requiring students to wear a helmet when bicycling to school.	PES; SAU #1	
	18. Continue to work with the Peterborough Police Department to have periodic police presence at the crosswalk that connects Union Street to High Street during morning arrival and afternoon dismissal times.	Peterborough Police Department; PES; SAU #1	
	19. Provide training on safe crossing techniques to crossing guards and to ensure that crossing guards wear high visibility, reflective vests.	Peterborough Police Department	

SOUTH MEADOW MIDDLE SCHOOL

SAFE ROUTES TO SCHOOL TRAVEL PLAN

Study Area

The South Meadow School (SMS) is one of two middle schools in School Administrative Unit #1, which comprises the towns of Antrim, Bennington, Dublin, Francestown, Greenfield, Hancock, Peterborough, Sharon and Temple. SMS includes grades five through eight and enrolled 419 students in the 2013-2014 academic year. In 2012, approximately 8.8% of the student population (42 students) lived within a two-mile radius of the school. Map 3 displays the extent of the SMS Travel Plan study area and the relationship of the school with surrounding development and residential neighborhoods.

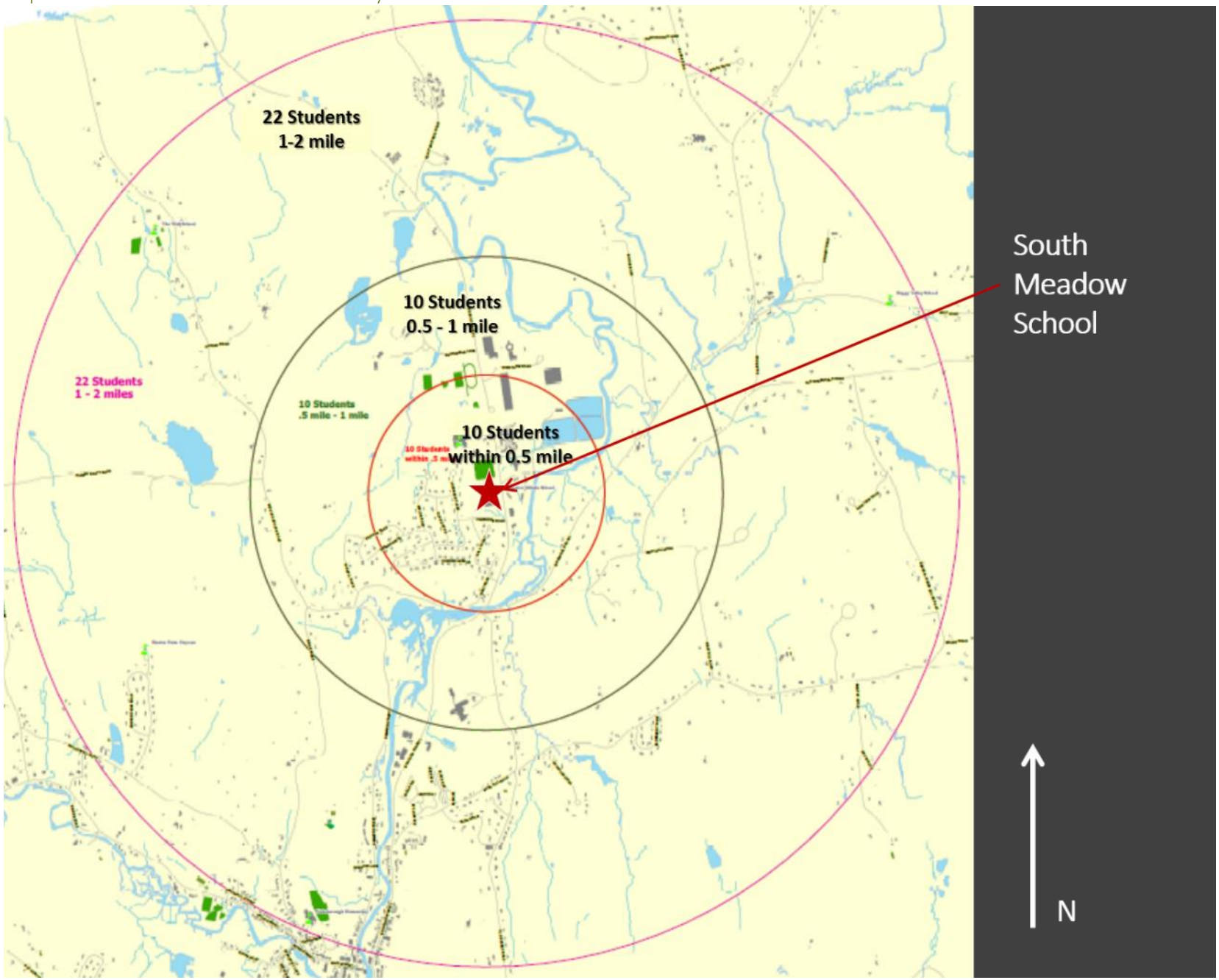
SMS is located along U.S. Route 202, a well-travelled minor arterial state road. In 2011, the Average Annual Daily Traffic along this segment of roadway, was 8,000 vehicles. Although sidewalks are present along most of the roadway between downtown Peterborough and SMS (~2 mile segment), traffic speeds and road-widths make crossing a challenge and present significant safety concerns for students walking and bicycling to school. Currently, there are no safe crossings for students trying to access SMS from the other side of U.S. Route 202. Although there is a crossing guard that guides students across U.S. Route 202 to the school, there are significant safety concerns associated with this crossing. The predominant focus of this Travel Plan is on identifying strategies to improve the safety of students crossing this road either on foot or bicycle to access SMS.

This Travel Plan also examines issues with access management in the study area. The distance between the entrance to the school's rear parking lot and the start of Pineridge Road along U.S. Route 202 is less than 55 feet. The SRTS Task Force sought to reduce potential conflicts between vehicles turning onto U.S. Route 202 from these roadways and to improve pedestrian safety.

A third focus of this Plan is identifying strategies to improve the condition and connectivity of 'desire paths' (i.e. informal trails) that lead to the school from adjacent neighborhoods. There are existing paths worn through the woods between Pineridge Road and the rear parking lot of the School.

Figure 9. Aerial Image of South Meadow School

Map 2. South Meadow School Travel Plan Study Area



Evaluation of Existing Travel Characteristics & Conditions

The Peterborough SRTS Task Force worked with the Southwest Region Planning Commission (SWRPC) to evaluate the walking and biking conditions within a two-mile radius of SMS. SWRPC conducted a survey of students and parents about current methods of travel to school, assessed the conditions of primary routes to and from neighborhoods and the school, and facilitated a comprehensive field review of the school area to identify potential safety concerns and opportunities for improvement. A review of these observations and analysis is included in the sections below.

Student Arrivals and Departures

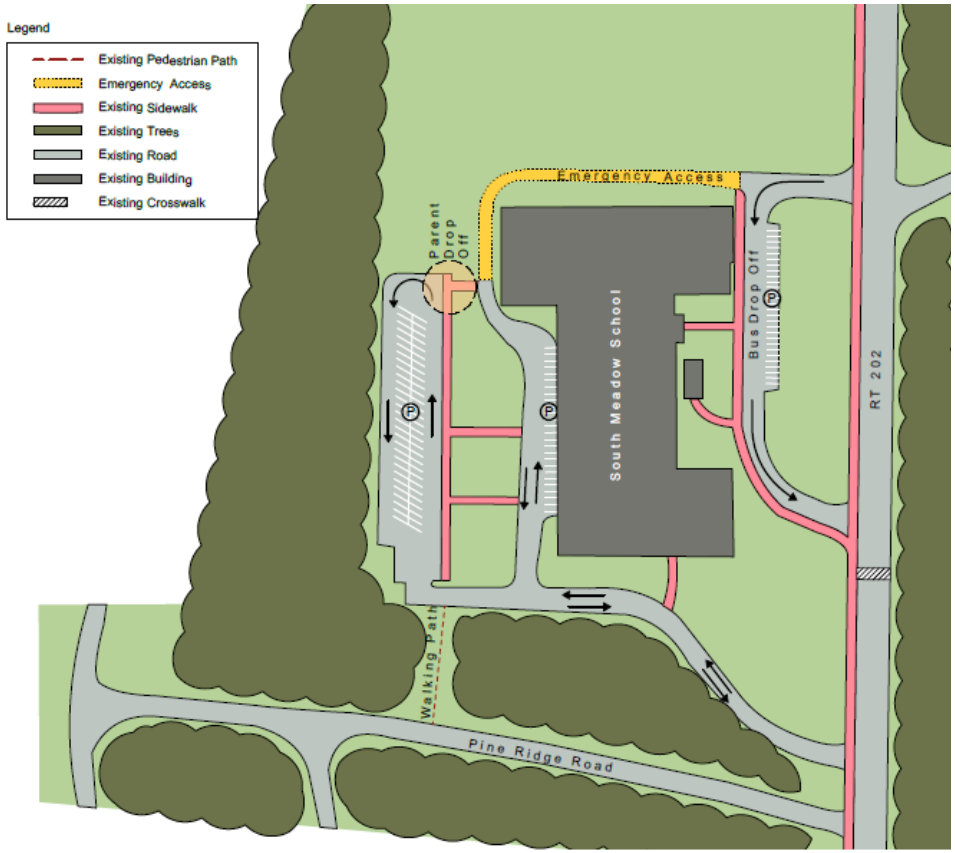
Students arrive at school between 7:10 a.m. and 7:25 a.m. and are dismissed at 2:15 p.m. There is a crossing guard positioned at the crosswalk by the front entrance to the school to lead students safely across U.S. Route 202. This crossing guard is present between 7:00-7:30 a.m. and 2:00-2:30 p.m. and uses a light-up baton and hand-held stop sign to alert traffic. A 30 mph school speed limit sign is visible on the north and south bound lanes of U.S. Route 202.

