Borough Of

WHARTON

Safe Routes 2 School

PLAN

submitted to

Morris County Division of Transportation

submitted by

The RBA Group, Inc. — Engineers · Architects · Planners

in association with

National Center for Bicycling & Walking • Eng-Wong, Taub & Associates
AmerCom Corp. • Steve Spindler Cartography • Vertices, LLC

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CREDITS/ACKNOWLEDGEMENTS

The SRTS Plan for Wharton Borough was created throughout a planning process that involved several players, without whom, the project would not have survived past a mere idea. Continued cooperation among the following people will be essential in implementing a successful SRTS program in Wharton Borough.

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Introduction

Purpose | Methodology | Best Practices

> “Base your vision on how you want to live, not what you’ve learned to live with.”
>
> – *Anonymous*

CHAPTER 1: INTRODUCTION

Safe Routes to School (SRTS), generally, refers to programs that promote walking and biking to school to achieve a wide range of benefits for students, school and community. These benefits include reduced traffic in the vicinity of schools, improved pedestrian/bicycle access and safety and increased physical activity among students, contributing to healthy lifestyles. By incorporating each of five "E's" – Education, Encouragement, Enforcement, Engineering and Evaluation – SRTS addresses a wide variety of topics relevant to journeys to and from school within a municipality, district or school.

In May of 2005, the Morris County Division of Transportation (MCDOT) selected MacKinnon Middle School and Duffy Elementary School, which occupy the same building, to be pilots for their Morris County Safe Routes To School (SRTS) Program, which was funded by the North Jersey Transportation Planning Authority (NJTPA). Wharton Borough was selected by MCDOT for the pilot project for a number of reasons. First, Wharton is a compact community where the students are not bused to school and safe alternatives to driving are needed. Second, both school and municipal officials enthusiastically supported community participation in International Walk to School Day (the first Wednesday in October). They had demonstrated that they were ready, willing and able to participate and were prepared to maintain SRTS momentum.

Perhaps the most outstanding aspect of the Wharton Schools SRTS Pilot Program was the dedication demonstrated by their project team. The SRTS team – led by the School District Superintendent, with support from Borough, County, parent, and community representatives – made it their mission to complete a successful and meaningful SRTS program that encouraged students to work with team leaders in both the classroom and at special events. The MCDOT facilitated the program with help from a local and a national consultant team, led by The RBA Group of Morristown. Together, the local and national consultant teams worked to develop an SRTS program unique to the needs of Wharton schools. They sought to develop a program that would engage the entire community in improving the physical environment and encouraging a social climate to support children's ability to walk, bicycle, carpool or take transit safely to school – all while gaining added health, air quality, traffic safety, and quality of life benefits.

Purpose

The program's overall purpose involves building a physical environment and encouraging a social climate that supports children's ability to walk, bicycle, carpool or take transit safely to school. This includes such goals as:

- Reducing traffic congestion around schools
- Creating safer, calmer streets and neighborhoods
- Improving air quality and provide a cleaner environment
- Increasing physical activity for children
- Fostering a healthier lifestyle for the whole family

Another purpose of this SRTS program was to ensure that the results – both the successes and challenges – of the Wharton experience were recorded and published in order to assist both the Wharton schools in advancing their SRTS Program and to serve as a resource to guide future projects in other communities in Morris County and New Jersey. This included:

- Providing Morris County with a database of SRTS programs
  - Program outreach and educational materials
  - Infrastructure treatment options for preferred routes
  - Potential performance measures
- Preparing a SRTS Plan for MacKinnon and Duffy Schools that incorporates findings and feedback from prior tasks and provides for a sustainable, long-term program

While this plan focuses specifically on the Wharton Borough Public Schools, a complementary How-To guide serves as the main document to aid other Morris County Schools in beginning and implementing their SRTS programs.

Methodology

The Wharton SRTS Program planning effort included several broad work tasks. They included:

Background Documentation

Background documentation for the SRTS program was collected from the perspectives of the health, enforcement, educational, engineering and encouragement fields to identify some of the best practices in SRTS programs in the United States and worldwide. The technical memorandum that resulted from this effort is intended to provide both Wharton Public Schools and schools throughout Morris County with a menu item of program ideas in the SRTS realm. Furthermore, an

update of potential funding/grant program information, which was previously developed for the New Jersey Safe Routes to School Plan, was provided to direct SRTS advocates towards potential funding opportunities.

Existing Conditions Evaluation

Existing conditions were documented by utilizing a combination of information available from Wharton Borough and/or Morris County and field information was collected on site by the consultant team. This included an evaluation of roadway width, pavement condition, curbing, sidewalk condition, traffic volumes, truck percentage, speed limits, lighting, parking restrictions, and crash data. Students aided in this process of evaluating existing conditions through the following activities:

- Creating Time-Radius Maps
- Performing Walkability Audits
- Measuring Cross Sections
- Camera Exercise (The Good, The Bad, and The Ugly)

Public Visioning Meeting

In April 2006, the SRTS project team hosted a public visioning meeting where community members had the opportunity to learn about the SRTS Program and share their ideas on what types of events, projects and activities were of most interest to the Wharton community. At this meeting, adults and children were led in various exercises fashioned to garner their perspectives on what they envision an effective SRTS Program to be. These activities included:

- **Visioning:** Those present were asked to describe their dreams for the future. Responses included broad, long-term goals like fewer autos on the roads and improved environmental health as well as specific improvements like clearly marked crosswalks. With their visions in mind, participants took part in subsequent activities geared to help develop their School Travel Plan.

- **Route Planning:** Participants were asked to begin to bring their visions to reality through a route planning exercise. Using the same base map that was used for the student field exercise, they identified where students currently walk or bike, where they could if conditions were improved, major obstacles and attractors to walking and biking.

- **Voting on Preferred Treatments/Programs:** Finally, solutions were categorized according to the "5 E" approach to implementing a SRTS Program: Encouragement Programs, Education Programs, Enforcement Programs, Engineering Treatments and Evaluation Measures. Each person was asked to rank the actions that they thought would best help the Wharton Schools realize their SRTS goals. By using color-coded stickers, participants could indicate for each solution whether they "loved it," "hated it" or "would consider it." Walk to School Days, Assemblies/Guest Speakers, and *Keep Kids Alive – Drive 25* Campaigns were voted among the top programmatic solutions, while traffic calming and facility improvements ranked highest for preferred engineering treatments.

By pulling together representatives from the school and community, the SRTS project team was able to refine their program goals, expand their understanding of optimal routes to school, brainstorm solutions, and further develop their ideas for an ideal SRTS program.

Strategy Meetings and Briefings

Strategy meetings were held throughout the Plan Development phase and will continue to be held during the Plan Implementation phase of the project. The purpose, focus and attendees varied with each meeting. Meetings included:

- TAC Meeting (August 29, 2005)
- TAC Meeting (September 14, 2005)
- SRTS Program Kick-Off Meeting (December 12, 2005)
- TAC Meeting (March 28, 2006)
- Joint Board of Education/Borough Council Meeting (March 30, 2006)
- PTA Briefing Meeting (April 4, 2006)
- TAC Meeting (July 12, 2006)
- Joint Board of Education/Borough Council Meeting (August 24, 2006)

In addition, four strategy meetings and a training session will also be held during the Plan Implementation Phase.

Student and Parent Surveys

Both student and parent surveys were distributed during the spring of 2006. Student surveys were used to quantify the ways children typically travel to and from school and why. Parent surveys were used to obtain information about how children travel to school and what affected their choices, ultimately attempting to address what can be done to help parents become more comfortable with allowing their children to walk or bicycle to school. The surveys elicited information and ideas that helped shape the recommendations and strategies presented in this SRTS Plan. For complete results of the spring 2006 survey, please see Appendix III.

Best Practices

A variety of improvements and program activities that both create improved walking and bicycling environments, and facilitate walking and bicycling to school, can be included in a SRTS Program. They include: improving sidewalks and crossings, enforcing speed limits, educating students and parents, and addressing issues of personal safety. Successful programs include the following elements, known as the Five E's – Engineering, Enforcement, Education, Encouragement and Evaluation.

1. **Engineering:** Creating operational and physical improvements to the infrastructure surrounding schools that reduce speeds and potential conflicts with motor vehicle traffic, and establish safer and fully accessible crossings, walkways, trails and bikeways.

2. **Education:** Teaching children and parents about the broad range of transportation choices, instructing them in important lifelong bicycling and walking safety skills, and launching driver safety campaigns in the vicinity of schools.

3. **Enforcement:** Partnering with local law enforcement to ensure traffic laws are obeyed in the vicinity of schools (this includes enforcement of speeds, yielding to pedestrians in crossings, and proper walking and bicycling behaviors), and initiating community enforcement such as crossing guard programs.

4. **Encouragement:** Using events and activities to promote walking and bicycling.

5. **Evaluation:** Monitoring and documenting outcomes and trends through the collection of data before and after the intervention(s).

Although each element can stand alone, the most successful SRTS programs have integrated elements from all approaches.

Engineering

Engineering elements include physical improvements to the transportation infrastructure in the vicinity of the school or on school property that are intended to improve access and safety for travel by walking and bicycling and minimize conflicts with motorized traffic. They are typically designed to address specific problems or needs that have been identified and can range from simple sidewalk replacement/repair to more complex traffic calming devices, such as roundabouts or speed humps. The following engineering treatments have been identified as positive contributors to SRTS goals:

- Sidewalks/Bike Lanes
- Crosswalks
- Bike Racks
- High-Visibility Crosswalks
- Advance Warning Signage
- Traffic Calming Measures
  - Curb Extensions
  - Speed Humps (Speed Tables)
  - Raised Intersections
  - Gateways

Enforcement

Enforcement generally involves three facets: police, community design and local policy. First, the local police should be an integral part of the SRTS program as a valuable resource for both program implementation and data collection. The police understand travel patterns in the community and have access to crash data, which can be helpful in planning walking routes. Second, quality community design can guide and support desired behavior in an effort to develop a culture where pedestrians and cyclists are respected and their mobility is given priority. Finally, both school and municipal policies and procedures that pertain to walking, bicycling, busing, parking and pick-up/drop-off issues need to be supportive of the SRTS plan. The following enforcement programs have been identified as positive contributors to SRTS goals:

- School Safety Zones
- Pedestrian Sting Operations
- Speed Trailers
- Sidewalk, Building and Property Maintenance Laws
- Neighborhood Watch/Escort Programs
- Law Enforcement Presence
- Keep Kids Alive – Drive 25
- Photo Enforcement (Red Light Camera)

Education

Education is another key component of a SRTS Plan. A variety of educational components can be included in a plan. This refers not just to the education of students through curriculum changes and extracurricular activities, but the education of all parties involved in making the SRTS plan work. Students walking and biking to school must know how to act responsibly as users of the public right-of-way. Parents can also be educated about school and other polices regarding student safety. Student bicyclists need to know appropriate bicycling skills. Parents, teachers, and law enforcement officials all must thoroughly understand this information since they will be responsible for imparting it to students and reinforcing appropriate behavior by students. The following education programs have been identified as positive contributors to SRTS goals:

- Neighborhood Working Groups
- Walk or Bike Across America
- Walking Math
- Classroom Activities
- Guest Speakers
- Campus Walks
- Walking Education Programs
- Auto Emissions Exercises
- Walkability/Bikeability Audits

Encouragement

Throughout the process of developing and implementing a SRTS program, it will be necessary to encourage participation in the SRTS activities. Many media tools can be used to do this, including posters, e-mail, newsletters, flyers, and school notices (backpack mail). Existing school and community communication resources include:

- School newsletters
- Board of Education/School District newsletters
- Local newspapers (opinion-editorials)
- Community newsletters
- Neighborhood list-serves (email distribution lists)
- Public Service Announcements (PSAs) on local television and radio stations
- School public information/public relations officer

A variety of contests, which have encouragement (and sometimes educational) aspects to them, can be incorporated into a SRTS program. Many of these contests are based on students tallying their miles for walking, biking, and busing to school to win points for prizes or recognition, either individually or for their class. Art contests and essay contests are also possibilities for independent or classroom activities. The following encouragement programs have been identified as positive contributors to SRTS goals:

- Walking School Bus or Cycle Train
- Walk-to-School Days
- Proclamations/Resolutions
- Pace Cars
- Bicycle Rodeos
- Walk to School Contests
- Frequent Walker Cards
- Golden Sneaker Awards
- Walk and Wave/Walking Wednesday
- Walk and Roll School Days
- Bicycle and Pedestrian Safety Quiz Show

Evaluation

Evaluation is necessary to:

- Assess progress in implementing the plan
- Progress towards the completion of each element, especially those of significant duration
- Identify success in the achievement of the overall goals and objectives

This includes developing a monitoring schedule and identifying who is responsible for carrying out the monitoring and evaluation. The monitoring and evaluation process can be the basis for establishing new goals and objectives and revising or updating existing ones. The first step involves collecting baseline data in the forms of travel mode surveys, attitudinal surveys, bicycle counts, walkability/bikeability audits and any other measurement tasks. Each of the selected tasks should be performed regularly to track the progress of the SRTS program as a whole.

CHAPTER 2

A SRTS Program for Wharton

Wharton at a Glance | Existing Conditions
Parent & Student Surveys | Vision for SRTS in Wharton

> "Think of bicycles as rideable art that can just about save the world."
>
> – *Grant Peterson*

CHAPTER 2: A SRTS PROGRAM FOR WHARTON

Wharton at a Glance

Incorporated: 1895; 1901
Total Population: 6,298
Population under 18: 1,638
County: Morris
Elementary School: Duffy School
Enrollment: 499
Grades: PreK-5
School Day: 8:35 am-3:05 pm
Middle School: MacKinnon School
Enrollment: 250
Grades: 6-8
School Day: 8:00 am-3:05 pm

History

SRTS Plan developers should build upon the unique characteristics of the community in which they would like to implement a program. In the case of Wharton, SRTS goals can be linked to their history, namely the Morris Canal. Beginning in the early 1800s as a small industrial settlement near the larger town of Dover, the area that would become Wharton Borough housed only a few mines and residences for their workers. The construction of the Morris Canal in 1831, however, opened up more profitable business opportunities for the steel companies of New Jersey and Pennsylvania. Between 1864 and 1868, 40 structures were built and the population rose to 400. In 1895, the continually growing settlement was incorporated as the Borough of Port Oram – named for the Oram brothers, the English miners who were credited with operating the mines in the Dover area for several years. Seven years later, however, the Borough was renamed as Wharton in honor of Joseph Wharton, who had bought the steel furnaces in the area from the Oram Company in 1881. Mr. Wharton, a steel tycoon for the Bethlehem Iron Company, also lends his name to the prestigious Wharton Business School at the University of Pennsylvania – the first business school in the United States.

The Morris Canal contributed greatly to the development of Wharton Borough, as better accessibility allowed businesses to better utilize the site. This encouraged families to relocate and establish homes near the mines around Wharton. The canal, which was completed in 1831, utilized a series of water-driven inclined planes, running from Phillipsburg, PA to Jersey City, NJ. As it was used primarily to transport iron ore and coal, the Morris Canal aided greatly in the industrial development of New York City during the 1840s. Today, Wharton boasts one of the longest stretches of the preserved Morris Canal.

In 1867, the first school – a one-room schoolhouse – in the settlement was constructed on the site where the current public library exists. At that time, all students walked to school, even though – as we may have been told by our grandparents – it was uphill both ways. Today, the schools in Wharton, which are now located merely blocks from the original site, hope to return to that sentiment.

Demographics

Nestled between I- 80 and US 46, Wharton Borough is a small community located in northwestern Morris County, with a population of 6,298 people. Noteworthy demographic characteristics from the 2000 Census include:

- **Race**
  - White: 67.5%
  - Hispanic or Latino: 23.2%
  - Black or African American: 5.0%
  - Other: 4.3%
- **Median Income**
  - Median household income: $56,580
- **Commuting to Work**
  - Drove: 94.4%
  - Walked: 0.9%
  - Mean travel time: 29.6 minutes
- **Language Spoken at Home**
  - English: 72.3%
  - Spanish: 19.5%

Schools

Duffy Elementary and MacKinnon Middle Schools are housed in the same building and have a combined student population of 780 students and 90 teachers/administrators. The student population is 46.4 percent Hispanic and 41.5 percent White, with a smaller population of African Americans and Asian/Pacific Islanders. (*Source: NJ Department of Education, 2005-2006*)

Duffy School's mascot is a Dragon that promptly states the school motto, "burning for learning." This motto was selected to reflect their dedication to building a strong community of learners within a nurturing community of parents. "Building a bridge to success," MacKinnon School's motto, reflects a dedication to linking academics to the community. This is accomplished as the school offers a variety of extra and co curricular opportunities. They include:

- Clubs in journalism and graphic publishing
- Training in computer and technology skills
- Organized opportunities for interscholastic athletic competition
- Social events for the establishment of positive peer relations and self-esteem
- Exercises in student government and social activism

Safe Routes to school can become part of this "bridge to success" through social events, student government and social activism. And because the schools share a building, middle school students could work to educate the elementary school students about the goals of SRTS. In addition, if students become interested in the many benefits of walking and bicycling to school, they could even start their own-related club with the support of MacKinnon Middle School Staff.

West Entrance: Duffy Elementary School

East Entrance: MacKinnon Middle School

Existing Conditions Summary

As the first step in initiating a comprehensive SRTS program, documentation of the current conditions for students traveling to and from school on foot or by bicycle in Wharton included many factors, both procedural- and infrastructure-focused.

School Campus

Although Wharton's elementary and middle schools are located in the same building, each school operates independently, sharing some services, such as the school nurse. The schools stagger their start and end times to avoid congestion on the school grounds, parking lot and adjacent roadways. A central meeting spot, at which students waiting for siblings or parents, has been established at the flagpole. Numerous before and after school activities, such as band, are also offered – another factor affecting the times that students enter and depart the school campus.

Drop-Off and Dismissal

The schools assign staff to help manage the drop-off and pick-up dynamics in the parking lot in front of the schools within the parking lot off E. Central Avenue. The staff members typically place a large series of traffic cones to discourage drivers from pulling all the way to the curbside in front of the school.

Heavy Backpacks

Most students, whether they walk/bike or are driven to school, carry many books back and forth to school. This leads families to find convenient ways, such as using wheeled backpacks, to transport these heavy loads. Thus, providing curb ramps makes the students' trip much easier.

Crossing Guards/Police Presence

The Wharton Police Department has invested resources to the school commute by assigning numerous crossing guards at the school and at major crossing locations along the identified routes to school. Crossing Guards wear reflective vests that are easily identifiable to motorists and pedestrians traveling in the area. They are also equipped with hand-held "STOP" paddles to help manage motorized traffic during the school commutes. Uniformed police officers also frequently patrol the school commute routes, and are very visible around the school campus during school commute times.

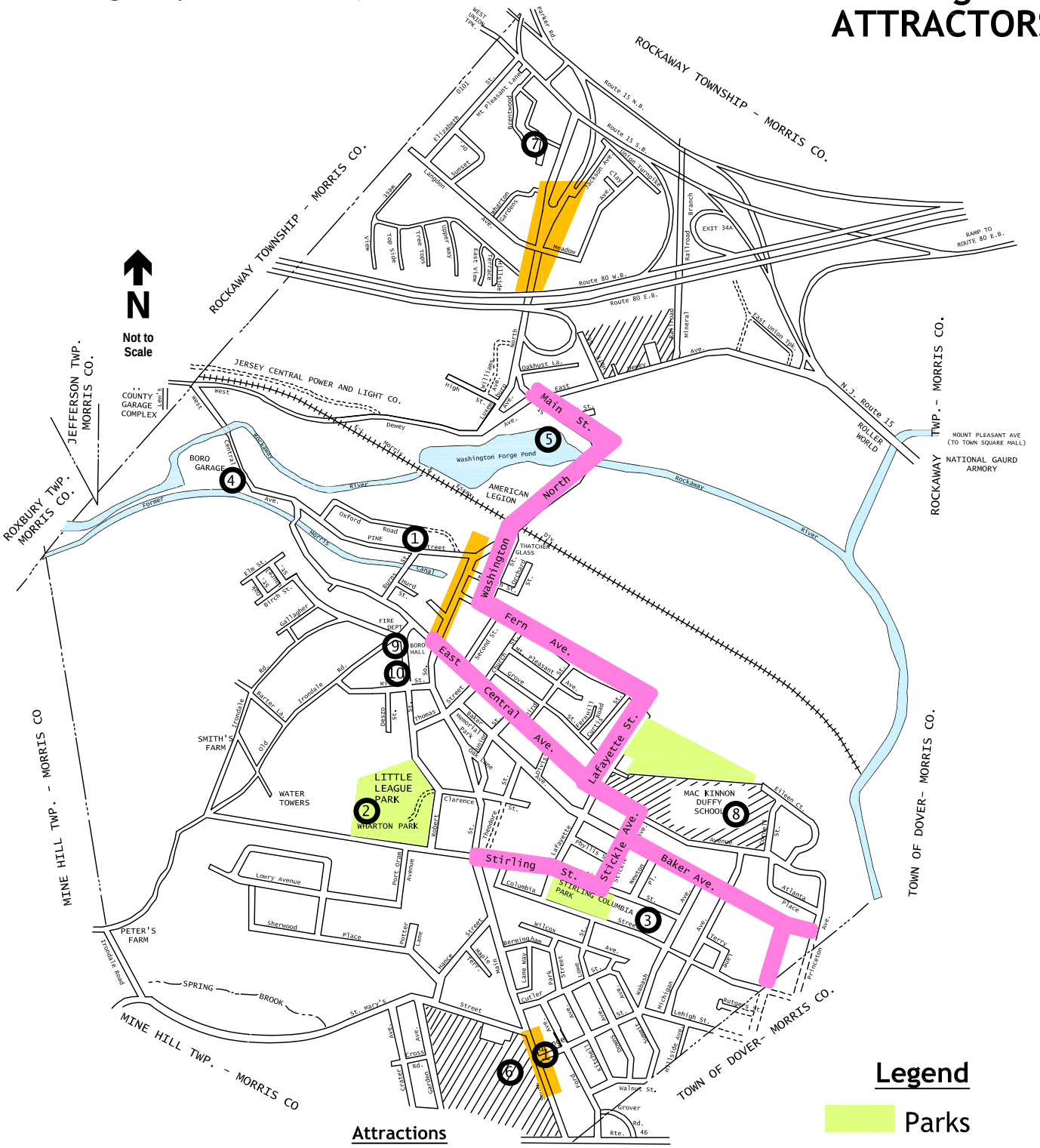
Current Infrastructure

Before the SRTS Project began, the Borough and Schools had already identified preferred routes for walking and biking to school that were mapped and shared with the community. This set of routes focused on the corridors between the Duffy and MacKinnon Schools and the intersections where crossing guards are assigned by the Wharton Police Department to monitor traffic during the morning and afternoon school commute. This initial routing served as the basis for the evaluations performed as part of this SRTS program. The existing routes and alternatives to expand or refine them were analyzed for several characteristics that determine how accommodating the corridors are for students walking or bicycling.

In addition to the schools, several destinations throughout Wharton will likely attract residents and visitors, who will often make these trips on foot or by bicycle. The municipal parks, Wharton Park, Memorial Park, Columbia/ Sterling Street Park, and the Hugh Force Park are located throughout the Borough and all major destinations for non-motorized trips. The off road path parallel to Main Street past Washington Forge Pond is another major facility for recreational trips. The various segments of business districts in the north, south and central areas along Main Street are also major destinations within Wharton, where many students will choose to walk or bike, especially as stop off points on their way home from school. **(See Figure 1)**

Safe Routes to School Program
Borough of Wharton, NJ

Figure 1
ATTRACTORS



Attractions

1. Business Districts
2. Wharton Park
3. Stirling Columbia Park
4. Morris Canal
5. Washington Forge Pond
6. St. Mary's School
7. Wharton Gardens

Public Services

8. MacKinnon and Duffy Schools
9. Boro Hall
10. Wharton Library

Legend

- Parks
- Commercial
- School Routes

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By assessing the Borough's roads, sidewalks and paths leading to both the schools and other attractors, deficiencies were identified; it is upon this basis that priorities for enhancements were developed. **(See Figure 2)** Additional analyses included:

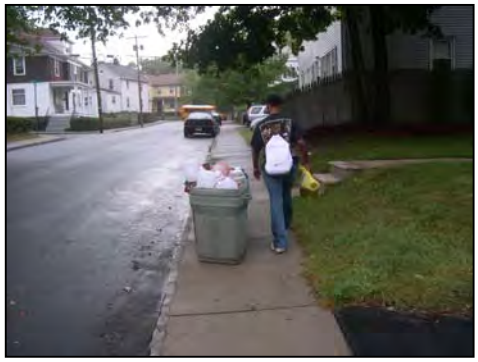
- **Speed Analysis.** Determined the level of motorized traffic that exceeds the posted speed limit **(See Figure 3)**
- **Accident Summary.** Determined areas where there were concentrations of motor vehicle crashes during school commute times **(See Figure 4 and Figure 5)**
- **Truck Traffic Analysis.** Determined areas of high truck traffic **(See Figure 6)**

These analyses are detailed in Appendix I.

Inventories

Several forms of inventories were performed to assess pedestrian and bicycle travel conditions along the sidewalk network and bicycling along the roadway corridors. They include:

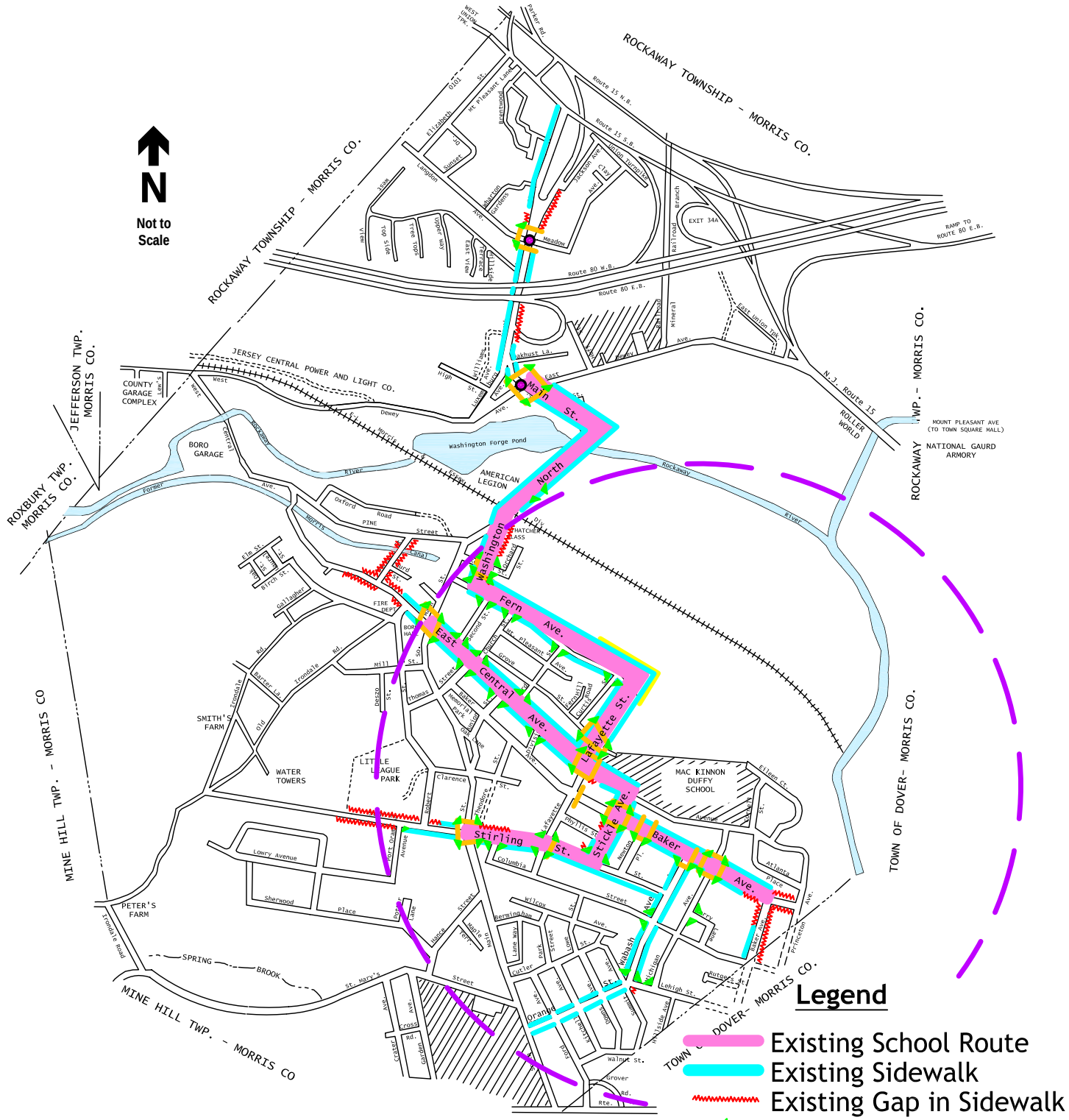
- **Sidewalk.** Wharton Borough currently has a substantial sidewalk network. The Borough has continually been working to both improve the sidewalks that already exist and to complete the gaps in the sidewalk network. However, issues do arise with maintenance and services. For example, sidewalks are often completely blocked on trash pickup days. Improving these services would aid in keeping the sidewalks accessible. **(See Figure 7)**



- **Roadway.** Roadways throughout the current routes to school and several other corridors were evaluated to document the pavement width and various other conditions. This information is valuable in assessing the compatibility for bicycle traffic and planning what types of treatments can fit within the existing cartway, as detailed later in this report. Students also participated in assessing the roadway conditions. To quantify the roadway measurements field, inventory forms were completed. This helped document the width and condition of the sidewalk, buffer, curb, roadway and various corridor conditions. Completing these forms introduced the students to this documentation process, and gave them an appreciation for the variances in the roadway environment.
- **Signal Timing and Accessibility.** Pedestrian crossing time was field verified at signalized intersections in the vicinity of the Wharton Schools.
- **Lighting.** The presence or absence of on street lighting was also documented in the roadway inventory. The lighting that is present along roadways throughout Wharton is typically the overhead cobra style lights that focus their illumination over the roadway.

