

## 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

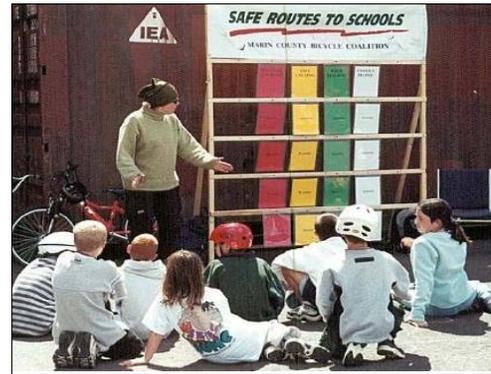
Pace Car participants sign a pledge to drive within the speed limit, stop for pedestrians, drive courteously and display an official Pace Car sticker on their car. At the Public Visioning Workshop, Wharton parents expressed an interest in displaying bumper stickers that read “I stop for pedestrians,” 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 than 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 than 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.

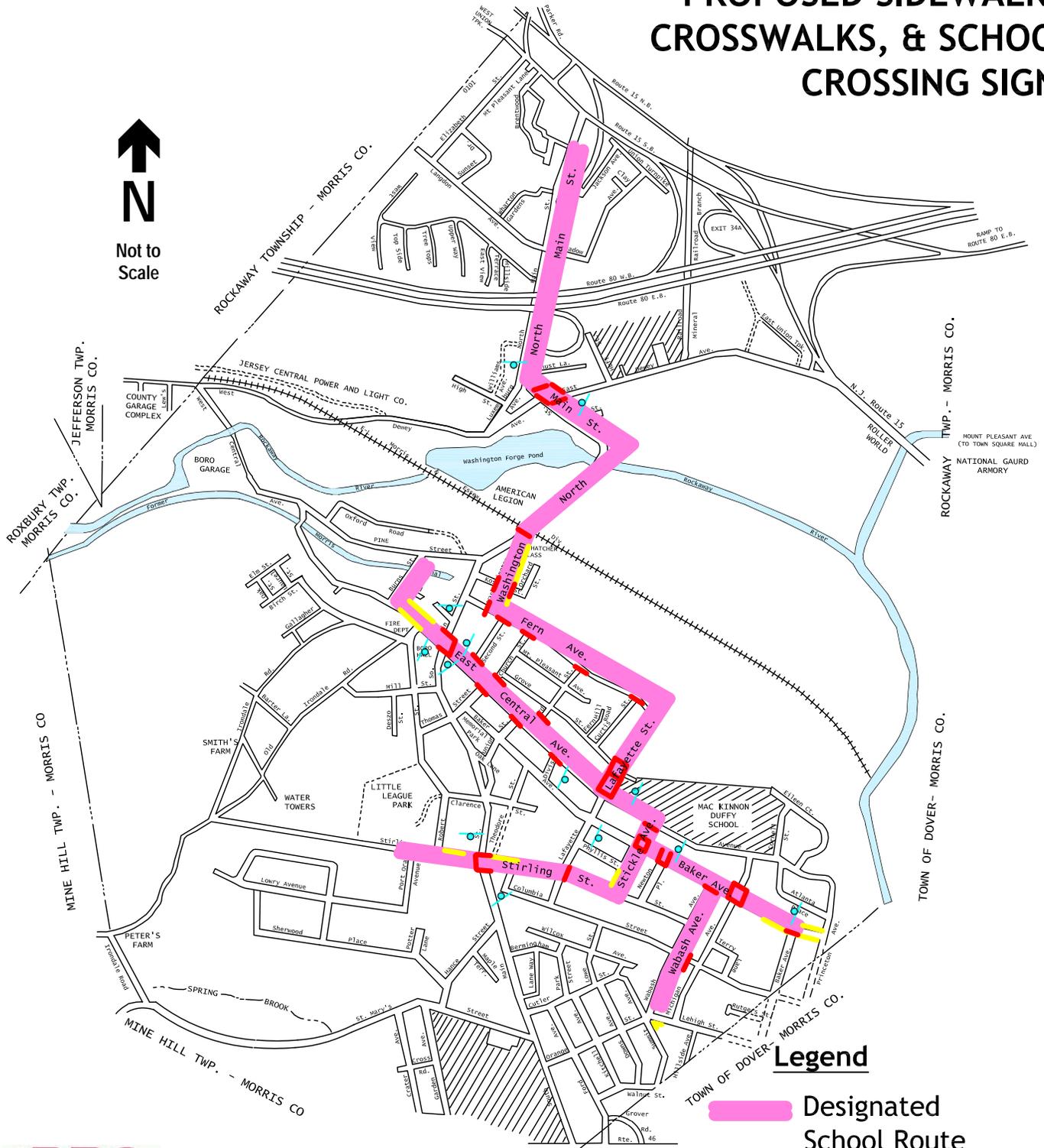
### 1B – School Route Modifications (See Figure 13)

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.

