

## Safe Routes to School Program

# Terrill Middle School Travel Plan

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## **DISCLAIMER**

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## **Executive Summary**

A Safe Routes to School (SRTS) Travel Plan is a resource to encourage and increase the number of students walking or bicycling to school. It provides directions for schools, students, families and the city to build a safer walking and biking environment for residents.

School Travel Plans are site specific and describe the needs of each particular school being studied. The plan includes observations, ideas and an action plan to address issues and problem areas. The Plan covers five aspects of the Safe Routes to School program – Education, Encouragement, Enforcement, Evaluation, and Engineering.

The School Travel Plan outlines the timeframe and funding priorities to support a coordinated schedule of streetscape improvements. In fact, the New Jersey Safe Routes to School (SRTS) infrastructure funding program strongly recommends applicants to have an approved School Travel Plan in order to apply for a grant.

### **1. Goals**

The goals of the Terrill Middle School Travel Plan are:

- a. Identify any issues that impact safety on the key travel routes used by students
- b. Provide a list of suggestions to improve the safety of the travel environment around school
- c. Prioritize the suggestions in terms of cost and time needed to make improvement.
- d. Propose solutions to encourage more students to walk and bike to school

### **2. Task Force**

This School Travel Plan is the product of a robust and productive partnership. The Terrill Middle School SRTS Task Force came together out of a shared community interest in improving the lives of students and residents. The involvement of local stakeholders is an important part of ensuring the sustainability of the SRTS initiative and the enactment of the Action Plan.

### **3. Community Barriers to Health**

In May 2016 a Parent/Caregiver questionnaire was distributed. Parents of Scotch Plains' children, age three to eighteen, were surveyed to identify their top concerns with students walking or biking to school. The concerns identified by parents include:

- a. Unpleasant sidewalks that are in disrepair
- b. Unsafe intersections as crosswalks are absent
- c. Property owners' plants encroaching into sidewalks
- d. Traffic congestion near schools during drop off and pick up

### **4. School Travel Data**

In May 2015, Terrill Middle School teachers conducted a School Travel Tally to determine how students travel to and from school.

Typically 7 percent of students walk to school, 46 percent of students are driven to school, 17 percent carpool, 30 percent use the school bus, and only 1 percent of students ride bicycles to school.

## **5. Barriers and Opportunities Identified for Safer Walking & Biking**

The Safe Routes to School Taskforce and Community Partners conducted a detailed walkability assessment of the road conditions along the main routes used by the students to walk to school on May 19, 2016. The major intersections surrounding the school are Terrill Road and Cooper Road and Raritan Road and Martine Avenue.

Key opportunities for bicycle and pedestrian infrastructure improvement around Terrill Middle School include: painting new high visibility crosswalk striping, repainting crosswalk striping, painting Stop sign bars, adding truncated dome pads and curb ramps to meet American with Disabilities Act (ADA) compliance, repaving sidewalks, and installing new sidewalks.

## **6. Action Plan**

The Safe Routes to School program categorizes the Action Plan into the “Five E’s:” Education, Encouragement, Enforcement, Evaluation and Engineering. This is a useful tool because it helps the school prioritize next steps. In a particular community, some of the action items may be more urgently needed than others, so the school can execute the recommendations in any order they choose. This School Travel Plan recommends a number of improvements that can be made to encourage safe walking and biking. The action plan can be used to support SRTS and other Federal or State grant applications to fund pedestrian and bicycle improvements.

### Key Actions/Recommendations in Action Plan include:

- Repave and level/resurface sidewalks along Kevin Road, King Street, Terrill Road, Cooper Road, Coles Elementary Bike Path, Terrill Middle School Bike Path, Raritan Road, & West Broad Street
- Paint/repaint high visibility crosswalks at: Cooper Road & Terrill Road, King Street & Martine Avenue, King Street & Terrill Road, Kevin Road in front of Coles Elementary, Colonial Drive & Terrill Drive, and Graymill Drive & West Broad Street
- Install a curb ramp for the bike path behind Cole Elementary
- Install bike racks behind Terrill Middle School
- Paint Bike Lanes on Raritan Road, Terrill Road, and Cooper Road
- Install new sidewalks, curb ramps, truncated dome pads, along majority of the routes, roads, and intersections
- Paint crosswalks and stop sign bars at most of the intersections along routes

## **1. Walking and Cycling to Health**

### **1.1 The Challenge**

Over the past few decades, a number of societal and environmental changes have limited children's access to safe places where they can walk, bike and play. For example, increased traffic, neighborhoods that lack sidewalks and urban sprawl have contributed to a sharp decline in the number of students who walk or bike to school. Nationally, while 42 percent of children walked or biked to school in 1969, only 13 percent of children did so in 2001. Additionally, the popularity of television and video games as a means to entertain children has contributed to a more sedentary lifestyle. As a result, children and adolescents are less physically active than they were several generations ago.

The decrease in walking and biking to school and less physical forms of play has resulted in an alarming increase in childhood obesity. During the past four decades, the obesity rate for children ages 6 to 11 has more than quadrupled (from 4.2 to 17 percent), and the obesity rate for adolescents ages 12 to 19 has more than tripled (from 4.6 to 17.6 percent).

Developing policies and practices to address these environmental and social barriers to daily physical activity are critical to reducing and preventing obesity among children. Supporting “active transport” (or walking and bicycling) to school presents an excellent opportunity to increase daily physical activity among youth.<sup>1</sup>

### **1.2. The Program**

Safe Routes to School (SRTS) is a federal program that encourages, teaches, and enables children to safely bicycle and walk to school. The program aims to help children be more physically active with the intent to reduce chronic disease and prevent and reduce obesity. SRTS focuses on increasing the number of children walking and bicycling to school by building and repairing infrastructure such as sidewalks, crosswalks, and bicycle lanes. The program also encourages changes in travel behavior, supports increased enforcement of traffic laws around schools, and educates communities on the benefits and safety aspects of active transport. This report summarizes research on active transport to school. It also explores the factors that influence walking and biking to school, including the impact of SRTS programs.

The SRTS Program is a collaborative effort of multiple stakeholders that include community members, elected officials, city planners, and police departments. SRTS brings a community closer together by implementing programs such as walking school buses, walkability audits, bicycle rodeos and pedestrian safety presentations. The benefits of SRTS extend far beyond the schools into the community as a whole.

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<sup>1</sup> Walking and Biking to School, Physical Activities and Health Outcomes, Robert Wood Johnson Foundation

A SRTS School Travel Plan “maps out” specific ways to improve pedestrian and bicycle travel to increase the number of students who walk and bike to school and to improve safety. A School Travel Plan identifies the following:

- Where students currently walk and bike?
- Where students would walk and bike if they could?
- What changes need to be made so that students can and will walk and bike to school?

The School Travel Plan identifies short term solutions for immediate action and implementation as well as long term solutions that may require planning and additional funds. Benefits of developing a School Travel Plan include:

- Creating partnerships between the school and surrounding community
- Generating ideas and actions so walking and bicycling is safer
- Building community excitement and support
- Making an application for a SRTS grant more competitive by demonstrating a connection between goals, actions and targets.

### **1.3. The Team**

The New Jersey Department of Transportation (NJDOT) funds and administers the SRTS program in New Jersey, and the Voorhees Transportation Center (VTC) at Rutgers’ University provides technical and administrative support.

The actual implementation of the SRTS program at the Terrill Middle School was undertaken by two organizations – EZ Ride and the Fanwood-Scotch Plains YMCA.

#### **EZ Ride**

In New Jersey, Transportation Management Associations (TMAs) have taken the lead in coordinating the implementation of the SRTS programs. TMAs are non-profit organizations whose mission is to implement transportation programs and services like carpools, vanpools, shuttles, biking and walking that reduce congestion and improve air quality. EZ Ride is one of eight Transportation Management Associations (TMAs) in New Jersey and primarily serves Bergen, Essex, Monmouth, Passaic and Union counties.

#### **Fanwood-Scotch Plains YMCA**

The Fanwood-Scotch Plains YMCA is a leading voice within the community on health and well-being, with a mission centered on balance and developing connection with individuals and families. The YMCA supports the community by providing opportunities to build and sustain life-long habits of health. It provides resources to children, adults and families by developing small communities of support within various areas. Health enhancement programs are designed to help people develop new skills through active lifestyle, proper nutrition, stress management and health education aimed at empowering individuals to choose healthier options. The YMCA is dedicated to addressing the chronic disease challenges within the community and developing programs and strategies aimed at

improving overall health. The YMCA is committed to serving the underserved and developing partnerships to help support those needs.

### **Township of Scotch Plains**

The township decided to apply for the SRTS infrastructure grant. A township full-time employee and the Town engineer are working with the resource support of EZ Ride and Voorhees Transportation Center to write and submit the grant application.

### **Scotch Plains-Fanwood PTA**

The PTA has been supportive of SRTS efforts including the Walk to School Day and bringing Walking Safety programs into the schools. A PTA leader helped with the walkability assessment.