Safe Routes to School Program
Borough of Wharton, NJ

Figure 2
EXISTING CONDITIONS



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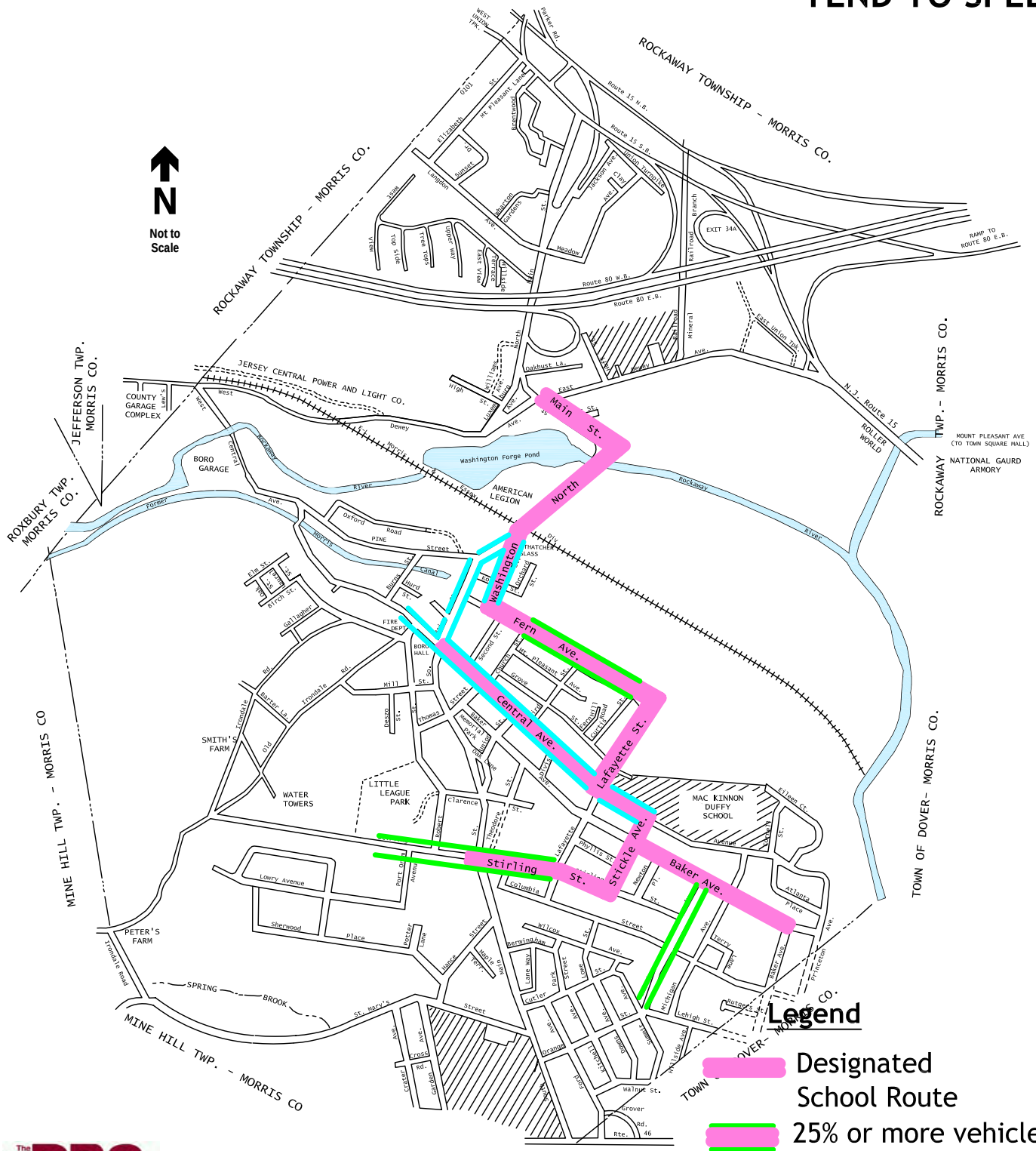
Borough of Wharton, NJ

Figure 3
AREAS WHERE VEHICLES TEND TO SPEED



Legend

- Designated School Route
- 25% or more vehicles exceed the speed limit
- 10% or more vehicles exceed the speed limit by 20 mph or more

* Speed analysis limited to school routes

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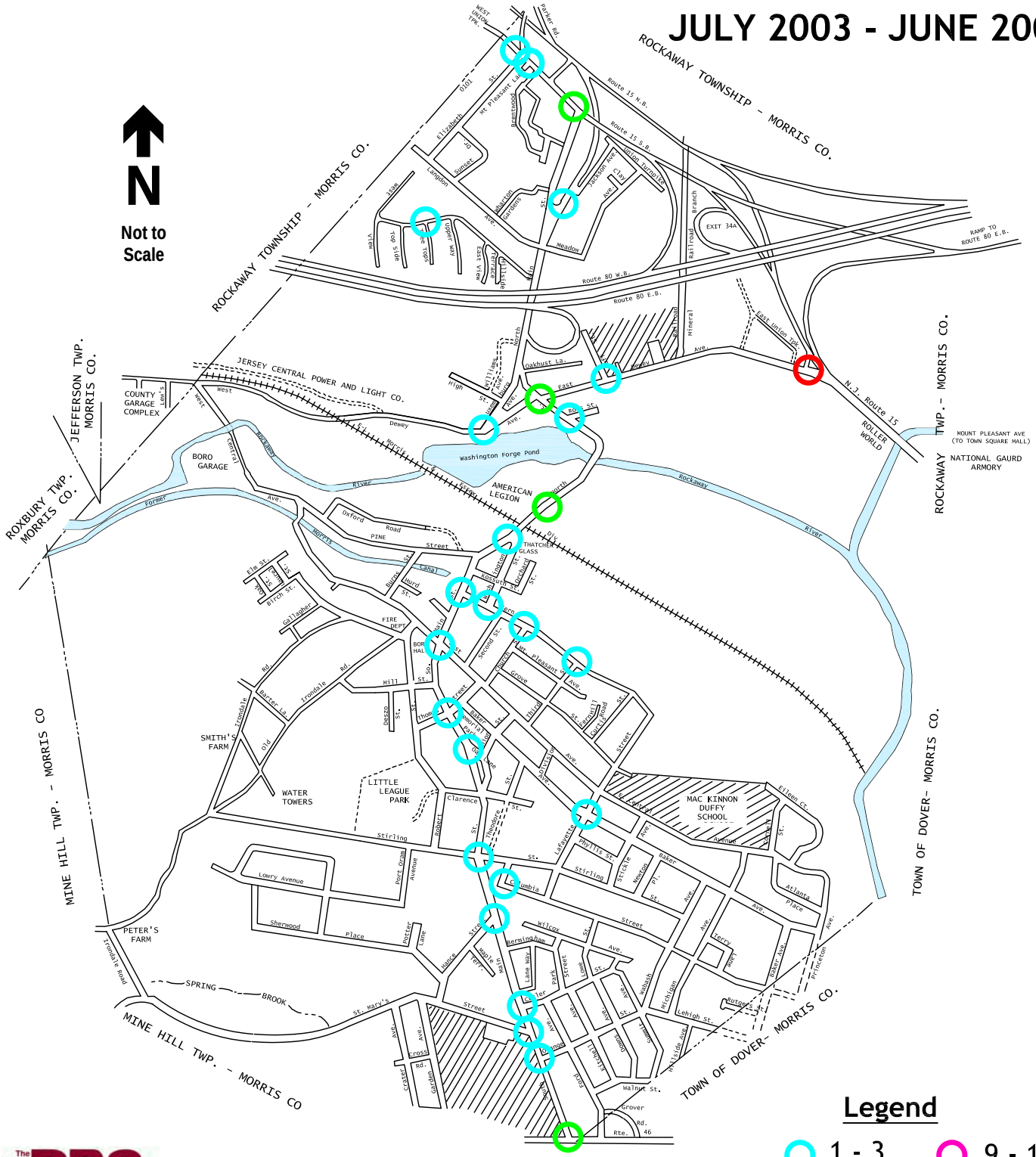
Safe Routes to School Program
Borough of Wharton, NJ

Figure 4
CRASH DATA
7:00 AM - 8:30 AM
JULY 2003 - JUNE 2006



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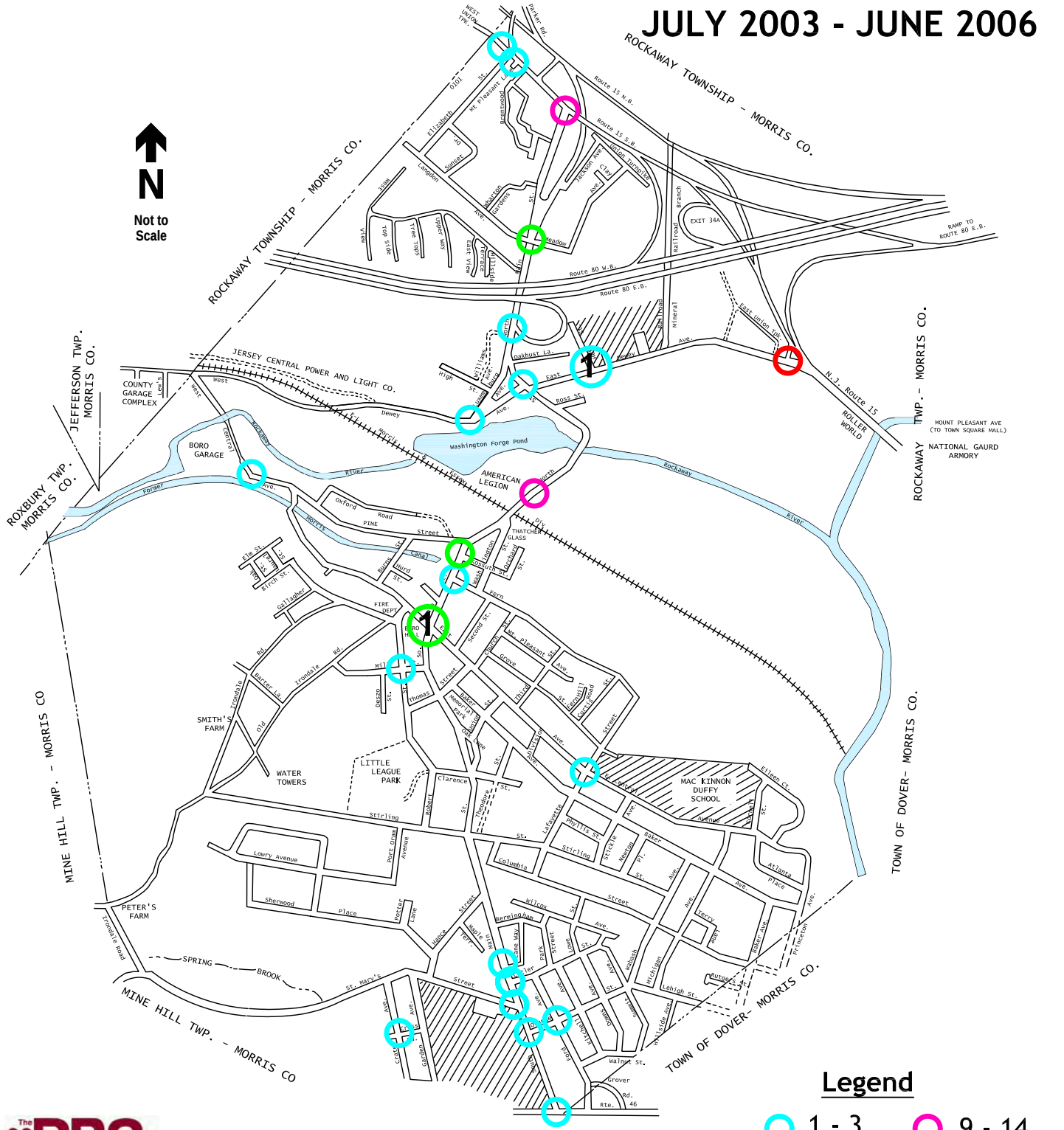
Safe Routes to School Program
Borough of Wharton, NJ

Figure 5
CRASH DATA
3:00 PM - 4:00 PM
JULY 2003 - JUNE 2006



Legend

- 1 - 3
- 4 - 8
- 9 - 14
- 15 - 20
- (2) Number of Crashes Involving Pedestrians

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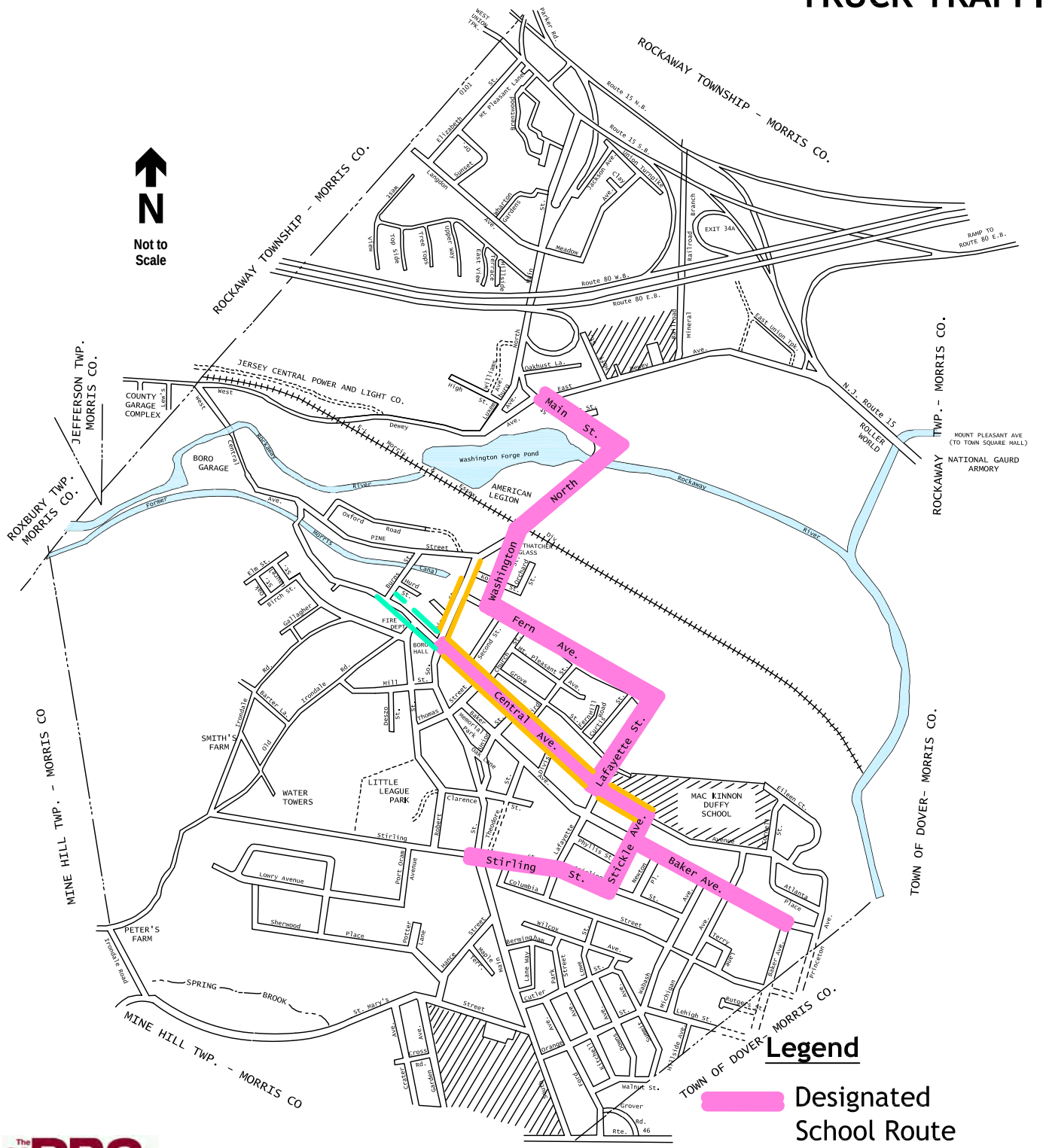
Safe Routes to School Program
Borough of Wharton, NJ

Figure 6
AREAS WITH HIGH TRUCK TRAFFIC



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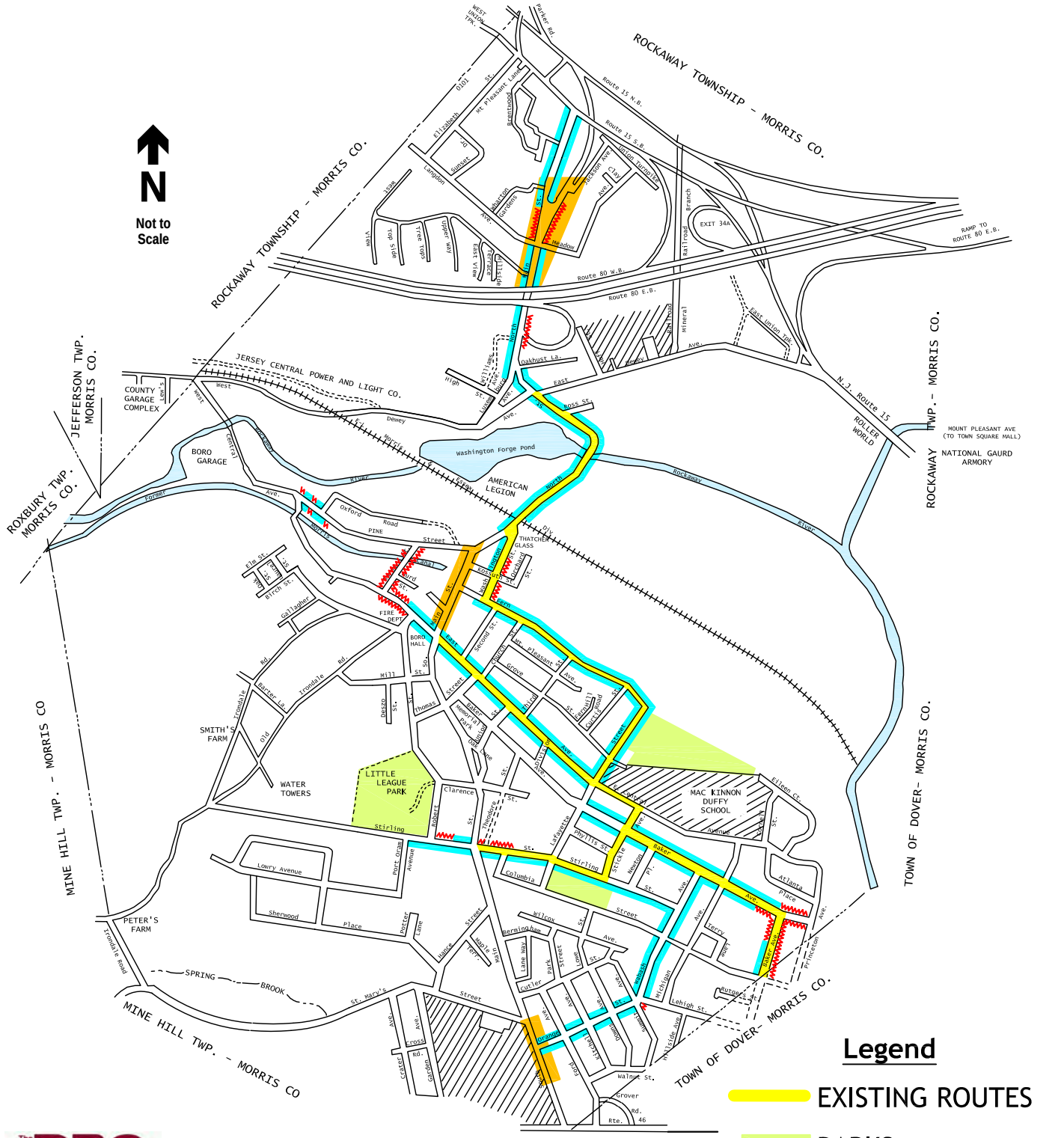
Safe Routes to School Program
Borough of Wharton, NJ

Figure 7
SIDEWALK INVENTORY



in association with:

There are portions of the sidewalk network that are illuminated by these lights, however the roadway area is the focus of the existing lighting fixtures.

Details of the inventory process are included in Appendix I.

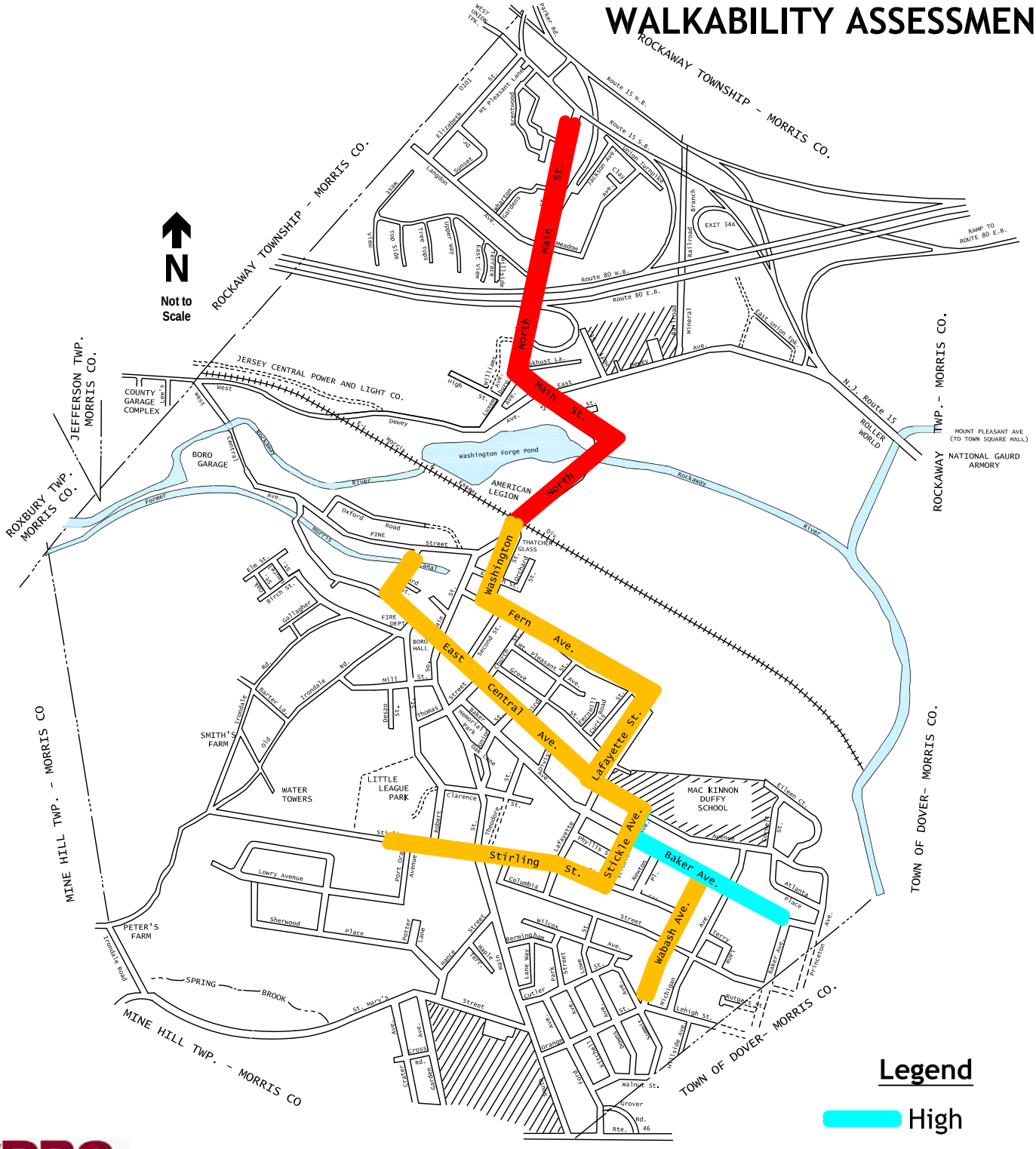
Assessments

- **Walkability.** Students assessed the condition of sections of the walking routes utilizing a checklist developed by the Pedestrian and Bicycle Information Center to determine what locations were and were not walkable. Walkability rankings are: **(See Figure 8)**
  - High: 26-30 = "Celebrate! You have a great neighborhood for walking."
    21-25 = "Celebrate a little. Your neighborhood is pretty good."
  - Med: 16-20 = "Okay, but it needs work."`
  - Low: 11-15 = "It needs lots of work. You deserve better than that."
    5-10 = "Consider wearing armor and Christmas lights before venturing out."
- **Bikeability.** The compatibility of the roadways along the identified and considered routes to school have been assessed using the New Jersey Bicycle and Pedestrian Master Plan evaluation tools, which yield a general bicycle compatibility measure. (This is available from the NJDOT Bicycle and Pedestrian Coordinator.) For example, roads with a high level of bicycle suitability generally have wide shoulders, while those with a low level generally have high traffic volumes and speeds. After the evaluation, corridors can be compared to alternative routes within the school commute area for deciding recommended school routes. This also allows a comparison between the existing conditions, and any design concepts being considered to enhance the route to school, such as striping bicycle lanes along the roadway **(See Figure 9).** To calculate the bikeability ranking, roadway traffic volumes, speeds, and pavement widths are required. Morris County Department of Transportation performed traffic counts utilizing automatic traffic counters (tube counts), a summary is included in Appendix I. This documents traffic volume, speed and vehicle classification information. This was augmented with field data collection to verify roadway width and condition. Bikeability rankings are:
  - High: Good accommodation for bicyclists
  - Medium: Average accommodation for bicyclists
  - Low: Poor accommodation for bicyclists
- **Time Radius Map.** Students walked from the school out along identified walking routes and noted how far they got at five, ten and fifteen minute intervals. The three teams headed different directions from the school property. By marking these results on a map, rough walking time radii were displayed on one aggregate map. This was useful in determining total area of town that is within various walking times from the school. This exercise was based on the Auckland, New Zealand SRTS program. **(See Figure 10)**
- **Student Camera Exercise (Good/ Bad/ Ugly).** A student volunteer photographer and a note keeper were paired to document the elements on a walk along identified school routes that struck them as either good for walking, bad for walking or anything else that might affect their decision to walk to school. The students took photos and kept notes on the photos taken. These student insights were used throughout the project. **(See Figure 11)**

Further assessment data is included in Appendix I.

Safe Routes to School Program
Borough of Wharton, NJ

Figure 8
WALKABILITY ASSESSMENT

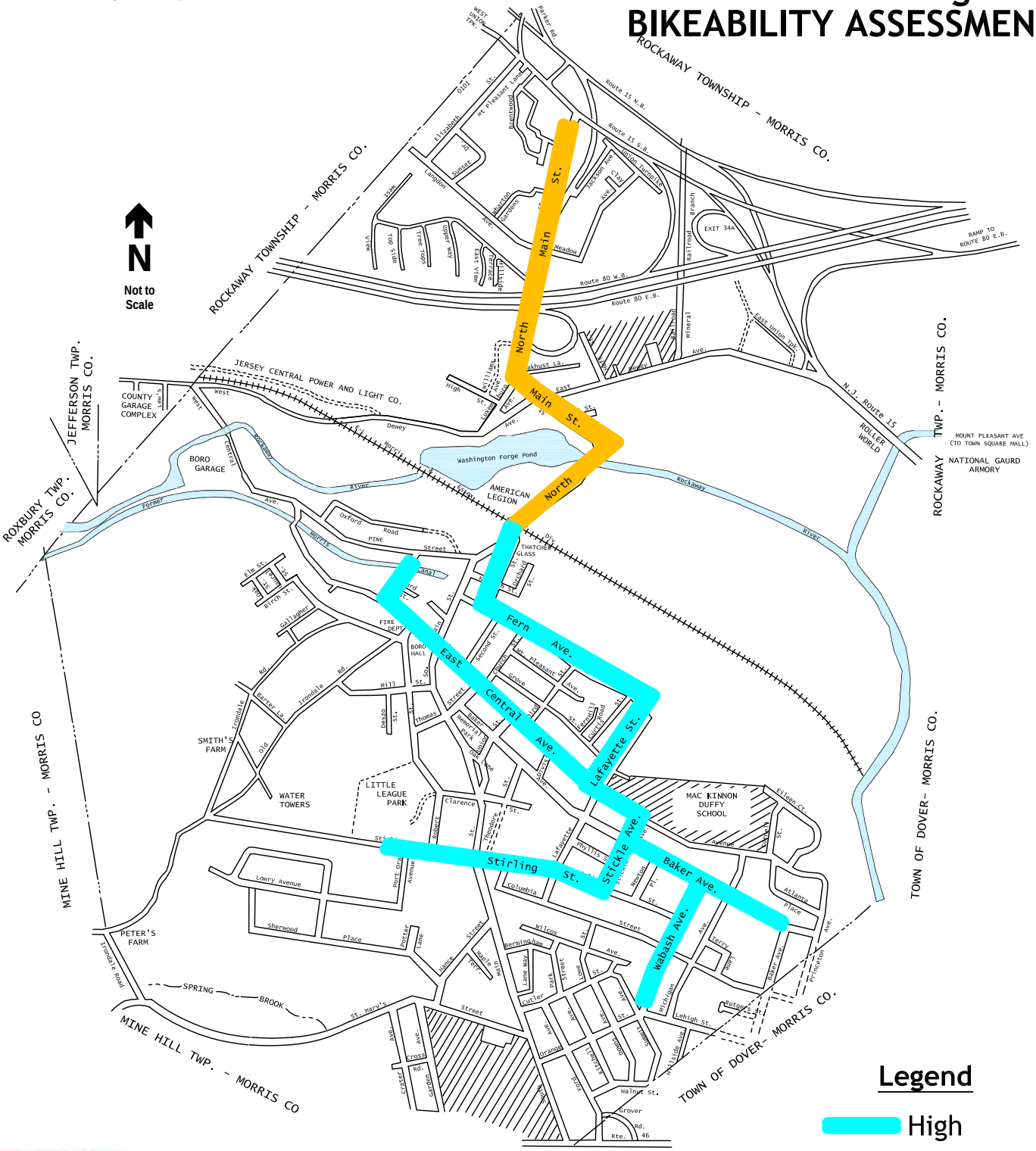


in association with:

* Based on pedestrian & bicycle information from student survey checklists

Safe Routes to School Program
Borough of Wharton, NJ

Figure 9
BIKEABILITY ASSESSMENT



Legend

- High
- Medium
- Low

in association with:

AmerCom Corp. consulting engineers

Figure 10: Time Radius Map

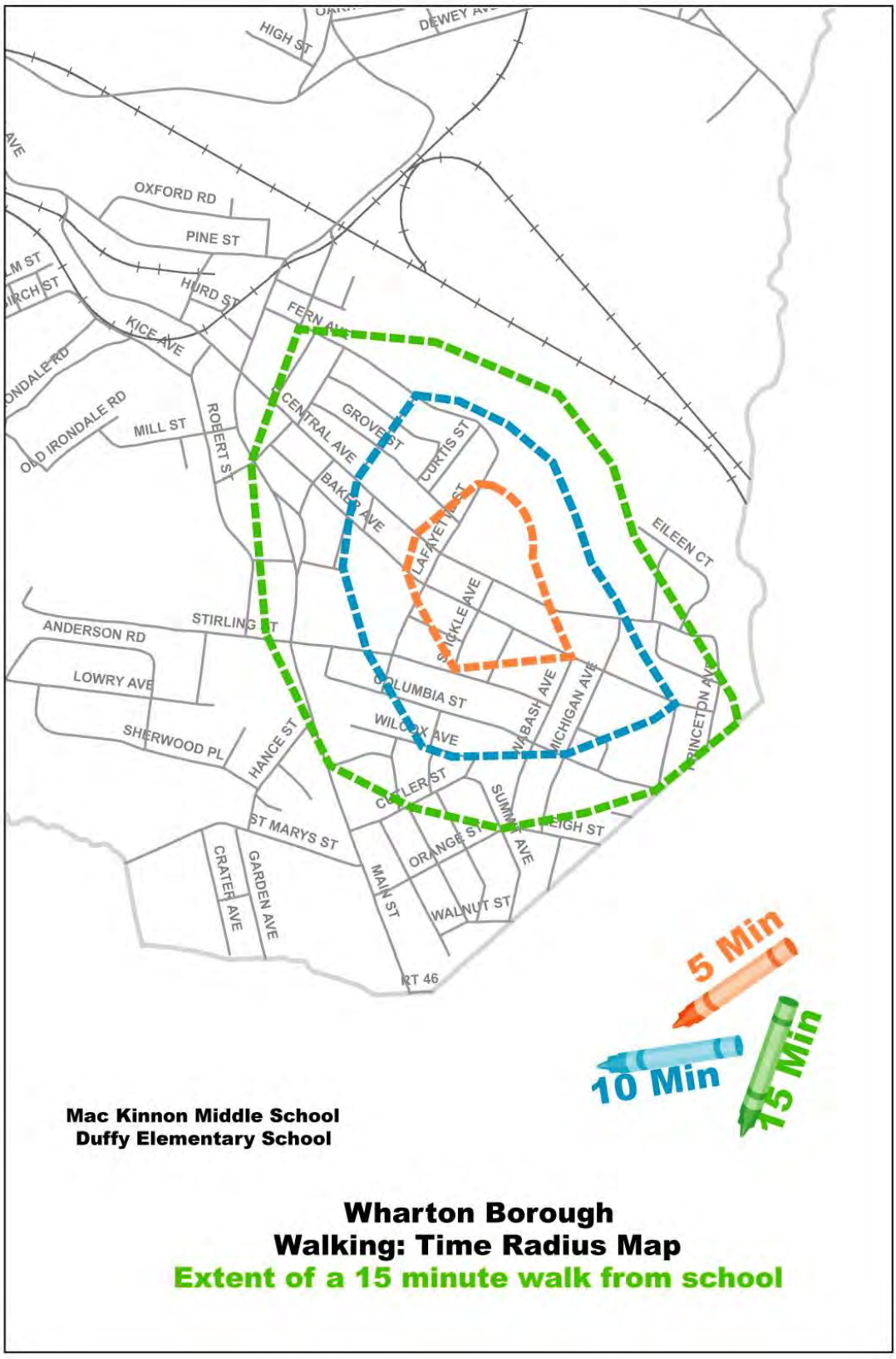


Figure 11: "The Good, Bad and Ugly" Student Exercise

School Zone Striping

School Zone Signage

Bicycle Safe Grates

The GOOD

Pavement in poor condition

Inadequate sidewalk facility

Sidewalk terminating

The BAD

Sidewalk in poor condition

Sidewalk in poor condition

Sidewalk in poor condition

The UGLY

These Photos were taken by MacKinnon students to document "the good, the bad and the ugly" conditions along routes to their school.

Previous Studies and Plans

Wharton Borough has produced a *Master Plan* (1994), *Open Space Element* (2001) and *Periodic Reexamination of the Master Plan and Land Use Plan* (2005). Each of these documents contains information that was helpful in understanding the geographic and demographic context of Wharton, in addition to the Borough's vision for the future. In addition, several on-going design and construction projects in Wharton affect the school commute areas or plan development, including:

- **East Central Avenue Roadway Reconstruction Project.** This project incorporates the section of East Central Avenue between Lafayette Street and Cornell Street, and Stickle Avenue between East Central Street and Baker Avenue. The project proposes reconstruction of the roadway, sidewalks, curb ramps, crosswalks and driveway aprons.
- **Duffy Elementary School Campus Enhancements.** This project will reconfigure the front yard area of the Duffy Elementary School, including removal of existing sidewalks and construction of new sidewalks that the align with the proposed crosswalk across East Central Avenue at Stickle Avenue.

Environmental Screening

An environmental screening was performed to identify potential "fatal flaws" that may impede proposed improvements to the route areas, as currently proposed. This screening and mapping effort was also conducted to 1) provide a visual representation of environmentally sensitive areas as well as 2) aid in the identification of potential regulatory requirements.

The sidewalk construction in various locations around Wharton and the potential interchange refinements to improve pedestrian accommodation may potentially require environmental permits. To determine the appropriate approach and permit process the identified environmental constraints will need to be field identified and delineated in order determine the proximity and potential impact to proposed improvements. Once potential impacts are identified, a determination can be made as to what permit may be applicable. The most likely wetland permits for the concepts recommended are either a Statewide General Freshwater Wetland permit (if construction impacts a regulated wetland area) or a Transition Area Waiver (if construction impacts a buffer area to a regulated wetland.)

There may also be potential Green Acres involvement if the proposed concepts involve any disturbance within Green Acres funded parklands, such as the path across Columbia Stirling Park. If regulated floodplains are disturbed, the NJ Flood Hazard Area Control Act will regulate construction activities. There may also be permits and approvals required for earth disturbance near reported Known Contaminated Sites, which may incorporate an agreement, or specific requirements with the New Jersey Department of Environmental Protection Site Remediation Program.

This is most likely applicable to the sidewalk construction along North Main Street near the interchange with I-80, and the section of sidewalk along the north side of Stirling Street east of Main Street. Advancing the environmental permitting is an item of additional work that should be included in the future design and construction phases of enhancing the SRTS concepts.

More detailed information on the complete Environmental Screening, including Environmental Constraints and Topographic Maps, can be found in Appendix II.