All students arriving by car are dropped off and picked up behind the school in the upper parking lot. Parents and guardians pick up students along the upper parking lot sidewalk.

Buses enter from the north entrance of the front parking lot to drop-off and pick-up students. All buses depart from the south entrance at the same time and turn left onto U.S. Route 202 to travel north to the High School. The crossing guard stops traffic on U.S. Route 202 for the buses as they exit.

It is school policy that students bicycling to school must wear a helmet. Bicycles can be left at the bicycle rack in the front of the school, which can hold up to 18 bicycles.

Figure 10. SMS Arrival and Departure Patterns



Surveys

The SRTS Task Force and SWRPC staff worked with SMS faculty and administration to conduct the National SRTS Parent and In-Classroom Surveys at the start of the 2012-2013 school year. These surveys helped generate an understanding of the number of students currently biking and walking to school and identified some of the barriers that prevent parents from allowing their children to walk or bike to school. Copies of both surveys are included in Appendix A and B of this document.

A total of 149 households completed the Parent Survey. Of this sample, 42% of parents indicated that they are not comfortable with their child walking or biking to school at any age. 11.4% of parents who completed the survey stated that they would feel comfortable letting their child walk or bike to school starting in the fifth grade.

Parents cited numerous factors that influence their decision to either allow or not allow their child to walk/bike to/from school. The predominant factor influencing parents is distance (noted by 56% of survey respondents). Among the parents surveyed, 76% lived greater than 1 mile from SMS, and 54% lived greater than 2 miles away.

Other significant factors identified by parents include timing; the amount and speed of traffic along roadways; the lack of sidewalks or pathways; and, the safety of intersections and crossings. Table 9 illustrates parent responses to this survey question in greater detail.

A few of the general comments shared by parents on this survey are included below. Many of these parent comments emphasize that distance and lack of safe walking/biking infrastructure such as sidewalks and bike lanes are the primary reasons walking and biking to school are not viable options for their children.

Table 9. Factors Influencing Decision to Allow Child to Walk/Bike to School

Factor	% Respondents
Distance	56%
Amount of Traffic Along Route	18%
Condition/Availability of Sidewalks or Pathways	12%
Safety of Intersections and Crossings	16%
Speed of Traffic Along Route	18%
Violence or Crime	5%
Weather or Climate	15%
Timing	25%
Availability of Adults to Walk or Bike With	5%
Presence of Crossing Guards	5%
Child's Before or After School Activities	9%
Convenience of Driving	8%

Table 10. Distance of Student Home from School

Student Distance from School	# Students	% of Students
Less than 0.25 mi	13	9%
Between 0.25 mi - 0.5 mi	8	5%
Between 0.5 mi - 1 mi	8	5%
1 mi - 2 mi	33	22%
Greater than 2 mi	79	54%
Don't Know	5	3%
Total	**147**	**100%**

Distance Factors

- "We live too far for my son to walk or ride a bike. It would take him too long. He would have to leave too early and would obtain the correct amount of rest."
- "We live too far away from the middle school to walk or bike. Too much traffic and my child can't carry her instrument on her bike."

Timing Factors

- "Biking or walking would be a consideration if the school day did not already start so early. My children need to wake at 6 am to be ready for school."
- "In order for my children to take the morning bus, they would have to wake up at 5:45 am to leave the house by 6:05 a.m. and walk 10 minutes to the bus stop to be there for 6:18 a.m. pick up."
- "We live 2 miles from SMS - this is ridiculous! Way too early for a 10 year old."

General Safety Concerns

- "I would love safer crossings. My kids bike a lot and it is not safe enough."
- "We love the idea of our 7th grader biking to school. If there were sidewalks on Rte. 136 we would do it too - weather permitting."
- "I would NOT feel comfortable letting my child walk or ride a bike to school alone. A friend would have to walk or ride with him/her."
- "The Town needs more police on duty at schools during arrival and dismissal to discourage crime and violence."
- "I grew up biking and walking to school and it saddens me that Peterborough isn't a community that provides safety and access to do the same."

Some of the comments indicated specific areas within the study area that are a safety concern for walking or bicycling to school. These comments are listed below by the relevant intersection.

Intersection of Route 136 and 202

- *"The main issue is Route 136 from Old Greenfield Road to U.S. Route 202. There is virtually no shoulder, cars are going fast on Route 136 (where the speed is 40 mph) going into 30 mph zone, and there is no shoulder room at the Old Street Rd/ Route 136/ Route 202 intersection."*
- *"Our biggest concern is the intersection at Route 136 and Route 202. The traffic along Route 202 N gets very congested and commuters are not completely aware of shoulder traffic or sidewalks."*
- *"I feel that the roads are not safe enough for any child to walk to school due to narrowed highways and speed of traffic. The town has no traffic lights which make it unsafe to drive at times. Especially, the intersection of Routes 136 and 202. I have lived here only 15 months and witnessed 4 accidents at this intersection."*
- *"Pulling out on US Route 202 is scary every day. I would not want my child in the middle of those vehicles on a bike or on foot."*

Pineridge Road

- *"I don't mind my children walking, but there should be a crosswalk and sign on Pineridge Road. People cannot see you when go over hill and are sometimes speeding! Plus, in the winter it is dangerous because students have to walk on non-plowed roads (sidewalks)."*
- *"Fix the traffic problems at the intersection of U.S. Route 202, Pineridge Road and the driveway to SAU #1."*
- *"Too many people use the Pineridge development (near SMS) as a cut through from Summer St/Middle Hancock Road to U.S. Route 202 and the schools. Lots of non-neighborhood traffic drive too fast and there are no sidewalks."*
- *"The trail thru the woods from our Pineridge neighborhood could be better maintained (roots and branches are an impediment) and that would facilitate an easier route."*

US Route 202 and Pine Street

- *"We would support sidewalks and signage at intersections such as Concord Rd (U.S. Route 202) to Pine Street. In our case the distance to SMS is a bit too far, but when they attended PES the children walked."*

The Parent Survey was also used to evaluate the number of students living within a 2-mile radius of the school that currently walk or bike. Table 11 outlines the numbers of students that arrive or depart school via bicycle, walking, school bus, carpool, or parent vehicle as indicated on the Parent Survey. This table also shows the distance of students' homes from the school. Not all parents completed this portion of the survey. There was a total of 146 responses to the question of arrival mode and 149 responses to the question of departure mode.

The predominant modes of student travel to school are parent vehicle (45%) and school bus (43%). Of the students that travel via these modes, 58% live greater than 2 miles from the school. A greater percentage of students (65%) depart school via bus.

Few students walk and bike to school, as is evident from the Parent Survey and In-Classroom Survey. In both surveys, only 1 student was reported biking to and from school. The Parent Survey indicated that approximately 8% of students walk to and 11.4% walk home from school.

The In-Classroom Survey reported an average of 21 students (6% of survey respondents) arrive to school via walking and 23 students (7% of survey respondents) depart school on foot. This survey was administered by most classrooms at SMS in early October 2012. Teachers surveyed students each morning and afternoon for three consecutive days (Tuesday – Thursday) on their mode of arrival and departure. On average, 356 students shared their arrival modes over the course of three days and 349 shared their departure modes.