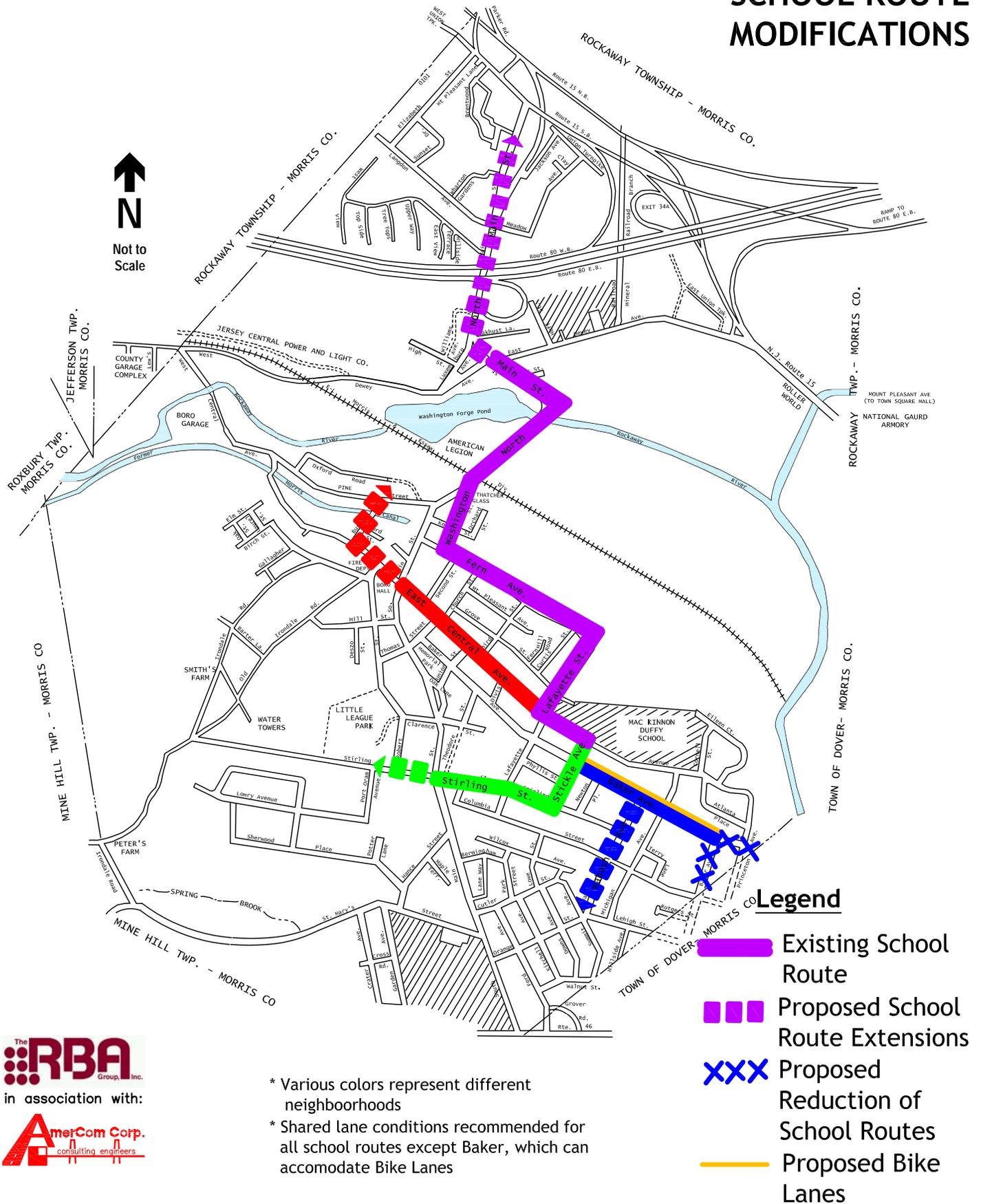
# Safe Routes to School Program Borough of Wharton, NJ