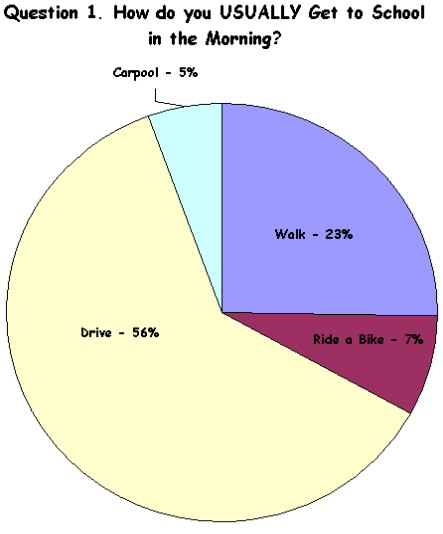
Parent and Student Surveys

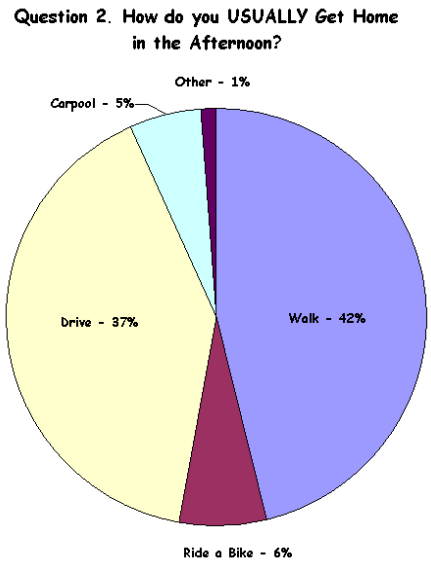
The overall goal of the surveys involves quantifying the ways children typically travel to and from school and obtaining attitudinal information in order to accurately assess the success of the SRTS program. Thus, surveys were administered to both parents and students during the spring of 2006 and will be again during the spring of 2007, after the SRTS program implementation has occurred.

Web-based surveys were available to parents and students for one month, between May 15 and June 15; no paper copies of the survey were available. During Computer Applications classes, approximately 500 students in grades 2-7 took the surveys, which aimed to gauge a child's perspective on walking and/or biking to school. Parent surveys sought to discover what types of programs would help parents become more comfortable allowing their children to walk or bicycle to school. A letter containing the web address for the parent survey was sent home to parents of all Duffy and MacKinnon students, levying a total of 80 responses. The surveys elicited information and ideas that helped shape the recommendations and strategies presented in this SRTS Plan.

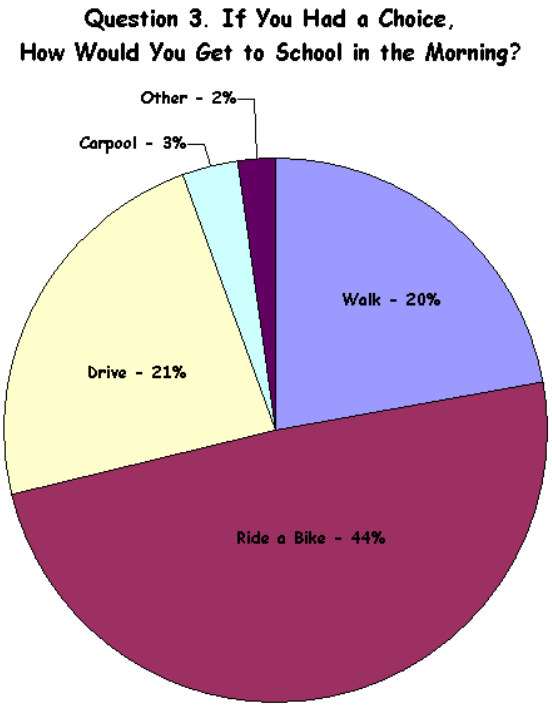
Student Surveys levied the following results:

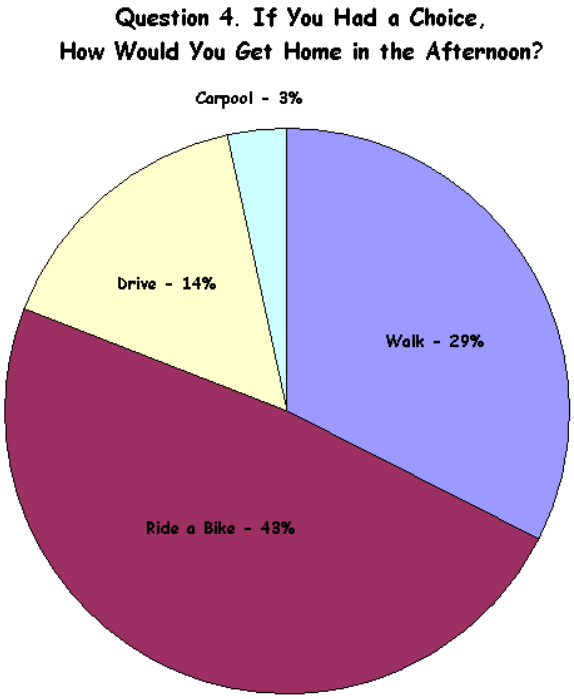
- A majority of students are driven to school, either alone or in a carpool, in the morning (Question 1)
  - Walk – 23 percent
  - Ride a Bicycle – 7 percent
  - Driven by Parents/Guardians or in a Carpool – 61 percent
- Most arrive at school between 7:45 a.m. and 8:30 a.m.
- Several students walk home from school, while the remainder are generally driven (Questions 2)
  - Walk – 42 percent
  - Ride a Bicycle – 6 percent
  - Driven by Parents/Guardians or in a Carpool – 42 percent
  - Other – 1 percent
- Most students arrive home from school between 3:00 p.m. and 3:30 p.m.





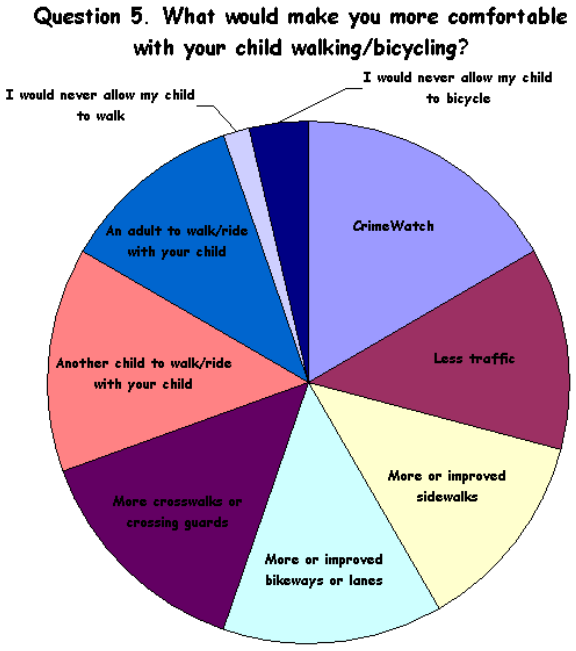
- Most students would ride their bicycle both to and from school, if the choice were theirs (Questions 3 and 4)





Parent surveys levied the following results:

- A majority of students are driven, either alone or in a carpool, to school in the morning
  - Walked – 26 percent
  - Biked – 5 percent
  - **Driven by parents/guardians – 56 percent**
  - Driven in a carpool – 1 percent
- A lesser number of children are driven, either alone or in a carpool, home in the afternoon
  - Walked – 36 percent
  - Biked – 5 percent
  - **Driven by parents/guardians – 46 percent**
  - Driven in a carpool – 1 percent
- On average, students do not live outside of walking/biking distance from the school
  - Average blocks – 4.41
  - Average miles – 0.99
- Most parents were aware of the designated walk to school routes in Wharton.
  - Aware – 73 percent
  - Not aware – 16 percent
- The most concern about children walking/biking to/from school resulted from these issues:
  - Crime
  - Speeding/Traffic
  - Children walking alone
- Parents ranked the following factors quite evenly when asked what would make them more comfortable with their child walking/bicycling to/from school:



For complete results the 2006 parent and student surveys, please see Appendix III.

Vision for SRTS in Wharton

Before the developing the SRTS Plan, it was important to understand the community's vision for a SRTS program. In other words, the project team believed that desired outcomes must be identified before the actions can be outlined. Thus, the attendees of the public visioning meeting were asked to express their vision for SRTS at MacKinnon and Duffy Schools, along with the Wharton community as a whole. The responses were summarized into the following visions:

- Safe, clearly marked and level crosswalks
- Safe, comfortable, traffic-controlled school zones
- Continuous, smooth sidewalks on all streets
- Decreased vehicle speeds near the school
- Enforcement of keeping sidewalks free of debris, brush, snow, ice, etc.
- More effective drop-off and pick-up zones
- Increased communication between parents/formation of a walking network
- More physically active and healthier children
- Children want to bike and walk to school (parents too!)
- Parents feel safe about their children walking to school (i.e. buddy system)
- Development of a school-community partnership
- Improved overall environmental health, with the use of cars at a decline
- Reputation of a family-oriented town

From the several responses, one vision statement was identified to reflect each idea:

"The Borough of Wharton envisions a Safe Routes to School program that enables the children to walk or bike safely to school with supervision; increases the amount of parent education and community involvement; decreases the amount of traffic near the school; and encourages children to be independent and healthy."

CHAPTER 3

Recommendations for the Five E's

Education | Encouragement | Enforcement Engineering | Evaluation

> "Me thinks that the moment my legs begin to move, my thoughts begin to flow."
>
> – *Henry David Thoreau*

CHAPTER 3: RECOMMENDATIONS FOR THE 5 E'S

The recommendations in this chapter will enable Wharton to adopt a program that applies the 5 E's for Safe Routes to School. The 5 E's are 1) Education, 2) Encouragement, 3) Enforcement, 4) Engineering, and 5) Evaluation. Recommended actions for each approach are provided as well as what organizers will be the responsible party for each action, an estimated level of effort for implementation and an estimated cost. A successful SRTS program will incorporate a mix of the approaches outlined in this chapter.

Education, Encouragement and Enforcement recommendations have been divided into two categories: "community-preferred ideas" and "other ideas." Community-preferred ideas reflect the preferences demonstrated by attendees of the Wharton SRTS Public Visioning Meeting, while other ideas include additional programs that may be of interest in Wharton. Costs for these programs, along with Evaluation programs, represent an estimate based on SRTS programs across the country.

Engineering recommendations are categorized by "general recommendations" including 3 concept scenarios and "off-road recommendations." Recommendations for Evaluation include steps both to initiate a SRTS program as well as to monitor its progress over time.

Education

Education in a SRTS-context refers not only to that of the students through curriculum changes and extracurricular activities, but the education of all parties involved in making the SRTS program a success. Students walking and biking to school must know how to act responsibly as users of the public right-of-way. Parents must also be educated about school and other policies regarding student safety. Student bicyclists need to know appropriate bicycling skills. Parents, teachers, and law enforcement officials all must thoroughly understand this information since they will be responsible for imparting it to students and reinforcing appropriate behavior by students. Upon this basis, the following recommendations were developed.

Community-Preferred Ideas

1. Assemblies/Guest Speakers
2. Neighborhood Working Groups
3. Walk/Bike Across America
4. Walking Math

1. Assemblies/Guest Speakers

- Organizer: School Administration (Principal, Superintendent)
- Level of Effort: Low
- Cost: $0-240

Guest Speakers can address bicycle and pedestrian safety. This could happen as part of a field day, a special assembly or even in lieu of a class trip.

2. Neighborhood Working Groups

- Organizer: Wharton residents
- Level of Effort: Medium
- Cost: $0-240

Neighborhood Working Groups organize as a means to assess their neighborhood and brainstorm ideas for improving their local school commute. For example, groups can use the walkability checklists to itemize the barriers and walking hazards**,** along with the neighborhood assets, connections that work and frequently visited places.

3. Walk or Bike Across America

- Organizer: School Administration and teachers
- Level of Effort: Medium
- Cost: $0

Walk or Bike Across America involves students keeping track of the miles they accumulate walking and biking to school. The Walk/Bike Across America program instructs classes to add up individual student totals walked per day/week and plot them on a map. They "travel" to a destination to learn about it.

4. Walking Math

- Organizer: School Administration and teachers
- Level of Effort: Low
- Cost: $0

Walking Math offers lesson plans that link math with walking. For example, students can calculate gas mileage, auto emissions and compare the miles per gallon (MPG) for different vehicles. These figures have a significant impact on the amount of air pollution produced by a vehicle.

Other Ideas

1. Classroom Activities
2. Campus Walks
3. Walkability/Bikeability Assessments
4. Walking Education Program

1. Classroom Activities

- Organizer: School Administration and teachers
- Level of Effort: Low
- Cost: $0-240

Classroom Activities can also be brought in to language arts, health, science, physical education and other class lesson plans. For example, students can create artwork or literature based on their commute.

2. Campus Walks

- Organizer: School Administration, school nurse, teachers, PTA and Borough representatives
- Level of Effort: Medium
- Cost: $0-240

Campus Walks are events, held on the school campus, that link health to walking. For example, teachers can take students' heart rates before and after the walk.

3. Walkability/Bikeability Assessments

- Organizer: School Administration and teachers
- Level of Effort: Medium
- Cost: $0

The first step in creating a SRTS program involves identifying the key walking and biking routes – a step that the Wharton School District has already taken. These routes were also assessed for walkability, including physical conditions and overall sense of personal safety. However, performing these audits on a regular basis will allow students or other players to monitor the conditions of these routes, as they are key determinants of whether or not students will be permitted by parents to walk or bike to school.

4. Walking Education Programs

- Organizer: School Administration and/or Borough Officials
- Level of Effort: Medium
- Cost: $240-2,400

The Walking Education Programs are very similar to that of the Bike Rodeo in that they teach those involved about the pedestrian rules of the road, and how to appropriately address certain situations.

Encouragement

Throughout the process of developing and implementing a SRTS program, it will be necessary to use events and activities to encourage participation in the SRTS program. Thus, the main recommendation for Encouragement involves launching a media campaign to publicize the events associated with the other recommendations.

Media Campaign

- Organizer: School Administration and/or Borough Officials
- Level of Effort: Medium
- Cost: $600

Many media tools can be used to get the SRTS message out to parents and the general public. They include posters, e-mail, newsletters, flyers, and school notices (backpack mail). In addition, local media, such as newspapers and radio/television stations, will often cover the larger events. Existing school and community communication resources and tools can include: school newsletters; Board of Education and/or school district newsletters; school public information/public relations officer; community newsletters; neighborhood list-serves (email distribution lists); local radio/television stations; and local newspapers. Utilizing several of these potential outlets will help gain both greater understanding and acceptance of the SRTS program for Wharton.

Community-Preferred Ideas

1. Walk and Roll Days/Walking Wednesdays
2. Frequent Walker Cards/Rider Miles
3. Golden Sneaker Awards
4. Activity at Family Picnic

1. Walk and Roll Days/Walking Wednesdays

- Organizer: School Administration
- Level of Effort: Medium
- Cost: $240 (initially)

These weekly or monthly events, complete with a rock n' roll theme, encourage students to walk and bike to school through rewards and outreach. The recurring event can serve as a catalyst that implants the SRTS program as part of the culture of the school. Although similar, Walking Wednesdays do not necessarily involve a theme, yet encourage walking throughout the year by asking students to walk to school every Wednesday.

2. Frequent Walker Cards/Frequent Rider Miles

- Organizer: School Administration
- Level of Effort: Medium
- Cost: $300

Frequent Walker Cards are similar to rewards programs offered by food and/or retail stores – students are given cards that get punched every time they walk or cycle to school. Similarly, the Frequent Rider Mile program can be modeled after an airline's frequent flier mile program. For both programs, the accumulation of points at various levels results in a reward. These may include a free lunch, a prominent photo display of the walker, a homework pass or an extra book from the library. Some schools have even gotten rewards donated by local businesses or agencies looking to promote physical activity. The program can be set up with various point structures and award levels with a theme centered on conserving resources and/or protecting the environment.

3. Golden Sneaker Awards

- Organizer: School Administration
- Level of Effort: Medium
- Cost: $0

Golden Sneaker Awards are quite simply athletic shoes spray painted gold. These can be awarded to either classrooms or individuals who walk the most number of walking/biking trips or collective miles. The more fanfare associated with the presentation of the Golden Sneaker the better. This program motivates and rewards good behavior; it can go a long way toward promoting school and community spirit and can be used to persuade children to utilize the preferred routes to school.

4. Family Picnic Activity

- Organizer: School, PTA and/or Borough representatives
- Level of Effort: Medium
- Cost: $240

Attendees of the Wharton SRTS Public Visioning Meeting expressed an interest in promoting SRTS at the annual Family Picnic. This could potentially involve a SRTS booth displaying children's artwork and other school projects relating to SRTS, informational material on the goals of SRTS programming and ways for parents, students and residents to get involved with the program.

Other Ideas

1. Walking School Bus
2. Pace Cars
3. Bicycle Pedestrian Quiz Show
4. Walk to School Days/I-Walk
5. Proclamations/Resolutions

1. Walking School Bus or Cycle Train

- Organizer: PTA and/or other parent group
- Level of Effort: High
- Cost: $0-240

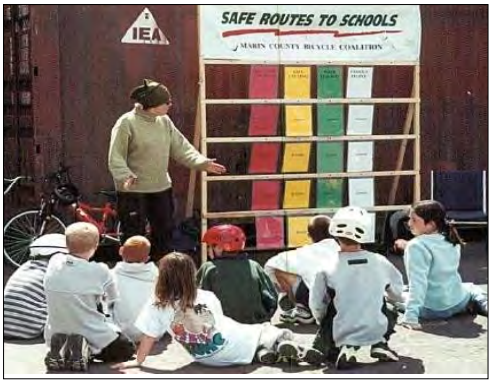
The Walking School Bus (WSB) is simply a group of children walked to school by a designated parent or adult, while the Cycle Train is basically the bicycle version of the WSB. Several adult leaders will arrange to lead the WSB or Cycle Train on different days and/or lead different segments. The children generally meet the bus at designated stops, usually corners at the top or bottom of their street, at designated times. WSBs can also serve as a communication line among parents, as the leader can inform other parents that the children arrived at school safely.

2. Pace Cars/Bumper Sticker Program

- Organizer: PTA and/or advocacy groups
- Level of Effort: High
- Cost: $300

Pace Car participants sign a pledge to drive within the speed limit, stop for pedestrians, drive courteously and display an official Pace Car sticker on their car. At the Public Visioning Workshop, Wharton parents expressed an interest in displaying bumper stickers that read "I stop for pedestrians," or "I stop at crosswalks." Once enough pace cars are identified, the pace cars actually become traffic calming devices. This program empowers people to calm traffic on residential streets and around schools dramatically, immediately, and free of charge. Pace Cars make it safer for children and adults to walk and cycle, without the need for physical barriers.

3. Bicycle and Pedestrian Safety Quiz Show



- Organizer: School Administration and/or teachers
- Level of Effort: Medium
- Cost: $240

The activity involves students playing a game in order to learn bicycle and pedestrian safety. Based on the television quiz show, *Jeopardy*, this activity can be elaborate or simple. The simplest way involves taking a stack of construction paper and writing the point values on one side and the question on the other; pin the columns of questions to a bulletin board or tape them to a wall. Although this activity was designed with children in mind, it could easily be adapted to adult audiences.

4. Walk to School Days/I-Walk

- Organizer: Borough Officials
- Level of Effort: Medium
- Cost: $0-240

Wharton Schools participated in International Walk to School Day (I-WALK) – an event celebrated every year around the globe – in October of 2005. Approximately 52 percent of MacKinnon Middle School students and 64 percent of the Duffy Elementary students participated in I-WALK by either walking or riding a bicycle to school. Continuing to participate in this event, and aim for a larger number of participants each year, will further demonstrate Wharton's commitment to the SRTS mission. Wharton schools should also consider holding Walk/Bike to School Events in association with Halloween, Election Day, Christmas, Earth Day and the Last Day of School.

5. Proclamations/Resolutions

- Organizer: Borough Officials
- Level of Effort: Medium
- Cost: $0

The Borough Council can declare proclamations/ resolutions that assist in the Safe Routes to School movement. For example, a Crossing Guard Appreciation Day proclamation urges all citizens to recognize each and every crossing guard for their important work.

Enforcement

Enforcement generally involves three facets: police, community design and local policy. First, the local police have proven to be a valuable resource for both program implementation and data collection. Second, quality community design can guide and support desired behavior in an effort to develop a culture where pedestrians and cyclists are respected and their mobility is given priority. Finally, both school and municipal policies and procedures that pertain to walking, bicycling, busing, parking and pick-up/drop-off issues need to be supportive of the SRTS plan. With these ideas in mind, the following enforcement programs are recommended for Wharton.

Community-Preferred Ideas

1. Sidewalk/Building/Property Maintenance Laws
2. Keep Kids Alive – Drive 25 Campaign
3. Pedestrian Sting Operations
4. School Safety Zones

1. Sidewalk, Building and Property Maintenance Laws

- Organizer: Borough Officials
- Level of Effort: Medium
- Cost: $0

Sidewalk, building and property maintenance laws that support a safer, friendlier walking environment must be enforced. For example, overgrown vegetation, namely at corners, can obscure the visibility of the pedestrian to the motorists and vice versa. In addition, sidewalks in disrepair can become a tripping hazard. A small committee can be tasked with inventorying the applicable laws and codes and ultimately fixing these problem spots.

2. "Keep Kids Alive – Drive 25" Campaign

- Organizer: School, PTA or Borough representatives
- Level of Effort: Medium
- Cost: $500-1,500

An excellent program that details a community-based approach to reducing driving speeds is the *Keep Kids Alive – Drive 25* campaign.

Their mission involves demonstrating how communities can mobilize in a number of ways, using local resources to effectively reduce travel speeds to 25 mph.

3. Pedestrian Sting Operations

- Organizer: Police Department
- Level of Effort: High
- Cost: $2,500-4,000

Pedestrian sting operations isolate drivers who fail to respect pedestrian rights. Pedestrian decoys cross at selected intersections and when a motorist fails to yield to the pedestrian, hidden police officers stop the motorists to issue a ticket or warning. One of the goals of this program is to garner media attention that will signify the community's dedication to protecting its pedestrians.

4. School Safety Zones

- Organizer: School Administrators and Police Department
- Level of Effort: Medium
- Cost: $2,500-4,000

A successful school safety zone highlights the presence of a school and school children within the surrounding area. Safety is significantly increased when the hazards are identified/eliminated, and when travel speeds are reduced – the engineering component of School Safety Zones. However, after the engineering improvements are completed, school administrators should work with district officials and the police to make sure the rules of travel around the campus are clear – properly signed and enforced. It is generally good practice to begin any enforcement program with an emphasis on warnings and increased awareness rather than punishment. To this end, parents should be given clear and frequent verbal and written communication on where student drop-offs and pick-ups are permitted.

Other Ideas

1. Neighborhood Watch Programs
2. Speed Trailers
3. Law Enforcement Presence
4. Photo Enforcement

1. Neighborhood Watch Programs

- Organizer: PTA and Police Department
- Level of Effort: Medium
- Cost: $240

In neighborhood watch programs, residents volunteer their homes as "safehouses" where kids can go if they feel threatened or endangered on their way to or from school. The safehouses can be established with a

Parent-Teacher Association and/or the local police. Another similar program involves organizing a network of "Corner Captains," who are parents or adult volunteers that station themselves at corners along a walking route. Their presence increases the safety and security of children walking to and from school by putting more eyes on the street. They can be given walkie-talkies or cell phones to report any unusual circumstances to the police or school.

2. Speed Trailers

- Organizer: Borough Officials
- Level of Effort: High
- Cost: $2,500-4,000

Speed trailers are electronic devices that contain a large digital speed display. They can be parked at or near schools to show passing motorists their speed. They are intended to encourage motorists to drive the speed limit. The SRTS campaign literature or PSAs can help to reinforce the message that "Speed Kills."

3. Law Enforcement Presence

- Organizer: Police Department and/or Borough Officials
- Level of Effort: Medium
- Cost: $5,000

Wherever and whenever possible, increasing the presence of law enforcement around schools when children are present will establish a safer traveling environment for kids on foot. In some communities police on bikes patrolling around schools has proven to be very effective. One great advantage of this program is that police on bikes are more apt to communicate with the parents and students that are walking, reinforcing safe behavior and modifying unsafe behavior. Another approach is to park manned or unmanned police vehicles on highly travel school routes. Some police departments have their officers park around schools and do their paperwork in their patrol cars. Yet another idea involves citizens and police working together to modify behavior.

4. Photo Enforcement (Red Light Camera)

- Organizer: Police and/or Borough Officials
- Level of Effort: High
- Cost: $2,500-4,000

Photo enforcement systems detect traffic law violators, photograph their cars, and issue tickets for their respective violations. The most common applications are red light cameras and speed cameras. Red light cameras catch red light violators, while speed cameras use radar or laser to target speeders.

Engineering

The recommended Engineering approaches for Wharton will help to create improvements surrounding the school that reduce speeds and establish safer crosswalks, walkways, trails and bikeways. This section presents general recommendations, as well as three major facility improvement concepts, for the Wharton SRTS program. The three concepts were selected to represent a range of treatments that would levy immediate benefits on the school commute for Wharton students. They are also representative of what could be done elsewhere in Morris County. Estimated costs for Engineering recommendations are included in Chapter 4: Phasing and Costs.

General Recommendations

Sidewalks. Where sidewalks do not exist along school walking routes, they should be constructed to meet current RSI standards. New Jersey Department of Transportation (NJDOT) preferred width for new sidewalk construction is five feet wide. Where possible, sidewalks fronting schools or along school walking routes or at bus and subway stops should be wider than the minimum. Where the curbside lane is a moving travel lane, wider sidewalks and a planting or utility strip should be provided between the edge of the sidewalk and the adjacent travel lane to separate pedestrians from passing vehicles, particularly on arterial roadways. The width of the buffer zone will vary according to the street type. Parked cars and/or bicycle lanes can provide an acceptable buffer zone.

Sidewalk Stencils. This type of marking, in the form of words or symbols, is used in the sidewalk pavement itself to both guide students and alert motorists of the school walking routes. Families who live along identified school routes will see a visual reminder that the sidewalk in front of their home is part of a route to school. This will also help encourage students to walk to school along the designated routes.

Bicycle Lanes. Bicycle lanes have been found to provide more consistent separation between bicyclists and passing motorists than simply providing a wide travel lane. Marking bicycle lanes can also benefit pedestrians; as turning motorists slow and yield more to bicyclists, they will also be doing so for pedestrians. Bicycle lanes also provide a separation between motor vehicle traffic and pedestrians when sidewalks are immediately adjacent to the travel lane, and there is no on-street parking.

Shared Lanes with "Sharrows." The Shared Roadway Bicycle Marking is intended to reduce the chance of bicyclists impacting open doors of parked vehicles on a shared roadway with on-street parallel parking. They help to alert road users within a

narrow traveled way of the lateral location where bicyclists ride. Sharrows should be used only on roadways without striped bicycle lanes or shoulders.

High Visibility Crosswalks. High visibility crosswalks should be used to improve safety and to emphasize the recommended path for crossing an intersection. They are at least 10 feet wide and traditionally marked with a 'piano' style pattern. Other options include:

- Overhead Illuminated Crosswalks – Overhead illuminated crosswalk signs may be installed at unsignalized or uncontrolled marked crosswalks. Two signs are required for each crosswalk and are positioned over the center of the approach lane with an illuminated 'CROSSWALK' sign.
- In-Road Illuminated Crosswalks – In-roadway illuminated crosswalks contain special types of lights that are actually installed into the pavement surface. The lights provide extra warning signals for motorists approaching crosswalks – an ideal treatment for school zones.

Pedestrian Scale Lighting. Pedestrian scale lighting focuses light on the sidewalk, rather that traditional roadway lighting that focuses on the roadway. This smaller scale lighting can help create friendly walking environments.

Bike Racks. The "inverted U" type bike racks are the leading edge in technology for bike rack parking and offer the best of short-term cycle parking. Many modern bike racks are made of steel and completely covered with a heavy rubberized coating. This combination has proven to maximize corrosion resistance, impact resistance, and protection of bicycle finishes. Racks similar to the ones pictured here can be mounted in concrete for additional security, ensuring that the rack itself cannot be carried away. This style of rack also provides two points for the bicycle frame to lean against, providing both stability and easy locations for bicycle locks to be mounted, rather then the historically traditional front wheel mounted style rack.

Traffic Calming Measures

- Raised Intersections – A raised intersection is an intersection—including crosswalks—constructed at a higher elevation than the adjacent roadways. The purpose of a raised intersection is to reduce vehicle speeds, better define crosswalk areas, and reduce pedestrian-vehicle conflicts.

- Curb Extensions – Curb extensions, also known as bulb-outs or neckdowns, extend the sidewalk curb line out into the street (typically into the parking lane) through a horizontal intrusion of the curb into the roadway. The curb is extended into the parking lane on one or both sides of the roadway.
- Speed Humps/Speed Tables – The purpose of a speed hump is to reduce vehicle speeds. Speed humps should not be confused with the speed 'bump' that is often found in shopping mall parking lots. A 'speed table' is a term used to describe a very long and broad speed hump, typically 22 feet. Sometimes a pedestrian crossing is provided on the flat portion of the speed table.
- Center Island Medians – A center island median is an elevated median constructed on the centerline of a two-way roadway. Center island medians can serve as a place of refuge for pedestrians crossing the street. Center island medians can also channel pedestrians to safe crossings and discourage dangerous movements.

- Full/Partial Street Closure – A full street closure is a barrier extending the entire width of a roadway, which obstructs all motor vehicle traffic movements from continuing along the roadway. A partial closure uses a semi-diverter, curb extension or vertical barrier extending to approximately the centerline of a roadway, effectively obstructing one direction of traffic. Temporary street closures are often used in school zones during specified school hours.
- Road Diet – Reducing the number of lanes on a multi-lane roadway and converting that space to a sidewalk or median can reduce crossing distances for pedestrians and may slow vehicle speeds. This reduction of the number of lanes is referred to as a "road diet." Most cases have utilized a typical three-lane configuration – two travel lanes and a center turn lane.
- Gateways –A gateway indicates a change in the roadway environment, such as from a higher speed arterial or collector road to a lower speed residential or commercial district. Gateways are frequently used to identify neighborhood and commercial areas within a larger urban setting. Gateways may combine pedestrian safety elements such as lane narrowing, neckdowns, medians, roundabouts, and signs, with aesthetic or architectural elements such as planting, archways, lighting, or other street furniture. Gateways are most effective when followed by a repetition of neighborhood traffic-calming treatments.

Concept 1: Identify and Enhance the School Route Network

Concept #1 involves three sections, which can be implemented in phases. Phase 1A includes constructing short segments of sidewalk to complete critical gap areas in the otherwise continuous sidewalk network along the school routes, and upgrading the school zone signs. Next, phase 1B includes designating the school routes with distinct striping and pavement markings (or "legends") on the sidewalks and roadways. Finally, phase 1C includes completing larger sidewalk gaps along the North Main Street corridor past the interchange with Interstate-80. Geometric changes to the interchange may also be required to enhance the pedestrian environment, but this will be a longer-term solution.

1A – Crosswalks and School Crossings (See Figure 12)

Sidewalks – The single most effective method to accommodate students walking to school is to provide a continuous sidewalk network. Wharton has sidewalks along most of its streets, however there are a few critical links missing along the recommended routes to school where sidewalk should be constructed. This includes the following segments:

- Stickle Avenue between Phyllis Street and Stirling Street (west side ~ 150 feet)
- Washington Street between Main Street and Fern Street (east side ~ 500 feet)
- West Central Street between Main Street and Burns Street (both sides ~ 1,000 feet total)
- Stirling Street between Robert Street and Division Street (two segments, each on the north side ~ 500 feet total)
- Wabash Street between Summit Avenue and Lehigh Street (east side, less than~ 50 feet)
- Baker Avenue near the west end of the roadway (three segments, each side of the road ~ 1,000 feet total) *Note: this segment may be considered un-designated as a portion of the School Route Network, yet sidewalks will still be beneficial.*

Crosswalks – The crosswalks along the School Routes should stand out and convey to both motorists and pedestrians that the potential exists for students to be crossing at this location. Differentiating the school crosswalks from the other crosswalks in Wharton is one way to call attention to the School Routes. Thus, each of the crossings along the School routes should be striped with a high visibility ladder style crosswalk.

School Zone Signing – Each of the approaches to the school zone should be signed with standard advance warning signs, as outlined in the Manual on Uniform Traffic Devices (MUTCD). These standard advance warning signs help to warn motorists that they are approaching/entering a school zone and will encounter school crosswalks where students may be crossing. Using the new fluorescent yellow-green sign color variation helps to catch motorist's attention, further reinforcing the crossing location.

1B – School Route Modifications (See Figure 13)

Safe Walking Routes – The identified routes to school should connect major neighborhood areas with the school. In order to do so, the existing routes should each be extended further into the neighborhoods, rather than terminating at the major crossing posted with a crossing guard. This will help to better connect the families to the school.

- Blue Route
  - Expand to include Wabash Avenue between Baker Avenue and Lehigh Street. This will provide connectivity to a residential area south of Columbia Street.
  - Consider eliminating the section of the identified route along Baker Avenue east and south of the 90-degree bend near Princeton Avenue. This section of the identified route provides access to only a limited number of Wharton residents.
- Red Route
  - Expand along East Central Avenue to Burns Street, crossing Main Street, and include Burns Street between East Central Avenue and Pine Street. This will provide connectivity to the residential area west of Main Street, in addition to the Morris Canal corridor.

