

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

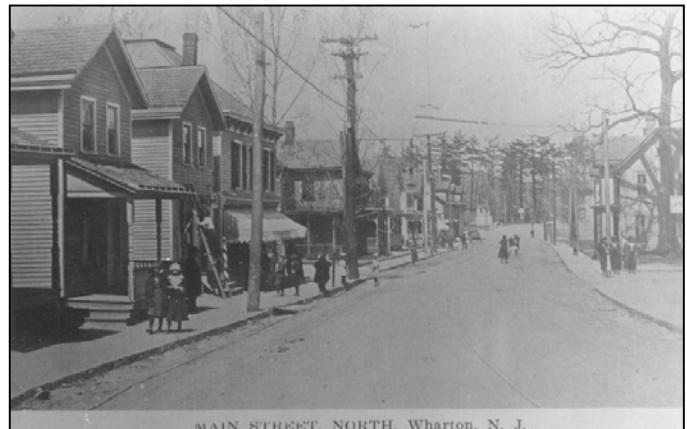
Incorporated: 1895; 1901
Total Population: 6,298
Population under 18: 1,638
County: Morris
Elementary School: Duffy School
Enrollment: 499
Grades: PreK-5
School Day: 8:35 am-3:05 pm
Middle School: MacKinnon School
Enrollment: 250
Grades: 6-8
School Day: 8:00 am-3:05 pm

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.





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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*)



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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.



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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.



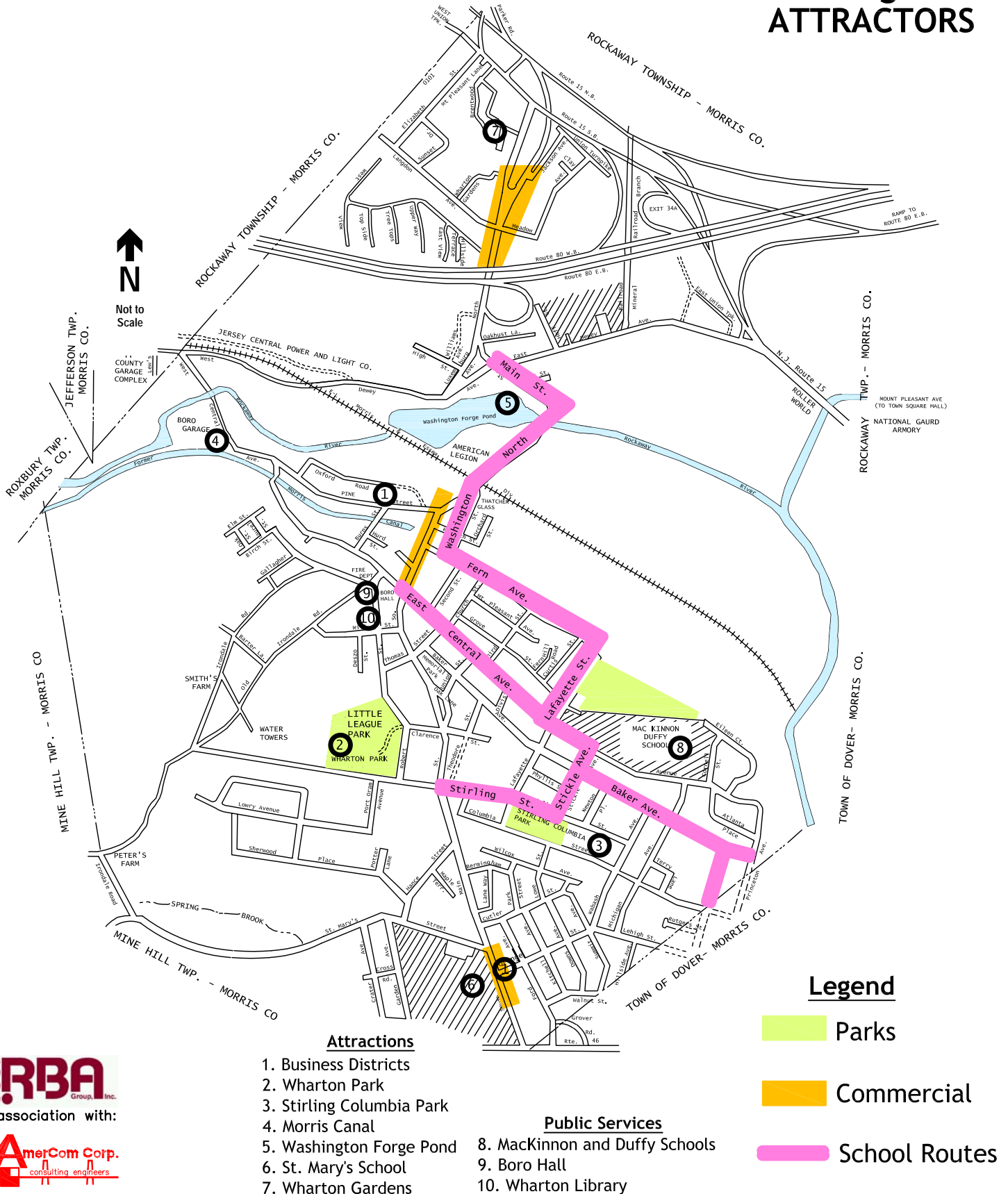
Current Infrastructure

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





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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