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



# Safe Routes to School Program Borough of Wharton, NJ

Figure 13  
CONCEPT 1B  
SCHOOL ROUTE  
MODIFICATIONS





## Borough of Wharton Safe Routes to School Program Plan 2006



- 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.)**

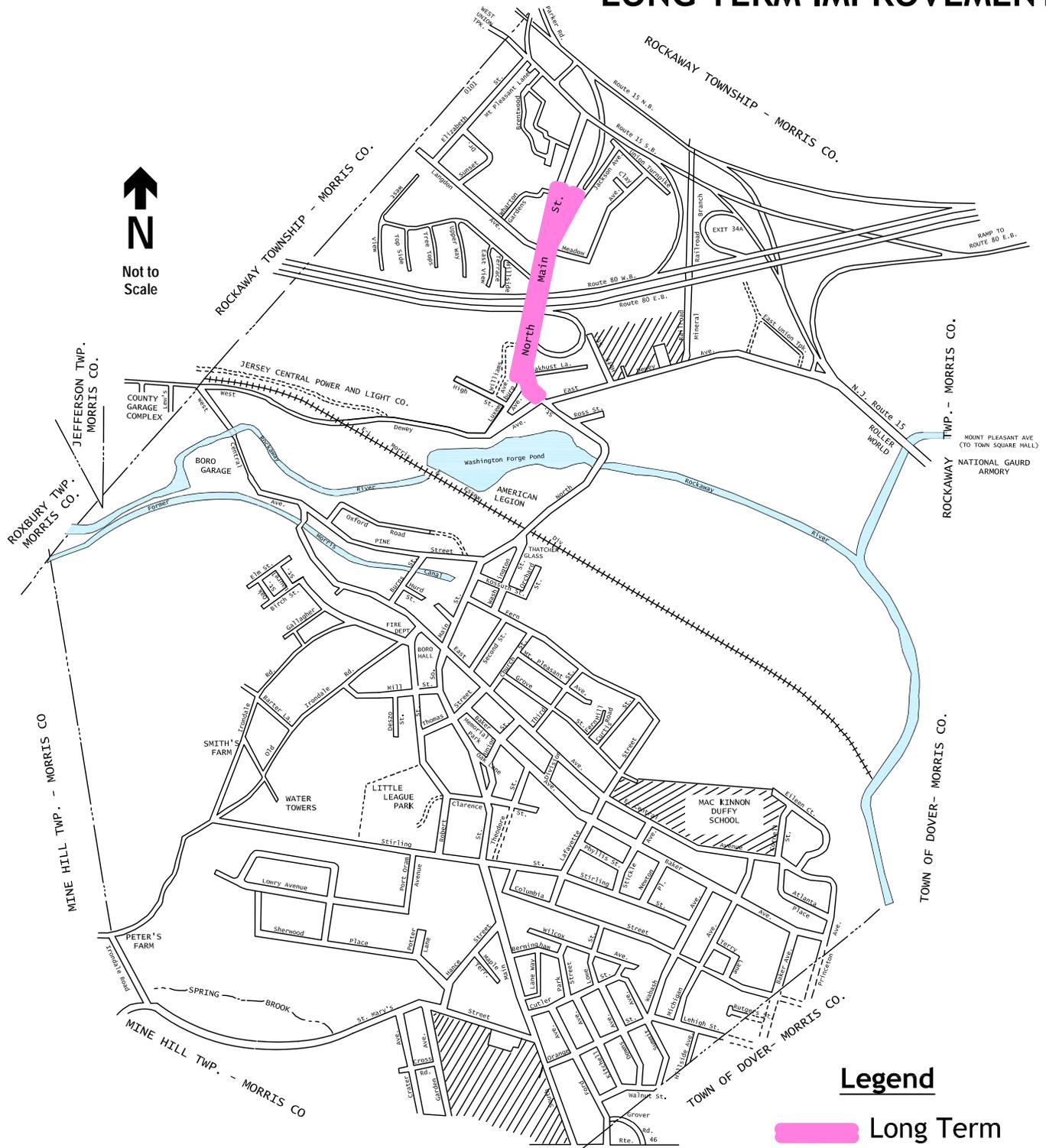
The gateway area to a school can be defined as the interface between the school property and the adjacent public street. For the MacKinnon and Duffy Schools the gateway area is located along East Central Avenue. This roadway is approximately 27 feet wide, has sidewalks on both sides, and is signed with 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.