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Borough of Wharton, NJ

Figure 12
CONCEPT 1A
PROPOSED SIDEWALKS, CROSSWALKS, & SCHOOL CROSSING SIGNS

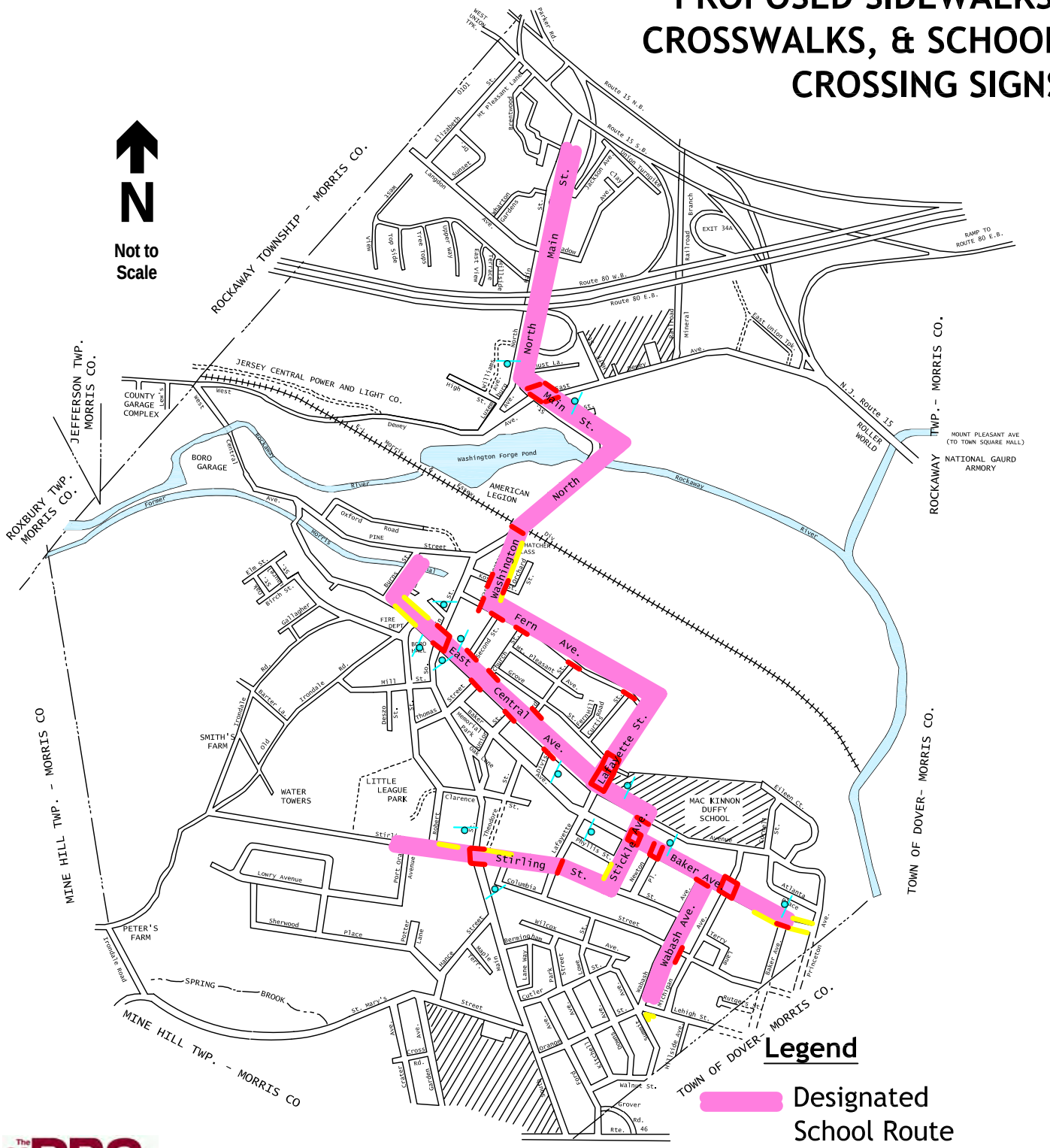

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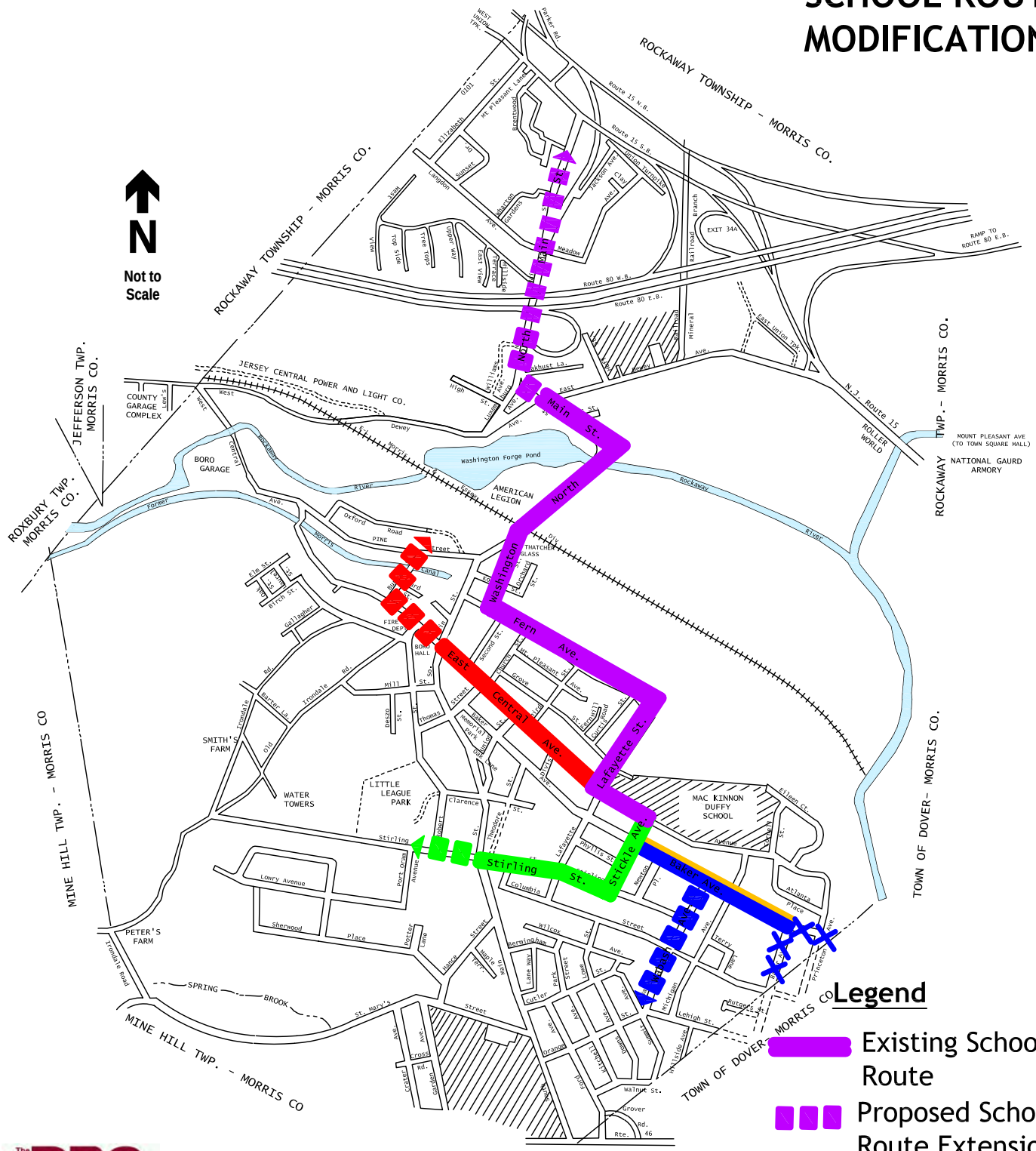
Figure 13
CONCEPT 1B
SCHOOL ROUTE MODIFICATIONS



* Various colors represent different neighboorhoods

* Shared lane conditions recommended for all school routes except Baker, which can accomodate Bike Lanes

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- Purple Route
  - Once pedestrian enhancements are in place, expand north along Main Street to Langdon Avenue/Meadow Avenue, or even to the *Wharton Gardens* apartment complex along Main Street. This will provide connectivity across the Interstate-80 interchange, eliminating a major barrier along the Main Street corridor.
- Green Route
  - Expand along the Stickle Avenue corridor to include a segment across the Stirling Columbia Park to Columbia Street at Lowe Street. This will provide more direct connectivity to the residential area south of Columbia Street. This route was noted during the public visioning workshop.
  - Extend west along Sterling Street, across Main Street to Port Oram Avenue. This would provide connectivity to the residential development to the southwest.

Sidewalk Stencils – Identifying each School Route through unique sidewalk and pavement stencils can help to identify the recommended route between the neighborhoods and the school. Having a route on a map is good for municipal planning, however placing physical treatments along the routes can help to reinforce to families and inform other residents and visitors that specific routes are intended for students' use on their school commute. Sidewalk stencils could range from simple pedestrian symbols to the school mascots. However, consensus among stakeholders must be achieved, as community members may not approve of having dragons and/or hornets painted in front of their property. **(See Figure 14)**

Bicycle Lanes– Striping the pavement to show the preferential use of a portion of the roadway reminds motorists that bicycles have the legal right to share the roadway, and reminds bicyclists that they should ride along the right side of the road parallel to motorized traffic. This keeps the bicyclist where drivers will be able to see and more easily react to the bicyclist's movements. Bike lanes should be striped between Stickle Avenue and the ninety-degree bend at Baker Avenue near Princeton Street (see Figure 14). This segment of Baker Avenue can accommodate both on-street parking and bike lanes within the existing pavement width due to its 50-foot width and provides an excellent opportunity to demonstrate to the community how a bike lane works. This can serve as a test treatment to be considered for other corridors throughout Wharton where on-street parking would not have to be restricted to establish a striped bike lane.

Shared Roadway Bicycle Marking ("Sharrows") – The shared roadway bicycle marking (sharrow) treatment should be considered for the remaining school route segments that are not as wide as the Baker Avenue corridor, where a full bike lane will not fit. The sharrow designates an area of the road for preferential use by bicyclists, and gives directional information to keep bicyclists from riding the wrong way, but takes up less width than a traditional bike lane. They will also help to reinforce that motorists should expect bicyclists to use the School Routes and that they should share the road. On street parking can be permitted where sharrows are used. Parking can be restricted at certain times of day, such as school commute times, but this is not required to implement the sharrow treatment.

Figure 14: Baker Street Photo Simulation

In a study conducted for the San Francisco Department of Parking and Traffic, the sharrow markings improved both motorists' and cyclists' positions in the roadway. The markings also reduced sidewalk and wrong-way riding. In California the Shared Roadway Bicycle Marking shall only be used on a roadway, which has on-street parallel parking. If used, Shared Roadway Bicycle Markings shall be placed so that the centers of the markings are a minimum of 3.3 m (11 ft) from the curb face or edge of paved shoulder.

1C – Long-Term Improvements (See Figure 15)

There is a large apartment complex and a concentrated commercial area located along the segment of Main Street north of the Interstate 80 interchange. Many students live in this area of Wharton. This area is also a major origin and destination for pedestrian trips, with many employees and shoppers choosing to walk to the various businesses. The interchange with I-80 presents a major obstacle to pedestrian travel between this area to the north and the rest of Wharton.

In order for Main Street, north of Dewey Avenue, to be designated as a route to school, the pedestrian network must be completed past the interchange with Interstate 80. This will include both sidewalk construction and probable geometric changes to the ramps to and from I-80, and some of the local intersecting roadways. This includes various segments of Main Street between Luxemburg Avenue and Wharton Garden Apartments (total of 3 segments ~ 1,000 feet). This corridor may also require geometric modifications to the intersection of Main Street with Luxemburg Avenue.

Concept 2: School Gateway (See Figure 16, Figure 17 and Figure 18.)

The gateway area to a school can be defined as the interface between the school property and the adjacent public street. For the MacKinnon and Duffy Schools the gateway area is located along East Central Avenue. This roadway is approximately 27 feet wide, has sidewalks on both sides, and is signed with a 25 mile per hour speed limit. Many students are picked up from school by parents or guardians who park their cars along the north (westbound) side of the street. Traditional overhead style lighting exists along the roadway. To reinforce to motorists that they should travel at an appropriate speed, several streetscape enhancements are recommended. They include:

- High-Visibility, Ladder-Style Pattern School Crosswalks
- Raised Intersection for the intersection of Stickle Avenue and East Central Avenue
- Speed humps on the approaches to the intersection along East Central Avenue
  - Approximately 100 feet east of the Lafayette Street intersection
  - Approximately 250 east of the Stickle Avenue intersection
- Sidewalks widened to a minimum of five feet
- Pedestrian scale lighting should be installed along the north side of East Central Avenue
- Advance warning signs are also recommended along the approaches to the gateway area

These traffic-calming elements are included within Concept 2 as a high priority target area to slow traffic in front of the school area. This is where there is the highest concentration of students walking to and from school. There are other areas where motorists speed along school routes that would also be likely candidates for similar treatments. Other locations, such as Fern Avenue, Stirling Street and Wabash Avenue, are recommended to be considered as part of additional future work.

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Borough of Wharton, NJ

Figure 15
CONCEPT 1C
LONG TERM IMPROVEMENTS

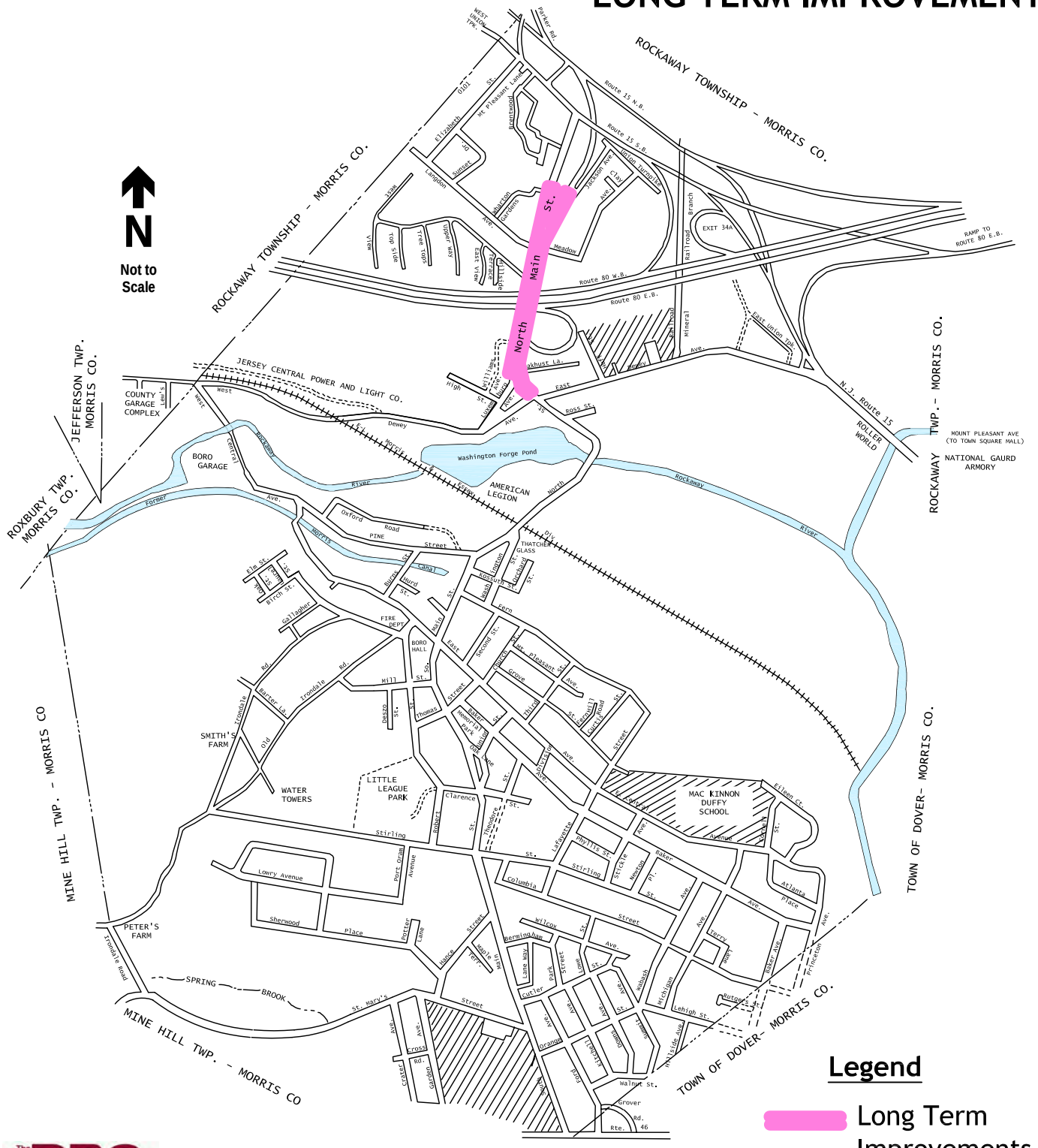

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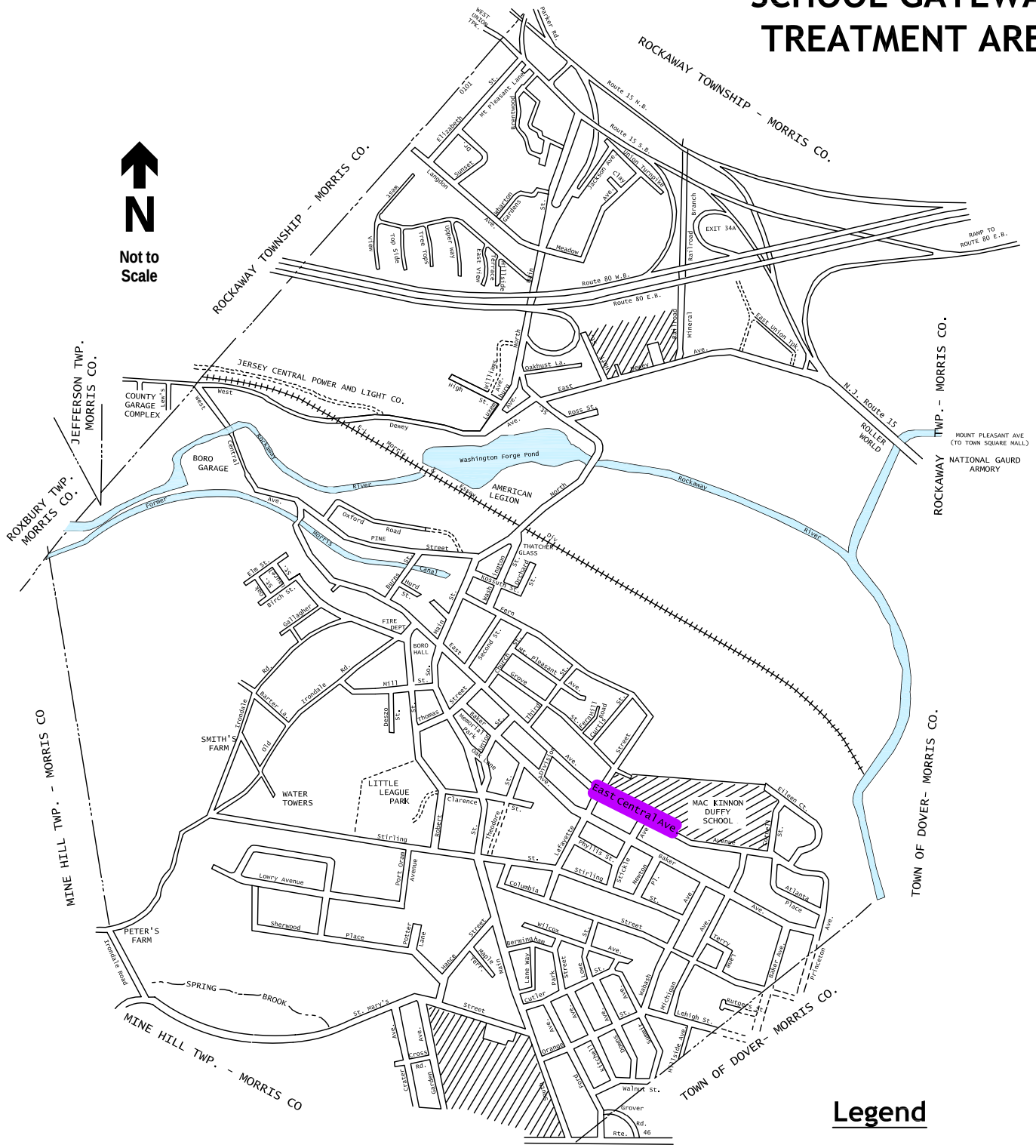
Figure 16
CONCEPT 2
SCHOOL GATEWAY
TREATMENT AREA



Legend

Location of school gateway treatment

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Figure 17
CONCEPT 2
SCHOOL GATEWAY TREATMENT AREA DETAILS

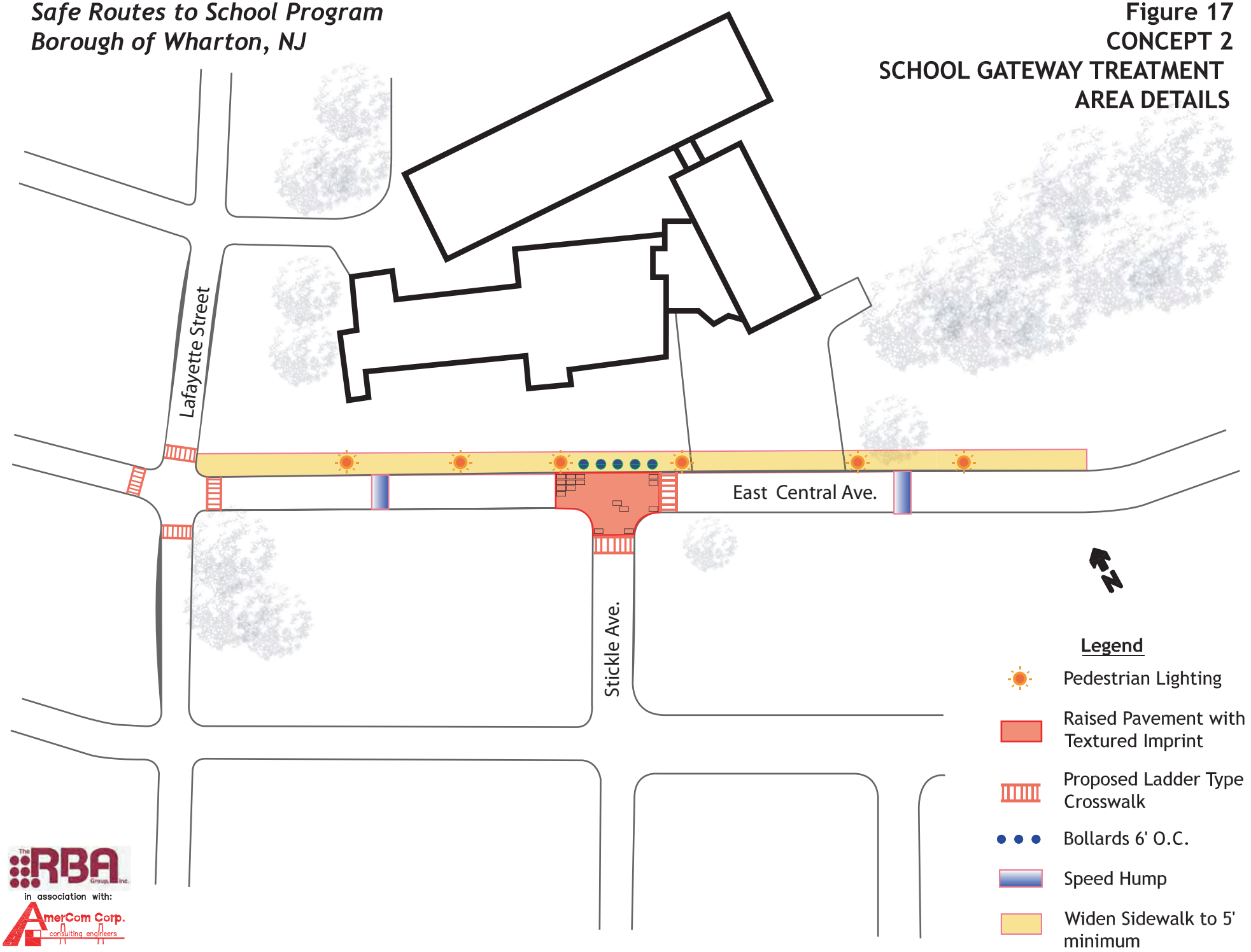

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Figure 18: School Gateway Photo Simulation

Concept 3: Main Street Crossing Improvements

Each of the locations where School Routes cross Main Street currently has a crossing guard assigned to monitor the student commute during school arrival and dismissal times; traditional parallel-line crosswalks are striped at these locations. The following changes are recommended at these sites.

Crosswalk Striping

The crosswalks across Main Street should be clearly designated with a crossing treatment that will give a clear indicator to motorists that they will likely see pedestrians attempting to cross at this location. There are many styles of crosswalk that can be considered, including a high visibility ladder style pattern that works very well for both motorists and accommodating pedestrians with limited vision. Any crosswalk treatment to be installed must also fit into the context of the overall Main Street concepts being considered for the surrounding Wharton Main Street district.

Flashing Beacons

Main street crossings should contain flashing beacons, which are systems configured with either push button or passive actuations that warn motorists of pedestrians attempting to cross the road.

Streetscape (See Figure 19)

Because all of the crossings are located at roadway intersections, potential exists for expanding the sidewalk through the intersection area with curb extensions. Any modification to the turning radius of an intersection would continue to accommodate all anticipated vehicles, such as school buses for high school students or delivery trucks. These and other streetscape enhancements along the Main Street corridor will help to balance the needs of pedestrians and motorized traffic, creating a safe traveling environment for all. This concept will most likely augment other Main Street initiatives currently underway in Wharton. Funding sources are available for both SRTS and Main Street projects; these could be combined or used to supplement each other to ensure that all of Wharton's goals are met for completing these intertwined enhancements.

Off-Road Path Recommendations

These additional engineering recommendations have been developed based on the input received from the public and the project Technical Advisory Committee.

Morris Canal

Consider constructing a shared use path connecting West Central Avenue and Burns Street, possibly extending to Main Street. This would establish an off-road travel alternative. Providing this connection would build on the existing facility. This will require neighborhood consensus, which has not yet been forthcoming.

Stirling Park Walkway

Construct a walkway across Stirling Columbia Park between the intersection of Stirling Street and Stickle Street and the intersection of Columbia Street and Lowe Street. This will provide a more direct path to school than walking around the perimeter of the park. The walkway should be made up of any all-weather surface that would keep the students from getting excessively wet or muddy on the way across the park; crushed stone would work well.

Safe Routes to School Program
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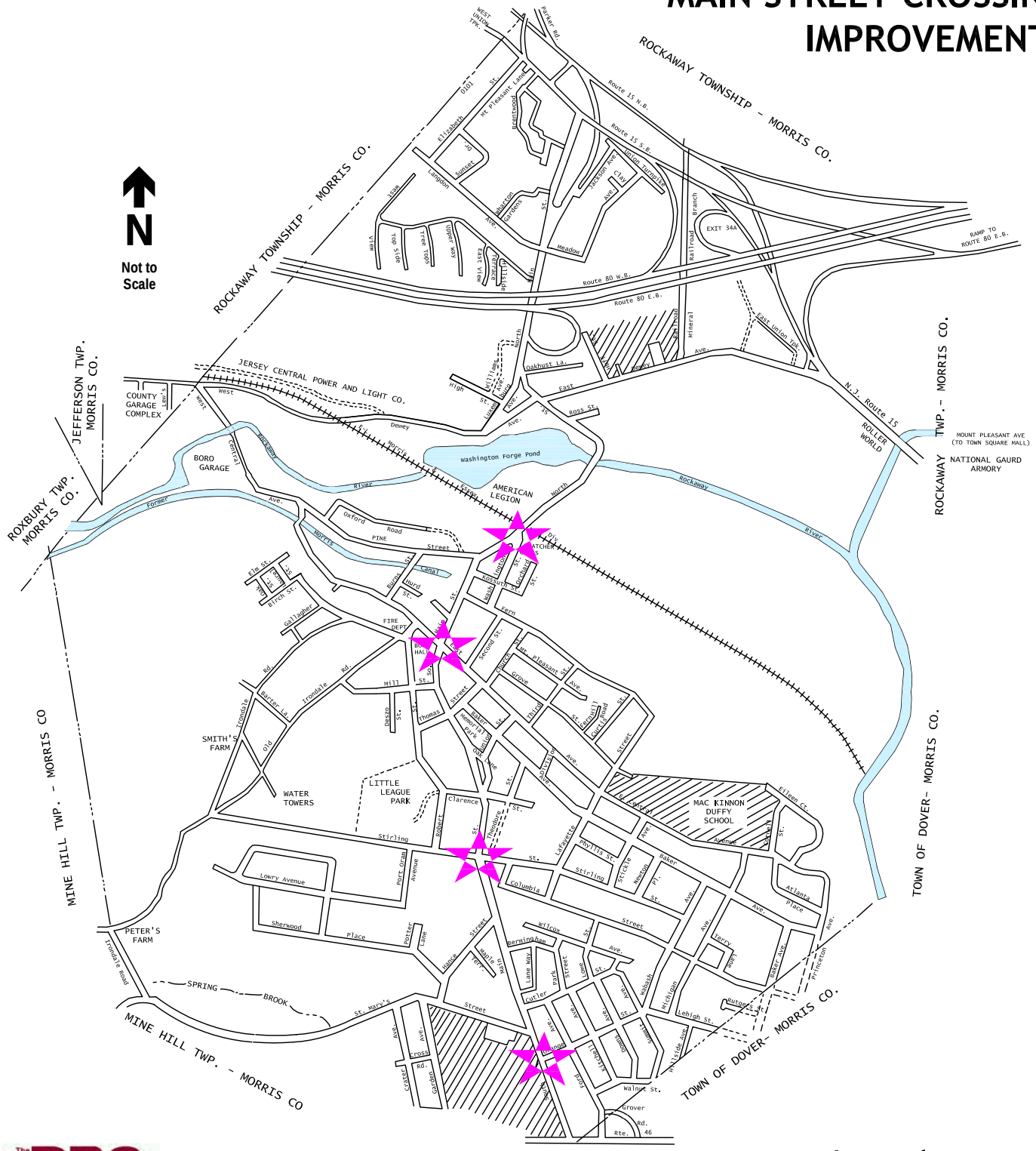
Figure 19
CONCEPT 3
MAIN STREET CROSSING IMPROVEMENTS



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Evaluation

The SRTS Task Force, or a subcommittee thereof, is most equipped to handle evaluation, or tracking the progress of the SRTS program as a whole. Evaluation is necessary to:

- Assess progress in implementing the plan
- Progress towards the completion of each element, especially those of significant duration
- Identify success in the achievement of the overall goals and objectives

The first step involves collecting initial data in the forms of attitudinal surveys, travel mode surveys, walkability/bikeability assessments, bicycle counts, number of volunteers/participants and/ or any other measurement tasks that may seem appropriate for a specific program. Each of the selected tasks should be performed regularly to track the progress of the SRTS program as a whole.

Attitudinal and Travel Mode Surveys

- Organizer: School Officials
- Level of Effort: Medium
- Cost: $0-240

Attitudinal surveys provide information on both parents' and students' feelings towards walking and biking to school, while travel mode surveys provide raw data on the number of students who are actually walking or biking to school. Both of these surveys were first administered at Wharton Public Schools during the spring of 2006. Similar surveys should be administered 1-2 times per school year over the next several years in order to measure both attitude change and travel mode selection of Wharton parents and students.

Walkability/Bikeability Assessments

- Organizer: School Officials/Teachers
- Level of Effort: Medium
- Cost: $0

Walkability and Bikeability Assessments should be were performed initially to evaluate the identified routes and should now occur regularly as a means to gauge improvements to the physical infrastructure. Since engineering improvements often require more time and resources for implementation, these assessments should be carried out for several years after the project has been completed. The assessments that were conducted in Wharton during the winter of 2006 can be used as a baseline from which to measure improved walkability and/or bikeability.

Bicycle vs. Automobile Counts

- Organizer: School Officials/Teachers
- Level of Effort: Low
- Cost: $0

Students can play a large role in this evaluation task as part of a class or extracurricular activity. At drop-off and/or pick-up time, both the number of bikes parked around the school and the number cars dropping students off should be counted. As the SRTS Program continues to be implemented, students should perform these counts again with hopes that the number of bicycles has risen and the

number of cars has fallen. A creative way to publicize this task involves placing a large thermometer in a prominent location at the school so that all students can be a part of tracking the progress.

Number of Volunteers and/or Participants

- Organizer: School Officials and/or PTA
- Level of Effort: Low
- Cost: $0

Perhaps one of the simplest evaluation tasks involves documenting the various participants in the SRTS program. This ranges from counting the number of children who participate in Walk-to-School Days to measuring the diversity of SRTS Task Force members. These numbers can illustrate to grant providers that the Borough has already made an effort to promote the SRTS mission.

CHAPTER 4

Implementation Strategies

Phasing & Costs | Events | Strategies

> "We're suggesting that parents stop driving their kids to school."
>
> – *Patrick Franco, Morris County Transportation Planner*

CHAPTER 4: IMPLEMENTATION STRATEGIES

Implementation of both infrastructure improvements and programmatic activities on the MacKinnon and Duffy School campus will be an essential ingredient in the creation of a successful SRTS Program. Each recommended improvement or activity plays a part in creating the network needed to implement the SRTS program, both on a physical and social level. The following sections address the phasing and costs of these recommendations, along with specific ideas of how to integrate SRTS over the course of the 2006-2007 school year.

Phasing and Costs

Given that sufficient resources to immediately undertake all recommended improvements are unlikely to be available, the practical approach involves phasing the implementation of physical improvements to maximize their utility. The recommended phasing of both infrastructure improvements and programmatic activities proposed in this SRTS Program Plan are listed in order below. Generally they begin with improvements on or near the campus, and subsequently extend into adjacent neighborhoods.

An estimated cost or range of costs for each proposed short-term and long-term task is provided. For the engineering recommendations, the low end of the range reflects the anticipated average construction cost bid assuming a basic design, using basic materials (no-frills) and assuming that the tasks are not bid separately but part of a package of improvements, thus minimizing one time costs such as bonding. The high-end range reflects several possibilities: 1) general contingencies to account for currently unknown circumstances such as the extent of involvement with utilities; 2) enhanced treatments that use more costly materials for durability or aesthetics; and 3) the overall extent of the treatment. For example, in some cases, such as traffic calming for the school gateway treatment area on East Central Avenue (Figure 17), the improvements could consist of a series of relatively simple treatments, such as a series of speed humps or speed tables using simple materials; or, they could consist of a more extensive combination of treatments, such as curb extensions, raised intersections and medians that include design elements intended to achieve a particular aesthetic effect in addition to their traffic calming benefits. The scale of an individual project, such as the total number of signs or quantity of striping can also have an economy of scale that will affect project cost. The higher cost range reflects smaller scale independent projects. All costs exclude right of way acquisition, design fees or other external costs.