Table 11. Student Mode of Travel to School

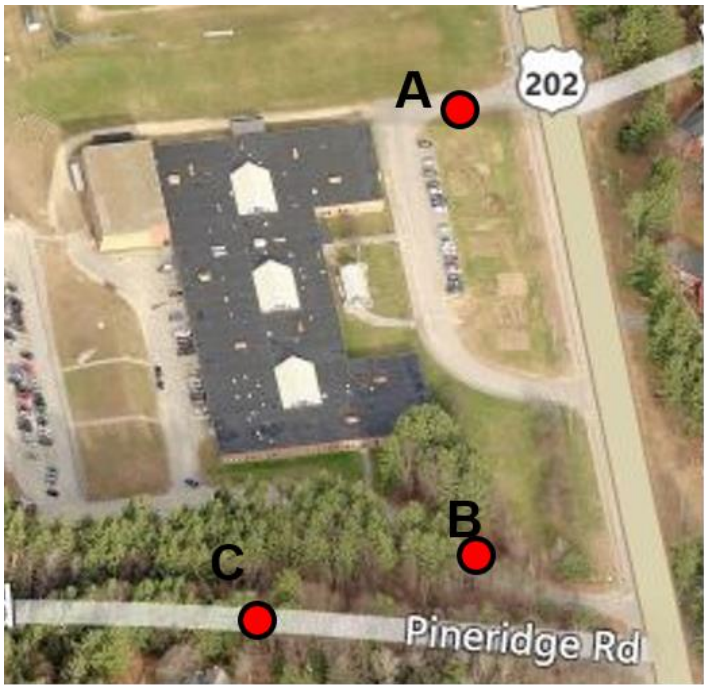
ARRIVAL MODE	# Students	DEPARTURE MODE	# Students
Bicycle	**1**	**Bicycle**	**0**
Less than 2 mi	1	Less than 2 mi	1
Walk	**12**	**Walk**	**17**
Less than 0.25 mi	11	Less than 0.25 mi	11
Between 0.25 mi - 0.5 mi	1	Between 0.25 mi - 0.5 mi	3
Between 0.5 mi - 1 mi	0	Between 0.5 mi - 1 mi	1
Between 1 mi - 2 mi	0	Between 1 mi - 2 mi	1
School Bus	**63**	**School Bus**	**98**
Less than 0.25 mi	1	Less than 0.25 mi	1
Between 0.25 mi - 0.5 mi	3	Between 0.25 mi - 0.5 mi	3
Between 0.5 mi - 1 mi	2	Between 0.5 mi - 1 mi	4
Between 1 mi - 2 mi	11	Between 1 mi - 2 mi	23
Greater than 2 mi	42	Greater than 2 mi	62
Carpool	**4**	**Carpool**	**3**
Between 1-2mi	0	Between 1-2mi	2
Greater than 2 mi	**4**	Greater than 2 mi	1
Parent Vehicle	**66**	**Parent Vehicle**	**31**
Less than 0.25 mi	1	Less than 0.25 mi	1
Between 0.25 mi - 0.5 mi	4	Between 0.25 mi - 0.5 mi	2
Between 0.5 mi - 1 mi	5	Between 0.5 mi - 1 mi	2
Between 1 mi - 2 mi	20	Between 1 mi - 2 mi	7
Greater than 2 mi	33	Greater than 2 mi	19

Traffic Volumes

To better understand vehicular travel conditions at SMS, SWRPC conducted traffic volume counts at the entrance to the front parking lot of the school, the entrance to the rear parking lot, and on Pineridge Road. SWRPC calculated the average number of vehicles that traveled on each road segment for the Tuesday, Wednesday, and Thursday of the week that roads were monitored. Figure 11 identifies the location of traffic counters and shows the average number of vehicles that travel along these roadways daily. It also notes the average volume of traffic during peak hours in the morning (6:00 a.m. - 9:00 a.m.) and afternoon (1:00 p.m. - 4:00 p.m.).

The majority of traffic volume for each road segment occurred during these peak travel times. The front entrance to the school experienced greater traffic volume in the afternoon (218 vehicles) than in the morning (115). However, traffic volumes for the rear parking lot were nearly identical for the morning (415 vehicles) and afternoon (414 vehicles) time periods. This roadway experiences nearly three times greater volume of traffic than Pineridge Road.

Figure 11. Traffic Counter Locations and Data



A. Front SMS Entrance

	Average # Vehicles
Daily	504
6-9 AM	115
1-4 PM	218

B. Rear SMS Entrance

	Average # Vehicles
Daily	1,045
6-9 AM	415
1-4 PM	414

C. Pineridge Road

	Average # Vehicles
Daily	362
6-9 AM	82
1-4 PM	120

Data Collected Week of 9/17/12-9/24/12 By SWRPC

Field Review

In October of 2012, SWRPC staff visited SMS during the morning arrival and afternoon departure periods to observe travel patterns of students, vehicles, and buses as well as site characteristics and conditions. The key observations and findings from this field visit are documented below.

Parent Drop-Off and Pick-Up

- Currently, parent drop off/pick up occurs in the upper parking lot at the rear of the school. Vehicles drop students off along the sidewalk of the upper parking lot. The average time it takes for a parent/guardian to drop-off their child is approximately 1 minute.
- There are no signs along the entrance/exit to the rear of the school that indicate speed limit.
- Signs indicating the direction of traffic behind the school should be repainted. The school may consider erecting signs that indicate the direction of parent drop-off/pick-up traffic.
- It was evident that many motorists are less cautious turning onto U.S. Route 202 from the school entrances/exits.
- Overall, motorists were careful when proceeding through the parking lot during pick-up and drop-off times. However, some drivers were observed using their cell-phones.

The above photo is of the school's rear upper parking lot sidewalk, where parent's drop-off/pick-up students.

Bus Drop-Off / Pick Up

- Although no parent vehicles were observed in this area, the school may consider installing larger signs to indicate that the front entrance of the school is for 'Buses Only.'
- All buses leave the school at the same time and turn left onto U.S. Route 202 to go to the High School. A crossing guard stops traffic on U.S. Route 202 for the buses as they exit.

The above photo is of buses lined in front of the school.

Bicycle Facilities

- The southwest corner of the gymnasium, where there is a security camera, would be a good location for bicycle rack.

- U.S. Route 202 does not have a designated bike lane; however, there is a wide shoulder that is used by bicyclists. Signs indicating "share the road" or painted markings on the road might be considered for improving safety of bicyclists along this route.
- Crossing U.S. Route 202 to access the school is a significant concern for student bicyclists. It is most safe to cross when the crossing guard is present.
- There is a bike rack in a secure location in front of the school that can hold 18 bikes.

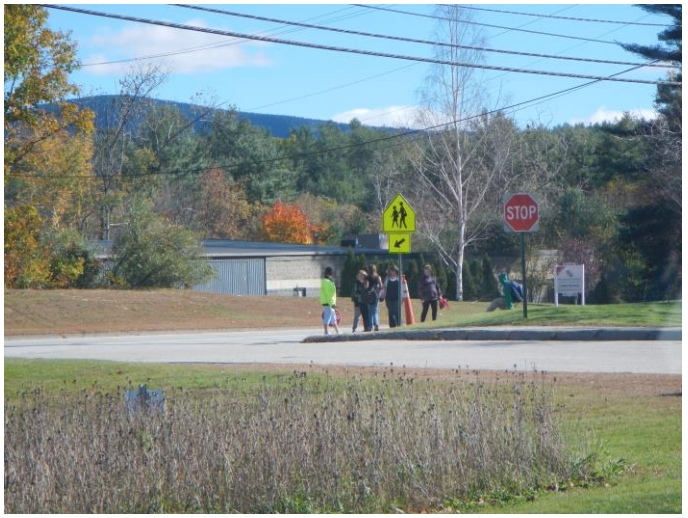
Sidewalks

- Sidewalks are not present on Pineridge Road or along the road leading to the back of the school.
- Sidewalks are not present on the eastern side of U.S. Route 202. There are multiple housing developments on this side of the roadway within close proximity to the school. Students were observed walking along the eastern side of U.S. Route 202 to access the crossing guard location near SMS. There is a need to improve the safety of students walking along this portion of the roadway to access the school.

Crosswalks

- There used to be a painted crosswalk across U.S. Route 202 near the front entrance to the school. However, the crosswalk has not been repainted since the road was paved recently.
- There is a crossing guard present from approximately 7:00-7:30 a.m. and 2:00-2:30 p.m. In the morning the guard has a light-up baton and a hand-held stop sign. The guard uses a hand-held stop sign in afternoon.
- Curb ramps are present where the crosswalk meets the sidewalk on the western side of U.S. Route 202.
- The Town and school might consider placing a police officer and/or police vehicle with the crossing guard before/after school to improve the safety of this intersection.

The photos above and below are of the crossing guard location on U.S. Route 202 at the SMS front entrance/exit.



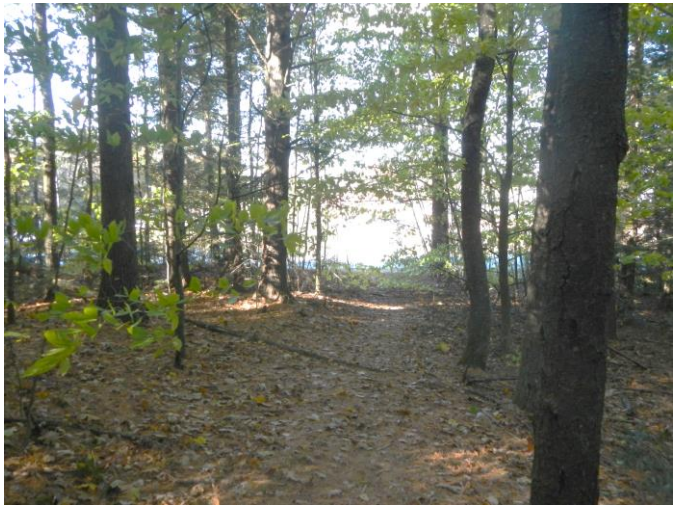
- The crosswalk needs to be repainted and a traffic calming device such as a flashing beacon should be considered for installation at this crossing.
- The crosswalk could be moved to the north entrance to the front of the school where there is better lighting and connectivity with Pheasant Rd.