# Safe Routes to School Program Borough of Wharton, NJ

## Figure 15 CONCEPT 1C LONG TERM IMPROVEMENTS



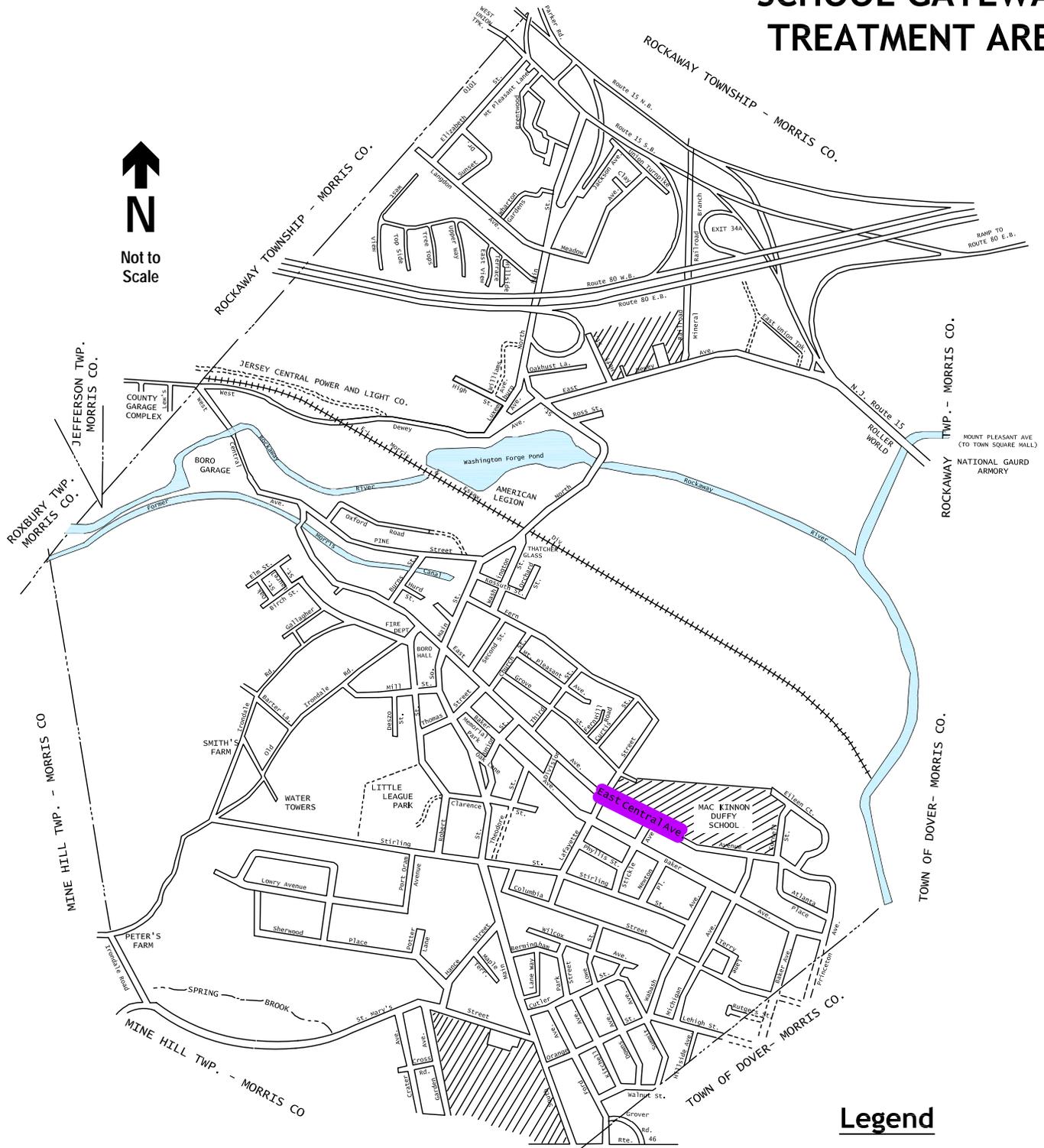
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Not to Scale