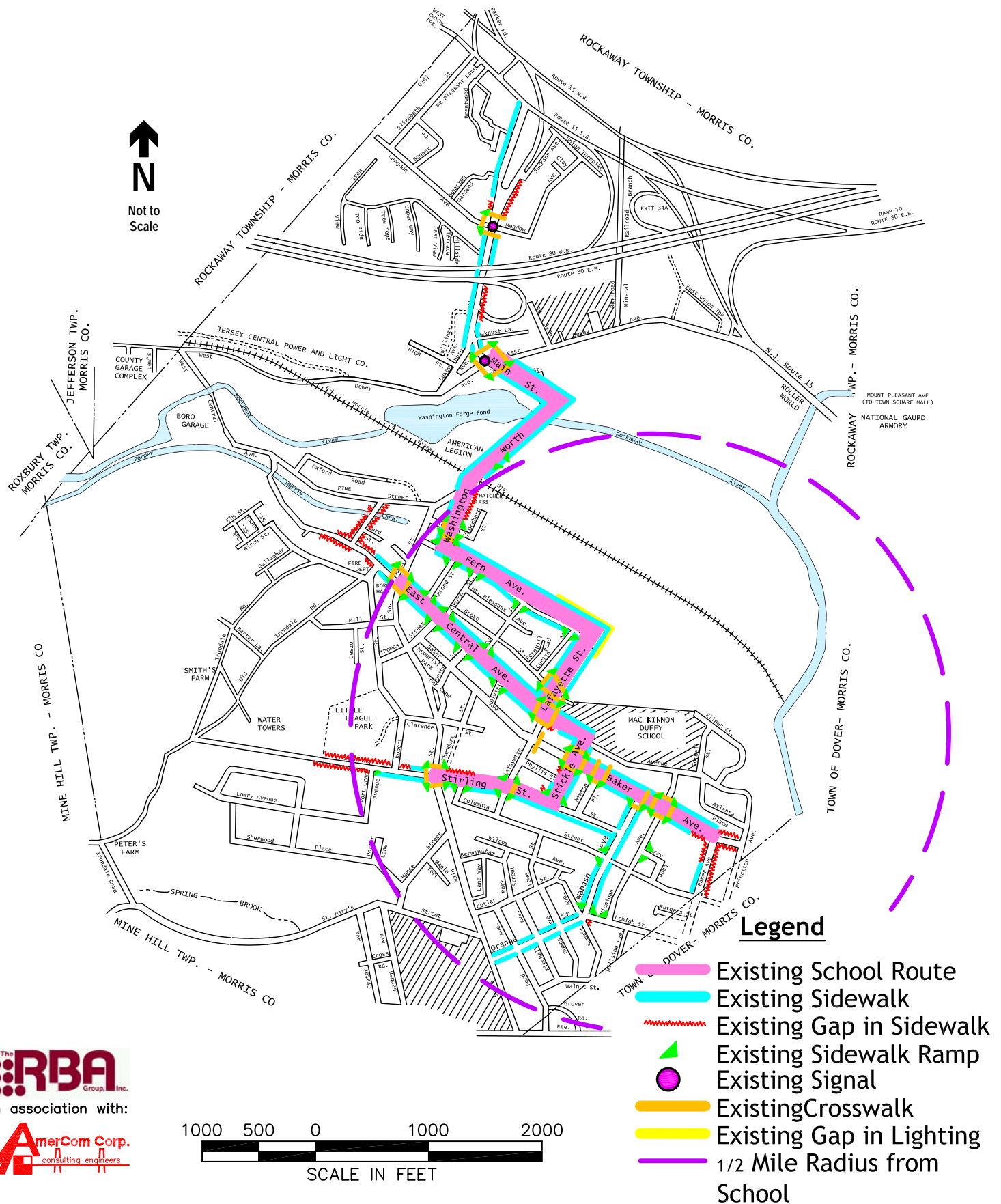
Several forms of inventories were performed to assess pedestrian and bicycle travel conditions along the sidewalk network and bicycling along the roadway corridors. They include:

- **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)