Lighting

- Adequate lighting is provided behind the school. However, it was observed that there is less lighting along the back row of parking furthest from school. Overall, lighting does not appear to be a safety concern at SMS.

Walking Trails

- There is an informal walking path / trail that connects from Pineridge Road through the woods to the dumpster in the upper parking lot at the rear of the school. SWRPC staff observed about 15 students using this trail in the morning. Students were also observed using another trail through the woods that connects the rear upper parking lot to a neighborhood behind the school. SMS staff members confirmed that the numbers of students using these trails remains fairly constant in both the morning and afternoon.
- Conditions along these trails in the winter can become icy and dangerous for students that continue to walk to school from adjacent neighborhoods.
- There are tree roots and rocks that could be cleared from these trails to improve walkability.
- The trail that connects Pineridge Road to the school parking lot does not lead directly to school. The school may consider creating a designated walking path that extends from this trail to the rear school entrance.
- Some students travel across the SMS recreational fields to connect to ConVal Regional High School, which is adjacent to the SMS property. An informal trail has been shaped across these fields. The school may consider creating a formal walking path that connects SMS to ConVal High School.



The photo above is of the trail connecting Pineridge Road to the SMS rear parking lot.

The photo above is of an informal foot path that connects SMS to ConVal High School.

Speed

- Speeding on U.S. Route 202 near the school is a significant safety issue. Traffic moves at speeds up to 50 mph in this area. The posted speed limit is 40 miles per hour, which decreases to 30 miles per hour in the school zone. The only traffic calming measures present along U.S. Route 202 in the school zone is a flashing yellow light.
- A few vehicles were observed speeding on school property when dropping off late students and picking up the last students.
- Speed limits are not marked for the entrance/exit to the rear parking lot.
- There are no traffic calming devices (e.g. speed bumps, speeding tables) to reduce vehicle speeds at any of the school's entrances or exits.

The above photo is of U.S. Route 202 past the intersectin of Pineridge Road looking south towards downtown Peterborough.

The above photo is of U.S. Route 202 outside the school rear entrancelooking north towards ConVal High School.

Consultation with NH Department of Transportation

In December of 2012, the SRTS Task Force met with representatives from the NH Department of Transportation's (DOT) to discuss potential traffic calming improvements on U.S. Route 202 near SMS. NH DOT suggested that due to the posted speed and average daily traffic volumes along this segment of the road, a rectangular rapid flashing beacon (RRFB) would be an appropriate traffic calming device to install at the crossing along U.S. Route 202. It was suggested that a crossing guard should continue to be present during the school arrival and departure hours.

An RRFB is a device that uses rectangular-shaped, high-intensity LED-based indications, which flash rapidly in a "flickering" flash pattern, to slow, stop and control traffic at a crosswalk. The RRFB is typically mounted in the space between a neon crossing sign and the sign's supplemental arrow plaque.

School Administrative Unit #29 recently installed a RRFB on Route 101 in Marlborough to improve the safety of students crossing the state road to access the Marlborough Elementary School.

Below are photos of this crossing and the RRFB in Marlborough

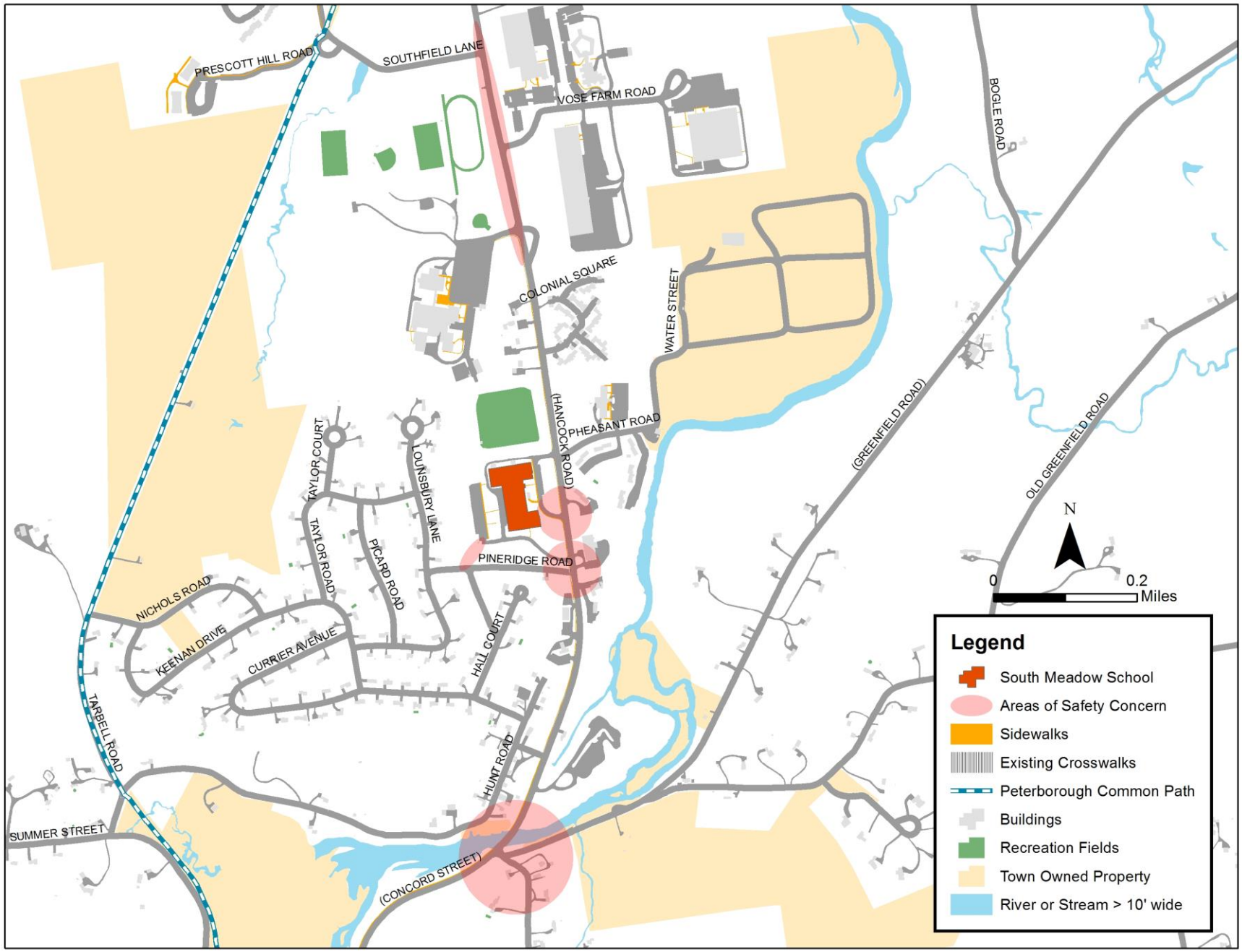
Areas of Safety Concern in the Study Area

Map 4 displays the pedestrian infrastructure that is located within less than 0.5 mile of the school. Sidewalks, crosswalks, and areas of safety concern as noted by students, parents and community members are displayed on this map. Sidewalks are present along most of U.S. Route 202 between SMS and downtown Peterborough. There are currently no painted crosswalks on U.S. Route 202 in close proximity to SMS. The closest crosswalk on U.S. Route 202 is at the intersection of Sand Hill Road and U.S. Route 202, near downtown Peterborough. The only crosswalk near SMS is across Pineridge Road near its intersection with U.S. Route 202.

The Peterborough Common Path is a pathway that runs for nearly 7 miles from the south end of Peterborough north to Hancock. The trail is a combination of asphalt and gravel and follows an old railroad right-of-way along the Contoocook River. While the pathway does not formally connect to SMS, it can be used by students traveling via bicycle or on foot to bypass heavily trafficked roadways on their commute to school. Not depicted on this map are the informal walking paths/trails that students use to connect to SMS from neighborhoods adjacent to the school.

Areas of safety concern identified by the SRTS Task Force, parents, and community members include the crossing on U.S. Route 202 to SMS; the intersection of NH Route 136, U.S. Route 202, and Old Street; the alignment of Pineridge Road and the SMS southern entrance; and, the unpaved trails that lead from adjacent neighborhoods to the rear of the school. Another area of safety concern is the lack of sidewalk along U.S. Route 202 from Southfield Lane to ConVal High School. It was noted by community members that there are many families that live in the apartment complex off of Southfield Lane. Students walking to SMS currently walk along the shoulder of U.S. Route 202 until it connects with the sidewalks near ConVal High School's entrance.

Map 4. Areas of Safety Concern in the South Meadow School Study Area



EDUCATION, ENCOURAGEMENT, ENFORCEMENT STRATEGIES

Education Strategies

Education is viewed as an essential component of improving safe walking and biking conditions in the study area and has been a core component of the travel planning process. The Task Force used the distribution of the SRTS In-Classroom and Parent Surveys as an opportunity to raise awareness about the importance of building and maintaining safe routes for students to travel to and from school. It intends to use this Travel Plan as an opportunity to educate the school community about the benefits of walking and biking to school and on safe travel behavior for students and parents.