### Legend

 Long Term Improvements

# Safe Routes to School Program Borough of Wharton, NJ

## Figure 16 CONCEPT 2 SCHOOL GATEWAY TREATMENT AREA



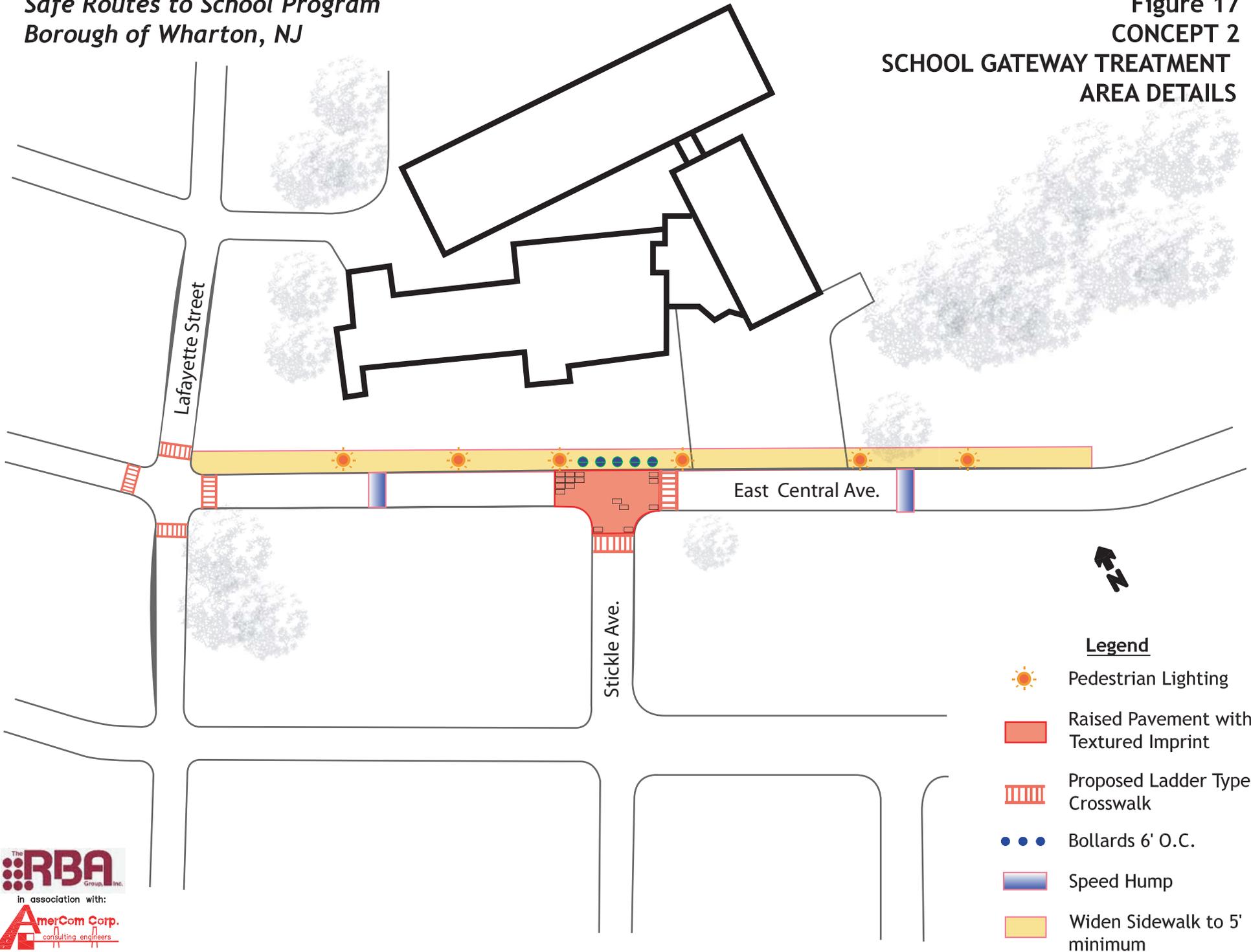
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### Legend

 Location of school gateway treatment

Safe Routes to School Program  
Borough of Wharton, NJ

Figure 17  
CONCEPT 2  
SCHOOL GATEWAY TREATMENT  
AREA DETAILS



**Legend**

-  Pedestrian Lighting
-  Raised Pavement with Textured Imprint
-  Proposed Ladder Type Crosswalk
-  Bollards 6' O.C.
-  Speed Hump
-  Widen Sidewalk to 5' minimum