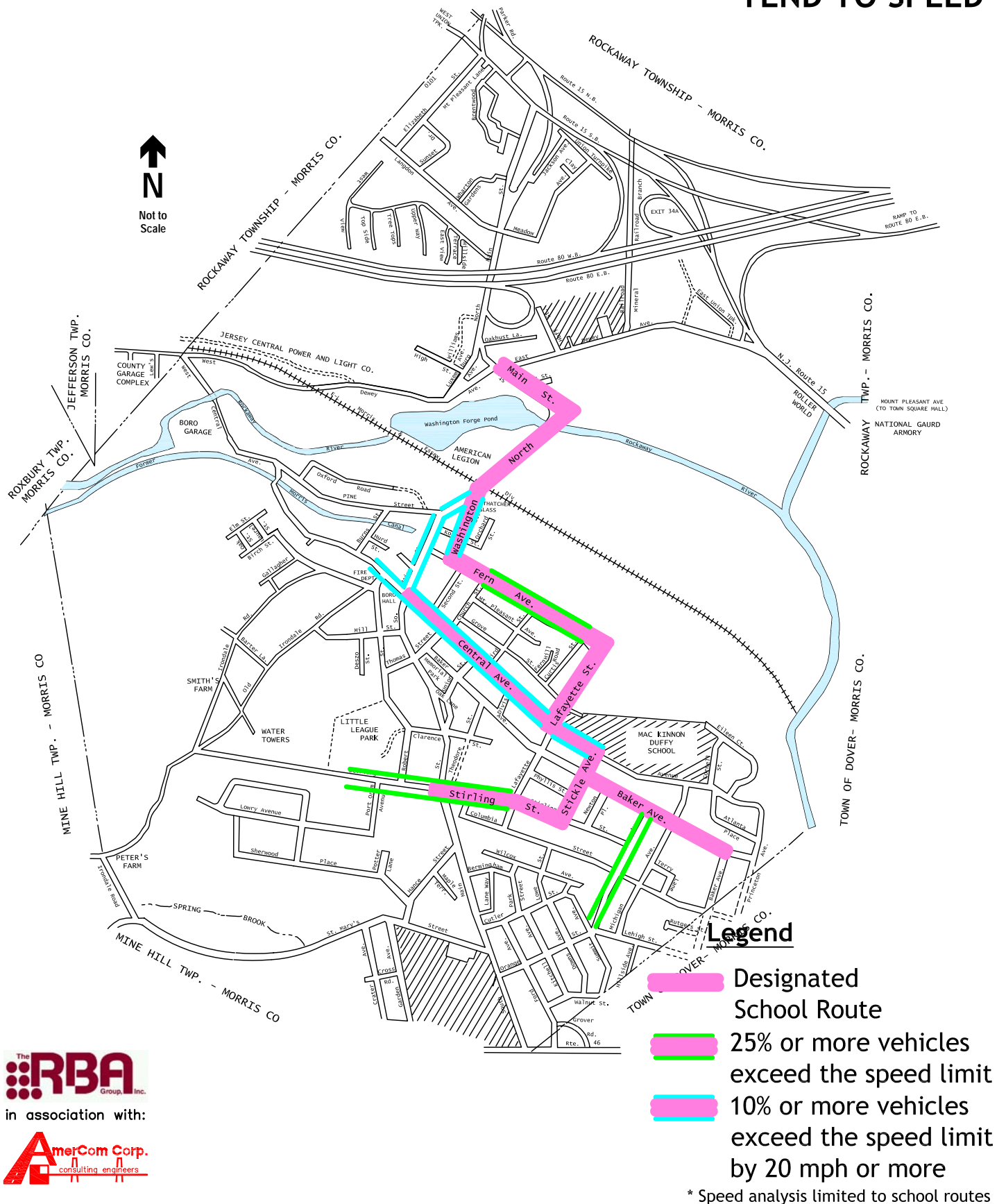
- **Roadway.** Roadways throughout the current routes to school and several other corridors were evaluated to document the pavement width and various other conditions. This information is valuable in assessing the compatibility for bicycle traffic and planning what types of treatments can fit within 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.