### **Terrill Middle School Travel Plan Task Force**

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## 2. District & School Profile

A school profile for Terrill Middle School was developed using data from the Scotch Plains – Fanwood District website, the Terrill Middle School website, and the National Center for Education Statistics. Additional site-specific information was collected from parent surveys, interviews and on-site visits.

The Township of Scotch Plains and the Borough of Fanwood are attractive residential communities located in north central New Jersey. The Scotch Plains-Fanwood Public Schools serve approximately 5,500 students from Preschool – Grade 12. The district offers a comprehensive academic program, excellent pupil services, an experienced and highly qualified staff, modest class size (12.98:1 student to teacher ratio), and a wide variety of extracurricular athletics and activities. The district has five elementary schools (Preschool – Grade 4), 2 middle schools (Grades 5 – 8), and one comprehensive high school (Grades 9 – 12). Student demographics are shown in Table 1 below.

**Table 1. Scotch Plains – Fanwood Public Schools – Student Demographics**

<b>Ethnicity</b>	<b># of Students</b>
African-American	497
Hispanic	380
Caucasian	3,988
Asian/Pacific Islander	471
American Indian/Native American	9
Two or More Races	136
<b>Gender</b>	<b># of Students</b>
Male	2,736
Female	2,745
<b>Grade Level</b>	<b># of Students</b>
Primary (Pre-Kindergarten – Grade 4)	2,101
Middle School (Grade 5 - 8)	1,756
High School (Grade 9 - 12)	1,551
Special Needs Students/Individualized Education Program	73

### Academic Performance

According to the New Jersey Department of Education data, Scotch Plains-Fanwood public schools are rated highly in academic performance when compared with other schools in the state. Schools are also compared to a group of schools that have similar student demographic characteristics (such as free/reduced lunch eligibility), known as a peer group. Across all the schools, the High School ranked lowest in terms of percentage of students meeting or exceeding expectations in math and language arts but still were in the 90<sup>th</sup> (peer) and 87<sup>th</sup> percentile (state). The elementary and middle schools had majorities of students meeting or exceeding expectations; 62 percent for math and 71

percent for language arts. Compared to their peers, they were never lower than the 68<sup>th</sup> percentile and not lower than the 86<sup>th</sup> percentile when compared to the entire state.

The Scotch Plains – Fanwood School district is classified by the NJ Department of Education as District Factor Group “I,” the second highest of eight groupings, indicating an advantaged community. A District Factor Group (DFG) is an indicator of the socioeconomic status of citizens in school districts of New Jersey. DFGs were first developed by the New Jersey Department of Education in 1975 for the purpose of comparing student performance on statewide assessments across demographically similar school districts.

## **2.1. Scotch Plains – Fanwood Health Profile – Union County Community Health Assessment**

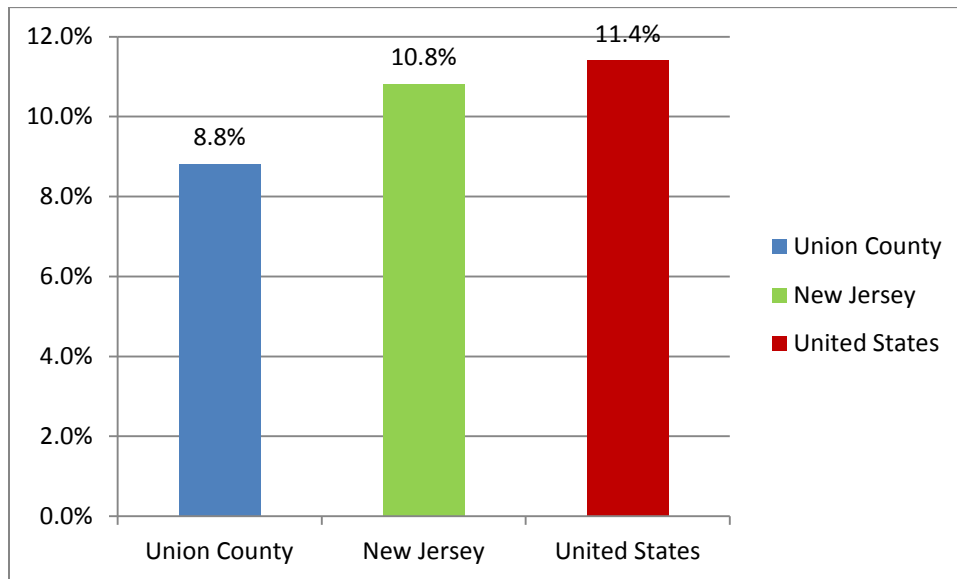
In 2016, the North Jersey Health Collaborative worked with the Center of Population Sciences and the Atlantic Health System to conduct a Community Health Assessment of Union County. The North Jersey Health Collaborative is a 501(c)3 organization with over 120 partner organizations aligned around shared goals for collective impact. In 2015, the Collaborative conducted a year-long process of community-based assessment entitled “Painting a Picture of Community Health”. Throughout this process, 107 community leaders participated from 56 organizations representing 12 community sectors. After data were collected, three data review sessions were held in Union County and a total of 125 issues were identified.

### **Understanding Social Determinants of Health**

Conditions in the places where people live, learn, work, and play affect a wide range of health risks and outcomes. These conditions are known as social determinants of health. We know that poverty may limit healthy food access and coincide with unsafe neighborhoods and that more education is a predictor of better health. We also know that differences in health are striking in communities with poor social determinants of health such as unstable housing, low income, unsafe neighborhoods, or substandard education. By applying what we know about social determinants of health, we can not only improve individual and population health but also advance health equity.

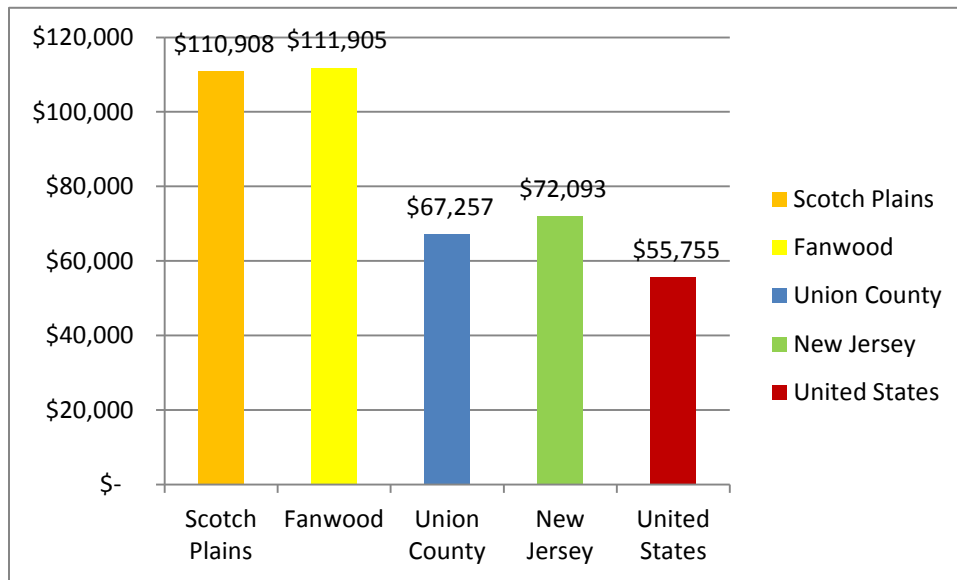
*Source: Centers for Disease Control and Prevention*

**Chart 1: Poverty Level 2015**



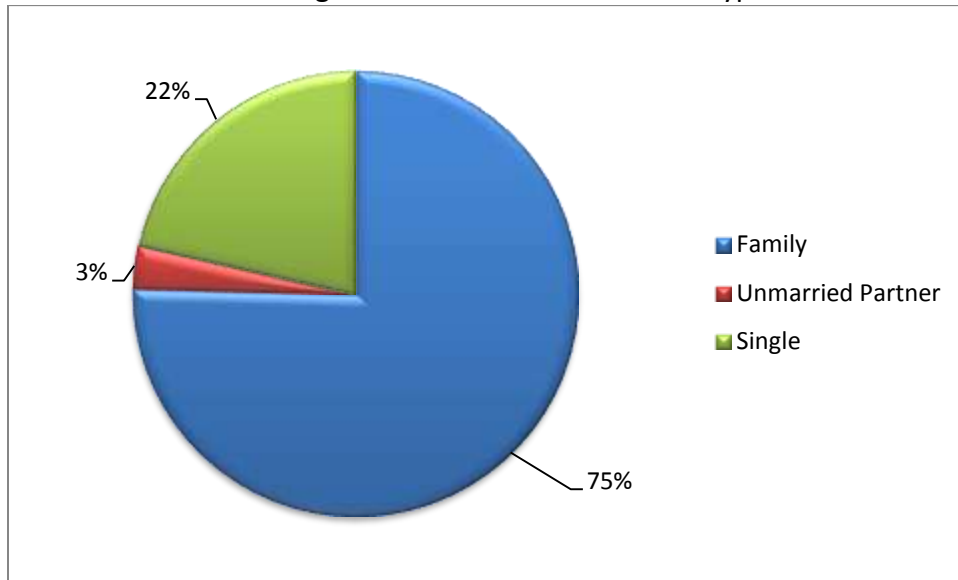
Source: 2016 Community Needs Assessment Union County; US Census Bureau: Income and Poverty Estimates