Additional strategies proposed by the SRTS Task Force to enhance education and awareness of the importance of and need for safe walking and bicycling routes to school are described below.

- Share information on student bicycle and pedestrian safety with the SMS school community via the school's website and newsletter.
- Sponsor clinic or program for students on bicycle maintenance and repair.
- Work with organizations and/or businesses such as Eastern Mountain Sport to sponsor a clinic or program for students on bicycle maintenance and repair.
- Work with the local police department and/or organizations such as the Bike Walk Alliance of New Hampshire to hold an event for students on bicycle safety and the rules for bicyclists in New Hampshire.
- Develop and distribute an easy-to-read map for students and families to use to identify routes in a one-mile radius of the school that are safe for walking and bicycling.

Encouragement Strategies

SMS has offered activities that encourage students to walk and bicycle to school. These include a program that offers helmets for a variety of activities (e.g. bicycling, skateboarding, snowboarding, etc.) to students for a fee of $5.00. Each year, the school participates in a fall Turkey Trot at ConVal High School. Students walk along the trails and pathways surrounding the school as well as along the sidewalk on U.S. Route 202 to access the High School.

Additional strategies considered by the SRTS Task Force to support and encourage walking and bicycling are described below.

- Apply for grant funding (e.g. NH DOT SRTS Start Up Grant) and/or seek donations from businesses/organizations for prizes, such as bicycles, bicycle locks and helmets, and sneakers, to distribute as awards or raffle items to incentivize and increase student interest in walking and bicycling.
- Work with the local police departments to collect and repair unclaimed lost and stolen bicycles. These bicycles could be raffled off or given away to students or be used to establish a bicycle share program at SMS.
- Install a bicycle rack at the rear entrance of the school where there is a security camera present.
- Hold and participate in events that promote walking and bicycling such as national Bike to School Day (typically in early-mid May) and national Walk to School Day (typically in October).
- Utilize the National Safe Routes to School website (www.saferoutesinfo.org) and the NH DOT SRTS program (www.nh.gov/dot/org/projectdevelopment/planning/srts) as resources to identify ideas and opportunities for additional encouragement activities.

Enforcement Strategies

As part of the development of this Travel Plan, the Task Force worked with SWRPC, the Peterborough Police Department, School Administrative Unit #1, and SMS to identify locations where speeding and traffic congestion are most problematic within the study area. The SRTS Task Force consulted with the Peterborough Police Department about opportunities for improving the safety of students walking and bicycling the study area. The ideas shared by the Police Department and by the SRTS Task Force for enforcing safer travel behaviors in the study area are listed below.

- Continue to include U.S. Route 202 near SMS as a location to periodically display the Peterborough Police Department's radar speed trailer. This device alerts motorists of their passing speed and records data on vehicle volume and speed. It can be used as a tool to slow vehicles and deter speeding in the vicinity of the school.
- Continue to enforce the SMS policy requiring students to wear a helmet when bicycling to school.
- Continue to work with the Peterborough Police Department to have periodic police presence at the crossing on U.S. Route 202 to SMS during morning arrival and afternoon dismissal times.
- Work with the Peterborough Police Department and other partners to provide training on safe crossing techniques to crossing guards and to ensure that crossing guards wear high visibility, reflective vests.

Engineering Strategies

The SRTS Task Force contracted with Hoyle Tanner & Associates, Inc. (HTA), an engineering and planning firm located in Manchester, NH, to identify and develop conceptual designs of potential improvements to the crossing on U.S. Route 202 to SMS and to the alignment of Pineridge Road and the SMS southern driveway. The improvements proposed by HTA are illustrated in figures 12 and 13. Brief descriptions of these proposed concepts are included below.

US Route 202 Crossing

The existing crossing area on U.S. 202 at southern driveway to the SMS provides limited visibility for motorist of pedestrians looking to cross the roadway. In addition, the current location does not provide connectivity to the existing housing development, Riverview Apartments, on the east side of the roadway and requires pedestrians to walk along the roadway shoulder. HTA's proposed improvements for this location address these issues by shifting the crossing to a more desirable location. The concept proposes to move the crosswalk to the northern driveway to the SMS, where buses currently access the front of the school. This location has several visibility benefits including additional sight distance to the crossing for drivers, an existing street light, and the potential to add additional lighting to adjacent utility poles. To further improve visibility of the crossing along this highly traveled roadway, a solar powered Rectangular Rapid Flash Beacon (RRFB) is proposed to be constructed. This beacon is pedestrian activated and will utilizing rapid flashing LED lights to alert motorists to pedestrians in the roadway. The new location will improve access to the housing development by locating the crossing closer to Pheasant Road and providing a short section of sidewalk that will allow pedestrians to safely access this drive. A 170 linear foot section of new sidewalk will also be required to connect the existing school sidewalk network to the proposed crossing location. HTA estimates that these improvements would cost approximately $52,500. A more detailed cost estimate for this concept is included in Appendix C.

Pineridge Rd / School Driveway

Pineridge Road and the driveway to the South Meadow School currently intersect U.S. Route 202 within 50 feet of each other. This increases conflict points between vehicles and pedestrians, which increases congestion and reduces safety for students walking to school. HTA's proposed improvement for this location involves eliminating the school driveway curb cut on U.S. Route 202 and connecting it to Pineridge Road. The concept proposes a realignment of approximately 350 linear feet of Pineridge Road so that it aligns with the driveway for Torphy Construction across U.S. Route 202. Approximately, 175 linear feet of the school driveway will be realigned so that it forms a stop controlled intersection with Pineridge Road. The existing sidewalk along the west side of US 202 will also need to be extended so that it connects to the new Pineridge Road intersection approach and crosswalk. HTA estimates that these improvements would cost approximately $148,300. A more detailed cost estimate for this concept is included in Appendix C.

Figure 12. Proposed Safety Improvements to the Crossing on U.S. Route 202 to SMS

Figure 13. Proposed Safety Improvements to the Alignment of Pineridge Road and SMS' Southern Driveway

RECOMMENDATIONS

The table below outlines strategies proposed by the SRTS Task Force to improve safe walking and bicycling conditions in the SMS study area. It identifies potential partners to assist the SRTS Task Force with pursuing and undertaking these recommended action items and it notes potential funding resources to support these efforts. This is intended to be a dynamic list of recommendations that are revisited and updated to address completed improvements and identify opportunities that were unforeseen at the time of its development.

Table 12. Proposed Strategies to Improve Walking/Biking Conditions in SMS Study Area

	Strategy	Potential Partners	Funding Resources
ENGINEERING / EVALUATION	**1.** Improve pedestrian visibility and safety at the crossing on U.S. Route 202 to SMS by relocating the crossing to the north driveway to the school, installing a Rectangular Rapid Flashing Beacon (RRFB), and extending sidewalk along the north driveway to the front entrance of the school and along a segment of Pheasant Road.	Town of Peterborough; HTA; SMS; SAU #1	NH Transportation Alternatives Program
	2. Realign Pineridge Road and the southern driveway to SMS to form one access point onto U.S. Route 202. HTA's conceptual design proposes realigning ~350 linear feet of Pineridge Road so that it aligns with the driveway on the opposite side of U.S. Route 202 and realigning 175 feet of the school driveway to form a stop controlled intersection with Pineridge Road.	Town of Peterborough; SAU #1; SMS	NH Transportation Alternatives Program; NH Highway Block Grant Aid
	3. Improve the condition of walking trails to the rear parking lot of the school from Pineridge Road and adjacent neighborhoods. Improve the connection of these trails to the rear entrance of the school.	SMS; SAU #1	NH Transportation Alternatives Program; NH Recreation Trails Program
	4. Investigate potential safety improvements to enhance the visibility and safety of pedestrians and cyclists at the intersection of NH Route 136, U.S. Route 202, and Old Street.	NH DOT; Town of Peterborough; SWRPC	NH Transportation Alternatives Program; NH State Aid Highway Program; NH Highway Block Grant Aid; NH Highway Safety Improvement Program
	5. Install a bicycle rack at the rear entrance of SMS near the gymnasium.	SMS; SAU #1; Town of Peterborough	NH Transportation Alternatives Program
	6. Extend the sidewalk on the western side of U.S. Route 202 from ConVal High School's entrance to Southfield Lane.	NH DOT; Town of Peterborough; SAU #1; SMS; ConVal High School	NH Transportation Alternatives Program
	7. Install signs indicating vehicle speed along the southern driveway to the SMS rear parking lot and the direction of parent pick-up / drop-off traffic.	SMS; SAU #1	NH Transportation Alternatives Program
	8. Consider replacing the 'Buses Only' sign in the front of SMS with a larger, more visible sign.	SMS; SAU #1	NH Transportation Alternatives Program
	9. Consider installing 'share the road' signs near SMS on U.S. Route 202.	NH DOT; Town of Peterborough	NH Transportation Alternatives Program

Table 22 (Continued from page 47). Proposed Strategies to Improve Walking/Biking Conditions in SMS Study Area