Figure 2
EXISTING CONDITIONS



Safe Routes to School Program Borough of Wharton, NJ

Figure 3
AREAS WHERE VEHICLES
TEND TO SPEED

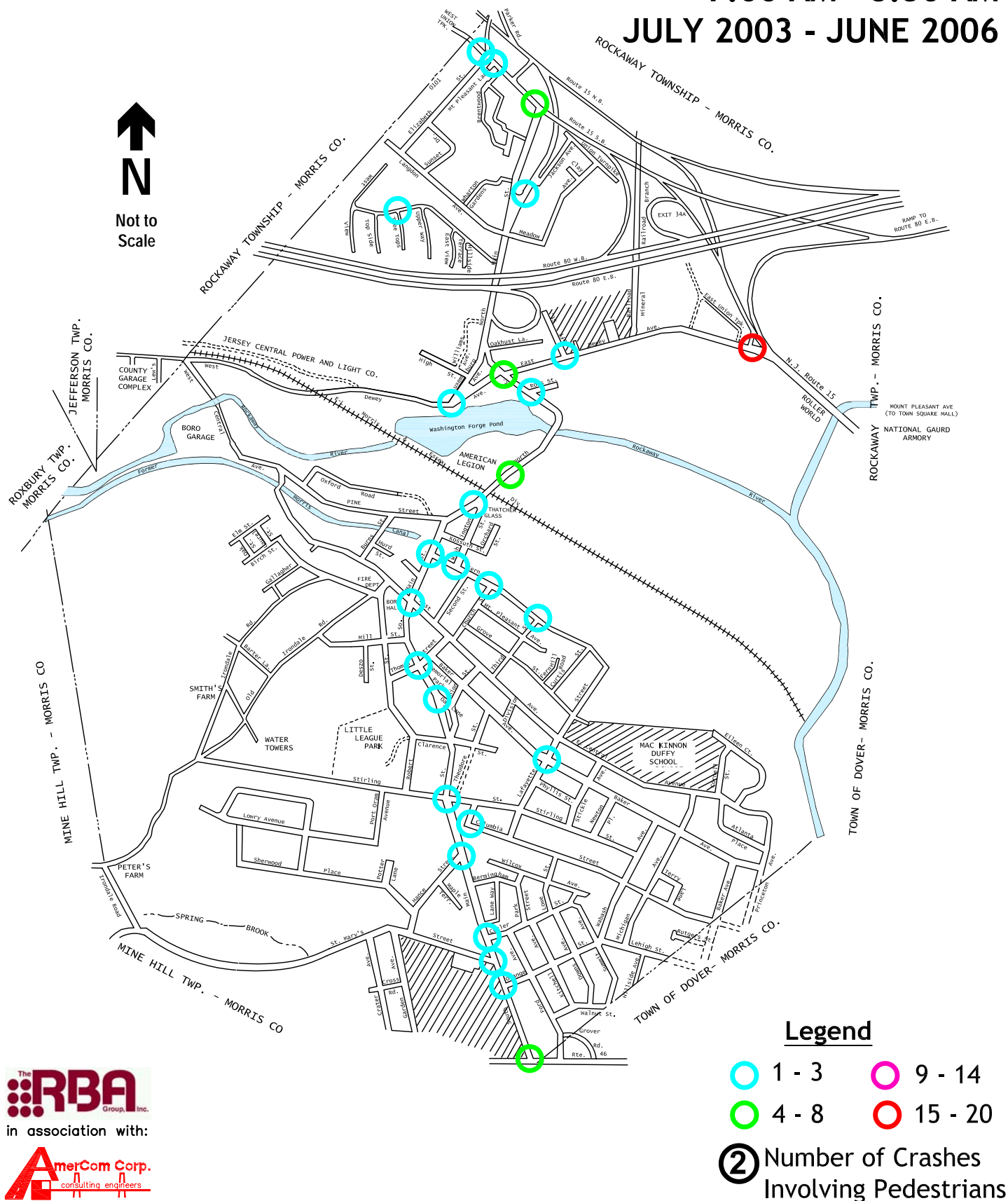


Safe Routes to School Program Borough of Wharton, NJ

Figure 4
CRASH DATA

7:00 AM - 8:30 AM

JULY 2003 - JUNE 2006

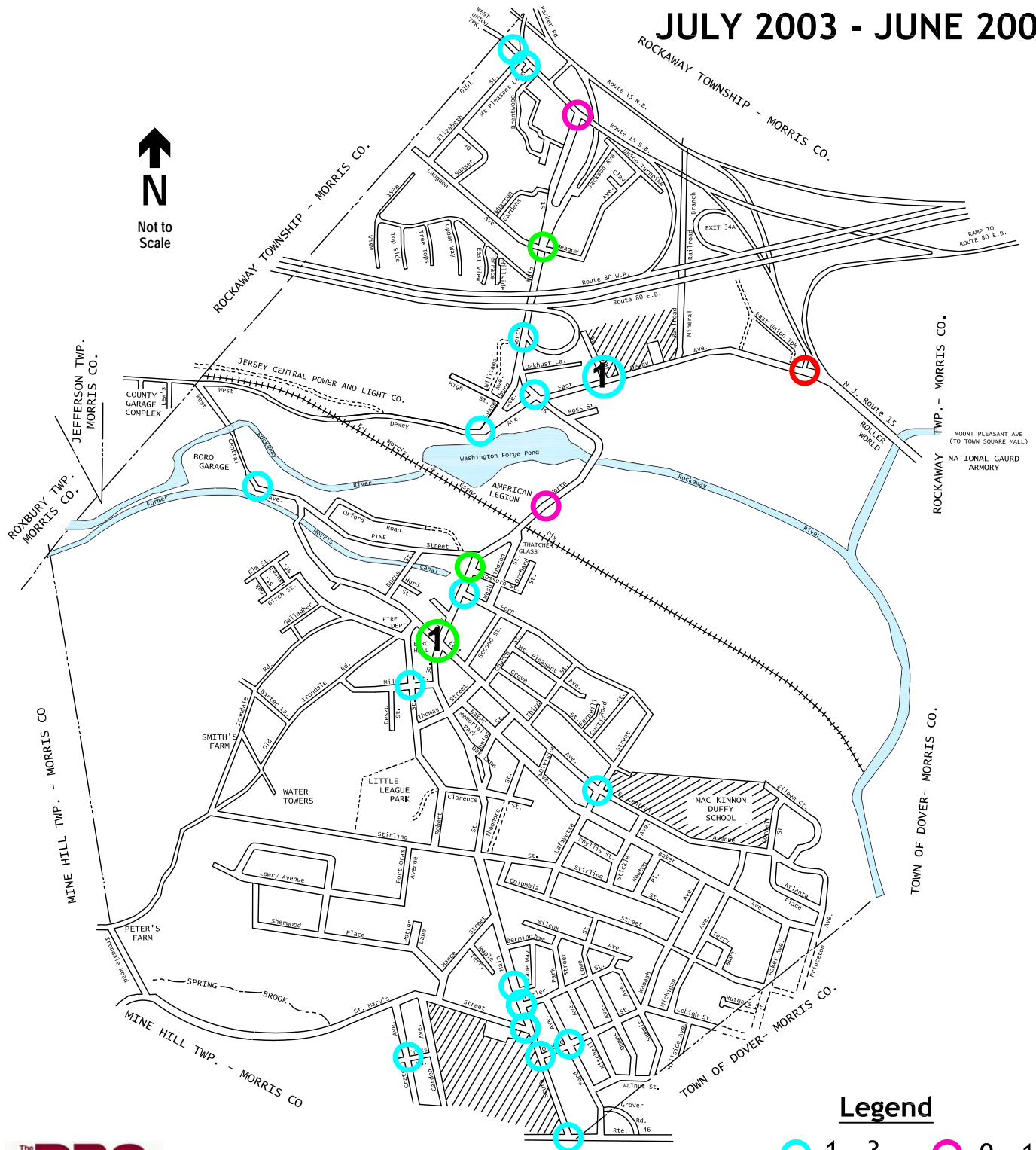