ENGINEERING: Short-Term Tasks	Cost
• **Install new school crossing signs along school routes (1A)** *(~13 signs installed along school routes – See concept 1A fig.12)*	$400-$500 each = $5,200-$6,200
• **Stencil the school mascot or other symbol along school routes (1B)** *Approximately 200 logos to cover all school routes*	$63 each = $12,600
• **Install bike lane signing & striping along Baker Avenue (1B)** *Approximately 2,100 feet of road striped on each side, 10 signs and 10 pavement symbols*	$14,000-$17,000
• **Install striping to designate shared lanes "Sharrows" (1B)** *Approximately 40 pavement symbols (20 locations, each side of the road)*	$100-$150 each = $4,000-$6,000
• **Stripe high visibility crosswalks along school routes (2)** *Approximately 43 crosswalks to cover all school routes*	$550-$850 each = $24,000-$36,000

• **Install Flashing Beacons at the Main Street Crossing (3)** *(2 beacons at $5,000-$7,500 each)*	$10,000-$15,000
ENGINEERING: Long-Term Tasks	**Cost**
• **Install sidewalks at missing locations (1A)** *Approximately 3,200 feet of total sidewalk*	$128,000-$160,000
• **Apply geometric changes to the sidewalks at the Main Street Interchange with I-80 (1C)**	$300,000-$600,000
• **Widen Sidewalks along East Central Avenue near the School (2)** *Approximately 500 feet of new wider (5') sidewalk*	$20,000-$25,000
• **Install raised intersection at East Central and Stickle Avenues (2)** *Includes paving, drainage, signs and stiping*	$80,000-$100,000
• **Install bollards on sidewalk of East Central at Stickle Avenue (2)** *Assumes 10 bollards located 6 feet on center along Stickle Avenue intersection*	$750-$1,000 each = $7,500-10,000
• **Install Speed Humps on East Central Avenue near the Schools (2)** *(2 humps installed every 50 feet)*	$2,000-3,000 each = $4,000-6,000
• **Install pedestrian scale lighting around school (2)** *(20 lighting fixtures, each fixture to be 12 feet tall and installed every 50 feet)*	$1,500-$2,250 each = $30,000-45,000
• **Install Main Street crossing enhancements (3) (Per Block)**	$50,000-$100,000
• **Construct shared use path connecting West Central Avenue and Burns Street near the Morris Canal** *Approximately ¼ mile of path*	$60,000-$115,000
• **Construct a Sterling Park Walkway** *Approximately 250 feet of 8 foot wide path between Sterling Street and Columbia Street*	$20,000-$25,000
PROGRAMMATIC: Short-Term Tasks	**Cost**
• **Assemblies/Guest Speakers**	$0-250
• **Walk or Bike Across America**	$0
• **Walking Math**	$0
• **Classroom Activities**	$0
• **Campus Walks**	$250
• **Walkability/Bikeability Assessments**	$0
• **Walk and Roll Days/Walking Wednesdays**	$250 (initially)
• **Frequent Walker Cards/Frequent Rider Miles**	$300
• **Golden Sneaker Awards**	$0
• **Family Picnic Activity**	$250
• **Bicycle and Pedestrian Safety Quiz Show**	$250
• **Walk to School Days/I-Walk**	$0
• **"Keep Kids Alive – Drive 25" Campaign**	$500-1,500
• **School Safety Zones**	$2,500-4,000
• **Neighborhood Watch Programs**	$250
PROGRAMMATIC: Long Term-Tasks	**Cost**
• **Neighborhood Working Groups**	$250
• **Walking Education Programs**	$250-2,500
• **Media Campaign**	$600
• **Walking School Bus or Cycle Train**	$0
• **Pace Cars/Bumper Sticker Program**	$300
• **Proclamations/Resolutions**	$0
• **Sidewalk, Building and Property Maintenance Laws**	$0
• **Pedestrian Sting Operations**	$2,500-4,000
• **Speed Trailers**	$2,500-4,000
• **Law Enforcement Presence**	$5,000
• **Photo Enforcement (Red Light Camera)**	$2,500-4,000

Events

The 2006-2007 school year at both MacKinnon and Duffy Schools will serve as a SRTS Demonstration Year for Morris County as a whole. The events and ideas that evolve out of Wharton's SRTS Program will serve as a base upon which other schools countywide can develop their SRTS program. **Figure 20** illustrates some of the proposed ideas for this Demonstration Year.

Walking/Biking Events

The following days present great opportunities to hold Walk/Bike to School Events. For example, the Election Day Walk could be presented in Social Studies as students learn about the importance of citizens being able to vote in the United States. Furthermore, the Winter Holiday walking event can be used to stress to students that they can still walk/bike to school, even in inclement weather.

- International Walk to School Day (October 06)
- Halloween Campus Walk (October 06)
- Election Day: "Walk to the Polls" (November 06)
- Bike Rodeo (November 06 or April 07)
- Winter Holiday Event (December 06)
- Earth Day Celebration (April 07)
- Last Day of School Parade (June 07)

Special Events

These following events present various opportunities to market the SRTS mission, goals and benefits. They include:

- **Canal Day (August 06).** Make available general SRTS literature for parents and students, along with residents and visitors to the large Borough event.
- **First Day of School Event (September 06).** Hold some sort of walking/biking to school event that will let children know right at the beginning of the year that several similar events will be occurring over the course of the '06-'07 school year.
- **Family Picnic (September 06).** At the Public Visioning Workshop, this Family Picnic was discussed as a prime opportunity to market the mission of SRTS. Several various activities and educational opportunities relating to SRTS should be available at this family picnic on Saturday, September 16. Ideas to consider include a Bike Rodeo, a Walking Education Program, a Bicycle-Pedestrian Safety Quiz Show, a booth containing informative marketing material and other activities that require active participation.

- **Guest Speaker Presentations (January 07).** During the months when students generally do not find walking/biking too appealing, guest speakers presentations can serve as tools to both maintain a focus on walking/biking and

demonstrate to students that walk/biking can be fun even when its snowy, rainy or cold.

- **Bicycle-Pedestrian Safety Quiz Show (February 07).** Similar to the Guest Speakers, the Bicycle-Pedestrian Safety Quiz Show can be a fun way to keep students focused on the benefits of walking and bicycling, even in the winter months.
- **Walking Wednesday Months (March, April, May 07).** The Walking Wednesday Program should be initiated during the month of March, after students have listened to guest speakers and learned more about bicycle and pedestrian safety. Encouragement contests, such as the Golden Sneaker, should also be implemented at this time so that awards can be presented in conjunction with the last day of school.

Training Sessions

In an effort to create a sustainable SRTS program led by local parents, teachers, and municipal representatives, two training seminars will be offered in Wharton during the Fall 2006 semester. First, an Engineering Seminar will be held in November. Representatives from the Wharton Borough and County governments will be invited to learn the basic SRTS engineering ideas, including traffic calming, security and safety, and bicycle/pedestrian facilities design. Second, a Curriculum Seminar will be held in December. Wharton Public School teachers will be invited to learn how to integrate SRTS ideas into their lesson plans. Both training sessions are intended to further educate SRTS stakeholders on their potential role in making the program a success.

Strategies

During the SRTS Demonstration Year at Wharton schools, several strategies are recommended to help maintain student, parent and community interest in the program. **Figure 20** also lists these strategies and when they should be applied.

1. **Publish SRTS Outreach Materials (Newsletters and Web Site)**
   Adequately communicating the mission of the Wharton SRTS Program with students, parents, teachers and other community members will be key to increasing the number of children who walk and bike to school.

2. **Add Walk to School Day to School/Borough Calendars (July 06)**
   This occurred during the summer of 2006 so the October International Walk to School Event will be included on both the 2006-2007 School and Borough Calendars.

3. **Adopt SRTS Plan Resolutions (August 06)**
   The Borough Council should officially recognize acceptance of the Wharton SRTS Plan in the form of a resolution.

4. **Initiate SRTS Activities focusing on Health/Geography (September 06)**
   Classroom Activities for the Fall Semester '06 should focus on both the health and geography aspects of SRTS, as this time of year presents optimal opportunities for these types of lessons. For instance, the Walk/Bike Across America Program could be tied to a geography lesson.

5. Surveys (October 06 and May 07)

It is recommended that attitudinal and travel mode surveys be distributed to parents and students once a semester. Using baseline data from the spring 2006 survey, Wharton SRTS volunteers can track the progress of the program per semester.

6. Initiate SRTS Activities focusing on the Environment/Science (March 07)

Classroom Activities for the Spring Semester '07 should focus on both the math and environmental aspects of SRTS, as this time of year presents optimal opportunities for these types of lessons. For instance, the Earth Day Celebration can tie nicely into an environmental lesson, such as the Auto Emissions Exercise.

Borough Of
WHARTON
Safe Routes to School 2

Figure 20 - Implementation Schedule

August 2006

Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
TAC Meeting #3 *Draft SRTS Plan Review*	*Canal Day (Exhibit/Literature)* *Joint Borough/BOE Meeting*	*First Day of School (Proclamation)* *Family Picnic (Exhibit/Literature)*	*Walk to School Day* *Halloween Campus Walk*	*Election Day: "Walk to the Polls"* *Engineering Training Seminar*	*Curriculum Seminar* *Holiday Event*	*Guest Speakers*	*Bicycle-Pedestrian Safety Quiz Show* *Classroom Contests*	*Walking Wednesday Month*	*Earth Day Celebration* *Walking Wednesday Month*	*Walking Wednesday Month* *Year End Evaluation Meeting*	*Last Day of School Parade*

2006

- Add Walk to School Day to School/ Borough Calendars
- Adopt SRTS Plan Resolutions
- Initiate SRTS Activities focusing on Health/ Geography
- Submit NJDOT SRTS Grant Application
- Fall 2006 Surveys
- Newsletter #2
- Web Page
- Advance Concept Plans & Engineering Grant Application

2007

- Newsletter #3
- Submit Grant Application
- Initiate SRTS Activities focusing on the Environment/ Science
- Spring 2007 Surveys
- Bike Rodeo
- Newsletter #4

The RBA Group

Appendices

Appendix I - Appendix IX

> It is a great idea to promote walking and/or biking to and from school especially for children who live in a very close proximity. A few minutes out in the fresh air before and after all day in school, and a little exercise could become a good health habit. However, there is a need to promote a safe environment for the kids that would decide to walk.
>
> *- Wharton Public School Parent*

APPENDIX I: EXISTING CONDITIONS ANALYSIS

Analyses

Speed Analysis

A speed analysis was conducted within the school routes. Several areas showed that 25 percent or more vehicles exceed the speed limit daily. East Stirling Street and Wabash Avenue are thoroughfares used by locals traveling within a high residential area.

East Central Avenue, which showed 25 percent or more vehicles exceeding the speed limit, as well as 10 percent or more exceeding the speed limit by 20 mph or more is a newly paved, widened street between Main Street and Route 46 in Dover. The schools are located on East Central Avenue, halfway between Main Street and Princeton Avenue, which ends at a traffic light on Route 46. East Central Avenue is used as a shortcut to Route 46 since access to Route 46 via South Main Street is often congested.

Washington Street and Fern Avenue are also used as a shortcut from the north side of town, where the main shopping areas are toward a highly residential area, as well as toward Route 46. Fern Avenue and Washington Street are two-lane residential streets, but heavily traveled.

North Main Street is a direct route from Route 46 in Dover to Route 80 E/W, Route 15 N/S, Picatinny Arsenal, Rockaway Mall, and the busy intersection of ShopRite/Costco/Busy Lady Plaza. This heavily traveled area, shown to have speeding, is an open area of Main Street where it is easy to pick up speed either leading into or out of the main downtown area. **(See Figure 3)**

Accident Summary

Accident reports for the Borough of Wharton for the three years between 2003-2006 were reviewed and summarized according to area and time. Specific times listed were between 7:00 a.m. and 8:30 a.m. and between 3:00 p.m. and 4:00 p.m. These times are relative to school hours and children walking to school, since busing is not available within the Borough.

A total of 76 accidents occurred during the 7:00 a.m. and 8:30 a.m. time frame. There were 81 accidents during the 3:00 p.m. and 4:00 p.m. time frame, three of which involved pedestrians.

A pedestrian accident took place at South/North Main Street and East/West Central Avenue, which also had eight other accidents during the specified times. The Main/Central intersection is an extremely busy intersection in the center of downtown with no traffic light. Businesses are located at each corner, the schools are located on East Central Avenue, and the Municipal/Police/Fire Headquarters are located on West Central Avenue.

The other pedestrian accidents occurred at East Dewey Avenue/Huff Street and Burns/Pine Street. East Dewey Avenue is a major street between North Main and Route 15. It is the access road to the shopping center area, which includes Shop Rite, Costco and the Busy Lady Plaza.

East Dewey Avenue is an extremely congested street at most times of the day. The highest number of accidents during that time (38) in the Borough occurred at the East Dewey Avenue and Route 15N/S intersection. A merging lane from East Dewey Avenue onto Route 15 is a source of accidents. At the East/West Dewey Avenue and North Main Street intersection, there were 6 accidents during the time frame. Again showing that Dewey Avenue in either direction is an area of high accident rates.

Another accident-prone area is North Main and Harry Shupe Blvd/Washington Street. There were 13 accidents at Harry Shupe Blvd and nine at Washington Street during the times studied. This area is extremely dangerous and is a walking route to the schools. Truck traffic into these industrial centers at these intersections is high. Harry Shupe Blvd and Washington Street are within one block of each other. Washington Street is between North Main and Fern Avenue. Fern Avenue is a direct street to the schools ending at the schools property on East Central Avenue. Four accidents occurred on Fern Avenue during the specified times at different cross streets.

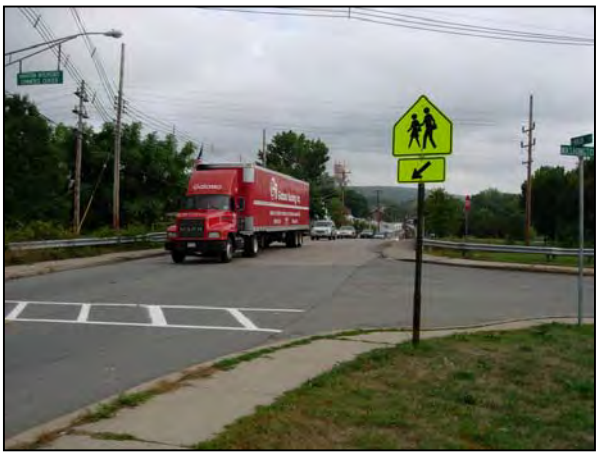
The South Main Street area experienced accidents but at a lower rate than the North Main Street area. Accidents at the intersections of South Main Street and Route 46/St. Marys Street/Hance Street/ Orange Street were the highest areas for accidents.

In summary, North & South Main Street connects Route 46 and Route 15 and is highly traveled. Main Street is an access route to Picatinny Arsenal (military base with large civilian work force), Rockaway Mall (off Route 15), industrial complexes, and shopping centers (Shop Rite, Costco, etc.). Intersections and cross streets are busy and many streets experience high traffic and truck volume. (See Figure 4 and Figure 5)

Truck Traffic Analysis

An analysis of truck traffic was conducted in certain school route areas. West Central Avenue near Main Street was shown to have 10 to 20 percent truck traffic. The Borough Garage, which houses all garbage trucks and heavy equipment, uses West Central Avenue to access Main Street and therefore most areas of the Borough. West Central ends at West Dewey Avenue, where the County Garage is located. Truck traffic from both the Borough and county garage use West Central Avenue extensively. With access from Route 46 in the Roxbury area, West Dewey is a direct route to Wharton with West Central being the shortest route to Main Street. The police, ambulance and fire headquarters are located in the designated areas, again producing truck traffic.

Truck traffic in excess of 20 percent or more was detected on East Central Avenue. East Central Avenue is a newly paved, widened street with direct access between Route 46 and Main Street. From a section of Route 46 where traffic is congested, there is a cutoff onto Princeton Avenue, which leads directly to East Central. Trucks use this shortcut to access North Main Street, thereby avoiding backups on Route 46. With North Main Street a direct route to Route 80 E/W, Route 15 N/S, industrial complexes and several shopping areas, truck traffic through the East Central Avenue area could be excessive. **(See Figure 6)**



Inventories

Sidewalk

Wharton Borough has a fairly complete sidewalk network. The sidewalks along the current routes to school and several other corridors were inventoried to document existing sidewalks and gaps in the sidewalk network along the school routes. (See Figure 7)

Roadway

Roadways throughout the current routes to school and several other corridors were evaluated to document the pavement width and various other conditions. This information is valuable in assessing the compatibility for bicycle traffic and planning what types of treatments can fit within the existing cartway, as detailed later in this report. Roadway cross-section data collection was performed at the following locations:

- North Main Street between Dewey Avenue and Jackson Avenue
- North Main Street between Dewey Avenue and Washington Street
- Washington Street between Fern Avenue and North Main Street
- Fern Avenue between Main Street and Lafayette Street
- Lafayette Street between Fern Avenue and East Central Avenue
- East Central Avenue between Lafayette Street and Princeton Avenue
- Baker Avenue between Stickle Avenue and Princeton Avenue
- Sterling Street between Wabash Avenue and Stickle Avenue
- Wabash Avenue between Baker Avenue and Summit Avenue
- Orange Street between Summit Avenue and Downs Avenue
- Stickle Avenue\Denison Way between East Central Avenue and Sterling Street
- Sterling Street between Stickle Avenue and South Main Street
- Baker Avenue between Stickle Avenue and Thomas Street
- Central Avenue between Lafayette Street and Main Street
- Sterling Street between Main Street and Port Oram Drive

- Port Oram Drive between Sterling Street and Lowery Avenue
- Central Avenue between Main Street and Burns Street
- Burns Avenue between Central Avenue and Pine Street

Students also participated in assessing the roadway conditions. To quantify the roadway measurements field, inventory forms were completed. This helped document the width and condition of the sidewalk, buffer, curb, roadway and various corridor conditions. Completing these forms introduced the students to the documentation process, and gave them an appreciation for the variances in the roadway environment.

Signal Timing and Accessibility

Pedestrian crossing time was field verified at signalized intersections in the vicinity of the Wharton Schools, and found to be adequate (for a child pedestrian walking rate of 3ft/sec) in all directions and approaches (Table 1). This assessment helps to determine if there is adequate time allocated for pedestrians to cross each roadway during the appropriate signal phase.

Intersection Name	Crosswalk Width (Feet)	Ped. Phase Actual (Seconds)	Ped. Phase Req'd (Seconds)	Timing Adjustment? (Yes/No)
North Main Street & Dewey Avenue				
Crossing Main Street	47	20	19	NO
Crossing Dewey Avenue	51	28	20	NO

Note – A rate of 3 ft/sec plus 3 seconds reaction time was utilized as the child pedestrian walking rate

The crossing time data demonstrates that there is adequate time for a pedestrian to cross Main Street alongside the traffic traveling on Dewey Avenue, and to cross Dewey Avenue along Main Street traffic. The conflict between pedestrians walking along a street and motorized traffic turning left or right from that street is not factored into this assessment, which assumes that drivers will yield the legal right of way to pedestrians.

Lighting

The presence or absence of on street lighting was also documented in the roadway inventory. Lighting that is present along roadways throughout Wharton is typically overhead cobra-style lights that focus their illumination on the roadway. There are portions of the sidewalk network that are illuminated by these lights, however the roadway area is the focus of the existing lighting fixtures.

Assessments

Traffic Counts

In order to facilitate further assessments, traffic count data was collected from Morris County. The following numbers were recorded:

Roadway	Peak Hour Traffic Volume	
	AM	PM
Main Street (between Ross St. & Washington St.)	854	1016
Washington Street (between Main St. & Fern Ave.)	101	122
Fern Avenue (between Church St. & Curtis Ave.)	44	65
Baker Street (between Michigan St. & Princeton St.)	51	78
Wabash Street (between Columbia St. & Summit Ave.)	28	33
Stirling Street (between Division St. & LaFayette St.)	68	71
Stirling Street (between Roberts St. & Main St.)	41	97
Central Avenue (between Burns St. & Main St.)	211	210
Burns Street (between Central Ave. & Pine St.)	46	55

Note: *Hourly traffic volumes, classification of vehicle type, and travel speed in formation is available from Morris County.*

Walkability

Students assessed the condition of sections of the walking routes utilizing a checklist developed by the Pedestrian and Bicycle Information Center to determine what locations were and were not walkable. Each of the route assessments yield a number result, which can range between 5 and 30. The consultant staff also completed these same assessments for the entire school route corridors. The students generally ranked the roadways a bit higher than the consultant staff, who were more conservative in their assessments. (See Figure 8)

The Walkability of each of the identified routes to school are summarized in the following table:

Corridor	Location	Rating
Baker Avenue	Between Stickle Avenue to Princeton Avenue	22
Stickle Avenue	Between East Central Avenue & Sterling Street	19
Washington Street	Between Fern Avenue & Lafayette Street	18
Wabash Avenue	Between Baker Avenue & Summit Avenue	18
Sterling Street	Between Port Oram Drive & Wabash Avenue	18
East Central Avenue	Between Main Street & Lafayette Street	18
Main Street	Between Landon Avenue & Washington Street	13
Burns Avenue	Between West Central Avenue & Pine Street	18

Note: The Walkability rankings have generalized ranges of how the assessment "stack up" that are as follows:
5 – 10: Very poor "Oh Dear. Consider wearing body armor and Christmas tree lights before venturing out again."
11 – 15: "It needs lots of work. You deserve better than that."
16 – 20: "Okay, but it needs work."
21 – 25: "Celebrate a little. Your neighborhood is pretty good."
26 – 30: "Celebrate! You have a great neighborhood for walking."

Bikeability

The compatibility of the roadways along the identified and considered routes to school have been assessed using the New Jersey Bicycle and Pedestrian Master Plan evaluation tools, which yield a general bicycle compatibility measure. Corridors can be compared to alternative routes within the school commute area for deciding the recommended routes to school. This also allows a comparison between the existing condition, and any design concepts being considered to enhance the route to school, such as striping bicycle lanes along the roadway. (See Figure 9)

The following table summarizes the results of the assessment:

Street	Bicycle Compatibility (BCI)	Level of Service (LOS)	Suitability for Bike Use
1. North Main Street	3.15	C	High
2. North Main Street	3.45	D	Medium
3. Washington Street	3.23	C	High
4. Fern Avenue	3.30	C	High
5. Lafayette Street	3.15	C	High
6. East Central Avenue	2.59	C	High
7. Baker Avenue	1.29	A	High
8. Sterling Street	2.55	C	High
9. Wabash Avenue	2.52	C	High
10. Orange Street	2.96	C	High
11. Stickle Avenue/Denison Way	2.41	C	High
12. Sterling Street	2.73	C	High
13. Baker Avenue	2.96	C	High
14. Central Avenue	3.04	C	High
15. Sterling Street	3.03	C	High
16. Port Oram Drive	2.76	C	High
17. Central Avenue	2.98	C	High
18. Burns Avenue	3.36	C	High

Note: The BCI The Bicycle Compatibility Index (BCI) rates the suitability of the roadway for bicyclists based on lane widths, volumes and other factors at a roadway link level.

- *Higher Value Indicates Poor Level of Service (LOS)*
- *Lower Value Indicates Good Level of Service*
- *BCI Increases for Lane Widths, Shoulders and Residential Area (Improves LOS)*
- *BCI Decreases with Traffic Volumes, Parking, Speed and Trucks (Decreases LOS)*

Time Radius Map

Students walked from the school out along identified walking routes and noted how far they got at five, ten and fifteen minute intervals. The three teams headed different directions from the school property. By marking these results on a map, rough walking time radii were displayed on one aggregate map. This was useful in determining total area of town that is within various walking times from the school. **(See Figure 10)**

Student Camera Exercise (Good/ Bad/ Ugly).

A student volunteer photographer and a note keeper were paired to document the elements on a walk along identified school routes that struck them as either good for walking, bad for walking or anything else that might affect their decision to walk to school. The students took photos and kept notes on the photos taken. These student insights were used during the public visioning meeting and throughout the project. (See Figure 11)

Previous Studies and Plans

Wharton Borough has produced a *Master Plan* (1994), *Open Space Element* (2001) and *Periodic Reexamination of the Master Plan and Land Use Plan* (2005). Each of these documents contains information that was helpful in understanding the geographic and demographic context of Wharton, in addition to the Borough's vision for the future. Several on-going design and construction projects in Wharton affect the school commute areas or plan implementation, including:

- East Central Avenue Roadway Reconstruction Project – This project incorporates the section of East Central Avenue between Lafayette Street and Cornell Street, and Stickle Avenue between East Central Street and Baker Avenue. The project proposes reconstruction of the roadway, sidewalks, curb ramps, crosswalks and driveway aprons.
- Duffy Elementary School Campus Enhancements – This project will reconfigure the front yard area of the Duffy Elementary School, including removal of existing sidewalks and construction of new sidewalks that the align with the proposed crosswalk across East Central Avenue at Stickle Avenue.

APPENDIX II: ENVIRONMENTAL SCREENING

A Geographic Information Systems (GIS)-based preliminary Environmental Screening has been conducted for the Wharton Borough Safe Routes to School project, at the request of the Morris County Division of Transportation Management. This screening was conducted for the purpose of identifying potential "fatal flaws" that may impede proposed improvements to the route areas, as currently proposed. This screening and mapping effort was also conducted to 1) provide a visual representation of environmentally sensitive areas as well as 2) aid in the identification of potential regulatory requirements.

The following is a summary of those environmental constraints that were assessed as part of this preliminary environmental screening process. Applicable data has been graphically presented on Topographic Mapping and Environmental Constraints Mapping, respectively.

Please note that no field investigation was conducted by RBA to verify any of the following represented NJDEP GIS mapped environmental constraints. It should be noted that future field studies may identify environmental constraints not previously identified on the enclosed mapping.

Wetlands. Wetlands are those areas that contain the three biological parameters of hydric soil, hydrophytic vegetation and the presence of hydrology as defined by the New Jersey Freshwater Wetlands Protection Act Rules, N.J.A.C. 7:7A-1.4 and as outlined in the methodology set forth in the Federal Manual for Identifying and Delineation Jurisdictional Wetlands. Based upon review of the New Jersey Department of Environmental Protection (NJDEP) GIS mapped wetland data, it appears wetland areas present are mapped as palustrine systems and vary in vegetation cover type from emergent, scrub/shrub and forested. General locations of wetland areas are depicted on the enclosed Environmental Constraints Map, Figure 2.

Surface Water. Water quality classifications are set forth in the State of New Jersey Surface Water Quality Standards, N.J.A.C. 7:9B. Watercourses identified through the investigation of mapped streams by the NJDEP GIS and the applicable USGS 7.5 minute quads within the Borough included the following:

Name	Location	Water Quality
Spring Brook	southwestern border	FW2-TPC1
Rockaway River (main stem)	middle of the Borough, through Washington Pond	FW2-NT
Green Pond Brook	northeastern border	FW2-NT
Rockaway River	eastern border	FW2-TMC1

Water quality classification is used to assist in determining potential wetland transition area buffer widths, as well as for certain environmental and engineering standards for potential Flood Hazard area permitting requirements.

FW2 is the general classification given to all waters of the United States. NT is the classification to all waters not supporting native trout populations. TM is the classification given to waters that have supportive Trout Maintenance habitat. TP is the classification given to waters that have supportive

Trout Production (breeding) habitat. C1 means Category One waters (those waters designated for protection from measurable changes in water quality characteristics and originating wholly within Federal, state, interstate, county or municipal parks, forests, fish and wildlife management lands and other special holdings. Category one waters also hold special protection when being applied to both Flood Hazard area and Stormwater Management regulations.

Floodplain Constraints. In accordance with New Jersey Flood Hazard Control Act Rules, N.J.A.C. 7:13, a floodplain is defined as the area inundated by the regulatory flood including the watercourse that creates it. The regulatory flood includes the 100-year flood along non-delineated watercourses or the Flood Hazard Area Design Flood along delineated watercourses. Due to the preliminary nature of this screening, the FEMA GIS Floodprone areas layer was utilized to determine if the Borough contains any mapped 100-year or 500-year floodplain areas.

According to the FEMA GIS mapping, there are several 100-year and 500-year floodplains within the Borough. These areas are mostly associated with the main stem of the Rockaway River, which traverses the middle of the Borough and the watercourse along the southeastern border.

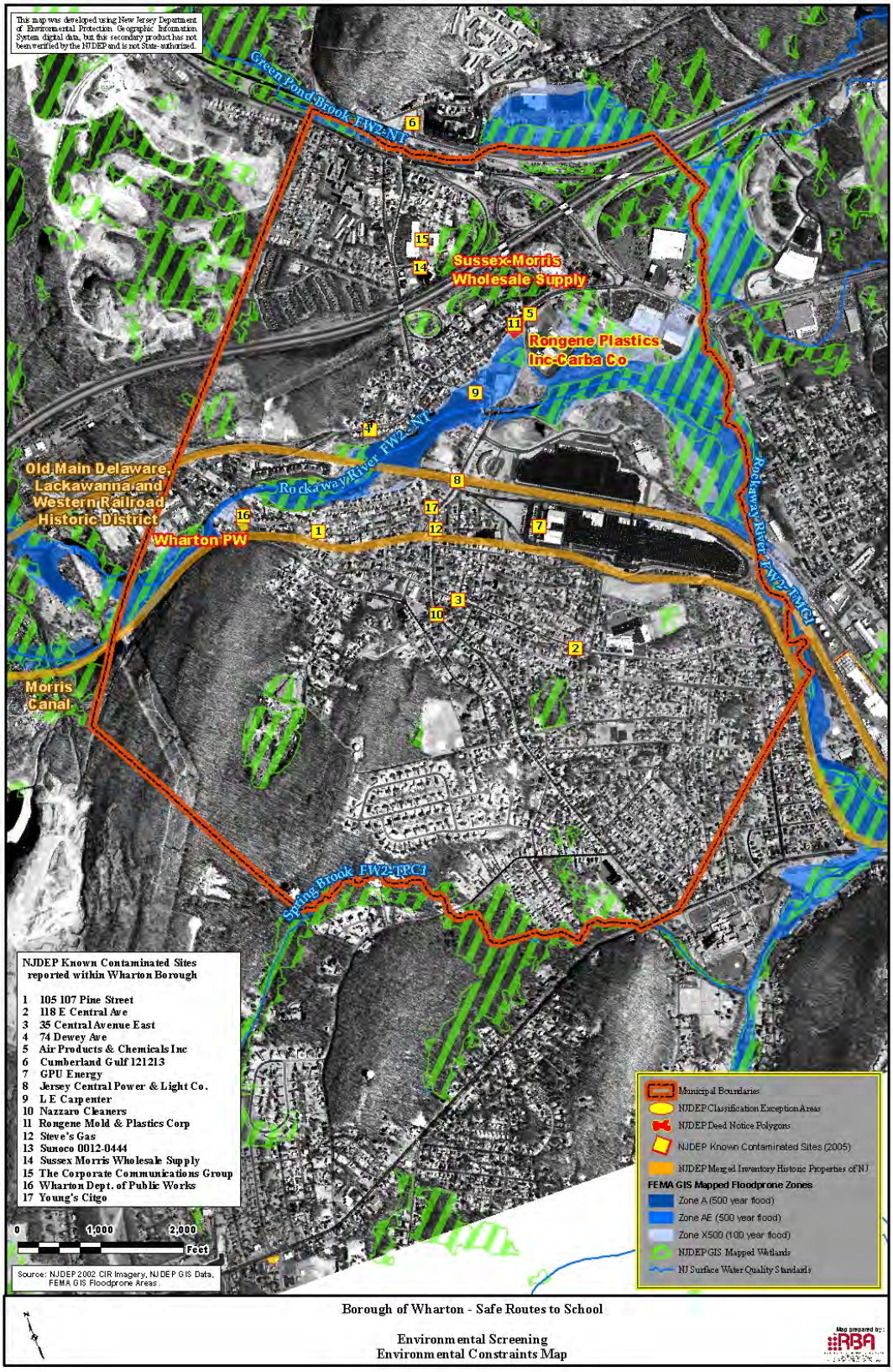
Hazardous Waste. RBA has reviewed several GIS data sources to determine the mapped presence of any Known Contaminated Sites (KCS). This data includes both point locations (KCS) and specifically defined areas (Classification Exception Areas, Deed Notice Polygons). All data reviewed under this constraint has been generated by the NJDEP.