	Strategy	Potential Partners	Funding Resources
EDUCATION	**10.** Share information on student bicycle and pedestrian safety with the SMS school community via the school's website and newsletter.	SMS administration and staff; SMS Parent Teacher Organization (PTO); SAU #1	NH SRTS Start Up Grant
	11. Offer lessons on pedestrian and bicyclist safety as part of the SMS curriculum.	SMS administration and staff; NH DOT SRTS; BWANH; Healthy Eating Active Living (HEAL)	NH SRTS Start Up Grant Program; BWANH
	12. Collect and repair unclaimed lost and stolen bicycles to raffle off to students as prizes for walking or biking to school or to establish a bike share program.	Peterborough Police Department; Eastern Mountain Sport (EMS); SMS; SAU #1	
	13. Hold event(s) for students on bicycle safety and the rules for bicyclists in New Hampshire.	Peterborough Police Department; Bike Walk Alliance of New Hampshire (BWANH); SMS; SAU #1	NH SRTS Start Up Grant Program
	14. Hold clinic or class on bicycle repair and maintenance for SMS students.	SMS; SAU #1; EMS; BWANH	
	15. Develop and distribute an easy-to-read map for students and families to use to identify routes in a one-mile radius of the school that are safe for walking and bicycling.	Town of Peterborough; SMS; SAU #1; SMS PTO; Monadnock Community Hospital	NH SRTS Start Up Grant Program; HEAL Community Grant
	Strategy	**Potential Partners**	**Funding Resources**
ENCOURAGEMENT	**16.** Apply for grant funding and/or seek donations from businesses/organizations for prizes, such as bicycles, bicycle locks and helmets, and sneakers, to distribute as awards or raffle items to incentivize and increase student interest in walking and bicycling.	SMS; SAU #1; EMS	NH SRTS Start Up Grant
	17. Hold and participate in events that promote walking and bicycling such as national Bike to School Day (typically in early-mid May) and national Walk to School Day (typically in October).	SMS; Peterborough Recreation Department; SAU #1; Monadnock Community Hospital; Town of Peterborough	NH SRTS Start Up Grant
	Strategy	**Potential Partners**	**Funding Resources**
ENFORCEMENT	**18.** Continue to include U.S. Route 202 near SMS as a location to periodically display the Peterborough Police Department's radar speed trailer. This device alerts motorists of their passing speed and records data on vehicle volume and speed. It can be used as a tool to slow vehicles and deter speeding in the vicinity of the school.	Peterborough Police Department; Town of Peterborough	
	19. Continue to enforce the SMS policy requiring students to wear a helmet when bicycling to school.	SMS; SAU #1	
	20. Continue to work with the Peterborough Police Department to have periodic police presence at the crossing on U.S. Route 202 to SMS.	Peterborough Police Department; SMS; SAU #1	
	21. Provide training on safe crossing techniques to crossing guards and to ensure that crossing guards wear high visibility, reflective vests.	Peterborough Police Department	

APPENDICES

APPENDIX A. PARENT SURVEY FORM

Parent Survey About Walking and Biking to School

Dear Parent or Caregiver,

Your child's school wants to learn your thoughts about children walking and biking to school. This survey will take about 5 - 10 minutes to complete. We ask that each family complete only one survey per school your children attend. If more than one child from a school brings a survey home, please fill out the survey for the child with the next birthday from today's date.

After you have completed this survey, send it back to the school with your child or give it to the teacher. Your responses will be kept confidential and neither your name nor your child's name will be associated with any results.

Thank you for participating in this survey!

CAPITAL LETTERS ONLY – BLUE OR BLACK INK ONLY

School Name:

1. What is the grade of the child who brought home this survey? ☐☐ Grade (PK,K,1,2,3...)

2. Is the child who brought home this survey male or female? ☐ Male ☐ Female

3. How many children do you have in Kindergarten through 8th grade? ☐☐

4. What is the street intersection nearest your home? (Provide the names of two intersecting streets)

and

Place a clear 'X' inside box. If you make a mistake, fill the entire box, and then mark the correct box.

5. How far does your child live from school?

☐ Less than ¼ mile ☐ ½ mile up to 1 mile ☐ More than 2 miles
☐ ¼ mile up to ½ mile ☐ 1 mile up to 2 miles ☐ Don't know

Place a clear 'X' inside box. If you make a mistake, fill the entire box, and then mark the correct box.

6. On most days, how does your child arrive and leave for school? (Select one choice per column, mark box with X)

Arrive at school	Leave from school
☐ Walk	☐ Walk
☐ Bike	☐ Bike
☐ School Bus	☐ School Bus
☐ Family vehicle (only children in your family)	☐ Family vehicle (only children in your family)
☐ Carpool (Children from other families)	☐ Carpool (Children from other families)
☐ Transit (city bus, subway, etc.)	☐ Transit (city bus, subway, etc.)
☐ Other (skateboard, scooter, inline skates, etc.)	☐ Other (skateboard, scooter, inline skates, etc.)

Place a clear 'X' inside box. If you make a mistake, fill the entire box, and then mark the correct box

7. How long does it normally take your child to get to/from school? (Select one choice per column, mark box with X)

Travel time to school	Travel time from school
☐ Less than 5 minutes	☐ Less than 5 minutes
☐ 5 – 10 minutes	☐ 5 – 10 minutes
☐ 11 – 20 minutes	☐ 11 – 20 minutes
☐ More than 20 minutes	☐ More than 20 minutes
☐ Don't know / Not sure	☐ Don't know / Not sure

8. Has your child asked you for permission to walk or bike to/from school in the last year? ☐ Yes ☐ No

9. At what grade would you allow your child to walk or bike to/from school without an adult?

(Select a grade between PK,K,1,2,3...) ☐☐ grade **(or)** ☐ I would not feel comfortable at any grade

Place a clear 'X' inside box. If you make a mistake, fill the entire box, and then mark the correct box

10. What of the following issues affected your decision to allow, or not allow, your child to walk or bike to/from school? (Select ALL that apply)

11. Would you probably let your child walk or bike to/from school if this problem were changed or improved? (Select one choice per line, mark box with X)

	My child already walks or bikes to/from school		
	Yes	No	Not Sure
☐ Distance	☐	☐	☐
☐ Convenience of driving	☐	☐	☐
☐ Time	☐	☐	☐
☐ Child's before or after-school activities	☐	☐	☐
☐ Speed of traffic along route	☐	☐	☐
☐ Amount of traffic along route	☐	☐	☐
☐ Adults to walk or bike with	☐	☐	☐
☐ Sidewalks or pathways	☐	☐	☐
☐ Safety of intersections and crossings	☐	☐	☐
☐ Crossing guards	☐	☐	☐
☐ Violence or crime	☐	☐	☐
☐ Weather or climate	☐	☐	☐

Place a clear 'X' inside box. If you make a mistake, fill the entire box, and then mark the correct box

12. In your opinion, how much does your child's school encourage or discourage walking and biking to/from school?

☐ Strongly Encourages ☐ Encourages ☐ Neither ☐ Discourages ☐ Strongly Discourages

13. How much fun is walking or biking to/from school for your child?

☐ Very Fun ☐ Fun ☐ Neutral ☐ Boring ☐ Very Boring

14. How healthy is walking or biking to/from school for your child?

☐ Very Healthy ☐ Healthy ☐ Neutral ☐ Unhealthy ☐ Very Unhealthy

Place a clear 'X' inside box. If you make a mistake, fill the entire box, and then mark the correct box

15. What is the highest grade or year of school you completed?

☐ Grades 1 through 8 (Elementary)
☐ Grades 9 through 11 (Some high school)
☐ Grade 12 or GED (High school graduate)
☐ College 1 to 3 years (Some college or technical school)
☐ College 4 years or more (College graduate)
☐ Prefer not to answer

16. Please provide any additional comments below.

APPENDIX B. STUDENT IN CLASSROOM SURVEY FORM

Safe Routes to School Students Arrival and Departure Tally Sheet

+ CAPITAL LETTERS ONLY – BLUE OR BLACK INK ONLY +

School Name: | Teacher's First Name: | Teacher's Last Name:

Grade: (PK,K,1,2,3...) 0 2 | Monday's Date (Week count was conducted) M M D D Y Y Y Y | Number of Students Enrolled in Class: 1 5

- Please conduct these counts **on two of the following three days Tuesday, Wednesday, or Thursday. (Three days would provide better data if counted)**
- **Please do not conduct these counts on Mondays or Fridays.**
- Before asking your students to raise their hands, please read through all possible answer choices so they will know their choices. Each Student may only answer once.
- Ask your students as a group the question "**How did you arrive at school today?**"
- Then, reread each answer choice and record the number of students that raised their hands for each. **Place just one character or number in each box.**
- Follow the same procedure for the question **"How do you plan to leave for home after school?"**
- You can conduct the counts once per day but during the count please ask students both the school arrival and departure questions.
- Please conduct this count regardless of weather conditions (i.e., ask these questions on rainy days, too).

Step 1. Fill in the weather conditions and number of students in each class

Step 2. **AM** – "**How did you arrive at school today?**" Record the number of hands for each answer. **PM** – "**How do you plan to leave for home after school?**" Record the number of hands for each answer.