Safe Routes to School Program Borough of Wharton, NJ

Figure 5
CRASH DATA

3:00 PM - 4:00 PM

JULY 2003 - JUNE 2006



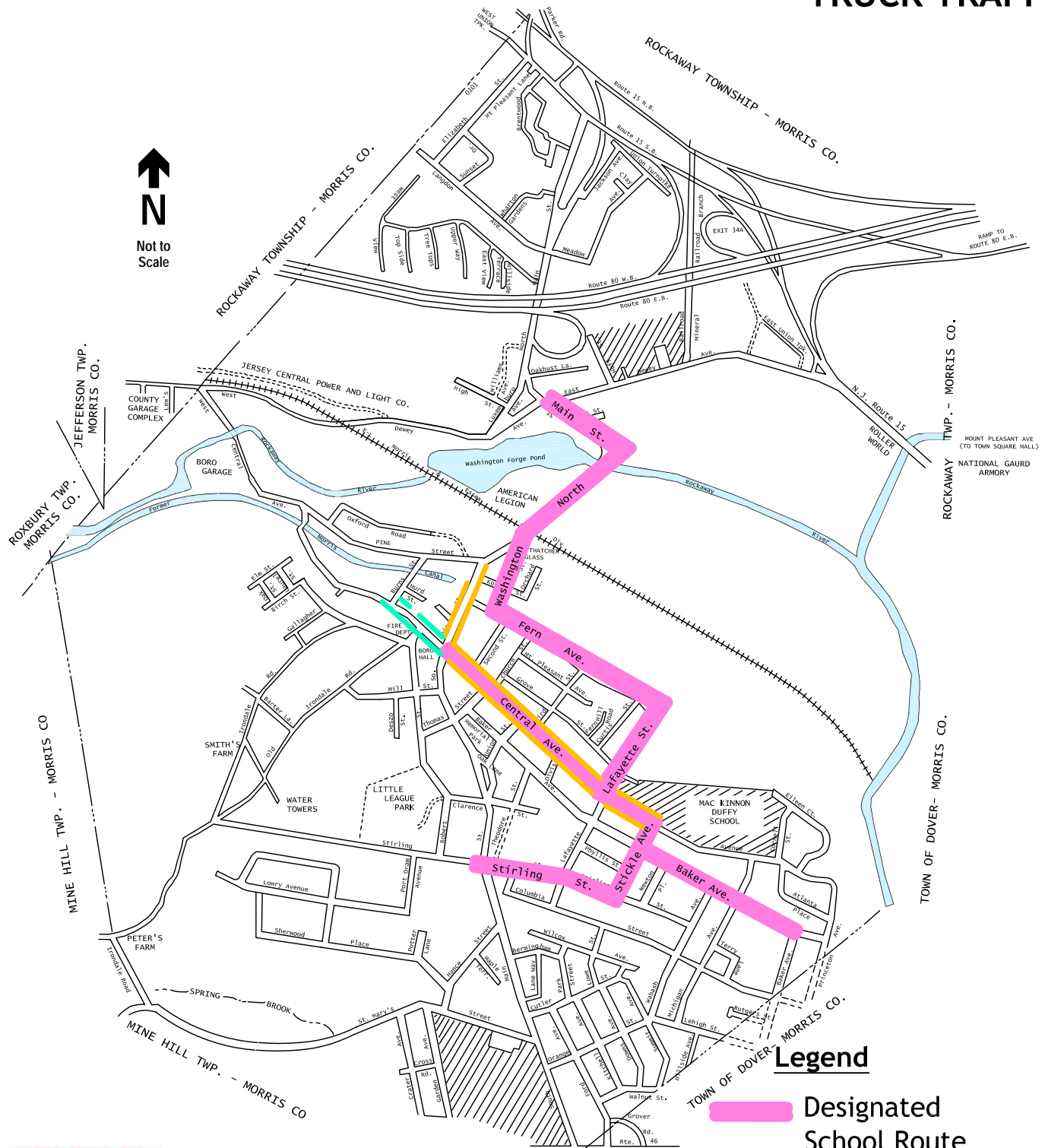
Legend

- 1 - 3
- 4 - 8
- 9 - 14
- 15 - 20

② Number of Crashes
Involving Pedestrians

Safe Routes to School Program Borough of Wharton, NJ

Figure 6
AREAS WITH HIGH
TRUCK TRAFFIC