**Chart 2: Estimated Median Household Income – Scotch Plains – Fanwood, NJ**



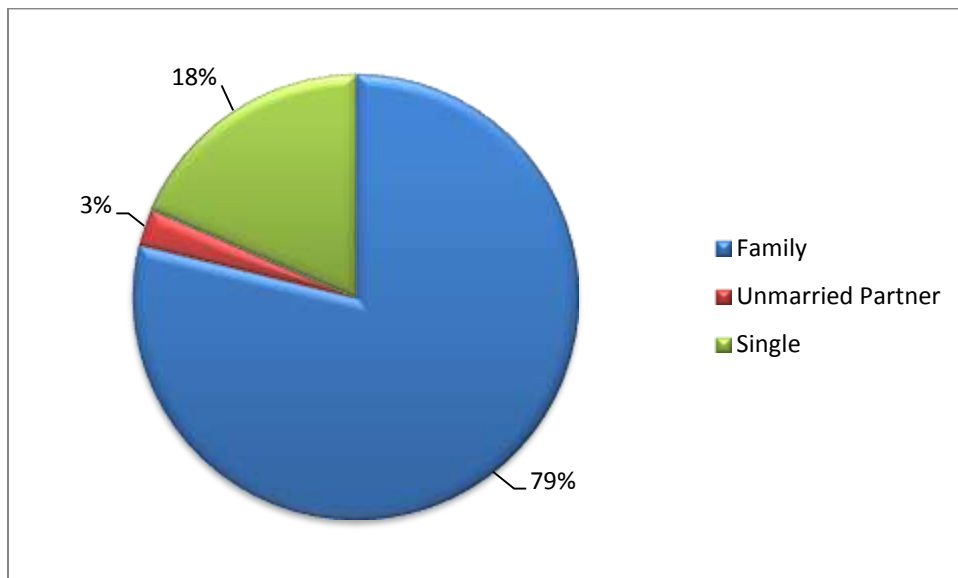
Source: 2016 Community Needs Assessment Union County; US Census Bureau: Income and Poverty Estimates (2011- 2015)

**Chart 3: Income Households by Type – Scotch Plains, NJ**  
Percentage of Scotch Plains Household types



City-Data.com, 2013

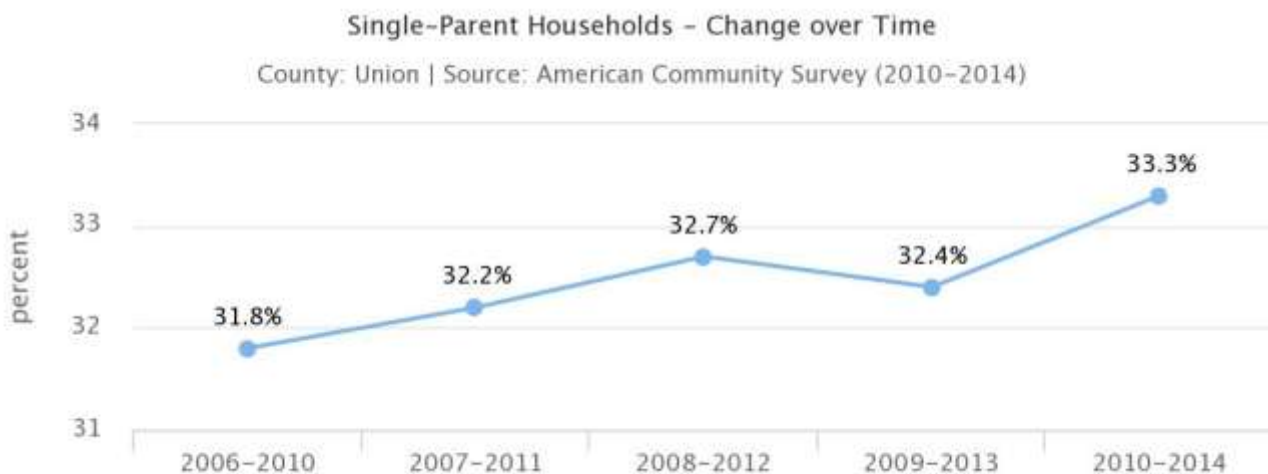
**Chart 4: Income Households by Type – Fanwood, NJ**  
Percentage of Fanwood Household types



City-Data.com, 2013

Approximately 1 in 5 households in Scotch Plains and Fanwood are run by a single parent. This is lower but follows a similar trend throughout New Jersey. As shown in Chart 4, in the past decade the percent of single – parent households has increased from 31.8 percent to 33.3 percent.

**Chart 4: Single – Parent Household Trend in Union County**



Source: NJHealthmatters.org; American Community Survey

### **Childhood Obesity**

Between 2009 – 2011 19.3 percent of low income preschool aged children in Union County reported as obese. The trend appears to be on the decline in recent years as it was reported that 21.3 percent of low-income preschool aged children were obese when data was collected in 2006 – 2008.

### **Adult Obesity**

In 2013, data collected showed that 24.7 percent of Union County adults over the age of 20 were obese. This is a slight increase from a previous reported value of 24.5 percent.

### **Media Viewing Habits**

The American Academy of Pediatrics recommends that children spend a maximum of two hours per day on entertainment media like television, computers, and video games.

### **Exercise**

The HHS 2008 Physical Activity Guidelines for Americans recommend that adults get at least thirty minutes of moderate to vigorous activity daily and that children get at least sixty minutes of moderate to vigorous physical activity daily.

## 2.2 Terrill Middle School

Terrill Middle School strives to educate and empower the community of individual learners to be successful citizens of the world. The educators of Terrill Middle School, with parents as partners, are highly committed to pursuing and maintaining an academically excellent, developmentally responsive, and socially equitable learning environment for every student.

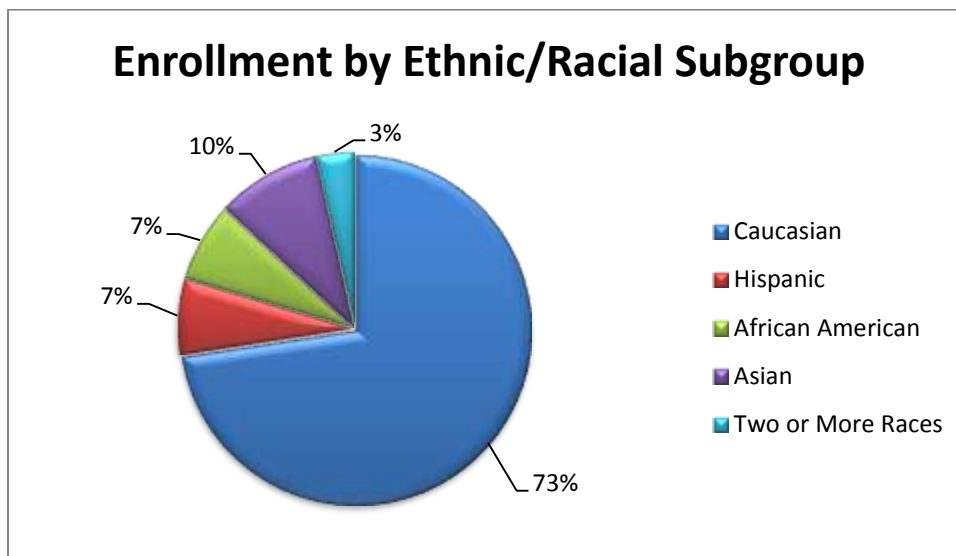
The academic program at Terrill Middle School currently provides two distinctive instructional models across four grade levels. The fifth grade instructional program is primarily a self-contained environment with a strong emphasis on mathematics, language arts literacy, science, and social studies. In addition to these core subjects, students experience three world languages, fine arts, and physical education/health. The sixth, seventh, and eighth grade instructional programs are structured on a team concept. In addition to the exceptional academic core program, students explore art and music. World language is included in the sixth grade curriculum as students make a three-year commitment to build proficiency in French, Italian, or Spanish. Finally, in all grade levels students may elect to participate in our outstanding music program through band and/or chorus.

Students may also participate in clubs and after school activities such as: Art Club, Intramural Club, Homework Club, Jazz Band, newspaper, a musical production, drama club, Builder's Club, PALS (Peer and Leadership Support), student council, and yearbook.

With excellence, initiative, and diversity as our cornerstones, we commit ourselves to providing exceptional learning experiences for all students.

Terrill Middle School serves approximately 825 students in Grade Five to Grade 8. As Chart 7 below shows, about 73 percent of the students enrolled are Caucasian, 7 percent are Hispanic, 7 percent are African American, 10 percent of students are Asian, and 3 percent of students are Two or More Races.