Key	Weather	Student Tally	Walk	Bike	School Bus	Family Vehicle	Carpool	Transit	Other
	S= sunny R= rainy O=overcast SN=snow	Number in class when count made	-	-	-	Only with Children from your family	Riding with children from other families	City bus, subway, etc.	Skate-board, scooter, etc.
Sample AM	S N	2 0	2	3	8	3		3	1
Sample PM	R	1 9	3	3	8	1	2	2	
Tues. AM									
Tues. PM									
Wed. AM									
Wed. PM									
Thurs. AM									
Thurs. PM									

Please list any disruptions to these counts or any unusual travel conditions to/from the school on the days of the tally.

+ +

APPENDIX C. ENGINEERING COST ESTIMATES

Hoyle, Tanner & Associates, Inc.

Date Printed: 4/17/2014

SAFE ROUTES TO SCHOOL - PETERBOROUGH, NH
UNION / MAIN / HIGH ST CONCEPT AT PETERBOROUGH ELEMENTARY
OPINION OF COST
QUANTITIES RELATED TO ROADWAY CONSTRUCTION

NHDOT Project No. N/A
HTA Project No. 907409
Date of Estimate: 4-16-2014
Calc'd By: SCS 4-16-2014
Checked By: SBH 4-16-2014

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT COST	COST
203.1	COMMON EXCAVATION	CY	210.00	$ 10.00	$ 2,100.00
203.6	EMBANKMENT-IN-PLACE (F)	CY	100.00	$ 10.00	$ 1,000.00
304.3	CRUSHED GRAVEL (F)	CY	160.00	$ 25.00	$ 4,000.00
306.11	RECLAIMED STABILIZED BASE PROCESSED IN PLACE, 10" DEEP (F)	SY	700.00	$ 10.00	$ 7,000.00
403.11	HOT BITUMINOUS PAVEMENT, MACHINE METHOD	TON	200.00	$ 90.00	$ 18,000.00
403.12	HOT BITUMINOUS PAVEMENT, HAND METHOD	TON	20.00	$ 120.00	$ 2,400.00
417	COLD PLANING BITUMINOUS SURFACES	SY	400.00	$ 10.00	$ 4,000.00
608.12	2" BITUMINOUS SIDEWALK (F)	SY	300.00	$ 15.00	$ 4,500.00
608.24	4" CONCRETE SIDEWALK (F)	SY	20.00	$ 50.00	$ 1,000.00
609.01	STRAIGHT GRANITE CURB	SY	675.00	$ 22.00	$ 14,850.00
	SUBTOTAL A				**$ 58,850.00**
	MISC. ITEMS (MARKINGS, LOAM, LANDSCAPE, SIGNS) (20% SUB A)	20%			$ 11,770.00
	SUBTOTAL B				**$ 70,620.00**
	DRAINAGE ITEMS (30% SUB B)	30%			$ 21,186.00
	SUBTOTAL C				**$ 91,806.00**
618.61	UNIFORMED OFFICERS WITH VEHICLE	$	1	$ 6,000.00	$ 6,000.00
618.7	FLAGGERS	HR	160	$ 25.00	$ 4,000.00
619.1	MAINTENANCE OF TRAFFIC	U	1	$ 10,000.00	$ 10,000.00
	EROSION, SEDIMENT, AND POLLUTION CONTROL (10% DRAINAGE)	U	1	$ 2,118.60	$ 2,118.60
	(HAY BALES, SILT FENCE, SWPPP, TEMP. WATER POLL. CONTROL)				
	SUBTOTAL D				**$ 113,924.60**
	ROADWAY MOBILIZATION	10%			$ 11,392.46
	ROADWAY CONTINGENCIES	15%			$ 17,088.69

Item Total: $ 142,405.75

Assumptions
High Street realigned to stop controlled T-Intersction with Union/Main
Minimal change in profile grade
10" Reclaimation of existing pavement surface
4" of new bituminous pavement
Pavement Removal and Loam & Seed of Old Roadways
80 LF of new sidewalk for realigned intersection (5' wide, 2" Bituminous, 6" Crushed Gravel)
520 LF of new sidewalk for Main St. extension (5' wide, 2" Bituminous, 6" Crushed Gravel)
Sidewalk/Curb on south side of Main Street will not be disturbed

SAFE ROUTES TO SCHOOL - PETERBOROUGH, NH
US 202 CROSSING CONCEPT AT SOUTH MEADOW SCHOOL
OPINION OF COST
QUANTITIES RELATED TO ROADWAY CONSTRUCTION

NHDOT Project No. N/A
HTA Project No. 907409
Date of Estimate: 4-16-2014
Calc'd By: SCS 4-16-2014
Checked By: SBH 4-16-2014

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT COST	COST
203.1	COMMON EXCAVATION	CY	70.00	$ 10.00	$ 700.00
304.3	CRUSHED GRAVEL (F)	CY	55.00	$ 30.00	$ 1,650.00
403.12	HOT BITUMINOUS PAVEMENT, HAND METHOD	TON	5.00	$ 150.00	$ 750.00
608.12	2" BITUMINOUS SIDEWALK (F)	SY	100.00	$ 15.00	$ 1,500.00
608.24	4" CONCRETE SIDEWALK (F)	SY	25.00	$ 50.00	$ 1,250.00
609.01	STRAIGHT GRANITE CURB	LF	250.00	$ 22.00	$ 5,500.00
	SUBTOTAL A				**$ 11,350.00**
	MISC. ITEMS (MARKINGS, LOAM, SEED, SIGNS) (15% SUB A)	15%			$ 1,702.50
	SUBTOTAL B				**$ 13,052.50**
	DRAINAGE ITEMS (20% SUB B)	20%			$ 2,610.50
	SUBTOTAL C				**$ 15,663.00**
618.61	UNIFORMED OFFICERS WITH VEHICLE	$	1	$ 600.00	$ 600.00
619.1	MAINTENANCE OF TRAFFIC	U	1	$ 500.00	$ 500.00
	RECTANGULAR RAPID FLASHING BEACONS	U	1	$ 25,000.00	$ 25,000.00
	EROSION, SEDIMENT, AND POLLUTION CONTROL (10% DRAINAGE)	U	1.00	$ 261.05	$ 261.05
	(HAY BALES, SILT FENCE, SWPPP, TEMP. WATER POLL. CONTROL)				
	SUBTOTAL D				**$ 42,024.05**
	ROADWAY MOBILIZATION	10%			$ 4,202.41
	ROADWAY CONTINGENCIES	15%			$ 6,303.61

Item Total: $ 52,530.06

Assumptions
250 LF of new sidewalk (5' wide, 2" Bitumionous, 6" Crushed Gravel)
2 - Bi-Directional Solar RRFB's will be installed (either side of 202)
No pavment work will be required other than patching for curb
Potential for additional luminaire on Utility Pole (By Others)

SAFE ROUTES TO SCHOOL - PETERBOROUGH, NH
PINERIDGE ROAD / SCHOOL DRIVE CONCEPT AT SOUTH MEADOW SCHOOL
OPINION OF COST
QUANTITIES RELATED TO ROADWAY CONSTRUCTION

NHDOT Project No. N/A
HTA Project No. 907409
Date of Estimate: 4-16-2014
Calc'd By: SCS 4-16-2014
Checked By: SBH 4-16-2014

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT COST	COST
201.1	CLEARING AND GRUBBING (F)	A	0.30	$ 15,000.00	$ 4,500.00
203.1	COMMON EXCAVATION	CY	1,150.00	$ 10.00	$ 11,500.00
304.2	GRAVEL (F)	CY	625.00	$ 20.00	$ 12,500.00
304.3	CRUSHED GRAVEL (F)	CY	325.00	$ 25.00	$ 8,125.00
403.11	HOT BITUMINOUS PAVEMENT, MACHINE METHOD	TON	430.00	$ 90.00	$ 38,700.00
417	COLD PLANING BITUMINOUS SURFACES	SY	130.00	$ 10.00	$ 1,300.00
608.12	2" BITUMINOUS SIDEWALK (F)	SY	45.00	$ 15.00	$ 675.00
608.24	4" CONCRETE SIDEWALK (F)	SY	12.00	$ 50.00	$ 600.00
609.01	STRAIGHT GRANITE CURB	SY	110.00	$ 22.00	$ 2,420.00
	SUBTOTAL A				**$ 80,320.00**
	MISC. ITEMS (MARKINGS, LOAM, SEED, SIGNS) (15% SUB A)	15%			$ 12,048.00
	SUBTOTAL B				**$ 92,368.00**
	DRAINAGE ITEMS (20% SUB B)	20%			$ 18,473.60
	SUBTOTAL C				**$ 110,841.60**
618.61	UNIFORMED OFFICERS WITH VEHICLE	$	1	$ 2,000.00	$ 2,000.00
618.7	FLAGGERS	HR	80	$ 25.00	$ 2,000.00
619.1	MAINTENANCE OF TRAFFIC	U	1	$ 2,000.00	$ 2,000.00
	EROSION, SEDIMENT, AND POLLUTION CONTROL (10% DRAINAGE)	U	1	$ 1,847.36	$ 1,847.36
	(HAY BALES, SILT FENCE, SWPPP, TEMP. WATER POLL. CONTROL)				
	SUBTOTAL D				**$ 118,688.96**
	ROADWAY MOBILIZATION	10%			$ 11,868.90
	ROADWAY CONTINGENCIES	15%			$ 17,803.34

Item Total: $ 148,361.20

Assumptions
350 LF of Realignment of Pineridge Road
175 LF of Realignment of School Driveway
4" Pavement, 6" Crushed Gravel, 12" Gravel
80 LF of new sidewalk (5' wide, 2" Bituminous, 6" Crushed Gravel)
10' of clearing on either side of roadways
Pavement Removal and Loam & Seed of Old Roadways
Utility Pole Relocation (By Others) will be required

APPENDIX D. LOCAL MEDIA COVERAGE

PAGE 2 Thursday, April 17, 2014 MONADNOCK LEDGER-TRANSCRIPT

CONVAL

Safety improvements previewed by School Board

Five-way intersection leading to PES, access road to South Meadow School and crosswalk changes are all in the mix

By Dave Anderson
Monadnock Ledger-Transcript

HANCOCK — ConVal School Board members learned Tuesday that new traffic patterns and crosswalks could be in the works for Peterborough Elementary School and South Meadow School, based on the recommendations of a Safe Routes to School travel plan being developed by the town of Peterborough and Southwest Region Planning Commission.