Legend

- Designated School Route
- 10% - 20% Trucks
- 20% or more Trucks

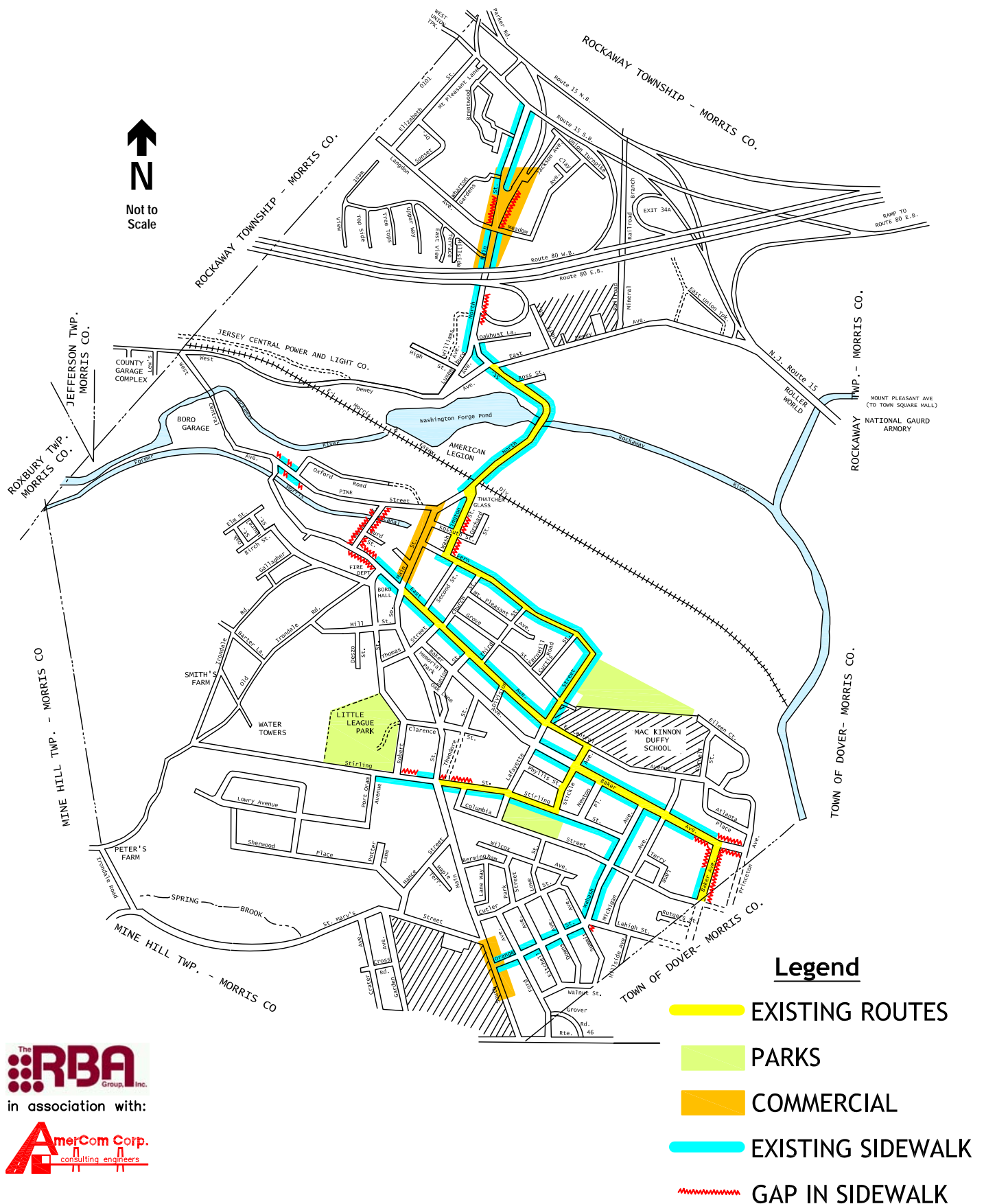
* Truck analysis limited to school routes



in association with:



Figure 7 SIDEWALK INVENTORY





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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.