**Chart 1: Terrill Middle School Enrollment by Student Ethnicity in 2014 – 2015**



New Jersey School Performance Report. 2014-2015. <http://www.nj.gov/education/pr/1415/39/394670065.pdf>

The number of students has slightly decreased from 845 in 2012 to 825 in 2013 and 2014. As shown in Table 2 below, English is the dominant language spoken at home by a wide margin at 93.6 percent of the students at home. Chinese is spoken by 1.9 percent of students in their homes. Spanish is spoken by 0.8 percent by students in their home. Hindi is spoken by 0.7 percent. Gujarati is spoken by 0.5 percent. Telugu is spoken by 0.4 percent. Finally, 2.0 percent identify “Other” as a language spoken at home.

**Table 2. Student Language Diversity (2014 – 2015)**

Language Diversity	
Percent of students who speak the following languages at home	
English	93.6%
Chinese	1.9%
Spanish	0.8%
Hindi	0.7%
Gujarati	0.5%
Telugu	0.4%
Other	2.0%

New Jersey School Performance Report. 2014-2015. <http://www.nj.gov/education/pr/1415/39/394670065.pdf>

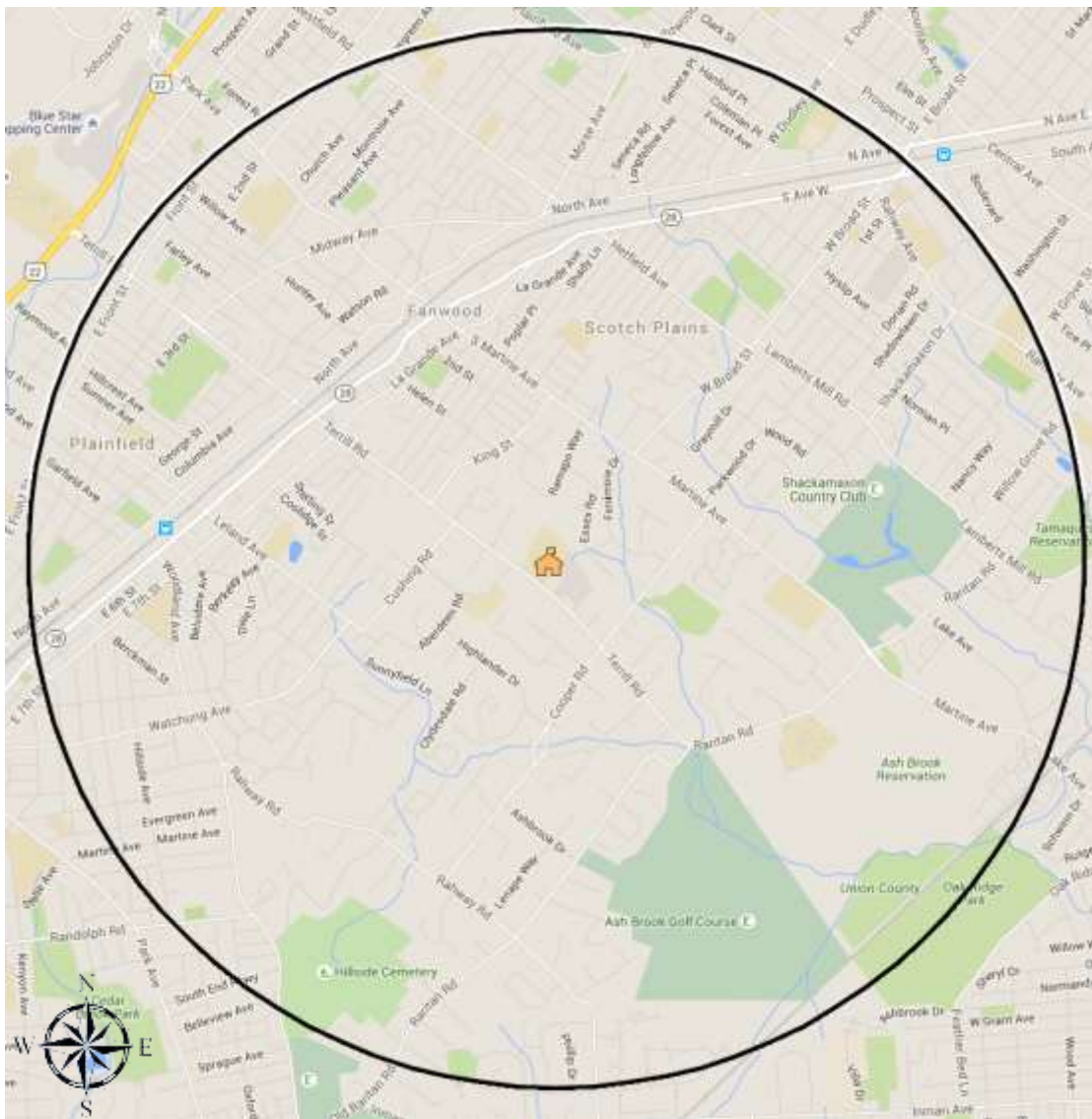


### 3. Journey to School

In the 1960s, about 50 percent of children in the United States walked or bicycled to school. Over the last few decades, concerns about vehicle traffic, safety for the children, and longer commutes have forced more and more parents to drive their children to school. This results in more traffic on the road and less children who walk to school. Today, on average only about 15 percent of children walk or bike to school. Map 1 provides a broad overview of the residential area near Terrill Middle School.

**Map 1: Two Mile Radius around Terrill Middle School**

Map 1 shows a two-mile radius surrounding the school. The neighborhood is in close proximity to a Golf Course and a Country Club. The district is split by County Road 28.



**Terrill Middle School**

### 3.1. Current Student Travel Environment

#### School Hours

The school day for students starts at 8:10 am and the day ends at 2:40 pm Monday through Friday. Students can attend extended learning programs at the school through after school programming Monday through Friday until 3:30 pm. There are no late buses provided for students after these programs.

#### Drop-off/Pickup Procedure

Buses drop off and pick up students directly in the front of the school's entrance. Parents drop off and pick up students in two locations: 1) by the curb on Terrill Road in front of the school or 2) at the adjacent church parking lot.

#### Crossing Guards

A crossing guard is stationed at the intersection of Kevin Road and Terrill Road, near the adjacent church.

#### Student Travel Mode

In May 2015, the teachers at Terrill Middle School conducted a SRTS Student Travel Tally Survey to document how the children in their classes get to and from school. Tallies were taken by teachers three times during one week. A total of 4,054 trips were documented and the data was analyzed by the NJ Safe Routes to School Resource Center at the Voorhees Transportation Center, Rutgers University.

As shown in Table 3, the analysis found that about 7 percent of children walk to school, 46 percent of the trips to school were in personal cars, 17 percent of students carpooled to school, 30 percent took the school bus, and 1 percent biked to school. 18 percent of students reported walking home, 36 percent were driven home, 28 percent took the school bus home, 16 percent carpooled home, and 1 percent biked home.

**Table 3. Current Commute Mode**

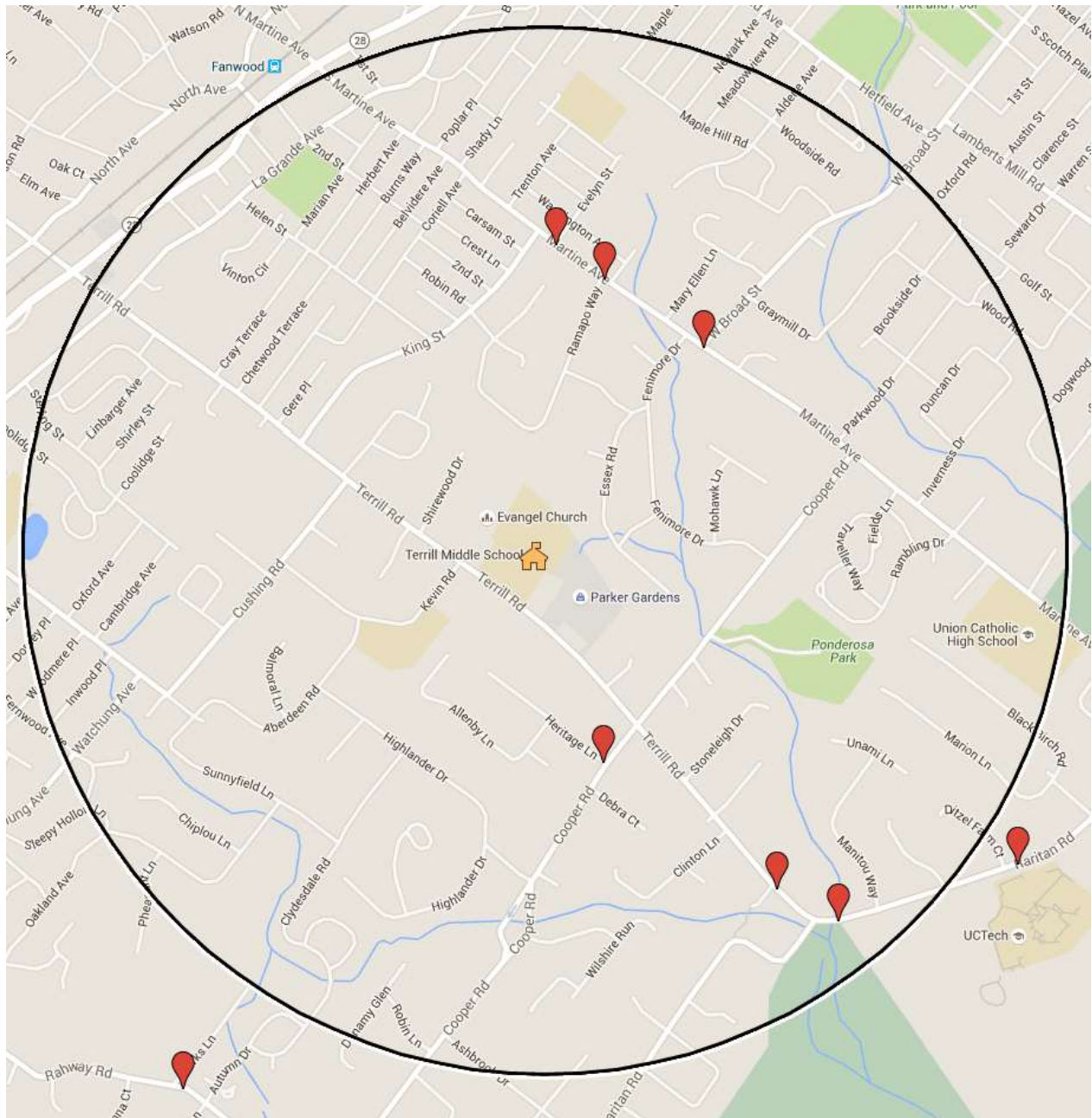
Mode	Arrival	Dismissal
<b>Walk</b>	7 percent	18 percent
<b>Driven in personal car</b>	46 percent	36 percent
<b>School Bus</b>	30 percent	28 percent
<b>Carpool</b>	17 percent	16 percent
<b>Bike</b>	1 percent	1 percent