**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**

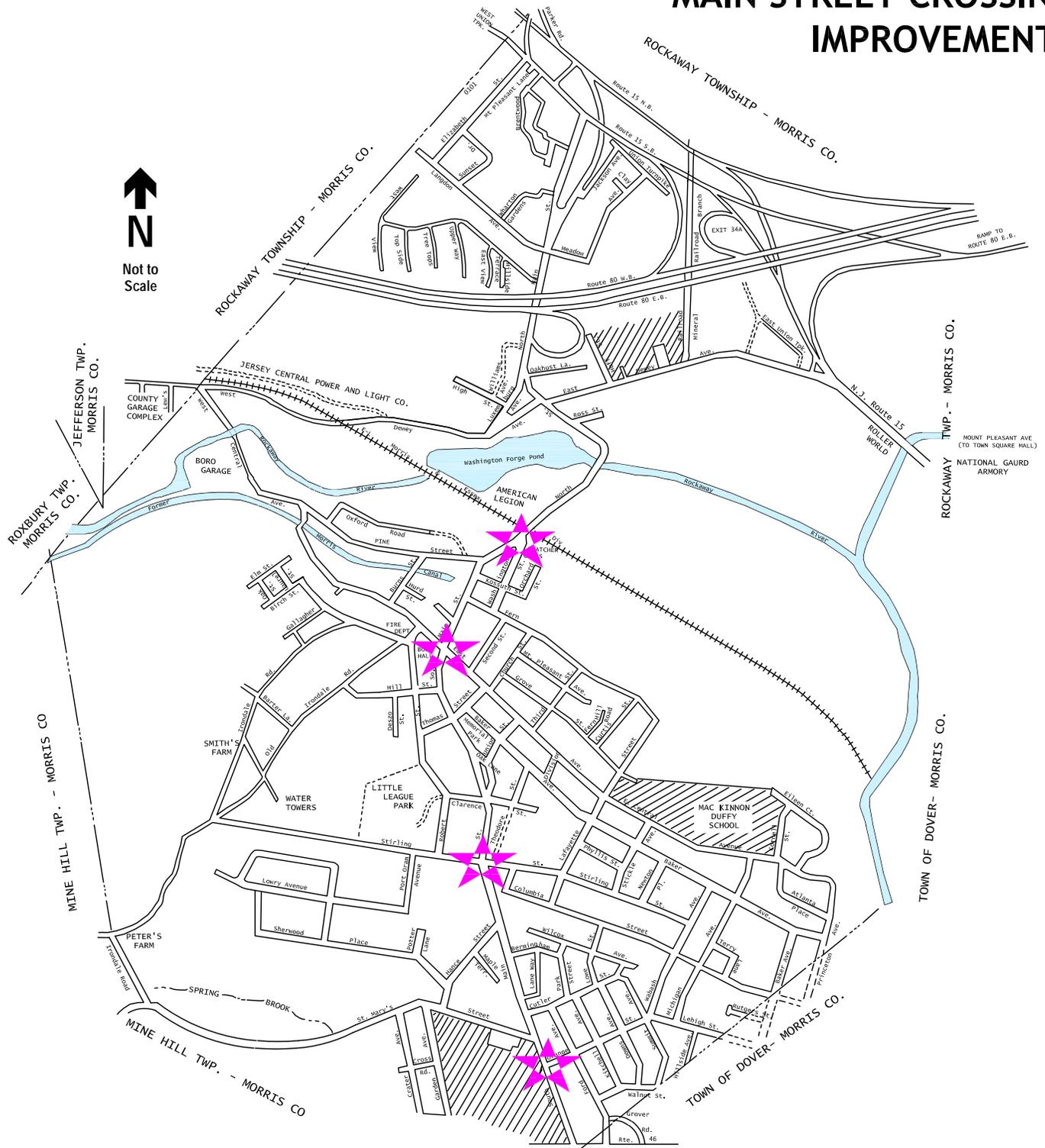
Consider constructing a shared use path connecting West Central Avenue and Burns Street, possibly extending to Main Street. This would establish an off-road travel alternative. Providing this connection would build on the existing facility. This will require neighborhood consensus, which has not yet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

Figure 19  
CONCEPT 3  
MAIN STREET CROSSING  
IMPROVEMENTS



↑  
N  
Not to Scale



## ***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.