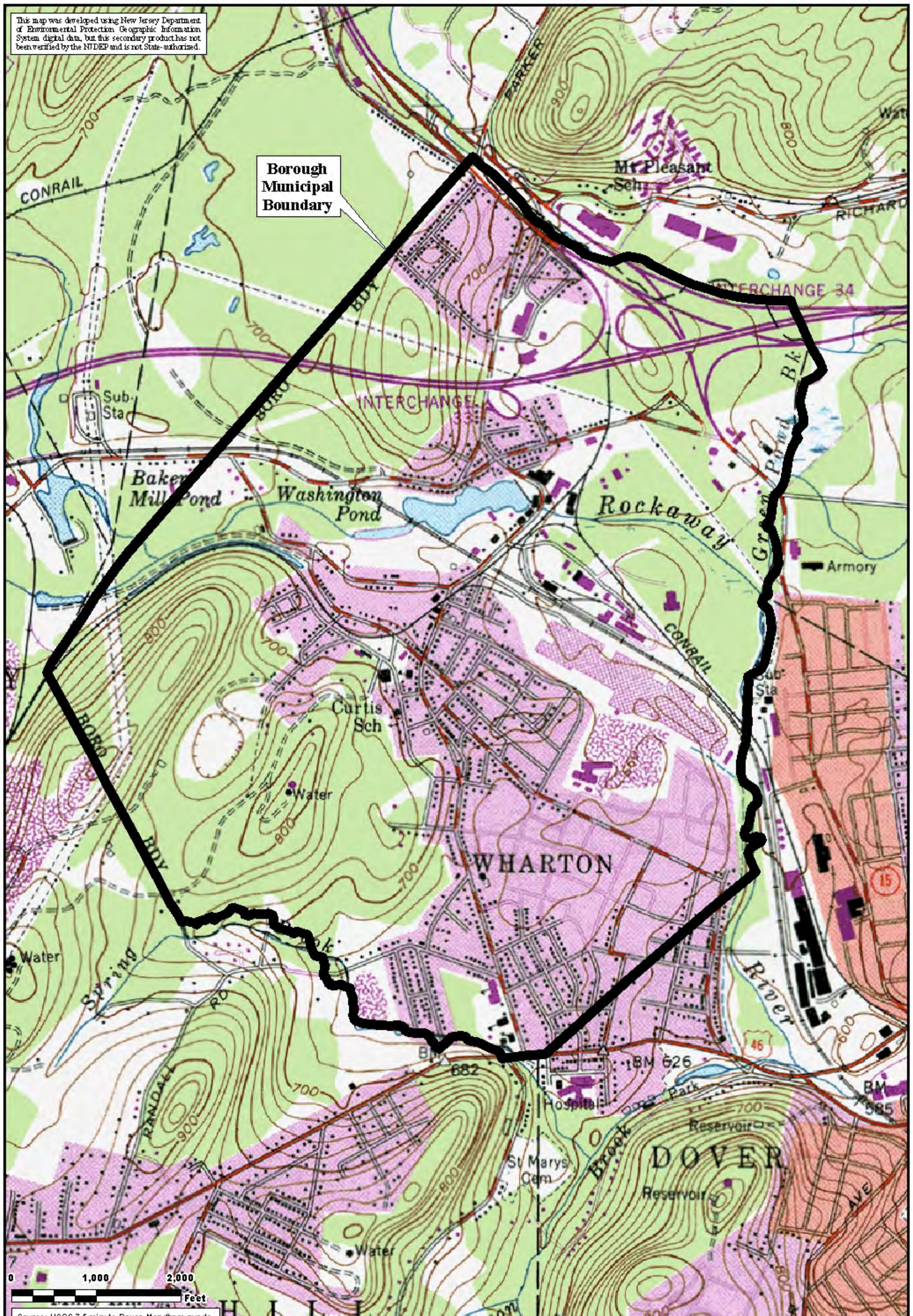
According to the KCS, there are approximately 17 sites having addresses listed within the Borough. Mapping reveals 15 sites actually located within the boundaries of the municipality (see the attached Environmental Constraints Map for locations). Three (3) separate sites have associated specifically defined areas.

Two (2) Classification Exception Areas are mapped within the Borough: the Wharton PW (near KCS 16) and Sussex Morris Wholesale Supply (near KCS 14). Within these areas, the NJDEP has identified groundwater contamination and, where appropriate, the has established a Classification Exception Area (CEA). CEAs are institutional controls in geographically defined areas within which the New Jersey Ground Water Quality Standards (NJGWQS) for specific contaminants have been exceeded. When a CEA is designated for an area, the constituent standards and designated aquifer uses are suspended for the term of the CEA.

One (1) Currently Known Extent (CKE) area has been identified within the Borough: Rongene Plastics Inc – Carba Co, near KCS #11. CKE areas are geographically defined areas within which the local ground water resources are known to be compromised because the water quality does not meet drinking water and ground water quality standards for specific contaminants.

Project construction could potentially disturb contaminated sites or underground storage tanks, causing hazardous conditions. Consequently, the exact locations of any underground storage tanks and hazardous sites should be confirmed through a more detailed hazardous waste screening in accordance with current County or other appropriate criteria.


This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by the NJDEP and is not State-authorized.
Green Pond Brook FW2-NT
Sussex-Morris Wholesale Supply
Rongene Plastics Inc-Carba Co
Old Main Delaware, Lackawanna and Western Railroad Historic District
Rockaway River FW2-NT
Wharton PW
Rockaway River FW2-TM(C)
Morris Canal
Spring Brook FW2-TPC1
NJDEP Known Contaminated Sites reported within Wharton Borough
1 105 107 Pine Street
2 118 E Central Ave
3 35 Central Avenue East
4 74 Dewey Ave
5 Air Products & Chemicals Inc
6 Cumberland Gulf 121213
7 GPU Energy
8 Jersey Central Power & Light Co.
9 L E Carpenter
10 Nazzaro Cleaners
11 Rongene Mold & Plastics Corp
12 Steve's Gas
13 Sunoco 0012-0444
14 Sussex Morris Wholesale Supply
15 The Corporate Communications Group
16 Wharton Dept. of Public Works
17 Young's Citgo
0 1,000 2,000 Feet
Source: NJDEP 2002 CIR Imagery, NJDEP GIS Data, FEMA GIS Floodprone Areas.
Municipal Boundaries
NJDEP Classification Exception Areas
NJDEP Deed Notice Polygons
NJDEP Known Contaminated Sites (2005)
NJDEP Merged Inventory Historic Properties of NJ
FEMA GIS Mapped Floodprone Zones
Zone A (500 year flood)
Zone AE (500 year flood)
Zone X500 (100 year flood)
NJDEP GIS Mapped Wetlands
NJ Surface Water Quality Standards
Borough of Wharton - Safe Routes to School
Environmental Screening
Environmental Constraints Map
Map prepared by: RBA



Borough of Wharton - Safe Routes to School

Environmental Screening
Topographic Map

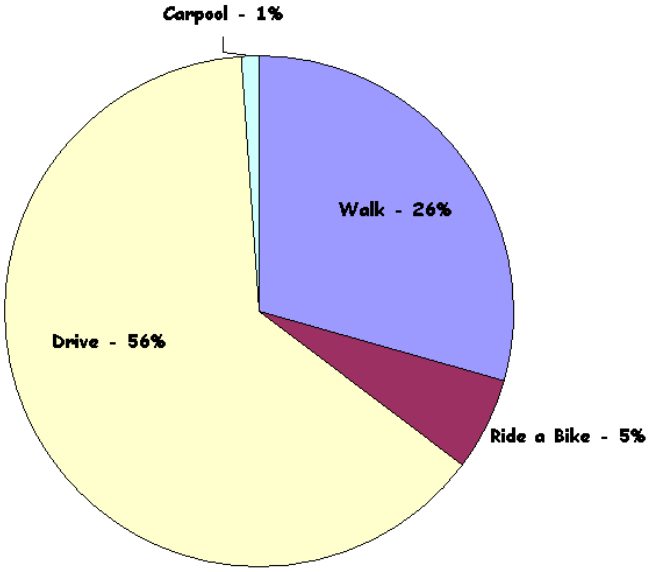
Map prepared by: RBA

APPENDIX III: SURVEY RESULTS

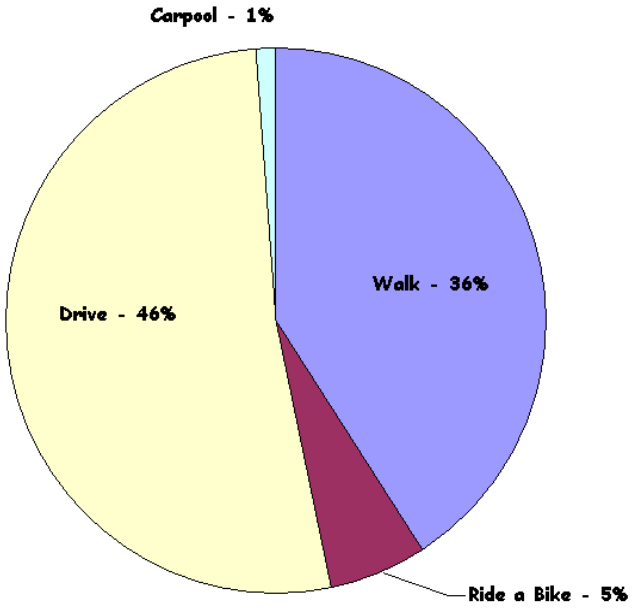
Parent Surveys

Parent surveys sought to discover what types of programs would help parents become more comfortable allowing their children to walk or bicycle to school. A letter containing the web address for the parent survey was sent home to parents of all Duffy and MacKinnon students, levying a total of 80 responses. The following graphics depict complete results of the parent surveys.

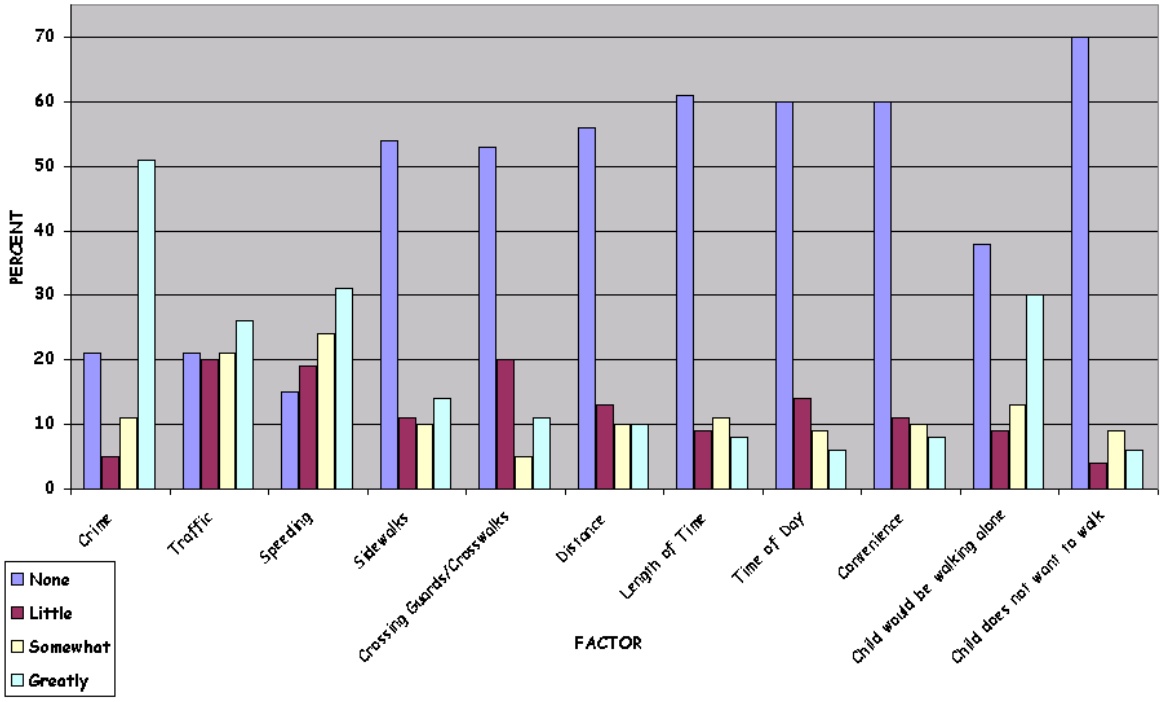
1. How does your child usually get to school in the morning?



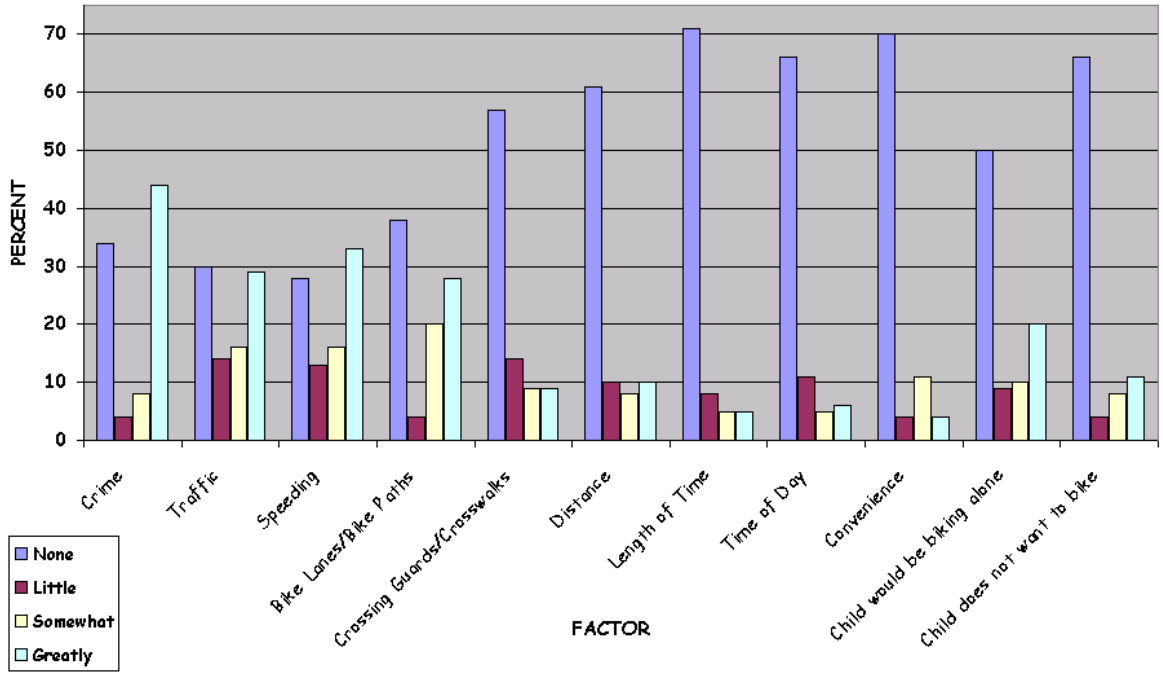
2. How does your child usually get home in the afternoon?



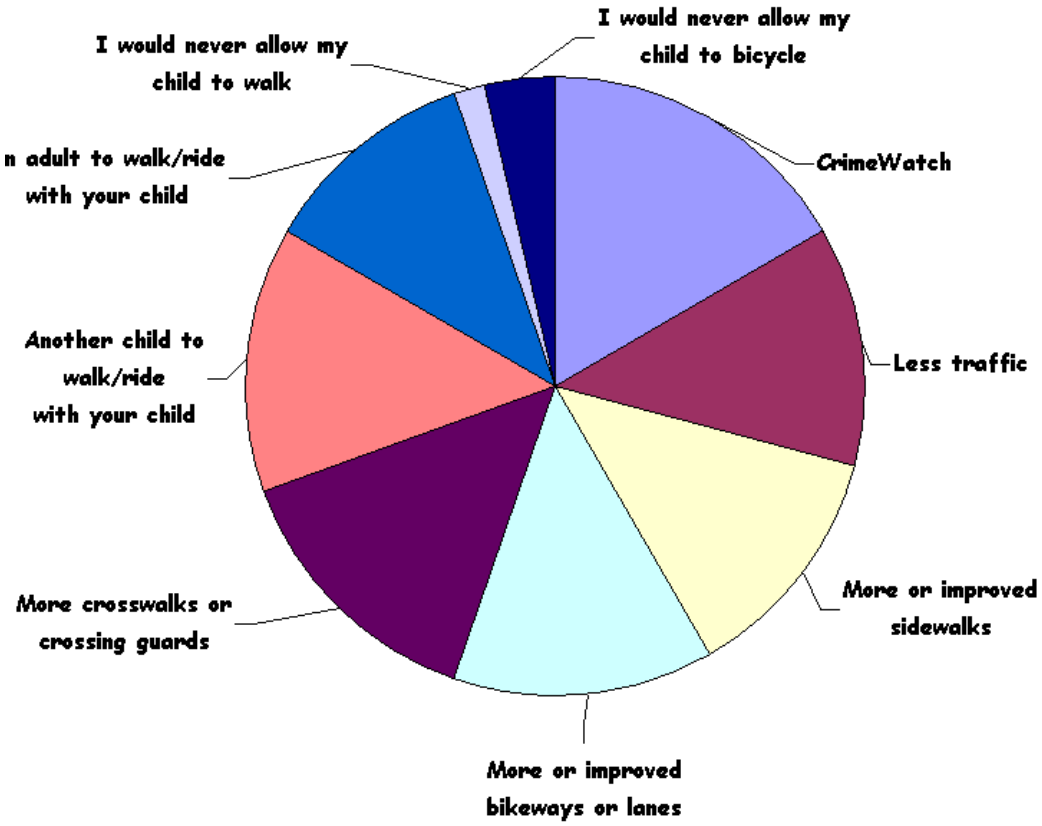
3. Level of concern about your child WALKING to/from school for factors that affect the commute



4. Level of concern about your child BIKING to/from school for factors that affect the commute



5. What would make you more comfortable with your child walking/bicycling to or from school?



Additional survey responses included:

- How Far do You Live From School?
  - Average blocks – 4.41
  - Average miles – .99
- Are you aware that there are designated walk to school routes in Wharton Borough?
  - Yes – 73 percent
  - No – 16 percent
- What grade is your child in?
  - Kindergarten – 5 percent
  - First – 8 percent
  - Second – 8 percent
  - Third – 10 percent
  - Fourth – 7 percent
  - Fifth – 8 percent
  - Sixth – 9 percent
  - Seventh – 8 percent
  - Eighth – 5 percent

Parents also made additional comments on their surveys. They included:

Convenience

- Since we are always rushed for time in the morning it is easier to drop my son off. If needed he could definitely walk or bike to school and I would not be concerned. I feel it is safe.
- As I am able to take my kids to school, walking/biking to school is not an issue.
- Sometimes we drive to school if there are major things to bring to school.
- It's just so much easier for me in the morning to drive them to school. If I didn't they would have to get up 20 minutes earlier.
- My child walks during fall and spring; in the winter it is easier to drop her off/pick her up
- We live in Stirling Heights; I believe that is too far to let my child walk and/or bike to school

Crossing

- There should be more crossing guards.
- I would like to see a crosswalk in front of the school and one on Stickle at the E. Central end near the front of school. The crossing guard is there but its concerning that there is no painted crosswalk.
- Crossing Main St. even with a crossing guard is not an option at this point.
- Another crossing guard on the corner of Sterling Street directly across from the park would benefit our children as speeding tends to occur on this street. I would be willing to let my children walk from school to Sterling Street park and I would meet them there for the remainder of our trip home, if the sidewalks were fixed and there was that extra crossing guard on the corner.
- There are no crossing guards on our side of town near Princeton/Michigan/ Atlanta/Cornell/Eileen or even someone to patrol for safety.
- The crossing guards are inadequate and do not stay at their assigned posts.

Facilities

- There are no bike paths/designated lanes and sidewalks are in need of much repair.
- The bicycle rack at our school is full to capacity in good weather.
- I would like to see a bicycle route in town from one end to the other. I live at the bottom of Princeton Ave, and we aren't usually included because we are almost in Dover.
- My children are unable to walk without one of the kids tripping and it usually winds up that we have to walk in the street.
- There are no ramps exiting Sterling Street Park on the Sterling Street side and for those of us who have baby carriages, it is a nuisance to have to hop over the curbs to get across.
- When I am not working we walk to school. I would not let them walk by themselves ever because the crosswalks at some of the intersections are not clearly labeled. Also the sidewalks in front of some houses are often blocked, especially with ice and snow and overgrown bushes.
- My student is not ready to ride her bicycle for such a long way to school since a safe bicycle route is an issue on Main Street.
- I am happy with my town's sidewalks.

Personal Safety

- There is at least one convicted criminal that lives on Main Street, close to the school and us.

- My son walks on nice days, but he walks alone, which sometimes concerns me. He is responsible, yet he is very outgoing and I always wonder and worry about the power of being persuaded.
- I don't feel it is safe for a child to walk or ride a bike alone to school. I like knowing that my child gets to school and home safely via drop off and pick up by an adult. Perhaps if there was a neighbor hood watch or safe houses along the route I'd reconsider, but it is doubtful.
- A way to ensure safety would be the promotion of a "buddy system" where kids living in the close proximity and perhaps their parents who have the opportunity to be available during the school "commute hours" could be put in touch and encouraged to form a walking team.

Traffic Safety

- A concern is speeding near the schools, especially on Lafayette, Baker and East Central.
- We live at the end of town and would have to walk quite a distance; it would take too long. Also, the route we would have to walk is very congested with too much truck traffic.
- There are too many speeding cars and trucks on our route to school; there is not enough monitoring of speed limits during school and after school hours.
- Cars on Baker and Central often travel well over the speed limit.
- Cars travel too fast on Central Ave & Lafayette St. Many cars do not yield to pedestrians.
- There is not enough monitoring of traffic during walking times to and from school. Cars and trucks drive way too fast on roads near the school.
- There's always traffic on Dewey Ave. and, which is difficult to avoid during rush hours. Hopefully, these pedestrian/bicycle routes will be a big success.

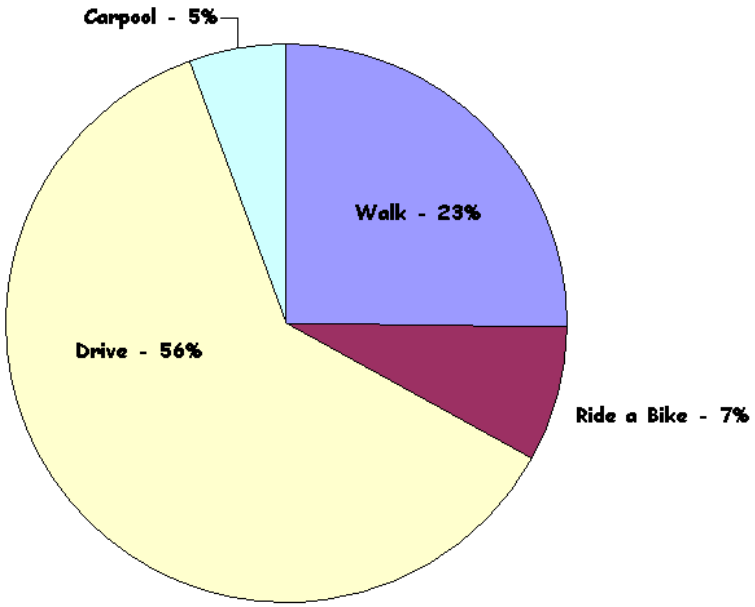
Miscellaneous

- Adults drop their children off without parking the car. Others go out of the parking lot without looking for children getting out of another car.
- This is not a priority for Wharton – too many construction projects have diverted safety patrols away from the children to the adult needs.
- I am pleased with the program as well as the advertising and information the school has provided for the parents.
- I've spoken with my daughter about the pros and cons of walking/bicycling. With a heavy school schedule and other after school activities she is usually too tired to even think of walking to school in the mornings.
- Most students have been driven to school from Kindergarten so they're used to the luxury of a few minutes of extra sleep, and the security that comes with being dropped off.
- It is a great idea to promote walking and/or biking to and from school especially for children who live in a very close proximity. A few minutes out in the fresh air before and after all day in school, and a little exercise could become a good health habit.
- It's my student's wish to ride her bike to school, but her activities – Band, Chorus and Soccer– will make her too busy for riding a bike all day long
- Elementary and Middle schools should not be dismissed at the same time. There should be a lag time of approx 30-45 minutes. This may ease up on congestion at the schools.
- One concern is bikes being stolen. Need to have some kind of security for the bikes.

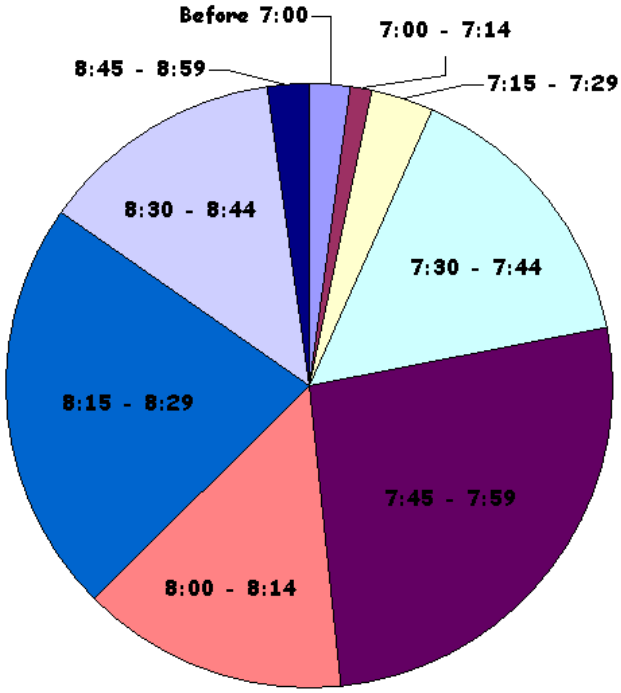
Student Surveys

During their Computer Applications classes, approximately 500 students in grades 2-7 took the surveys, which aimed to gauge a child's perspective on walking and/or biking to school. The following graphics depict complete results of the student surveys.

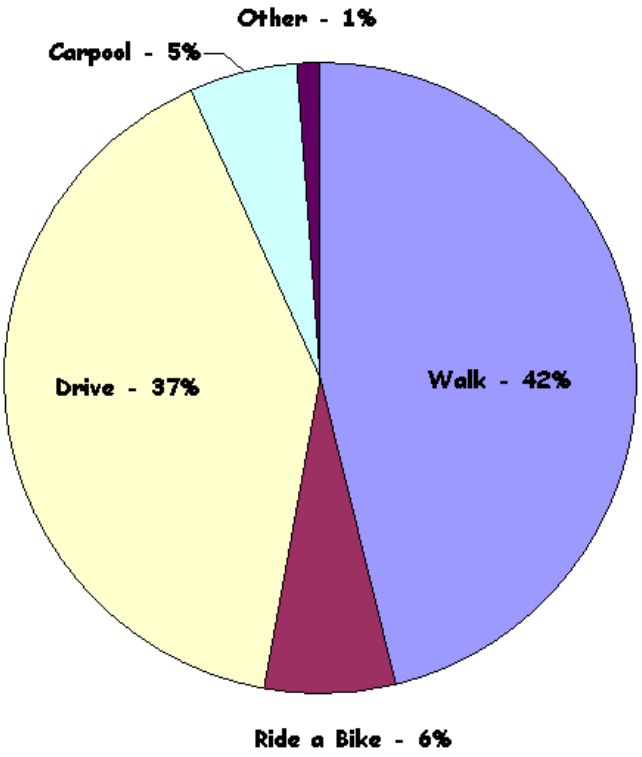
1. How do you USUALLY Get to School in the Morning?



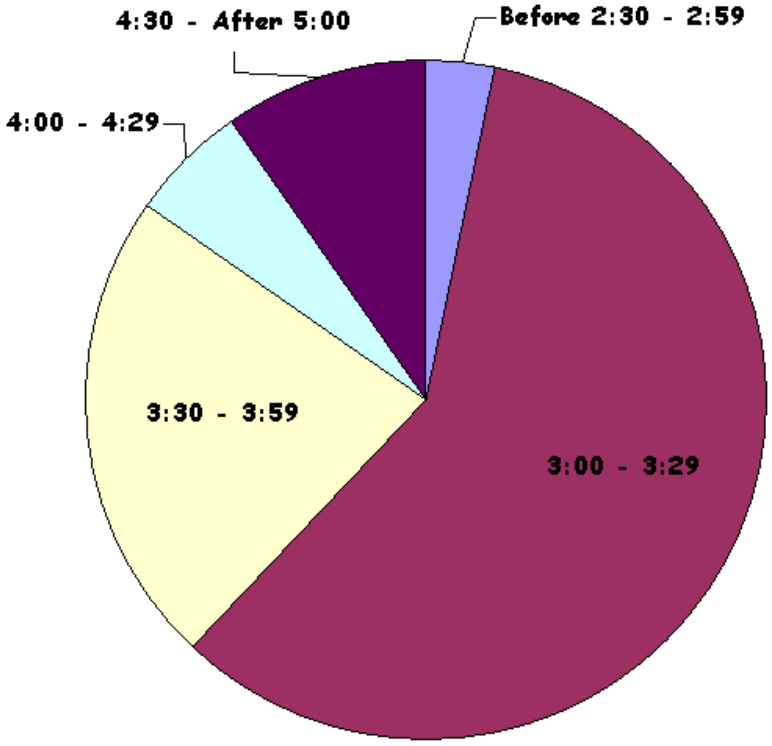
2. What Time Do You USUALLY Get to School in the Morning?



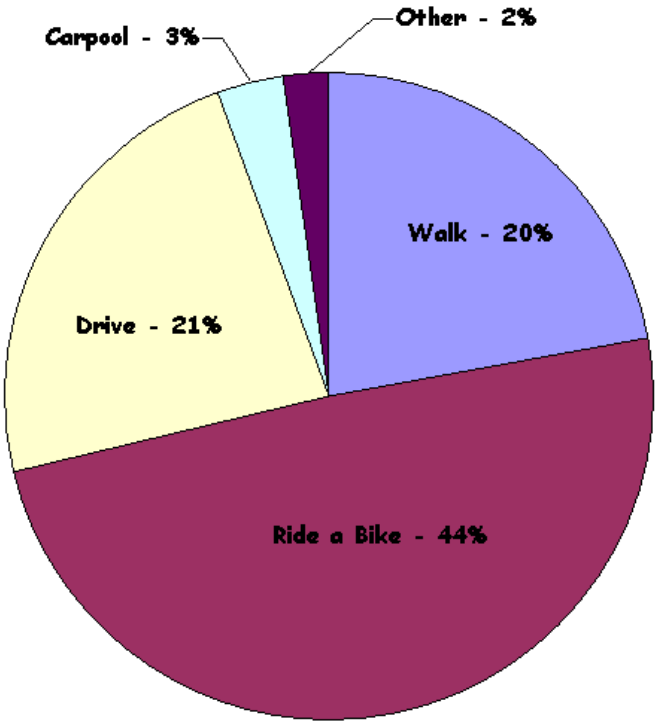
3. How do you USUALLY Get Home in the Afternoon?



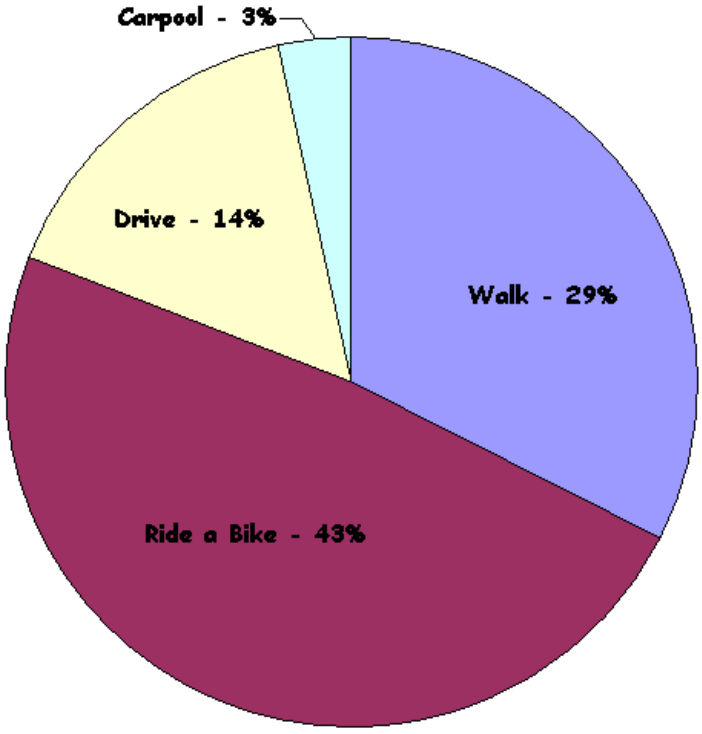
4. What Time Do You USUALLY Get Home in the Afternoon?



5. If You Had a Choice, How Would You Get to School in the Morning?



6. If You Had a Choice, How Would You Get Home in the Afternoon?



Students also made additional comments on their surveys. They included:

Convenience

- My backpack gets really heavy. (3)
- I go to the YMCA after care so it was sort of hard to answer some of the questions
- We should ride our bikes when it's sunny.
- Sometimes I walk home, but most of the time my mother drives me because she works in the school.

Crossing

- What would happen if you didn't cross the cross walk?
- I sometimes ride my bike to school but I always walk because my mom can't take me to school. Whenever it is raining or if it is too cold, my uncle takes me to school.
- I would like to be able to walk to school in the morning, but I am not able to get up early enough to be able to get to the early programs like band and chorus. I would like to walk, but I feel the programs are to early in the morning to be able to walk.

Facilities

- Some of the sidewalks are in very bad condition and there are a lot of cars or trucks.
- We should have designated lanes for bicycle riders!

Personal Safety

- When I'm walking home the older kids usually tell me to do something and I do it because I'm afraid of what they'll do to me.
- It is scary to walk to school in this non-safe town

Traffic Safety

- I wish I could bring my bike to school but my parents do not let me bring my bike to school because they think I will get hurt.
- I don't have a helmet (2)
- Can you put a traffic light or a cop on Main Street so I can get across faster?

Miscellaneous

- I think it's a good thing to walk to school because then you're ready for class.
- I think it would be good to ride on a bike because it helps you to get muscles.
- I would like to walk to school and ride a bike to school too.
- I do not enjoy driving in a car to school.
- I think people are getting fatter because kids are getting driven to school and home.
- My parents say that next year they will let me walk to school with my brother
- I ride my bike to school. I like it a lot.
- I would like to rollerblade to and from school
- This survey makes you think how other people get to school, which is a good thing to think about.
- I think bikes are the best. I ride my bike everyday. To School and from. My dad just bought me a new BMX bike and it rides very good. Everyday I ride it with my friends. I enjoy going off ramps.

APPENDIX IV: WHARTON SRTS STRATEGY MEETING MINUTES

TAC Meeting #1 – August 29, 2005

In attendance were: Rick Bitondo – Wharton Superintendent of Schools, Vince Binkowski – Wharton Councilman, Peter Weigly – Wharton School Business Administrator**,** Alan Bocchino – Wharton School Supervisor of Curriculum, Chris Herdman – MacKinnon Middle Principal, Jon Reinhardt – Wharton Borough Administrator, David Young – Wharton Borough Councilman, Susana Matos-Kruck – Duffy Elementary Principal, Anthony Fernandez – Wharton Chief of Police, Jerry Bernotas – Wharton Police Department, Deena Cybulski – Morris County DOT, and Patrick Franco – Morris County DOT.