### 3.2 Pedestrian Safety

EZ Ride conducted an analysis of the pedestrian-related crashes within a one-mile radius of the school over a 12-year period from 2003 to 2015 based on police incident reports. The reported incidents were plotted on Map 2.

**Map 2: Pedestrian Crashes within One Mile of Terrill Middle School, 2003-15**



Terrill Middle School



Pedestrian Crash Location

**Table 4. Pedestrian Crashes by Age, In Scotch Plains Township (2003-2015)**

Age	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total	Percent
0-10	1	0	1	1	0	1	0	0	0	0	0	0	2	6	8%
10-17	1	0	0	2	2	1	0	1	1	1	1	0	3	13	17%
18-35	1	1	1	1	1	0	3	2	3	1	1	2	2	19	25%
36-60	2	2	0	3	4	3	2	0	1	2	2	0	2	23	30%
60+	0	1	2	2	1	1	2	0	3	1	1	0	2	16	21%
Total	5	4	4	9	8	6	7	3	8	5	5	2	11	77	

For Scotch Plains Township, there were 77 pedestrian crashes between the years 2003-15. On average, Scotch Plains Township had approximately 6 pedestrian crashes per year. While the majority of the crashes (55 percent) involved pedestrians aged 18-60, about 25 percent (19) of the total incidents involved children in the 0-17 age group. Last year in 2015, the pedestrian crashes were the highest the town has seen in 12 years with 11, an average of nearly 1 pedestrian crash per month. Children under 17 accounted for approximately 45% (5) of pedestrian crashes in 2015.

### **3.3 Walkability Assessment**

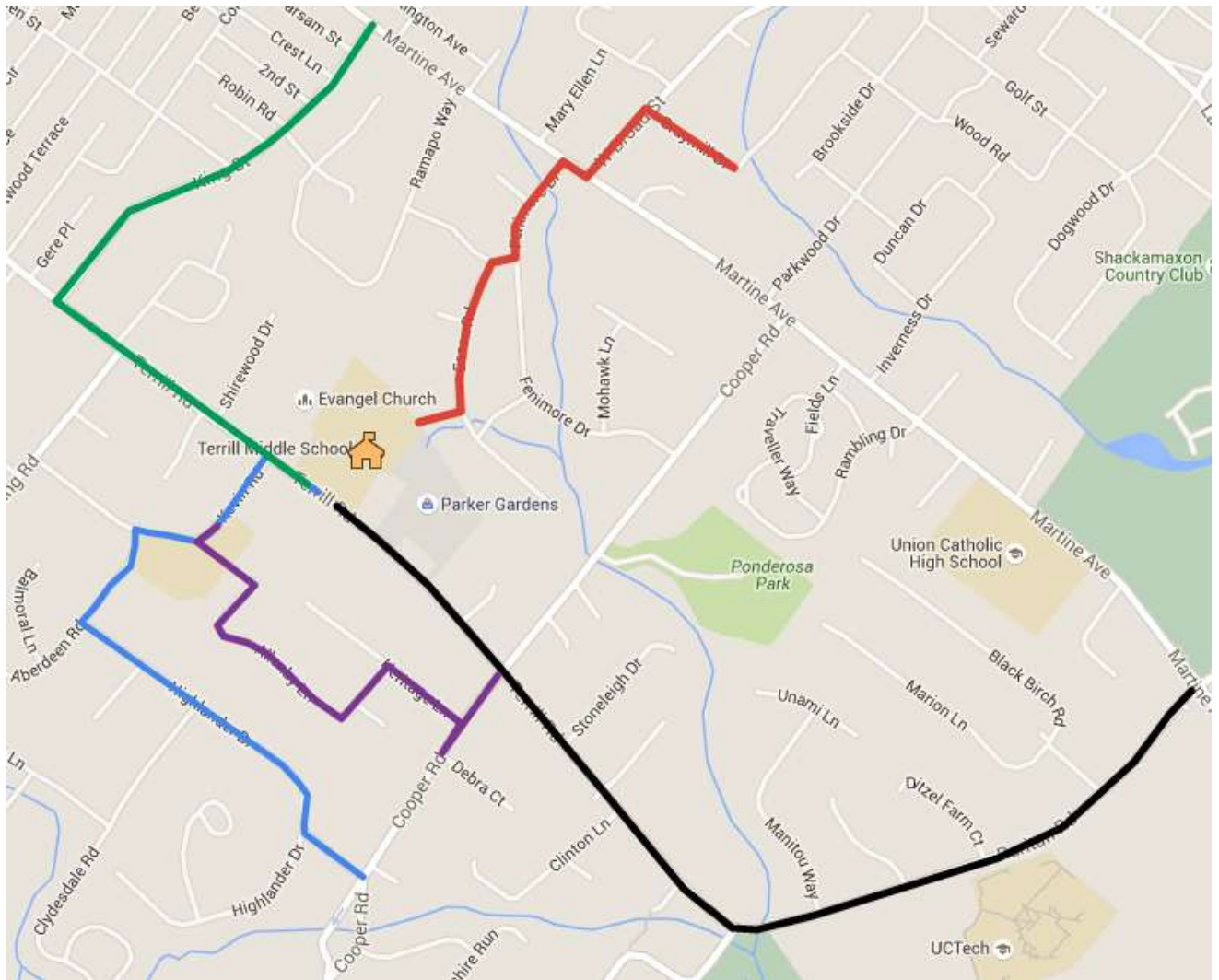
The SRTS Task Force conducted a walkability assessment of the major routes used by students to get to Terrill Middle School. School children and residents of all ages and abilities walk in and through the neighborhood. Map 3 below shows the walking routes which were assessed in the audit.

A Walkability Assessment evaluates the sidewalks, roads, crosswalks, lighting, signs, signals, and conditions of the walking environment along the walking route. A walkability assessment identifies pedestrian and bicycle infrastructure improvements that can be made and notes what is currently done well. The SRTS Taskforce took photos of areas on each route. Comments and recommendations are listed with each photo and are summarized in the Action Plan at the end.

Map 3, on the following page, shows all three of the walking routes which were assessed.