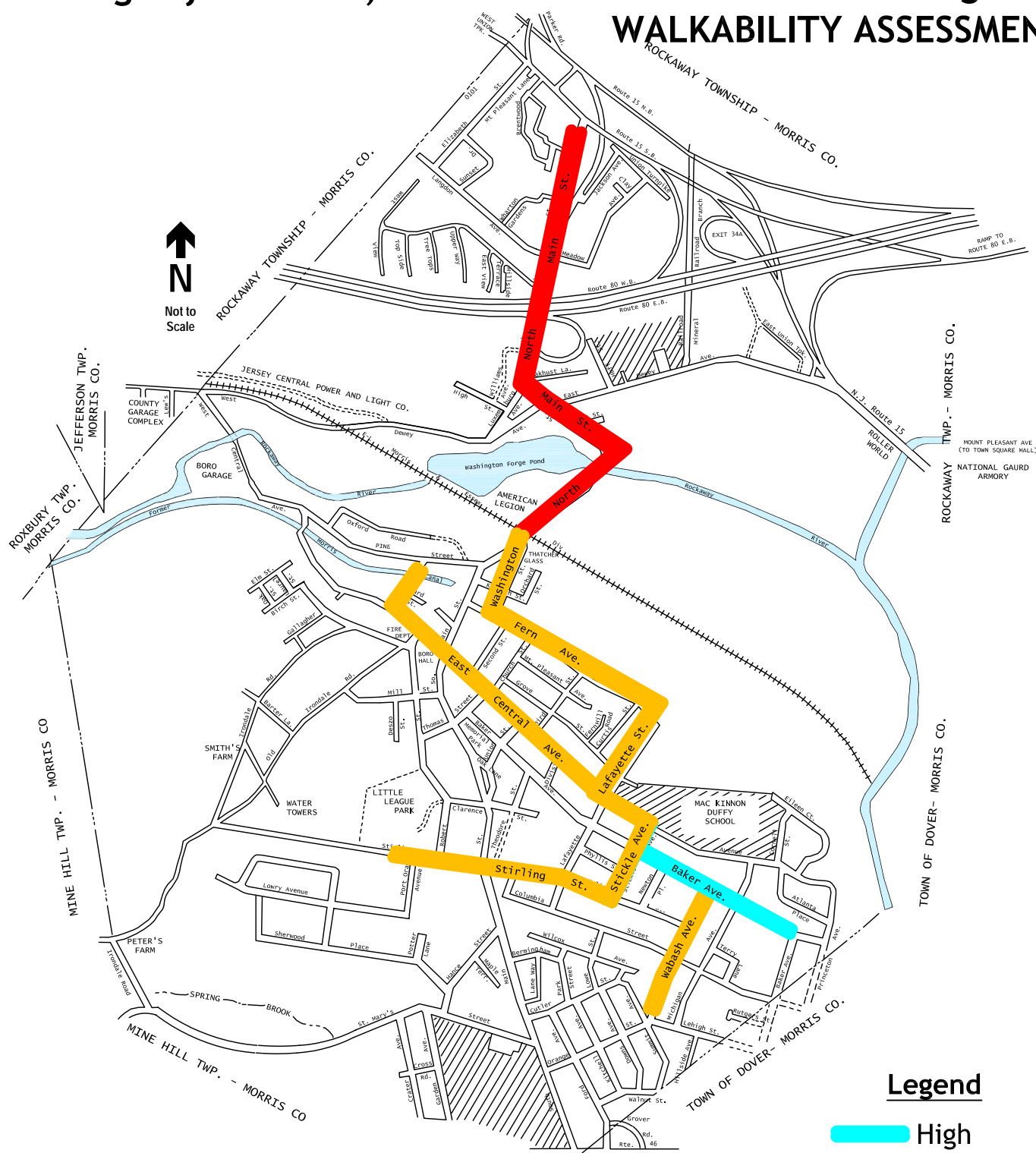
Assessments

- **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



Legend

█ High

█ Medium

█ Low



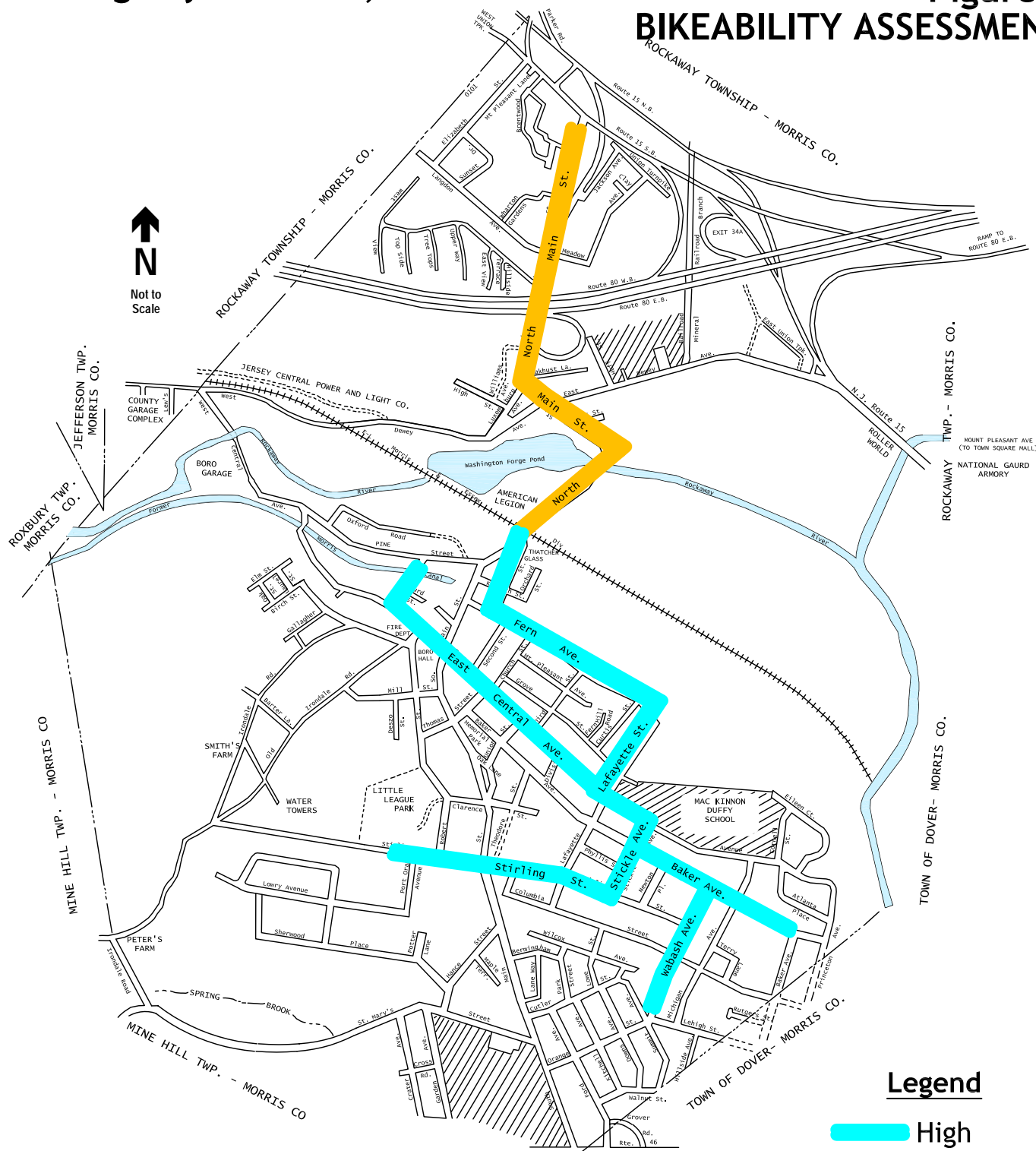
in association with:



* 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:





Borough of Wharton
Safe Routes to School Program Plan 2006



Figure 10: Time Radius Map





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



School Zone Striping



School Zone Signage



Bicycle Safe Grates



Pavement in poor condition



Inadequate sidewalk facility



Sidewalk terminating



Sidewalk in poor condition



Sidewalk in poor condition



Sidewalk in poor condition

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



Borough of Wharton Safe Routes to School Program Plan 2006



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 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 to 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

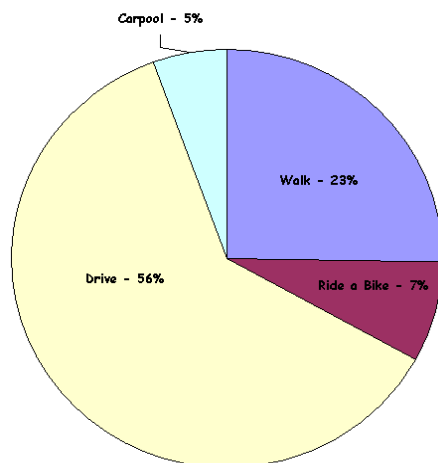
The overall goal of the surveys involves quantifying the ways children typically travel to and from school and obtaining attitudinal information in order to accurately assess the success of the SRTS program. Thus, surveys were administered to both parents and students during the spring of 2006 and will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

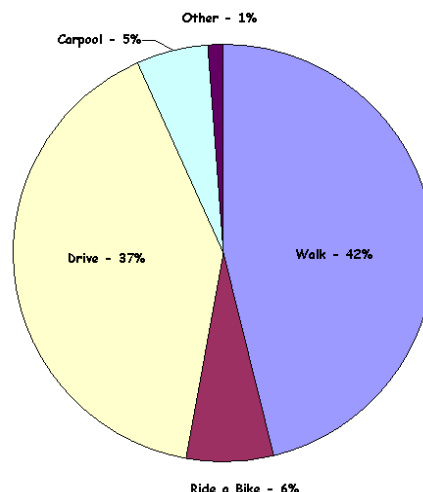
Student Surveys levied the following results:

- 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.

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



Question 2. How do you USUALLY Get Home in the Afternoon?



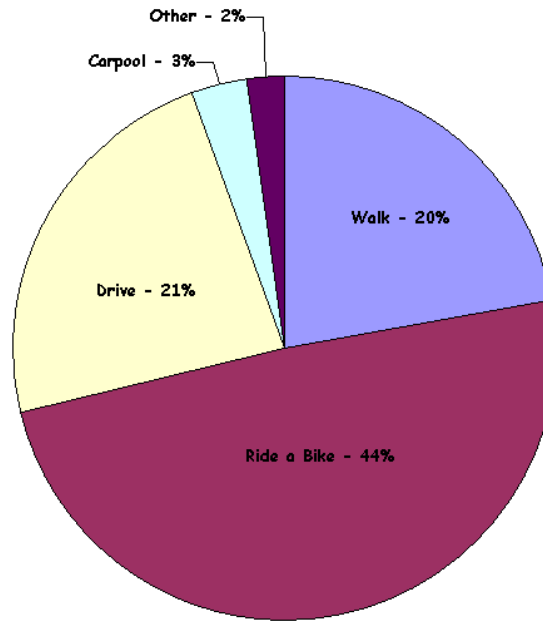


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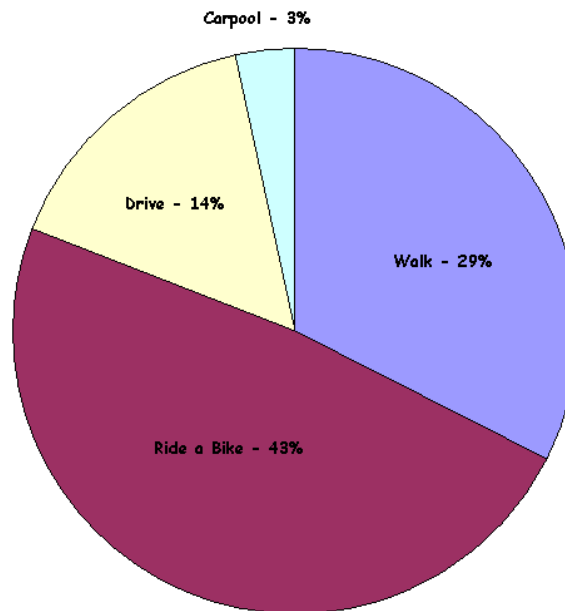


- Most students would ride their bicycle both to and from school, if the choice were theirs (Questions 3 and 4)

**Question 3. If You Had a Choice,
How Would You Get to School in the Morning?**



**Question 4. If You Had a Choice,
How Would You Get Home in the Afternoon?**





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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 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.”