Notes

- Wharton Borough already has established "safe routes" for walking and bicycling
- Morris County DOT will map those routes in GIS to be sent home to parents during the first week of school
- Morris County DOT will make 36 "safe routes maps" to be displayed in all classrooms throughout the school
- A Walk to School Day letter, Informational Flyer, and copy of "safe routes map" will be sent home to parents during the first week of school
- A reward (possibly homework pass) will be given to students who participate in Walk to School Day upon arrival at school
- Walk to School Day will be October 5, 2005 with an alternate rain day on October 6, 2005
- A Safe Routes to School TAC meeting will be scheduled during the second week of September (date and time is yet to be determined)

TAC Meeting #2 – September 14, 2005

In attendance were: Jerry Bernotas – Police Department, Vince Binkoski – Borough Council, Joseph Birchenough – NJDOT Local Aid, Rick Bitondo – Superintendent, Joseph Caravella – TransOptions, Michelle Caulfield – Board of Education President, Sue Chodkiewicz – School Nurse, Gladys Cifuentes – Board of Education, Anthony Fernandez – Police Department Chief, KJ Feury – Morristown Memorial Hospital/NJ SafeKids, Chris Herdman – MacKinnon Middle School Principal, Susana Matos-Kruck – Duffy Elementary School Principal, Jon Rheinhardt – Borough Administrator, Leigh Ann Von Hagen – Voorhees Transportation Center, Peter Weigly – Board of Education, David Young – Borough Council, Jerry Rohsler – Morris County DOT, Deena Cybulski – Morris County DOT, and Patrick Franco – Morris County DOT.

Notes

- Opening of Meeting and Introductions
- Safe Routes to School, National and International Perspective – Leigh Ann Von Hagen
    - Ms. Von Hagen of the Voorhees Transportation Institute at Rutgers University gave a general overview of Safe Routes to School (SRTS). She provided a number of

statistics on mode choice and child health. Ms. Von Hagen highlighted a number of SRTS programs in other countries; the concept originated in Denmark. She highlighted the walking school bus using a video from Australia. She than addresses current programs within the United States and noted that the Community Tool Kit prepared in Boston could be of use to this group. The new funding allotted by the SAFETEA-LU legislation to the SRTS program was addressed. Ms. Von Hagen finished her presentation with a discussion of current SRTS activities in New Jersey, including the NJDOT SRTS Demonstration Program.

- Morris County Safe Routes to School Program – Patrick Franco
  - Mr. Franco of the Morris County Division of Transportation gave a presentation on the federal funding received through the North Jersey Transportation Planning Authority (NJTPA) to conduct the Wharton Borough Safe Routes to School Program. He explained the tasks that were outlined in the Request for Proposals (RFP) that are due on October 5, 2005. He explained that the initial step of the consultant is to evaluate the existing conditions. Another crucial task is to identify available funding, so that short and long term strategies may be implemented. The goal is to plan in a way that results in long term SRTS success. The plan's success will be measured and reported in a How-To Guide that will be available to other counties and municipalities. The group had a small discussion about the perspective consultant's need to gather data and observe the area around the school prior to reward of the contract.
- International Walk to School Day (October 5, 2005) – Open Discussion
  - There are two designated student drop-off areas in front of the schools. The middle school starts at 7:50 a.m. and the elementary school starts at 8:30 a.m. The elementary school has full-day kindergarten. The group discussed briefly the number of handouts that would be needed for the event and Mr. Bitondo suggested contacting Councilman Young who works for Xerox. Ms. Feury of North Jersey Safe Kids was concerned at the short time frame to plan the event. It was discussed that this would be a small event, just enough to recognize that a SRTS program is beginning in Wharton. Ms. Feury announced that she could get giveaways from FedEx. Mr. Bitondo suggested that a subcommittee be assembled to deal with the planning of the event. The following is a draft list of the subcommittee members:
    - Rick Bitondo, Superintendent
    - Vince Binkoski, Councilman
    - Patrick Franco, Morris County DOT
    - KJ Feury, North Jersey Safe Kids
    - Leigh Ann Von Hagen, Voorhees Transportation Institute
    - Don Watt, TransOptions
    - Gladys Cifuentes, Board of Ed
    - The Superintendent volunteered one of the principals
    - The Police Chief volunteered one officer, perhaps the traffic safety officer
  - Chief Fernandez suggested that raffle tickets, which could be redeemed for ice cream in the cafeteria, be handed out by volunteers,. The Chief questioned what the target age of the program was. Ms. Von Hagen answered that children age 10 and over

have the ability to safely judge the speed of an oncoming car, and they, therefore, would be appropriate candidates.
    - Modifications to the safe routes map were discussed. It was suggested that the aerial mapping be eliminated from the map. It was also determined that the title should read "Wharton Borough Police Designated Safe Routes."
- Other Business
    - Principal Matos-Kruck questioned why the Borough does not have more bike lanes and suggested that the older students may be more prone to bike. Chief Fernandez replied that the roadways are too narrow. Ms. Cybulski of the Morris County DOT replied that on-street parking often hinders the delineation of bike lanes.
    - The school nurse relayed the problem that students are refusing to wear helmets while riding their bikes to and from school. She added that she has called home to parents and has been told that the child does own a helmet. A number of people suggested that the new law requiring all children age 17 and younger to wear helmets may help.
    - Mr. Caravella of TransOptions discussed the concept of school pools, or car pools for transporting students. He raised the issue of liability and said that it has dampened the creation of many school pools.

Kick-Off Meeting – December 12, 2005

In attendance were: Chris Herdman –MacKinnon Middle School Principal, Susana Matos-Kruck – Duffy Elementary School Principal, Peter Weigly – Board of Education Business Administrator, Gladys Cifuentes – Board of Education, Vince Binkoski – Wharton Borough Council, William Zimmerman – Wharton Police, Jon Rheinhardt – Borough Administrator, Rick Bitondo – Superintendent, Joseph Birchenough – NJDOT Local Aid, Sue Chodkiewicz – School Nurse, Leigh Ann Von Hagen – Voorhees Transportation Center, Patrick Franco – Morris County DOT, Jerry Rohsler – Morris County DOT, Deena Cybulski – Morris County DOT, Bettina Zimny – The RBA Group, Mike Dannemiller – The RBA Group, and Sarah Higgins – The RBA Group.

- Welcome
    - Patrick Franco opened the meeting, noting that the purpose today is to introduce the project team, review scope/schedule, and discuss roles and responsibilities.
- Introductions
    - Names/Organizations of attendees (see sign-in sheet)
- Bettina Zimny introduced the consultant team
    - The RBA Group
        - Bettina Zimny – Project Manager
        - Michael Dannemiller – Technical Engineering/Planning
        - Sarah Higgins – Organization/Logistics
    - Other team members
        - National Center for Bicycling and Walking – Programs/Education
        - Steve Spindler Cartography – GIS/Graphics

  - Vertices – GIS/Interactive tools
  - AmerCom – Engineering
  - Eng-Wong Taub – Data Tracking
- Bettina Zimny went over the Two-phase project schedule
  - Plan Development phase → December 2005 to April 2006
    - Draft Report – SRTS Overview (a menu of SRTS options) by mid-February
    - Visioning exercise
  - Implementation phase → May 2006 to May 2007
- Bettina Zimny asked the group to share their ideas of the most important elements of and vision for an SRTS program
  - Rick Bitondo – Wharton Borough Public Schools Superintendent
    - Grants and infrastructure improvement for sidewalks/crosswalks
    - Beautification of downtown
    - Improved perception of Wharton (residential and business interests)
  - Patrick Franco – Morris County Division of Transportation
    - Looking forward to Public Visioning – gives local people a voice
    - Involve other projects
    - SRTS will become well-known, bringing the community together
  - Jerry Rohsler – Morris County Division of Transportation
    - Making walking to school part of day-to-day activity (SRTS)
    - Reduction in traffic around school
  - Leigh Ann Von Hagen – Voorhees Transportation Center
    - Provide base program for other towns in the county/state to emulate
    - Remember to evaluate success of the program for attaining future funding
  - Deena Cybulski – Morris County Division of Transportation
    - This community will have positive results
    - Some infrastructure/walking already exists
    - We can take the ideas that worked here to other places where the right attitudes/infrastructure may not currently exist
  - Joseph A. Birchenough – NJDOT Local Aid (engineer)
    - Interested in the technical aspects of SRTS
    - Location-specific problems
    - Can provide help with grant applications
  - Chris Herdman – MacKinnon Middle School Principal
    - Getting the SRTS message to students and parents
    - Middle schoolers are harder
    - Reduce traffic around the school
  - Susana Matos-Kruck – Duffy Elementary School Principal
    - Increase the sense of community – kids can have fun walking together
    - Some parents even pay for carpooling
  - Peter Weigly – Board of Education Business Administrator
    - Reduction in traffic around school
    - Bicycle as a new commonplace

- Gladys Cifuentes – Board of Education
  - As a resident – little kids should grow up with it
  - Worked with high school kids in WTS day
- Vince Binkoski – Town Council
  - Goal: bring life back to the downtown
  - Spend money to become eligible for more grants; Wharton as a model town
  - Cultural change towards more walking and biking – eliminate stigmatism
- William Zimmerman – Wharton Police
  - Goal = SAFETY
  - Lots of walking down E. Central
  - Sidewalks not at certain places
  - Concern = intersections
  - Walk to School Day was great
  - Liability issues with traffic calming – more than just "bumps and humps"
  - No child pedestrians have been struck by vehicles YET
  - Crossing guards have been struck E. Central and Main Street
- Jon Rheinhardt – Wharton Borough Administration
  - Looking for new funding mechanisms
  - Money already spent on Baker Avenue, E. Central, etc.
  - In five years, SRTS should be a maintenance/damage control issue
- Sue Chodkiewicz – Wharton Schools Nurse
  - Wants to see a bilingual SRTS program
  - Concerned especially with children at Main Street
  - More children need to wear bicycle helmets

- Bettina Zimny asked the group to describe the Walk to School Event, held in early October in Wharton (resources, key people, etc.)
  - Key to success was the team effort
    - Borough, PD, Schools, FedEx, St. Clare's Hospital
  - The word spread quickly, even though planning began late
    - A letter was sent home with all kids
  - The school looked different; it was obviously a special day
    - Atmosphere felt like a fair (giveaways, decorations, etc.)
  - Borough discussed the future of SRTS at meetings
    - Need to making walking/biking a habit, but can use these types of encouragement to create the habit
    - 60-70 percent of students walked that day; 20-25 percent on a normal day
  - Middle School teachers used SRTS in Social Studies class
    - The week before Walk to School Day
    - Teachers would do it again, but need to be notified in advance
  - The weather was also great for the Walk to School Day event
    - High school students had the day off, so they helped out
    - Signs and other materials were available in Spanish
  - Officer Zimmerman addressed the students who biked without helmets

  - Some were embarrassed
  - Need to send home helmet awareness material
  - Marty, bike shop owner, did some bike helmet promotions
  - FedEx (sponsor) brought their directors
  - Safe Kids Organization was impressive:
  - Borough of Wharton is open to change (motto = "Tradition with Progress")
- Bettina Zimny asked for other events that may incorporate the SRTS program
  - Bike Rodeo in April 2006
  - Bettina Zimny passed out an events list compiled by RBA
    - She asked for feedback and contact person for each possible event
    - The Borough calendar will be on the web site in February
    - Dates to avoid: the next two weeks, the week off in February, the last three weeks in March – state testing (noted that the Schedule for the outreach meetings will require adjustment), and April 10-14 – Spring Break
  - Selected revised dates for the TAC, BOE/Borough Meeting and Public Visioning
    - Three meetings to be held in this order: TAC → early April, BOE/Borough → early April and Public Visioning → late April
- Bettina Zimny mentioned a few last minute items
  - Homework assignment for stakeholders → Prioritize SRTS Actions
    - Engineering
    - Programs (Education, Encouragement, Enforcement)
  - Data collection
    - Speeds/crash statistics → MC gets numbers from DOT
    - Morris County can do GIS and mapping
    - Need the electronic "Routes to School" map
    - Clarify procedures/policy for photos of kids

Student Classroom Exercises – March 14, 2006

Morris County and RBA conducted several exercises with students at the McKinnon School in Wharton. A class of 23 7th grade Algebra students participated. The overall purpose of these activities was for the project team to solicit insight on the identified and potential routes to school from the student's perspective.

The principal introduced the team and explained the importance of the exercise to the overall Safe Routes to School project. This helped to set a positive tone for the project team involvement, and displayed the principal's support for the project. Teams of six to eight students each worked with a staff person to complete each of the following activities.

Walking: Time-Radius Map

Students walked along identified walking routes and noted how far they got at five, ten and fifteen minute intervals. The three teams headed different directions from the school property. By marking

these results on a map, rough walking time radii can be displayed on one aggregate map. This can be useful in determining total area of town that is within various walking times from the school. This exercise was based on an idea used in the Auckland, New Zeeland SR2S program.

Walkability Audits
Students assessed the condition of the walking routes utilizing a checklist developed by the Pedestrian and Bicycle Information Center. Each of the route assessments yield a number result, which can range between 5 and 30. The consultant staff also completed these same assessments for the identified corridors. The students generally ranked the roadways a bit higher (better) than the consultant staff, which was more conservative in their assessments.

Cross Section Measurements
To quantify the roadway measurements field inventory forms were completed. This helped document the width and condition of the sidewalk, buffer, curb, roadway and various corridor conditions. Completing these forms introduced the students to this documentation process, and gave them an appreciation for the variances in the roadway environment.

Camera Exercise - *(The Good, The Bad, and The Ugly)*
A student volunteer photographer and a note keeper were paired to document the elements along the walk that struck them as either good for walking, bad for walking or anything else that stood out to them that would affect their decision on whether of not to walk to school. The students took photos and kept notes on the photos taken. These will be used during the public visioning meeting and throughout the project.

Emissions - How Much Pollution is that Car Producin'
The students were lead through an exercise where they calculated the level of emissions that were NOT generated during the walk, or their daily commute to school if done by bicycle or on foot. This was based on the Walking for Health & the Environment Curriculum from Walk Boston. This kept the focus of the day's activities relevant to the student's Algebra course.

Public Visioning Meeting – April 25, 2006

In attendance were: Eileen Mitchell, Ann Marie Cuhna (Teacher), Sage (Student), Jessica (Student), Darlene Darling (Parent), John Manna, Stephen Skelly (Parent/BOE), Patrick Skelly (Student), Russel Krutissia, Heather Ginder (Parent), Alyssa Ginder (Student), Bernadette Lengyel (Parent), Voula Serevis (Parent), Carol Pillsbury (Teacher), Rick Bitondo (WBPS Superintendent), Chris Herdman (MacKinnon School Principal), Lisa Donovan (Parent), Virginia Vertetis (Teacher), Vince Binkoski (Wharton Borough Council), Karen Skelley (Parent), Maira Rogers (PTA President), Theresa Yeager (Parent), Tom Yeager (Parent), Salwant K. Banga (Teacher/Parent), Brian Donovan (Parent), Jerry Rohsler (Morris County DOT), Deena Cybulski (Morris County DOT), Patrick Franco (Morris County DOT), Bettina Zimny (The RBA Group), Mike Dannemiller (The RBA Group), and Sarah Higgins (The RBA Group).

Welcome
Rick Bitondo, Wharton Borough Public Schools Superintendent, and Vince Binkoski, Wharton Borough Councilman, opened the meeting by welcoming and thanking all of the attendees. They

described how the partnerships formed throughout the SRTS program duration – including the municipality, school, community and private businesses – would help to position the Borough for further SRTS funding from various sources in the near future. Jerry Rohsler, Director of the Morris County Division of Transportation, also discussed the county's role in the project.

Introduction to SRTS

Mike Dannemiller, Senior Planner at The RBA Group, presented an overview of the SRTS program, including history and purpose of the effort. He engaged the crowd by presenting several pictures with obvious pedestrian and bicycle obstacles. He asked "What's wrong with this picture?" Several children responded not only enthusiastically, but correctly to his question.

Visioning Exercise

Mike Dannemiller asked all meeting participants to provide us with their vision for SRTS. Responses included:

- 10 maybe 15 years from now, a walk to school will be magnificent. In the sense of being able to walk without worrying about tripping, and also being able to cross streets with drivers' awareness more keen. Also with the use of cars at a decline, the overall environmental health shall be improved.
- Wharton is a family-oriented town that provides a safe, comfortable, traffic-controlled zone so that our children can walk safely to school.
- The Borough of Wharton envisions a Safe Routes to School program that enables the children to walk or bike safely to school with supervision; increases the amount of parent education and community involvement; decreases the amount of traffic near the school; and encourages children to be independent and healthy.
- Create a buddy system with older and younger kids paired up. Increase communication between parents and form network that they can rely on each other.
- Vehicle speeds near the school are decreased.
- More effective drop-off and pick-up zones.
- Sidewalks on all streets.
- Enforcement of keeping sidewalks free of debris, brush, snow, ice, etc.
- Children are more physically active and healthier.
- Children want to bike and walk to school (parents too!)
- All crosswalks are clearly marked (and level….no puddles!)
- One of the visions for the Borough of Wharton is to have more people and students walk to school and have the parents feel safe about their children walking to school.
- It should be warm every day so we can walk.
- A school-community partnership that recognizes the importance of walking/cycling and in doing so encourages the fitness and safety of safe routes and automobile courtesy.
- Our vision is foremost to keep our children safe, in all environments; show them how much fun it can be to walk to and from school; increase their overall health; and do our part to improve our environment.
- Less traffic in town (Dewey Avenue). Busy in AM when kids would be walking to school.
- A way to know if kids make it to school

- Children enjoy getting together with their friends and siblings to walk or bike to and from school; builds community, friendship, trust and confidence.
- Children would choose to play smaller band instruments
- Continuous, smooth sidewalks for bikes and skateboards

Wharton Activities to Date
Patrick Franco, Senior Planner for Morris County DOT, presented a brief overview of the Wharton SRTS Program Technical Advisory Committee. He described their role in the project overall and how their expertise has helped make the project a success thus far.

Next, Mike Dannemiller and Patrick Franco asked some of the students who had participated in SRTS classroom activities to present their ideas to the group.

- A seventh grade pre-algebra class had performed a walkability audit of the sidewalks around the school. Three class-members discussed their experience and were awarded with a prize. Their speech read as follows:
  - "With our class, we took a field trip through certain sections of Wharton, to observe the conditions of our town's walkways and calculate the amount of pollutants put into the air. We split into three groups and we each went separate routes so we could get a better idea about our routes to get around town. Also, we stopped every five, ten, and fifteen minutes to see how far we had traveled.

    Along our walk, we found many things of interest, good and bad. Cracks in streets, litter, and uneven sidewalks are a few examples of some bad things that we saw. These made it unsafe to walk through there, by possibly tripping from uneven sidewalks or scattered trash. Although there were bad things, there were some good things we observed. Helpful walkways on streets, and signs telling driver's to slow down in the school zone made it safer to walk, and makes drivers aware that the area is highly trafficked after school hours.

    Afterwards, we came back to the school, and all of the students were given a worksheet. This helped us find out the amount of pollution we would save by walking, or biking to and from school. These results were quite astounding, realizing how much pollutants are put into the air from a short distance car ride to school. After that, we realized that we can make the world a better place it we cut down pollution in motor vehicles, or walk to school every once in a while. We could save our Earth."
- Second graders were asked either to write a poem or draw a poster relating to SRTS. The winning poem and poster were displayed at the meeting. In addition, the winning artist and poet received a small award.

The 5 E's (PowerPoint Show)
Mike Dannemiller presented the 5 E's of SRTS: Engineering, Education, Encouragement, Enforcement, and Evaluation.

Route Planning Exercise

Participants were asked to mark the following on maps of Wharton Borough. Results included:

- Where students currently walk/bike in Wharton
  - Stirling Street
  - Oram Drive
  - Columbia Street
  - Summit Avenue
  - Lafayette Street
  - Fern Avenue
  - Washington Street
  - North Main Street
  - Luxemberg Avenue
  - Baker Avenue
  - Stickle Avenue
  - East Central Avenue
  - Burns Street
  - Pine Street
- Where students could walk/bike if conditions were improved
  - Through the park behind the water towers (off-road path)
  - Lafayette Street (north of Central Avenue)
  - Fern Avenue
  - Pontoon Bridge over Washington Ford Pond
  - Intersection of Baker Avenue and Lafayette Street (w/crossing guard)
  - Along the railroad line
- Major walking/biking obstacles
  - Intersection of St Mary's Street and Garden Avenue/Hance Street
  - Cars park at the intersection of Stirling Street and Main Street
  - No crosswalk from North Central Avenue to Pine Street
  - No sidewalks on Pine Street from Burns St to Oxford Road
  - No sidewalks on Rice Avenue
  - No sidewalks on W. Central Avenue
  - Speeding at intersection of Dewey Avenue and Luxemburg Street
  - Trucks on curb at bend of North Central Avenue /Main Street
  - Crosswalk needed at intersection of Thomas Street and Main Street
  - High speeds on Baker Avenue from Davison Street to Stickle Avenue
  - High speeds on East Central Avenue from Princeton Street to Michigan Street
  - Sidewalks on Stickle Avenue
  - Obstacles in sidewalks
- Major walking/biking attractors
  - Mike's Corner Market
  - MacKinnon/Duffy Schools (including soccer fields)
  - Mimmo's Pizza
  - Little League Park
  - Stirling Park (Block of Wabash-Columbia-Lafayette-Stirling)

  - Intersection of Garden Avenue and Cross Road (?)
  - Day Care on corner of Fern Avenue and Curtis Street
  - Children's Workshop on corner of Church Street and Grove Street
  - Borough Hall
  - Sterling Heights (90 homes)
- Additional Comments
  - Walk to school lane
  - Frequent walking miles
  - Pine Street and Fern Avenue are routes (no sidewalk?)
    - Day Care nearby
    - Need crossing guard
  - Fern Avenue would be better if there were crosswalks
  - Parks are used as connectors
  - Some kids walk at very early hours (i.e. band begins at 7:30 a.m.)
  - Concerns regarding Princeton Street & East Central Avenue
  - Interest in off-road paths
  - Stirling Park used as a cut-through, though not a formal route
  - Stirling Heights is a problem area
  - Stickle Avenue sidewalks are broken/obstacles
  - Path to Dewey Street a concern
  - Main Street and Dewey Street = critical intersection
  - Luxemberg Street and Main Street → speeding problems, want enforcement
  - Carpenter's Corner → trucks (9/10 wheels go over the curb)
  - Crosswalks needed at Thomas Street and Main Street
  - Maria's/Bakery/Library = key destinations
  - No sidewalk:
    - W. Central Avenue to Pine Street
    - W. Central Avenue to Fire Station
  - Want traffic calming on Baker Avenue, W. Central Avenue and Dewey Street
  - Traffic calming devices to slow cars at W. Dewey and Luxemberg Streets
  - Police are needed at the intersection of W. Dewey and Luxemberg Streets to enforce:
    - Speed limit (cars speed through, especially during rush hour)
    - "Local traffic only"
  - Want bumper stickers/ signs for cars that read:
    - "I stop for pedestrians"
    - "I stop at crosswalks"

Voting on Preferred Treatments/Programs

Participants were asked to vote on their favorite education, encouragement and enforcement programs, along with their favorite engineering treatments. Green dots meant the voter loved the idea, orange dots meant they hated the idea, and yellow dots meant they would consider it.

Encouragement:

Rank	Activity	Love it	Hate it	Consider it
1	Walking Wednesday	8	0	2
2	Frequent Walker Cards/ Rider Miles	7	0	2
3	Walk and Roll School Days	7	0	0
4	Walk to School Day/I-Walk	6	0	1
5	Golden Sneaker Awards	5	0	3
6	Walking School Bus/Cycle Train	4	0	1
7	Pace Cars	4	0	0
8	Walk to School Contests	3	0	4
9	Bicycle Rodeo	3	0	1
10	Bicycle/Pedestrian Safety Quiz Show	2	1	1
11	Proclamations/Resolutions	2	3	1

Education:

Rank	Activity	Love it	Hate it	Consider it
1	Assemblies/Guest Speakers	6	0	2
2	Neighborhood Working Groups	5	0	4
3	Walk or Bike Across America	5	1	0
4	Walking Math	5	1	0
5	Activity at our Family Picnic (Write-In)	4	0	0
6	Walkability Assessments	3	0	1
7	Art/Language Arts Class Activity	3	0	0
8	Classroom Activities	3	0	0
9	Campus Walk	2	0	1
10	Auto Emissions Exercise	2	1	1
11	Walking Education Programs	1	3	0
12	Time Radius Map	0	1	1

Enforcement:

Rank	Activity	Love it	Hate it	Consider it
1	Sidewalk/Building/Property Laws	9	0	2
2	Keep Kids Alive – Drive 25 Campaign	9	0	0
3	Pedestrian Sting Operations	8	1	0
4	School Safety Zones	7	0	0
5	Law Enforcement Presence	6	0	0
6	Neighborhood Watch Programs	3	0	4
7	Photo Enforcement	1	1	2
8	Speed Trailers	0	7	1

Engineering:

Rank	Activity	Love it	Hate it	Consider it
1	Traffic Calming (Speed Control)	14	0	3
2	Bicycle Lanes	14	0	0
3	Color Coded Sidewalk Stencils	9	0	0
4	Off Road Paths	9	0	0
5	Pedestrian Scale Lighting	8	0	1
6	Sidewalks	8	0	0
7	High Visibility Crosswalks	7	0	0
8	Signing & Marking the School Zone	6	0	1
9	Bike Racks	5	0	1
10	Shared Lane Bicycle Markings	3	0	0
11	In-Road Illuminated Crosswalks	3	1	1
12	Roadway Markings	0	0	1

Evaluation

Susan O'Donnell discussed the surveys, both parent and student, and how the results will aid Wharton schools in created a successful SRTS program.

Next Steps/Schedule

Deena Cybulski, Supervising Planner at Morris County DOT, closed the meeting by sharing key upcoming dates for the SRTS Program.

- June 2006 – Web Site/Brochure
- June 2006 – Final Plan
- May 2006-May 2007 – Implementation
- May 2006-May 2007 – Surveys

APPENDIX V: WHARTON SRTS CONTACT INFORMATION

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APPENDIX VI: WHARTON PUBLIC SCHOOLS WALK-TO-SCHOOL DAY 2005 DATA

International Walk to School Day 2005 Results

	Number of Students	Number of Walkers and Bicyclists	Percentage of Walkers and Bicyclists
MacKinnon Middle School	250	130	52%
Duffy Elementary School	500	320	64%
TOTAL	**750**	**450**	**58%**
Average Percentage of Daily Walkers/Bicyclists	25%		
Percent Increase	**33%**		

APPENDIX VII: WHARTON SRTS MEDIA COVERAGE

A SURE WAY TO EASE THE MORNING COMMUTE
Sunday, July 2, 2006
By John Cichowski of the *Bergen Record*

You might have noticed that last week's morning commute was faster than it has been all year -- for an obvious reason: School is out, taking more than1.5 million New Jersey kids out of the morning traffic mix.

What if there were ways to keep it that way year-round? What would you be willing to do to achieve that goal?

Planners in Morris County think they've found one solution.

"We're suggesting that parents stop driving their kids to school," said Patrick Franco, a county transportation planner.

This is the kind of suggestion that makes some Road Warrior readers see red.

"It's too far for my kid to walk, but not far enough to qualify for a bus," complained a Teaneck dad named David.

"I'm on my way to work anyway," said a Fort Lee mom named Deborah.

"Children tend to wake up at the last minute and not leave enough time to walk," explained Alan of Fair Lawn.

Franco has heard these arguments and others, like safety, before. He and transportation researchers at Rutgers University are weighing these reasons against California studies showing that 21 percent to 27 percent of morning traffic is caused by parents driving their children to school.

Think about that. Parents who don't want their youngsters to walk to school or ride buses are contributing to about one-quarter of the traffic and, presumably, the road rage, slowdowns, accidents and injuries that accompany it.

"Kids are getting too soft," concluded Tom, a Hillsdale parent. "They rarely walk anywhere."

Right, Tom! And their chauffeur-parents are paying twice for transportation. As drivers, the cost ranges from $2.80 to $3.05 a gallon. As property taxpayers, the range is about $125,000 for buses in compact, 2.5-square-mileRidgewood to $2 million in 88-square-mile West Milford.

What Can Be Done? Morris planners have published, "Bulletin No. 1 -- It's Not Cool to Drive to School" -- which you can read at mcdot.org. It calls for close monitoring of student travel times and habits, increasing car-pool options, building sidewalks under the state Transportation Department's $5.2 million Safe Routes to School program, and encouraging school boards to offer incentives for students to walk, cycle or ride school buses.

One of these incentives has little to do with safety. It recommends charging teens for parking at high schools. West Milford has already begun charging a$50 fee for its high school seniors. Its purpose, however, was to raise money, not to reduce traffic, said Schools Superintendent Glenn Kamp.

As for safety, Franco said some parents claim they drive their children to avoid accidents, stalkers and violence. Police, however, say stalking is rare and violence varies widely from town to town. But National Highway Traffic Safety Administration accident statistics strongly suggest that hitching a ride with mom or anybody else is not the safest way to go to school.

NHTSA says motor vehicle crashes are the leading cause of death for children younger than 15. And the school buses that drive some 500,000 New Jersey students to class every day? NHTSA crash data shows that buses represent the safest mode of transportation for school-age children, including teenagers.

WALK TO SCHOOL? PLANNERS SAY YES
Morris Plans to Encourage Students to Walk, Bicycle Each Day to Fight Congestion
Sunday, July 9, 2006
By Michael Daigle of the *Daily Record*

If the ride to work seems less crowded, it's because school is out for the summer, leaving 20 percent to 30 percent of morning drivers doing something else besides shuttling around their children.

To keep those drivers off the road all year round, the Morris County Division of Transportation said that the county needs a plan to have more children walk or bike to school.

In the first of what will eventually be 10 bulletins, the county issued "It's not cool to drive to school"--a bulletin that is part of the process to develop the circulation element of the Morris County Master Plan, which covers transportation issues.

Issues to be Addressed
County Transportation Director Gerald Rohsler said that the bulletins are summaries of the issues that will be addressed in later technical documents and the final circulation element. Other bulletins, for example, will discuss public transportation, alternate means of transportation and commuting.

The completed document will detail county transportation projects, demographics, issues and projections. The county adopted a circulation element to its master plan in 1992 and the current project is an update to that plan.

The drive to encourage more walking and biking to school came out of the recent state-funded Safe Routes to School Pilot Program that started in Wharton last fall.

The goal of that program is to build a physical environment and social climate that supports a child's ability to walk, bike, carpool or take transit safely to school. The project began with International Walk to School Day in October and was followed in the spring with a bike rally.

Walking and biking to school increased from 20 percent to 70 percent on the day of the event, the bulletin said.

Rohsler said that in most interviews done to prepare the school transportation bulletin, the issue of morning and afternoon school-related traffic jams was raised.

He said safety while walking to school and riding a bus were the top issues raised in most towns.

The school transportation bulletin said today that only 10 percent to 15percent of school children walk or bike to school, down from 70 percent 30years ago.

The chief reasons for this decline, the bulletin said, were the distance from home to school, traffic around the school, lack of sidewalks and crosswalks, weather, crime and school policy.

Deep-Rooted Problem

"These conditions are the result of land and transportation decisions made over the last 40 years," the bulletin said.

Prior to World War II, most communities were compact and centered around schools and other public buildings, the bulletin said. Post-war "dispersal" land use policies that encouraged outward growth contributed to "school sprawl," which occurs when schools are located on the fringes of communities and accessible only by automobile or bus, the bulletin said.

Most of the county's nearly 80,000 public school students are either driven by car or take a bus even when they live close to school, the bulletin said.

The Federal Highway Administration reported that 90 percent of children living less than 2 miles from school are driven or bused.

Busing Changes

In the past two years, changes were proposed in the systems that bused students to school in East Hanover, Parsippany, Montville, Denville and Mount Arlington. Montville, for example, ended courtesy busing and substituted a subscription bus service that could cost parents up to $500.

The county transportation division set two chief goals in this bulletin. The first goal calls for a reduction in the number of children driven to school in private vehicles.

The transportation division, TransOptions, a regional agency, and the county superintendent of schools should explore carpooling options, opportunities and incentives for parents to reduce the number of individual trips to school.

The county division should develop more safe Routes to Schools programs and work with the superintendent of schools to seek a statewide funding source.

The county should organize a school transportation summit for all school boards, superintendents and principals to identify common transportation problems.

Systematic monitoring of students should be done to determine travel behavior. School boards should be encouraged to provide incentives to students who walk, bike or ride the bus to school. Boards should also be encouraged to limit the number of parking permits issued to students or charge them for parking spots. Bus ridership should also be increased by ensuring parents of bus safety through driver education, global positioning technology, bus monitoring and random bus inspections.

The second goal calls for an increase in bicycle and pedestrian accessibility to schools.

The county should require transportation infrastructure that supports walking and biking in any new development or redevelopment proposal, while encouraging maintenance of existing facilities that do so.

SAFETY ROPES KIDS AT WHARTON BIKE RODEO
April 24, 2006
The Daily Record

WHARTON -- Kaelli Zacchini shook her head from side to side and up and down, and grinned as her bicycle helmet wobbled on her head. Nancy Statt from Morristown Memorial Hospital removed the helmet, replaced the rubber pads inside, and placed it back on the girl's head.

It didn't wobble as much but the 7-year-old still grinned. Statt said that many of the helmets she examined Wednesday were ill-fitting.