**Map 3. Main Walking Routes**



Terrill Middle School



Route 1



Route 2



Route 3

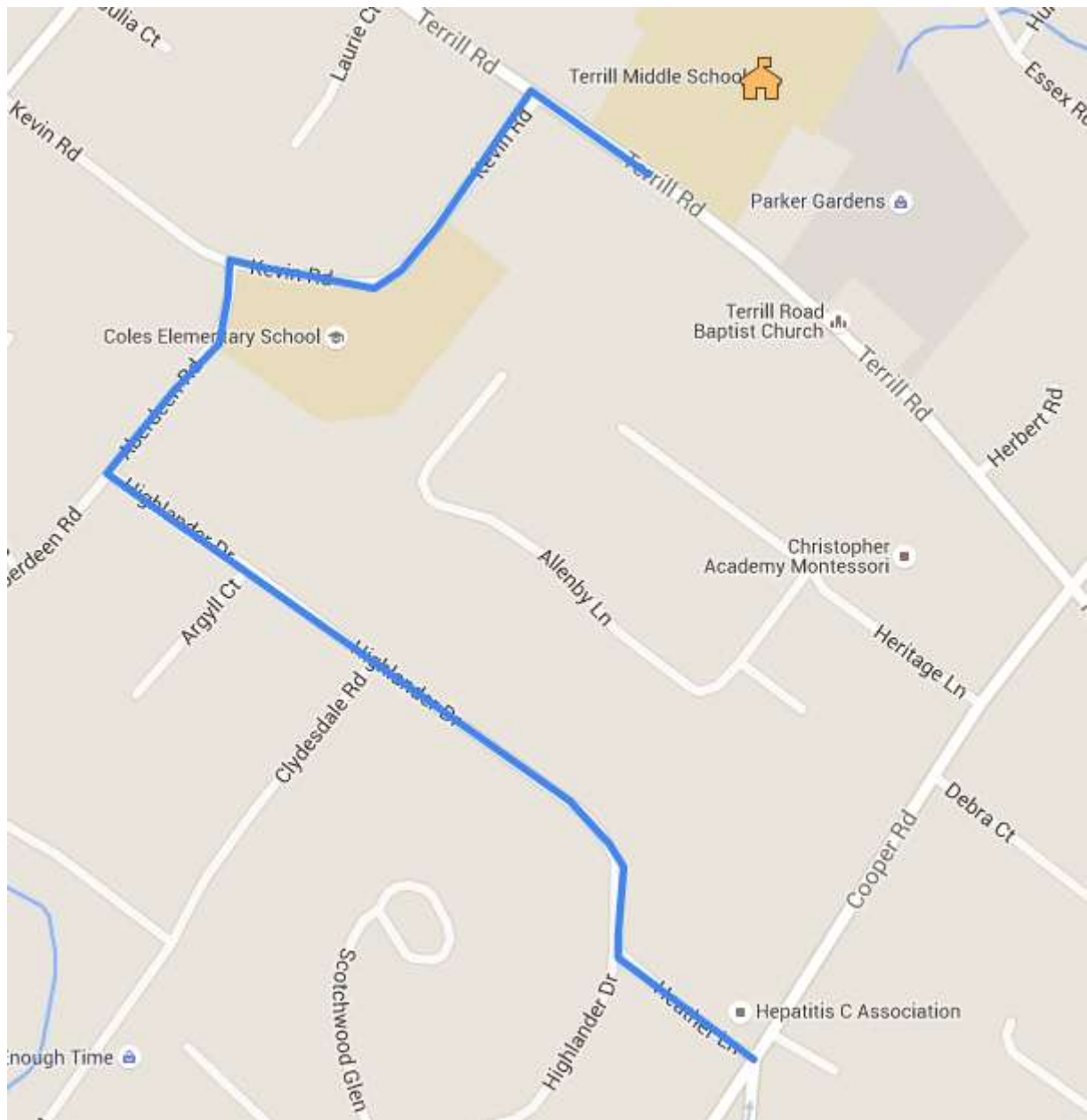


Route 4



Route 5

### Map 4: Walking Assessment of Route 1:



Terrill Middle School



### Route 1

## **Walking South Kevin Road**

Photo 1: Walking South on Kevin Road



### **Observations and Recommendations**

1. Sidewalk broken, cracked, bumpy, and in disrepair
2. Sidewalk narrows
3. Sidewalk only on one side of road
4. Recommend repaving, leveling, and widening sidewalk
5. Recommend installing sidewalk on both sides of road



**Walking South on Kevin Road by Coles Elementary**  
**Photo 2: Walking South of Kevin Road by Coles Elementary**



**Observations and Recommendations**

1. Area outside of Cole Elementary is in relatively good shape
2. Concrete Sidewalk seems to be much more resilient than asphalt
3. Curb and grass present to create separation from road and sidewalk
4. Recommend high visibility restriping of crosswalks
5. Recommend addition of School Zone Signs



**Intersection of Kevin Road and Aberdeen Road**  
**Photo 3: Intersection of Kevin Road and Aberdeen**



### **Observations and Recommendations**

1. Truncated domes missing
2. Curb ramp and sidewalk only on one side
3. Recommend installing truncated domes, curb ramp, and sidewalk on both sides

**Intersection of Aberdeen Road and Highlander Drive**  
Photo 4: Intersection of Aberdeen Road and Highlander Drive



### **Observations**

1. No crosswalks
2. No truncated dome pads
3. Stop bar missing
4. No sidewalks
5. Recommend installing curbs, truncated domes, and sidewalks
6. Recommend painting high visibility crosswalks and Stop bar

## **Walking Highlander Drive**

Photo 5: Walking Highlander Drive



### **Observations and Recommendations**

1. No sidewalks or curbs
2. No pedestrian lighting
3. Recommend installing sidewalks and pedestrian lighting



**Intersection of Highlander Drive and Argyle Court**  
**Photo 6: Intersection Highlander Drive and Argyle Court**



**Observations and Recommendations**

1. No crosswalks
2. No sidewalks
3. No Stop Sign
4. Wide Turning radius which encourages speeding into turns
5. Recommend installing sidewalks, curb ramps, truncated domes, and Stop sign
6. Recommend painting high visibility crosswalk and Stop bar

**Intersection of Highlander Drive and Clydesdale Road**  
**Photo 7: Intersection of Highlander Drive and Clydesdale Road**



**Observations and Recommendations**

1. Roadway is cracked and in need of repair
2. No crosswalks
3. No sidewalks
4. Stop bar missing
5. Recommend installing sidewalks
6. Recommend repaving road
7. Recommend painting high visibility crosswalk and Stop bar

**Intersection of Highlander Drive and Heather Lane**  
Photo 8: Intersection of Highlander Drive and Heather Lane



**Observations and Recommendations**

1. No crosswalks
2. No sidewalks
3. No Stop sign
4. Wide turning radii
5. Recommend installing sidewalks
6. Recommend repaving road
7. Recommend painting high visibility crosswalk and Stop sign



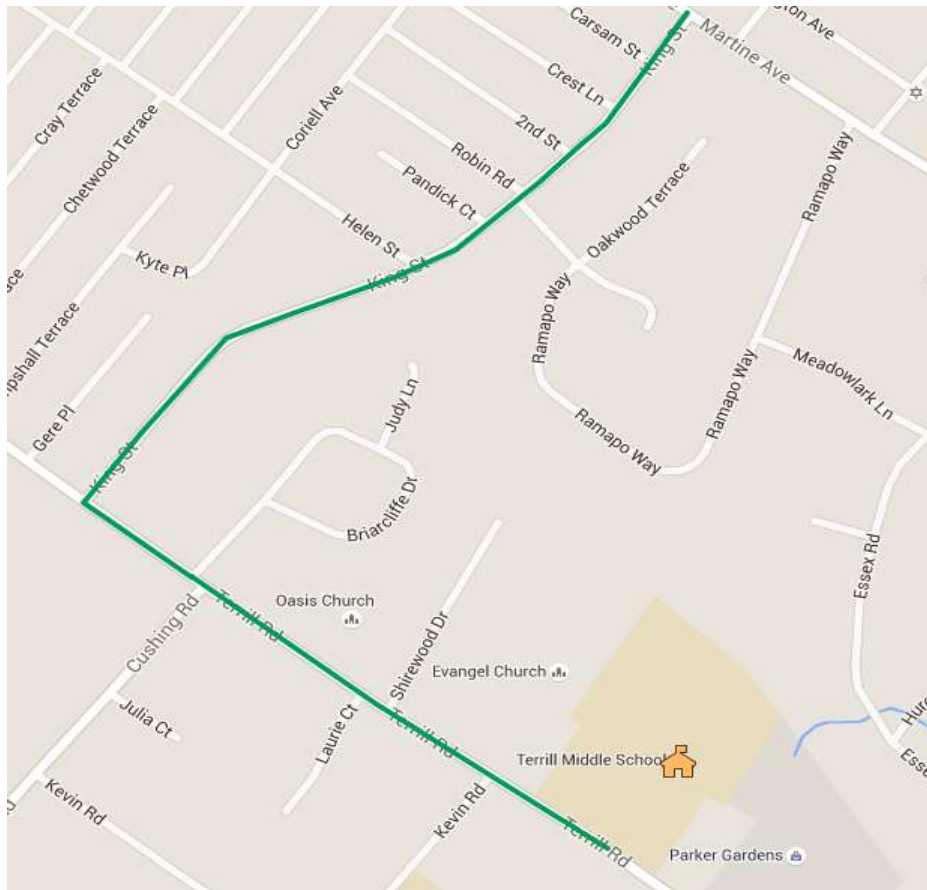
**Intersection of Heather Lane and Cooper Road**  
Photo 9: Intersection of Heather Lane and Cooper Road



**Observations and Recommendations**

1. No crosswalks
2. No sidewalks
3. No curb ramps or truncated domes
4. Stop bar faded
5. Recommend installing sidewalks, curb ramps, and truncated domes
6. Recommend painting high visibility crosswalk