Tara Germond, a senior planner for the SRPC, gave board members a preview of the some of the suggestions that a Safe Routes to School Task Force may be recommending. One of those ideas would be to rework the five-way intersection in Peterborough near the elementary school where Main Street, Union Street, Elm Street, High Street and Vine Street come together, adding stop signs on Union Street and Main Street, and possibly relocating crosswalks and extending the sidewalk on the north side of Main Street.

At South Meadow, the task force is considering changing the access road to the back of the school building by eliminating its curb cut on Route 202 and having the driveway intersect at some point with neighboring Pineridge Road. Drivers going to the back of the school or the SAU 1 office would turn from Route 202 onto Pineridge Road and then turn into the school's access road. The initial proposal also calls for changing the location where students cross Route 202, moving it north to a spot near Pheasant Road, where a new crosswalk could be marked and traffic warning lights installed.

"Our focus is on improving safety," Germond said at Tuesday's School Board meeting.

She stressed that the proposal is still preliminary, but said the task force, made up of representatives of both the town and the school district, is aiming to finalize its recommendations by the end of April in order to start the process of seeking funding. She said the group has been working on the project since 2011.

Speaking about the elementary school, Germond said the task force has done traffic studies, surveyed parents, and held a community meeting at the school.

"The focus there is on the five-way intersection," she said. "It can be a challenge to motorists and speed is a factor. The intersection is difficult to navigate and visibility is poor."

She said drivers often don't even seem to see the crossing guard at the intersection.

Stephen Haas, a project engineer at Hoyle Tanner & Associates of Manchester, who has been working with the town and the SRPC on the proposal, showed a diagram of how the intersection might be revamped, with additional stop signs and a revised traffic pattern that could reduce the amount of pavement where the five roads intersect and possibly make turning locations more evident to drivers. The drawing shows a sidewalk extending up the north side of Main Street to a pedestrian crosswalk that would direct students across a revised intersection with High Street, so they could then take a sidewalk up the west side of High Street to the school. A second crosswalk is shown running across Union Street to the east of the Elm Street intersection. Drivers on Union Street or who had turned left from Elm Street to head toward downtown Peterborough would stop at a new stop sign in front of that crosswalk.

Like Germond, Haas stressed that the design was a first draft. He declined to provide a copy of the drawing following the meeting.

At South Meadow, Germond told the board, the task force's goal was to reduce the number of access points onto Route 202 in order to improve safety. She said the consensus of school officials and parents was that the system for drop-off and pickup of students on school buses, which takes place in front of the school, has been working well. But parents who drop off students do so in the upper parking lot, which gets heavy traffic in the morning and afternoon, and many drivers find it difficult to pull out onto Route 202 from the current access road.

Haas showed the board a drawing of a possible revised access road, which would connect with Pineridge Road rather than directly onto Route 202. Board members asked whether the connection should be made at a different location, perhaps further away from Route 202 than the plan shows. Haas said that could be considered, but sight lines and topography in the area are also factors in determining what is feasible.

Haas and Germond said a relocated cross walk near Pheasant Road would provide safer access across Route 202 for students who live in the Riverview Apartments complex and better sight lines for drivers. The task force is considering installing a flashing beacon that emits a flickering pattern to alert motorists that they are approaching a crosswalk. Germond said the beacon could be activated by a crossing guard or a pedestrian who wished to use the crosswalk.

Board member Rich Cahoon of Antrim wondered about the timing of the access road proposal, given that the School Board and administration just two months ago had asked voters for $150,000 to redo the exit road, adding a turning lane at the intersection of Route 202. That warrant article was turned down at the polls in March.

School Superintendent Brendan Minnihan said the task force hadn't reached the point of making a recommendation when the warrant articles were prepared, and Germond said the design had just been developed and was now being presented for the first time for discussion.

Germond told the board that cost estimates for the projects have not been developed and will depend on the plans that are eventually proposed. The task force is planning to apply for Safe Routes to School grant funding that could cover 80 percent of the cost. It has not been determined how the remaining 20 percent would be allocated between the town and the school district.

Peterborough Public Works Director Rodney Bartlett said the town had taken the lead in developing the travel plan, which was funded by a grant from the N.H. Department of Transportation's Safe Routes to School Program. He said any recommendations for changes at the five-way intersection, the SMS crosswalk, or the tie-in of the SMS access road to Pineridge Road would require review and approval by Peterborough's Select Board.

The task force was formed in 2011 as a joint effort of the town and the school district. Current members of the group are Bartlett, Minnihan, Peterborough Community Development Director Pete Throop, ConVal Facilities Director Tim Grossi, principals Anne O'Bryant of South Meadow School and Ben Loi of Peterborough Elementary School, Peterborough Recreation Director Jeff King and Matt Waitkins of Peterborough. Former School Superintendent Dick Bergeron, former SMS principal Dick Dunning and former Peterborough Community Development Director Carol Ogilvie also participated in the early stages of the study.

Staff photo by Dave Anderson

Stephen Haas of Hoyle Tanner describes options for revising the intersection near Peterborough Elementary School to ConVal's School Board.

Viewpoints

TOP TOPICS

A CALL FOR READER OPINION

The ConVal School Board is reviewing plans to improve road safety around the schools in Peterborough, including reworking the five-way intersection near the elementary school, moving crosswalks and funneling traffic to an access road around the back of South Meadow School. Are these changes a good idea? What are your views on how to improve road safety around the ConVal schools?

How to submit: Send 400 to 600 words to news@ledgertranscript.com, with "Safe Routes" in the subject line, by April 24 at noon.

Editorial

More questions than answers

ConVal School Board members got a first look Tuesday at a proposal on ways make it safer for students to get to Peterborough Elementary School and South Meadow School.

Whether students come on foot, by bus or car, or even in a few cases by bicycle, it's a given that they should be kept as safe as possible. The challenge is how to do that, when one school fronts on a major state highway and the other is tucked away on a hill, but close to the awkward five-way intersection that has been a thorn in the side of Peterborough officials for years.

The report of the Peterborough Safe Routes to School Task Force, which was summarized by Tara Germond of the Southwest Region Planning Commission at Tuesday's board meeting, is an admirable first step. As Germond told the board, the task force, made up of Peterborough and ConVal officials, has quietly been researching traffic issues at the two schools for more than three years now. They have a wealth of data, from traffic studies, community surveys, meetings with parents. But now comes the hard part: Taking that information and developing thoughtful, workable and affordable proposals for improvements. That won't be easy, and it's vital that the group get more input from the entire Peterborough and ConVal communities.

The admittedly preliminary ideas presented at the board meeting raised a few eyebrows. To start, few people there, including School Board members, seemed to be aware that the task force even existed. Perhaps that explains why just a couple of months ago the School Board was promoting a plan to widen the traffic lanes and repave the access road to South Meadow School, even though the task force was apparently discussing a totally different approach — eliminating the access directly off Route 202 and having the entrance to the back parking lots of the building off Pineridge Road. Did the board know what the task force members were thinking? It's a good thing voters turned down the board's warrant article.

And at first glance, the suggestions for reworking the five-way intersection near the elementary school seem impractical. There's no easy solution there, given steep streets and awkward sight lines, but adding more stop signs, as an initial drawing suggests, could create a nightmare of backed-up traffic that would rival the rush-hour snarls at the Peterborough Library intersection.

Task force members are hoping to move quickly to seek grant money. Before they do, they should take plenty of time to get public feedback. Otherwise, the project will go nowhere. And that would be a shame, since the safety of our children should be a top priority.

The way we were

Ledger-Transcript file photo

April 1998: ConVal High School's math team successfully defended its Class I title, even though it was up against teams from Class L schools. Forming the plus sign are, horizontally, Matt Bernstein, Rob Anderson, Andrew Eppig and Brian Bollinger; vertically, Matt Stanley, Ben Bollinger, Jeff Jantos and Emily Smith, with Sam Blair in the center.