She was a member of the New Jersey Safe Kids/Safe Communities team at the "Ready to Roll" bicycle rodeo at MacKinnon Middle School that attracted more than 150 local students. The kids displayed their riding skills on a slalom course, took a bike safety ride under the watchful eyes of Wharton police officers, had their bikes tweaked by professionals and learned how to be safe on the borough's busy streets. The rodeo is part of a Safe Routes to School pilot program sponsored by the Morris County Division of Transportation. The division plans to develop safety ideas and techniques that can be implemented at schools throughout the county. Wharton was selected because it is a compact town with its schools at the same location. Deena Cybulski of the Morris

County transportation division said the borough's network of small streets and a large walking population of students made it ideal for the pilot program.

She said the overall goals of the program are improved safety for students walking and biking to school, to encourage more parents to allow their children to walk to school, to reduce congestion at morning drop-offs, promote car-pooling and encourage exercise for children.

Not all the ideas developed through the pilot program will be practical for all the county's schools, Cybulski said. It could be harder to implement some of the ideas at regional schools and schools in larger towns that were built on more rural roads that lack sidewalks, for example.

The public is invited to a meeting at 7 p.m. Tuesday at the school to help refine the vision for the Wharton plan, and help identify strategies and projects that would lead to safer routes to school.

Jennifer Zacchini, who brought Kaelli and her brothers Danny, 5, and Dominic, 3, to the rodeo, said the event was timely with her boys getting ready to do more bike riding. Kaelli just nodded and grinned when her mother asked if she was learning about bike safety. Zacchini said that they were picking up tips that would help them be safer bikers.

Wharton's streets are generally safe, she said. Central Avenue, a main street, is busy, she explained, but the side streets generally see little traffic. Dozens of students buzzed the parking lot next to the school during the rodeo.

Miguel Moreno, 11, a fourth grader, said he was reminded that bike safety was very important, especially stopping at intersections. Sebastian Munoz, 9, a fourth grader, said he learned to be careful walking to school. He said he and his neighborhood friends walk together each day and think about safety.

Raymond Lopez, 14, a seventh grader, was happy with his new bike helmet. He had just successfully completed the slalom course that allows the students to exhibit control as they take sharp turns around orange cones.

Among the organizations at the rodeo were Morristown Memorial Hospital, Marty's Cycles, TransOptions, school and town officials and the local parent-teacher's association.
Judy Maltese and Luis Home were operating TransOptions'"Wheel Fit" booth, which Home admitted was misnamed.

If you go…
A public meeting on the state-funded Safe Routes to School program proposed for Wharton will be held at 7 p.m. Tuesday at the Marie V. Duffy School on Central Avenue. Safe Routes to School is a program that promotes safe walking and biking to schools. Designers of Wharton's program will outline the scope of the project. For details, call Patrick Franco at (973) 829-8101

"We're fitting more seats than wheels," he said. Most of the time the pair was adjusting the height of bike seats for students. The proper height of bike seats allows riders to keep their flat feet on the ground while resting, he said. Most of the seats were too low -- "way low" -- Home said.

Wharton Police Detective Bob Lubia said the rodeo was a way to reinforce bike safety rules in a friendly atmosphere, which he exhibited by stopping a student from riding his bike backwards through the lot.

Principal Chris Herdman said the Safe Routes to School project reinforces many of the rules that students learn in school.

As part of the project a seventh grade math class compiled data based on a walking tour of the borough that measured how much gasoline they saved and how many calories they burned among other statistics. By encouraging walking and biking to school, the program also supports health education students get on fitness and obesity, Herdman said.

K.J. Fuery, an injury prevention consultant from Morristown Memorial, said the hospital sees about 12 children annually who are severely injured in bicycle accidents. Many more are treated by family physicians, or receive no treatment at all, she said.

The hospital provided these national statistics:

- In 2002, 130 children ages 14 and under died in bicycle-related crashes.
- The death rate associated with bicycle crashes involving children 14 and under dropped 70 percent between 1987 and 2002.
- Children ages 14 and under are five times more likely to be injured in a bicycle-related crash than older riders.

Fuery said the effort to provide safer routes to schools will help reduce bike-related injuries, which would be a significant step, "but one is too many."

APPENDIX VIII: SRTS FUNDING SOURCES

This table lists the more likely funding sources that may be available to fund Safe Routes to School (SRTS) planning, program activities and projects. While SRTS funding opportunities are constantly changing, this list will provide you with a place to begin your search. Because SRTS programming ranges from engineering improvements to encouragement campaigns, education courses to enforcement operations, the funding sources are quite diverse. Thus, the sources have been categorized as **planning** assistance, **program** activities or **project** implementation funds. Please note that the agencies listed in the table have not been consulted, but SRTS initiatives may be eligible under each entry. The entries are not presented in any particular order.

TITLE / WEBSITE	TYPE	TIMELINE	DESCRIPTION
Discretionary Funding Program www.state.nj.us/transportation/business/localaid/descrfunding.shtm ***Source***: NJDOT	Project	Applications can be made at any time.	This program is administered by NJDOT's Division of Local Aid and Economic Development. Primarily, this funding is used to address both emergency and regional needs. Projects are approved by the Commissioner. Under this program, counties and municipalities may apply for bicycle and pedestrian projects. Payment of project costs is the same as the Municipal Aid Program.
Locally Initiated Bicycle Projects www.state.nj.us/transportation/business/localaid/bikeways.shtm ***Source***: NJDOT	Project	Typically, a solicitation is sent out in January. Application Deadline falls in mid April. Note: In FY 2007, this program will not be funded.	NJDOT's Division of Local Aid and Economic Development administers this program. These funds could be used for roadway projects to improve bicycle travel or for designated bikeways such as signed routes, bicycle lanes, or multi-use trails. NJDOT staff evaluates projects and the Commissioner determines the final selection.

TITLE / WEBSITE	TYPE	TIMELINE	DESCRIPTION
Safe Streets to Schools www.state.nj.us/transportation/business/localaid/safestreets.shtm ***Source***: NJDOT	Project	Typically, a solicitation is sent out in January. Application Deadline falls in mid April. Note: In FY 2007, this program will not be funded.	This program, administered by NJDOT's Division of Local Aid and Economic Development, is for pedestrian access and safety projects along routes to schools. NJDOT Staff evaluates projects and the Commissioner determines the final selection.
County Aid Program www.state.nj.us/transportation/business/localaid/countyaid.shtm ***Source***: NJDOT	Project	Application Deadline falls in mid April. Note: For FY 2007, $78.75m will be available – a 17% increase.	This program is administered by NJDOT's Division of Local Aid and Economic Development. The program provides funding to counties for general design, ROW, and road construction. The amount of money distributed to each of New Jersey's 21 counties is based on total county road mileage and population. Each county must develop an Annual Transportation Program (ATP). The program must indicate each project to be undertaken and the estimated cost of each. It is NJDOT's policy that all "bicycle and pedestrian traffic should be incorporated in the planning, design, construction and operation of all projects and programs funded or processed by the NJDOT." Independent bicycle or pedestrian projects could be funded under this program.

TITLE / WEBSITE	TYPE	TIMELINE	DESCRIPTION
Municipal Aid Programs www.state.nj.us/transportation/business/localaid/municaid.shtm ***Source***: NJDOT	Project	Typically, a solicitation is sent out in January. Application Deadline falls in mid April. Note: For FY 2007, $78.75 m will be available – a 17% increase.	This program is administered by NJDOT's Division of Local Aid and Economic Development. The program provides funding to municipalities in New Jersey. It is NJDOT's policy that all "bicycle and pedestrian traffic should be incorporated in the planning, design, construction and operation of all projects and programs funded or processed by the NJDOT." Independent bicycle or pedestrian projects could be funded under this program. NJDOT will pay 75 percent of the total cost at the time of the award and the other 25 percent at the time of completion of the project.
Centers of Place www.state.nj.us/transportation/business/localaid/centerplace.shtm ***Source***: NJDOT	Project	Typically, a solicitation is sent out in January. Application Deadline falls in mid April.	This program is administered by NJDOT's Division of Local aid and Economic Development. The Centers of Place program is designed to assist municipalities who have formally participated in implementation of the New Jersey State Development and Redevelopment Plan (SDRP). The program provides an opportunity to apply for funds to support non-traditional transportation improvements to advance growth management objectives.
Transit Villages www.state.nj.us/transportation/business/localaid/transitvillage.shtm ***Source***: NJDOT	Project	Typically, a solicitation is sent out in January. Application Deadline falls in mid April.	This program is administered by NJDOT. The Transit Village Grant Program is designed to assist municipalities who have been formally designated as Transit Villages by the Commissioner of Transportation and the inter-agency Transit Village Task Force.

TITLE / WEBSITE	TYPE	TIMELINE	DESCRIPTION
Transportation Enhancements (TE) www.state.nj.us/transportation/business/localaid/enhancements.shtm ***Source***: FHWA/NJDOT	Project	Typically a solicitation is sent out in early February. In FY 2007, there will be no solicitation for new projects.	This program administered by NJDOT's Division of Local Aid and Economic Development, focuses on transportation-related projects that promote alternative modes of transportation while preserving and protecting environmental resources. The program fosters more livable communities, enhances the overall travel experience, and promotes new transportation partnerships. The program is funded by a set-aside percent of Federal Surface Transportation Program Funds for reimbursement to participants.
Local Scoping Projects ***Source***: FHWA/NJDOT/NJTPA www.state.nj.us/transportation/business/localaid/scoping.shtm	Planning and Project	MPO's establish application and selection timeline.	This program, administered by the MPO provides federal funds to the sub-regions (counties, Newark and Jersey City) to advance projects through preliminary engineering and environmental reviews. Municipalities are eligible for the program but must work through the County. NJDOT is involved in the selection process and in requesting authorization of federal funding and review of environmental documents.
Local Lead Projects ***Source***: FHWA/NJDOT/NJTPA www.state.nj.us/transportation/business/localaid/lead.shtm	Planning and Project	MPO's establish application and selection timeline.	This program administered by the MPO (NJTPA) provides funding (on a competitive basis) to advance projects through final design and right-of-way. Once a project is selected, NJDOT is involved in processing, establishing federal funding, and reviews.

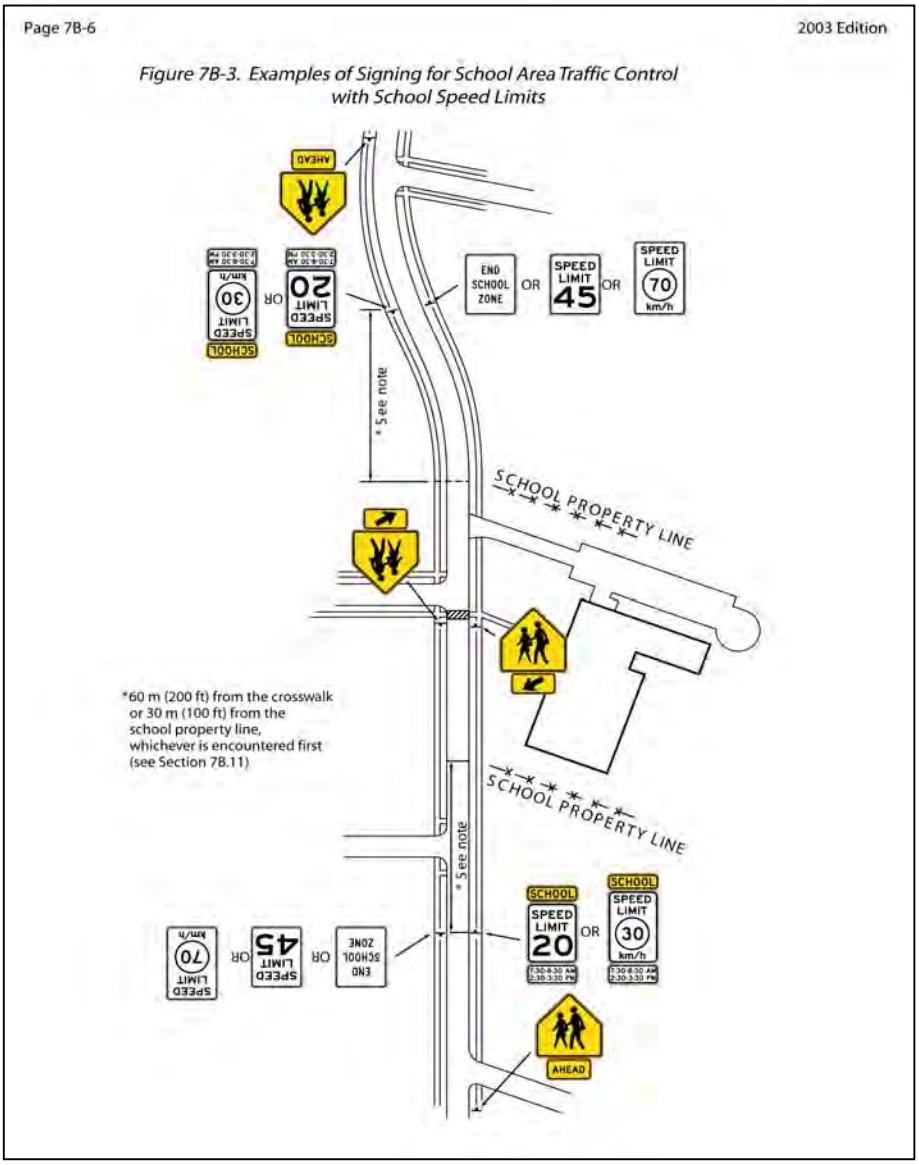
TITLE / WEBSITE	TYPE	TIMELINE	DESCRIPTION
Pedestrian Safety Grants ***Source***: NHTSA/NJDLPS (Section 402 Funds) www.nj.gov/lps/hts/grants/pedestriangrants.html www.njsaferoads.com/downloads/instrucgrant.pdf www.njsaferoads.com/downloads/grant_application.pdf	Program	Grant operates on the Federal Fiscal Year (i.e. FY 2007 = October 1, 2006-September 30, 2007). Grant application deadline is February 28, 2006; Grant approval letters to be sent July/August, 2006.	This program provides funding to governmental subdivisions, often police departments, for pedestrian safety education and enforcement. The education component provides funding for materials to educate high-risk pedestrian groups. The enforcement component provides overtime funding to enforce traffic laws at high-risk pedestrian locations. Grants are typically given to police departments.
Comprehensive Traffic Safety Programs (CTSP) ***Source***: NHTSA/NJDLPS (Section 402 Funds) www.nj.gov/lps/hts/grants/ctspgrants.html www.njsaferoads.com/downloads/instrucgrant.pdf www.njsaferoads.com/downloads/grant_application.pdf	Program	Grant operates on the Federal Fiscal Year (i.e. FY 2007 = October 1, 2006-September 30, 2007). Grant application deadline is February 28, 2006; Grant approval letters to be sent July/August, 2006.	Grants are available typically to counties to initiate a comprehensive traffic safety program. Under the guidance of a steering committee at the county level, funds can address a variety of traffic safety issues including impaired driving, pedestrian/bicycle safety, school bus safety, work zone safety, aggressive driving, speed enforcement and child safety.
Safe Routes to School Funding (Under SAFETEA-LU) ***Source:*** FHWA/NJDOT	Program and Project	Program guidelines and funding process to be established in 2006, with application round beginning mid to late year for 2007 award.	The SRTS program is a new program under the current Federal transportation funding legislation, Safe, Flexible, Efficient Transportation Equity Act: A legacy for Users (SAFETEA-LU). Federal funding is administered by the State SRTS coordinator. The program will fund the planning and implementation of projects and programs that access and safety and thereby facilitate walking and bicycling to school.

TITLE / WEBSITE	TYPE	TIMELINE	DESCRIPTION
Transportation Management Associations (TMAs) ***Source***: FHWA/NJDOT	Program and Planning		TMAs receive substantial funding assistance through the NJDOT and New Jersey Transit. In recent years, these funds have been from federal sources (CMAQ or STP). TMAs have considerable latitude in developing annual work programs to implement Travel Demand Management (TDM) strategies. TMAs have carried out and are encouraged to continue to develop and undertake work program elements involving the promotion of bicycling and walking, development of bicycle suitability maps, effective cycling presentations, etc.
School District Funds	Program and Project		School Districts can provide funds through the annual budget to provide program support or capitol improvements. Each individual school district will have several different ideas for funding.
County or Municipal Funds	Program and Project		Counties and municipalities can provide funds in the Capital Improvement Budget for physical improvements and program development and support. For example, sidewalks can be added instead of providing courtesy busing.
Association of New Jersey Environmental Commissioners (ANJEC) 2006 Smart Growth Planning Grants for Municipalities www.anjec.org	Planning	Application Deadline March 31, 2006	A matching grant program with grants of up to $20,000 for New Jersey communities. The goal of the grant program is to promote local land use planning that reduces sprawl, creates efficient, walkable communities with open space and green areas and protects environmentally sensitive areas.

APPENDIX IX: DESIGN REFERENCE INFORMATION

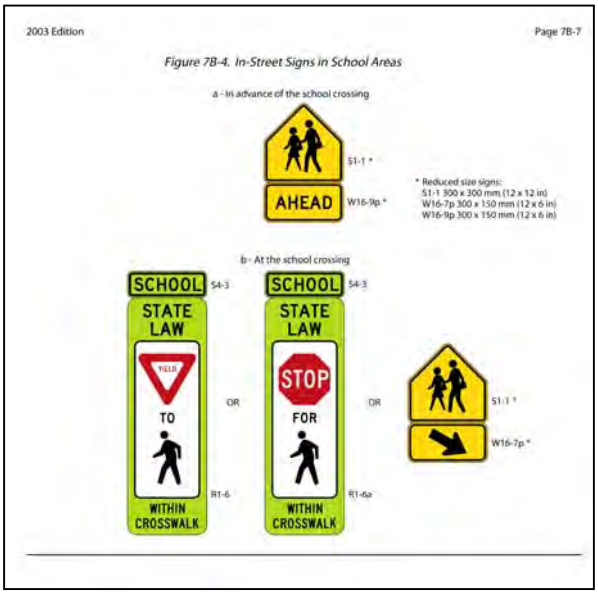
School Zone

This graphic – reproduced from the 2003 Edition of the Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways – displays the appropriate placement of signs to designate a school zone. Further detail on where, when and how to designate school zones can be found in Chapter 7 of the MUTCD.



School Crossing

This graphic, also reproduced from the 2003 MUTCD, presents the appropriate signs used in advance of or at school crossings. Further detail on where, when and how to designate school crossings can be found in Chapter 7 of the MUTCD.



Sidewalks – Cross Section

This graphic displays a cross section view of a typical sidewalk, buffer area and outside edge of a roadway. Note the separation, street trees and street furniture such as trash barrels. The vertical curb also help to define the edge of the roadway and channelize drainage.

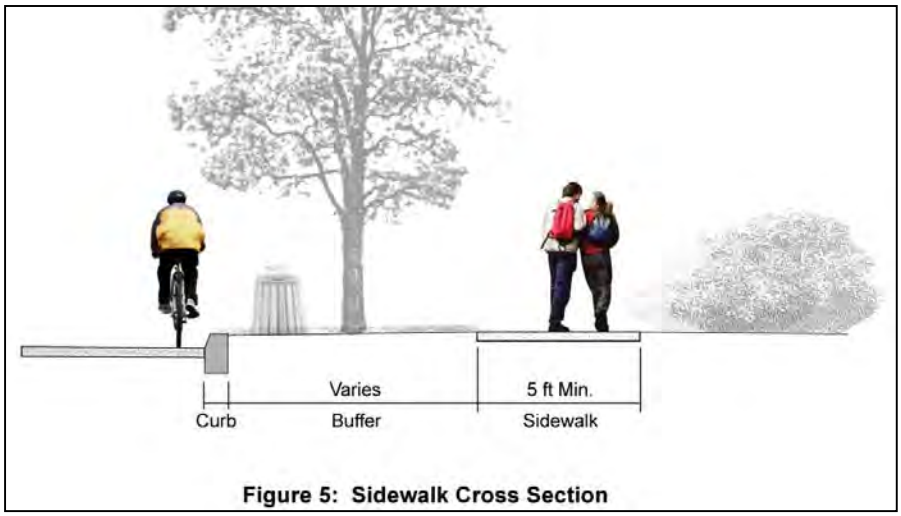
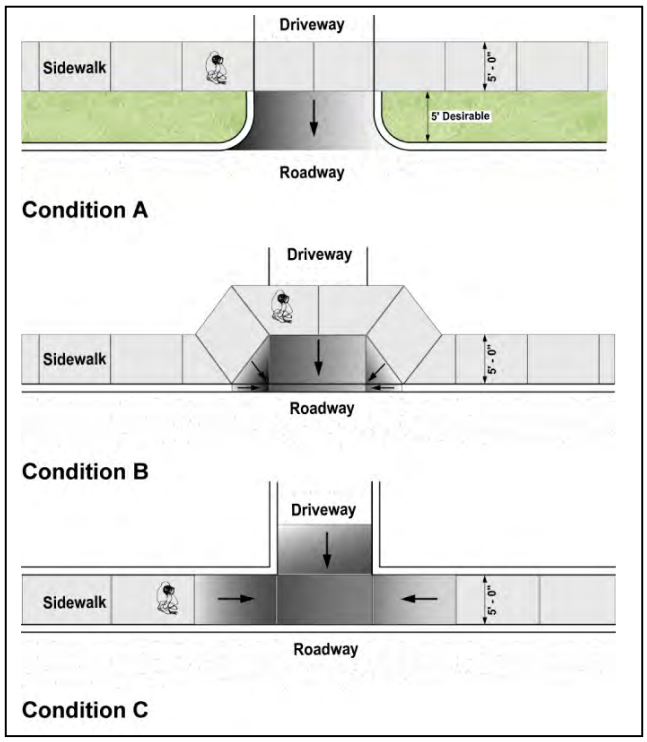


Figure 5: Sidewalk Cross Section

Sidewalk – Plan Views

A minimum width of 5 feet is recommended to separate a sidewalk and traveled way. This keeps pedestrians out of the "splash zone" and provides a more comfortable walking environment. Cross-slopes from driveways should be minimized; this may require additional separation from the roadway. To maintain a relatively level walking area, the sidewalk and driveway slopes should be coordinated, longitudinal sidewalk ramps may also be used if right of way is limited.



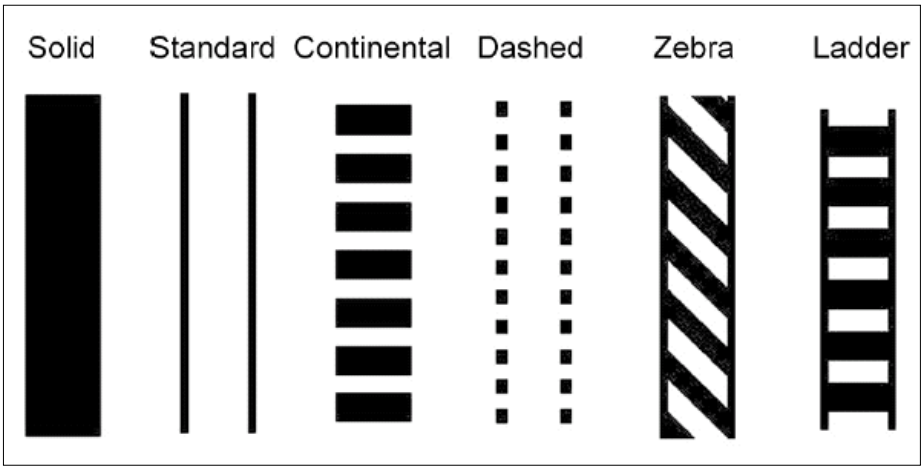
Lighting

Pedestrian scale lighting focuses light on the sidewalk, rather that traditional roadway lighting that focuses on the roadway. This smaller scale lighting can help create friendly walking environments.

High Visibility Crosswalks

The striping patterns and materials used for constructing crosswalks can vary greatly, but, if done properly, can also be a cost effective method of enhancing the pedestrian route to school. Drivers recognize the high-visibility crosswalks (ladder or continental striped) much better than standard style crosswalks (two parallel lines only). This reinforces that motorists should expect to see people attempting to cross the street where these crosswalks are striped. New York City differentiates school crosswalks from standard crosswalks by adding the ladder-style, high-visibility striping to all school crosswalks.

Below you will find the various crosswalk styles (as depicted in FHWA's January 2004 report "A Review of Pedestrian Safety Research in the United States and Abroad") and an photo example of a high-visibility crosswalk.

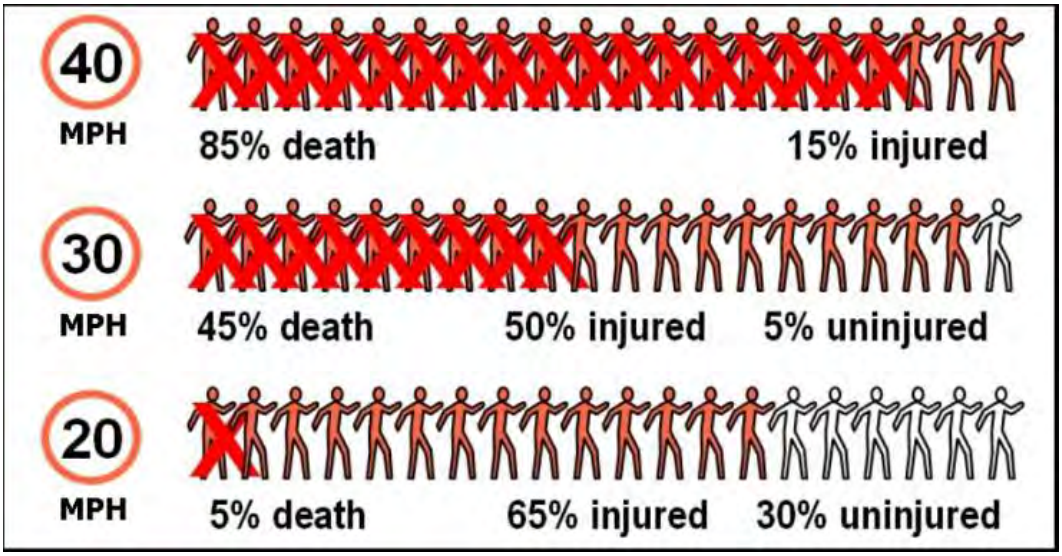


Speed Trailer and Driver Speed Feedback Signs

Speed trailers and driver speed feedback signs can be extremely effective at getting drivers to travel an intended speed through a school zone. Trailers can be located at various points throughout the school neighborhood to expand their effective range. Sign mounted units can be installed where an ongoing speed issue exists.

Fatalities Based on Speed of Vehicle

A pedestrian's chance of death if hit by a motor vehicle varies by the speed of that vehicle. The following graphic depicts the differences. (Source: *Killing Speed and Saving Lives*. UK Department of Transportation. London: 1979)



APPENDIX X: ADDITIONAL RESOURCES

SRTS Guidance and Exemplary Programs

The following web sites offer a wealth of information on SRTS programs, including sample press releases, data, how-to guides, community presentations and ideas to help develop messages.

- FHWA's Office of Safety – SRTS
  http://safety.fhwa.dot.gov/saferoutes
- NHTSA Safe Routes to School Tool Kit
  www.nhtsa.dot.gov/people/injury/pedbimot/bike/Safe-Routes-2002/toc.html
- National Center for Bicycling & Walking
  www.bikewalk.org/safe_routes_to_school/SR2S_introduction.htm
- Pedestrian & Bicycle Information Center
  www.saferoutesinfo.org
- Active Living Resource Center
  www.activelivingresources.org
- CDC, Kids Walk to School (community presentation)
  www.cdc.gov/nccdphp/dnpa/kidswalk/index.htm
- Marin County (CA) Safe Routes to School
  www.saferoutestoschool.org
- Go For Green (Canada)
  www.goforgreen.ca/walktoschool.com
- Green City (Canada)
  www.greencity.org
- Sustrans SR2S program (Bristol, UK)
  www.saferoutestoschools.org.uk

Encouragement Programs

Walking School Bus

The Walking School Bus was not specifically mentioned in the Ashbrook SRTS Action Plan. However, if and when sidewalks are installed on Municipal Road and other streets, the WSB may be an ideal way to get Ashbrook's students walking to school on a regular basis. The WSB has worked in many communities throughout the United States, Canada, Europe and Australia. Additional information on WSBs is available from:

- RideWise TMA
  www.ridewise.org/walksafely.shtml
- Pedestrian Bicycle Information Center/Partnership for a Walkable America
  www.walkingschoolbus.org
- Active and Safe Routes to School – California
  www.saferoutestoschool.ca

- Go for Green – California
  www.goforgreen.ca
- Travel Smart – Australia
  www.travelsmart.gov.au/schools/schools2.html

Golden Sneakers

On International Walk to School Day, held October 5, 2005, the Mechanicsburg School District in Pennsylvania rewarded walkers who found the golden sneakers that were hidden along the routes to school. Each "finder" was entered into a drawing to win backpacks full of prizes. While this program revolves around motivating and rewarding good behavior, it can also promote school spirit.

Walk/Bike Across America

Each week, at a designated time, the students total the distance the whole class has traveled and plot it on a map. Then they "travel" to a destination chosen by the class within those miles. Students become aware that they can travel great distances on foot or bike. Each new destination can be reached by the class to find out more about other parts of the country. At the end of a designated time, the class that traveled the farthest gets a special reward. While this activity seem a bit premature for Ashbrook students, it may be appropriate for Bobby's Run Middle School. For more information, see www.saferoutestoschools.org/events.html.

Bicycle Rodeos

A bicycle rodeo provides children with a basic understanding of the rules of the road; educates those children and their parents about elementary bike safety; gives trained personnel a chance to look over the equipment the kids are riding; and involves parents, teachers, and/or a local civic organizations in a worthwhile activity. A bicycle rodeo involves "stations" that teach skills, such as:

- Looking over a shoulder without weaving
- Fast-braking without skidding
- Dealing with traffic at intersections

More information on bicycle rodeos is available through:

- *Bicycling Life* at www.bicyclinglife.com/SafetySkills/BicycleRodeo.htm
- *Guide to Bicycle Rodeos* (Adventure Cycling Association) at 1-800-721-8719

Campus Walks

An excellent source of information on promotional events and classroom activities is The Safe Routes to School Tool Kit prepared by NHTSA. It can be found on the web at www.nhtsa.dot.gov/people/injury/pedbimot/bike/Safe-Routes-2002/toc.html.

International Walk to School Day

International Walk to School Day is celebrated every year in early October. Information on the event, including instructions on how to organize the event, press releases, downloadable signs, posters and other resources, is available at:

- www.iwalktoschool.org
- www.walktoschool-usa.org

Morton Way School (Brampton, Canada)

Encouragement for schools in the early stages of an SRTS program (www.saferoutestoschool.ca):

- On the first Wednesday of each month, parents and grandparents who walk to school with students are invited into the school library for a cup of coffee or hot chocolate, conversation and an opportunity to sign out library books to read with their children.
- A thermometer made by teachers, along with a complementary graph displayed inside the school, alert drivers of how many vehicles dropped off students the day before. Daily announcements update students on progress, as posters are displayed around the school.

Education Programs

Walking Math

- Math activities for an elementary math class: www.thelearningcalendar.com/Newsletter/2005/October2005/WalkingMath.htm
- Instructions on how to take students on a *Math Trail* www.findarticles.com/p/articles/mi_qa3666/is_200411/ai_n9465002#continue

Calculate Miles Per Gallon and Auto Emissions (math and science classes)

Students can calculate gas mileage, auto emissions and compare the miles per gallon (mpg) for different vehicles. These figures have a significant impact on the amount of air pollution produced by a vehicle. Students use the following steps to calculate the gas mileage of their family's car:

- Write down the odometer reading when the gas tank is full.
- The next time the gas tank is filled, write down the odometer reading again and how many gallons of gas it took to fill the tank.
- Subtract the first odometer reading from the second odometer reading to calculate the number of miles traveled between the two fill-ups.
- Divide the number of miles traveled by the number of gallons of gas used. This is the gas mileage of your family's car.
- Calculate the amount of pollution generated by your car. Compare that with the amount of pollution generated by buses, by trains, by carpooling, by walking and biking. (Your local Air Quality District can provide this information.)

Source: NHTSA Toolkit – "Smart Tripper" *of Kitsap County, Washington.*

Classroom Activities by Subject

Similar lessons can be brought in to health, science, physical education and other class lesson plans. Resources for these programs include:

- Safe Kids – New Jersey State at (732) 524-3864 or cgiardel@corus.jnj.com
- Safe Kids – Middlesex County at (732) 418-8026 or diana.doherty@rwjuh.edu
- The National Safe Kids Campaign at www.safekids.org/members/unitedStates.html
- The League of American Bicyclists at www.bikeleague.org/educenter/labsrts.htm

Enforcement Programs

School Zone Safety

- Information on the Washington Traffic Safety Commission school zone safety program at www.wa.gov/wtsc/school_safety.html.
- More information on school zone safety from the Active Living Resource Center at www.activelivingresources.org/safe_school_zones.html.

Pedestrian Sting Operations

- More information is available at www.walkinginfo.org/ee/sting.htm.

Speed Trailers

- More information at www.nhtsa.dot.gov/people/injury/research/pub/HS809012.html.

Sidewalk, Building and Property Maintenance Laws

- NHTSA resource guide to laws governing pedestrian and bicycle safety at www.nhtsa.dot.gov/people/injury/pedbimot/bike/resourceguide/index.html.
- The Pedestrian and Bicycle Information Center list of exemplary pedestrian plans at www.walkinginfo.org/pp/exem2005.htm.

"Keep Kids Alive – Drive 25" Campaign

An excellent program that details a community-based approach to reducing driving speeds is the *Keep Kids Alive – Drive 25* campaign. Their mission involves demonstrating how communities can mobilize in a number of ways, using local resources to effectively reduce travel speeds to 25 mph. Their web site can be found at www.keepkidsalivedrive25.org.

Engineering Tools

Walkability/Bikeability Assessments

- The PBIC Walkability Checklist can be found at http://www.walkinginfo.org/pdf/walkingchecklist.pdf
- The PBIC Bikeability Checklist can be found at http://www.bicyclinginfo.org/pdf/bikabilitychecklist.pdf