### Map 5: Walking Assessment of Route 2



Terrill Middle School



Route 2



## Intersection of King Street and Martine Avenue

Photo 10: Intersection of King Street and Martine Avenue



### Observations and Recommendations

1. Crosswalk present
2. Truncated dome present on one side
3. Sidewalk ends on one side
4. Missing sidewalk, curb ramp, and truncated dome
5. Recommend installing sidewalk, curb ramp, and truncated dome
6. Recommend repainting crosswalk with high visibility striping

## **Walking Down King Street**

Photo 11: Walking Down King Street



### **Observations and Recommendations**

1. No sidewalks on either side
2. Intersections along King Street are almost all missing:
  - Crosswalks
  - Sidewalks
  - Curb ramps
  - Truncated domes
3. Recommend installing sidewalks, curb ramps, and truncated dome pads
4. Recommend painting high visibility crosswalks and Stop bars

### **Intersection of Tanglewood Lane and King Street**

Photo 12: Intersection of Tanglewood Lane and King Street



#### **Observations and Recommendations**

1. Truncated domes are absent
2. Crosswalk absent
3. Stop bar missing
4. Sidewalks begins on King Street at this intersection on near side
5. Recommend installing truncated domes and curb ramps to meet ADA requirements
6. Recommend painting Stop bar
7. Recommend painting high visibility crosswalk
8. Recommend installing sidewalks



**Sidewalk along King Street past Tanglewood Lane**  
Photo 13: Sidewalk along King Street past Tanglewood Lane



**Observations and Recommendations**

1. Sidewalks are broken, cracked, uneven, and narrow
2. Recommend repaving, leveling, and widening sidewalks to reduce tripping hazards

**Sidewalk along King Street past Tanglewood Lane**  
Photo 14: Sidewalk along King Street past Tanglewood Lane



**Observations and Recommendations**

1. Sidewalks are cracked, broken, uneven and in need of repair
2. Utility pipes/covers and holes present tripping hazards
3. Recommend repaving sidewalks and ensuring they are level
4. Recommend utility pipes/cover be level with sidewalk



## **Intersection of King Street and Terrill Road**

Photo 15: Intersection of King Street and Terrill Road



### **Observations and Recommendations**

1. Truncated domes present but not properly angled
2. Crosswalk present
3. Recommend painting high visibility crosswalk striping and rotating truncated domes pointed toward the crosswalk

**Walking along Terrill Road toward Terrill Middle School**  
**Photo 16: Walking along Terrill Road toward Terrill Middle School**



**Observations and Recommendations**

1. Sidewalk is cracked, broken, uneven, and in need of repair
2. Recommend repaving sidewalk



**Walking along Terrill Road toward Terrill Middle School**  
**Photo 17: Walking along Terrill Road toward Terrill Middle School**



### **Observations and Recommendations**

1. Owner's vegetation extends into pedestrian walkway
2. Forces pedestrians to duck
3. Leaves and other debris could provide slipping hazards and makes walk less pleasant
4. Recommend having discussions with residents about maintaining their vegetation and keep it trimmed so as to not impede pedestrian path



## **Intersection of Terrill Road and Cushing Road**

**Photo 18: Intersection of Terrill Road and Cushing Road**



### **Observations**

1. Stop bar from Cushing Road is absent
2. No crosswalk in either direction
3. Shoulder lines, lane markers, faded along Terrill Road

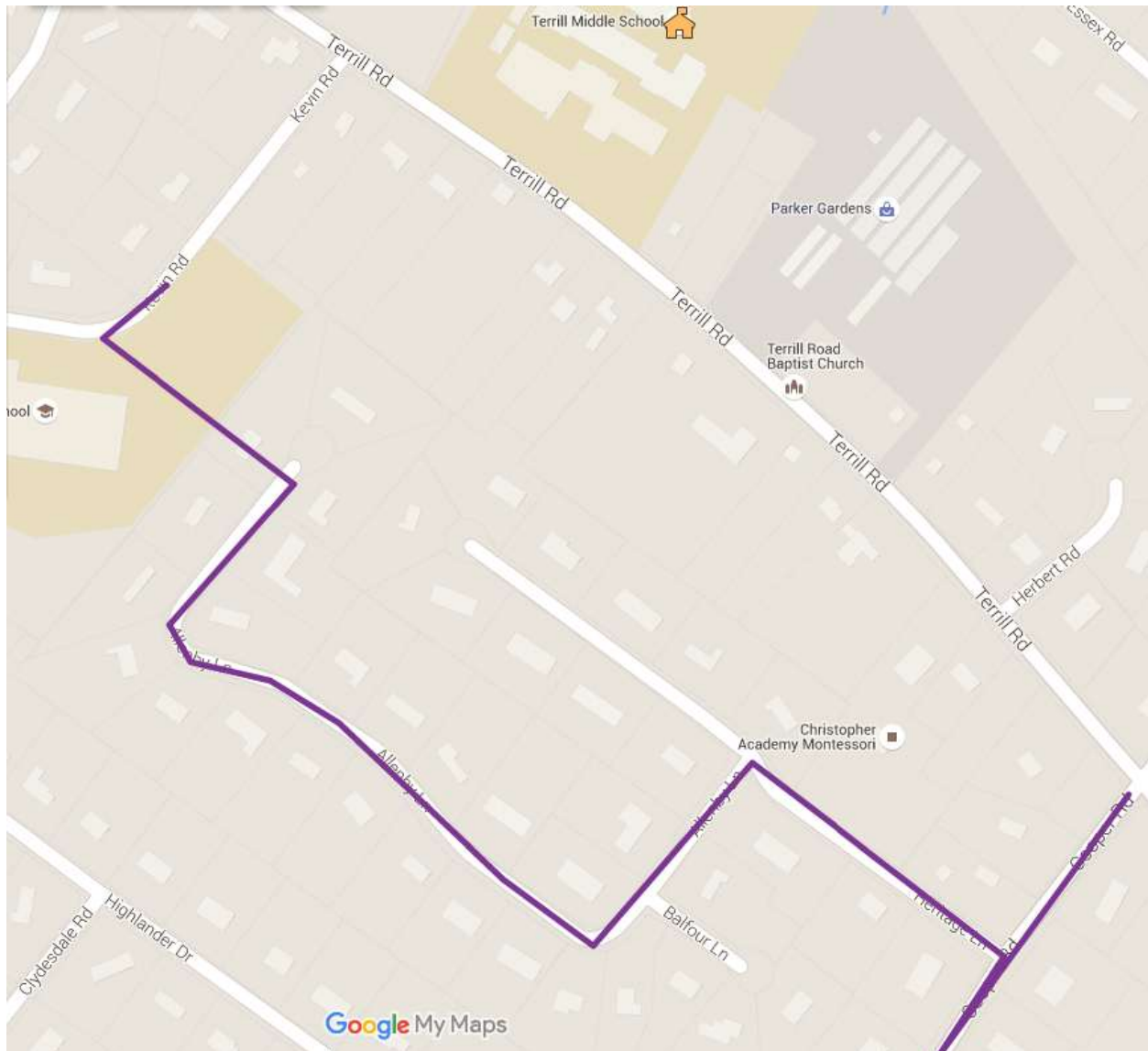
**Sidewalks along Terrill Road**  
Photo 19: Sidewalks along Terrill Road



**Observations and Recommendations**

1. Sidewalks broken, holes present, rocks/chunks of asphalt from broken driveway or sidewalk present tripping hazards, and generally in need of repair
2. Recommend repaving and leveling sidewalks

### Map 6: Walking Assessment of Route 3



Terrill Middle School



Route 3



### **Along Kevin Road by Coles Elementary**

Photo 20: Along Kevin Road by Coles Elementary



### **Observations and Recommendations**

1. Driveway exit from Coles Elementary Parking Lot
2. No Crosswalk
3. Truncated domes not facing intersection
4. Recommend painting high visibility crosswalk
5. Recommend installing Student/Pedestrian Crossing Signs

### **Along Kevin Road by Coles Elementary**

Photo 21: Along Kevin Road by Coles Elementary



### **Observations and Recommendations**

1. Entrance driveway to Coles Elementary Parking Lot
2. No crosswalk striping and truncated domes not facing intersection
3. Holes and uneven asphalt where students would cross
4. Recommend repairing/levelling asphalt, angling truncated domes properly, and painting high visibility crosswalk striping
5. Recommend installing Student/Pedestrian Crossing Signs

### **Coles Elementary School Parking Lot**

Photo 22: Coles Elementary School Parking Lot



### **Observations and Recommendations**

1. Coles Staff parking lot is frequently used as shortcut by Terrill Middle School students
2. Broken, uneven, and in need of re-pavement
3. Recommend installing signs to make drivers aware of potential students



**Coles Elementary School Parking Lot**  
Photo 23: Coles Elementary School Parking Lot



**Observations and Recommendations**

1. Faded, angled, protected crosswalk present
2. Recommend high visibility re-striping
3. Recommend installing Student/Pedestrian Crossing signs to make drivers aware of crosswalk area

**Coles Elementary School Blacktop**  
Photo 24: Coles Elementary School Blacktop



**Observations and Recommendations**

1. Coles Elementary School Blacktop, behind school
2. Students enter through bike path near back, cut through as shortcut to Terrill
3. Parent informed without any lighting it becomes dark and the area floods during rainstorms
4. Recommend installing pedestrian lighting
5. Recommend investigating potential drainage solution

### **Coles Elementary School Rear Bike Path**

Photo 25: Coles Elementary School Rear Bike Path



#### **Observations and Recommendations**

1. Bike Path used by Terrill Middle School students
2. No lighting; can be dark and dangerous, especially during early morning hours
3. Asphalt is in disrepair, broken, and not level
4. Recommend adding pedestrian lighting
5. Recommend re-paving path



### **Coles Elementary School Rear Bike Path**

Photo 26: Coles Elementary School Rear Bike Path



#### **Observations and Recommendations**

1. Broken, uneven, path in need of repair
2. Recommend re-paving path
3. No lighting makes the path hazardous in dark
4. Recommend installing pedestrian lighting

### **Allenby Lane Bike Path Entrance**

Photo 27: Allenby Lane Bike Path Entrance



### **Observations and Recommendations**

1. Bike path entrance from Allenby Lane
2. No curb cut/curb ramp
3. Not ADA compliant and hazard to students biking or walking
4. Recommend cutting the curb and adding a ramp



**Allenby Lane towards Heritage Court**  
Photo 28: Allenby Lane towards Heritage Court



**Observations and Recommendations**

1. Allenby Lane leading to bike path
2. No sidewalk on either side of the street
3. No School Zone Signs
4. Resident informed of disregard for “No Parking During School Hours” sign as Coles Elementary parents park their cars to walk their children to school
5. Recommend installing sidewalks
6. Recommend installing “School Zone” signs
7. Recommend painting bike lane, sharrow, or signage to help protect students that use the bike path and raise awareness with drivers of children bikers
8. Recommend discussing with Scotch Plains Police Department to enforce “No Parking” Sign



### **Heritage Court towards Cooper Road**

Photo 29: Heritage Court toward Cooper Road



### **Observations and Recommendations**

1. Residential road connecting from Allenby Lane
2. No sidewalks on either side of the street
3. Cracked, uneven pot-hole laden street
4. Big drains provide tripping hazards for those on foot or bike
5. Recommend installing sidewalk
6. Recommend installing bicycle safe storm drains

### **Heritage Court toward Cooper Road**

Photo 30: Heritage Court toward Cooper Road



### **Observations and Recommendations**

1. Residential road connecting to Cooper Road
2. No sidewalks on either side of the street
3. Cracked, uneven pot-hole laden street
4. No stop bar
5. Recommend painting stop bar
6. Recommend installing sidewalks

## **Intersection of Heritage Court and Cooper Road**

Photo 31: Intersection of Heritage Court and Cooper Road



### **Observations and Recommendations**

1. Cracked, uneven asphalt
2. No crosswalk
3. No truncated domes
4. Recommend repairing sidewalk
5. Recommend painting high visibility crosswalk striping and installing truncated domes



**Cooper Road towards Debra Court**  
Photo 32: Cooper Road towards Debra Court



**Observations and Recommendations**

1. Cracked, uneven sidewalk
2. Holes present tripping hazards
3. No curbs or other barrier to help shield pedestrians
4. Recommend repairing/re-paving sidewalk
5. Recommend installing curbs or bollards to create barrier

### **Cooper Road towards Terrill Road**

Photo 33: Cooper Road towards Terrill Road



### **Observations and Recommendations**

1. Narrow, uneven sidewalk
2. Leaves, twigs, mulch, dirt
3. Homes with driveways have landscaping that makes it difficult to see vehicles
4. Litter present on sidewalk
5. No barrier/separation of road and sidewalk
6. Recommend repairing/re-paving sidewalk
7. Recommend installing bollards or curbs to provide barrier between street and sidewalk
8. Recommend discussing property maintenance with owners in keeping sidewalks clear



## **Intersection of Cooper Road and Terrill Road**

Photo 34: Intersection of Cooper Road and Terrill Road



### **Observations and Recommendations**

1. Cooper Road and Terrill Road
2. Intersection has working pedestrian signals
3. Sidewalk ends on this side several yards down
4. Faded crosswalk
5. Faded street markings for drivers
6. No "School Zone" Sign
7. Drivers driving fast, trying to avoid stopping at red light
8. Recommend installing "School Zone" signs
9. Recommend re-striping high visibility crosswalk
10. Recommend re-painting street markings



### **Intersection of Cooper Road and Terrill Road**

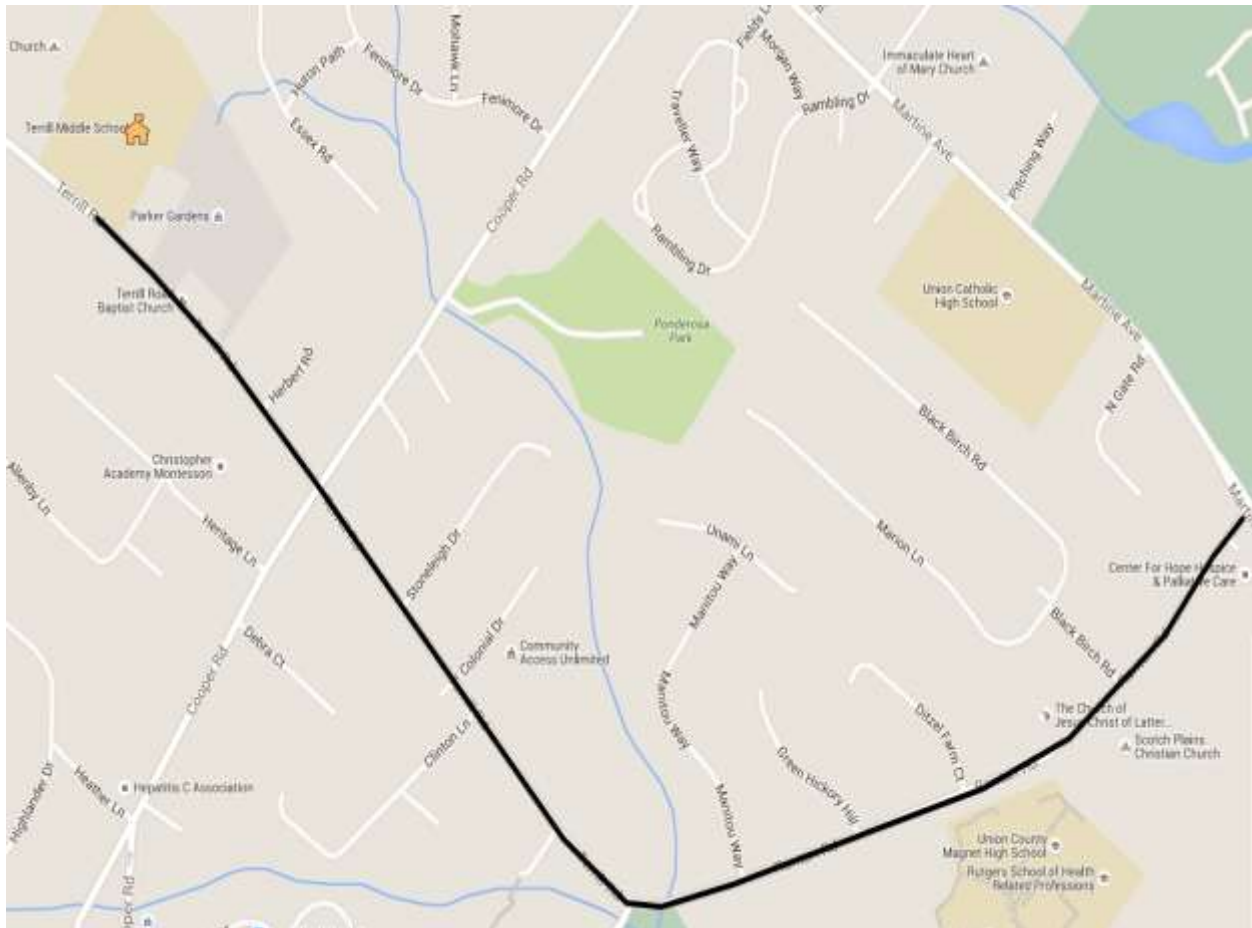
Photo 35: Intersection of Cooper Road and Terrill Road



#### **Observations and Recommendations**

1. Intersection has working pedestrian signals
2. Cracked, uneven asphalt in crosswalk
3. Very faded crosswalk striping
4. Recommend repairing/re-paving crosswalk
5. Recommend re-painting high visibility crosswalk

**Map 7: Walkability Assessment of Route 4**



Terrill Middle School



Route 4

## **Walking along Raritan Road**

Photo 36: Walking along Raritan Road



### **Observations and Recommendations**

1. Many sidewalks are cracked, broken, narrow and uneven asphalt that abruptly stop
2. Debris covers and narrows sidewalks
3. Utility poles and sign posts stick out as tripping hazards
4. Vegetation overgrown and unkempt, encroaching into sidewalks
5. Roads are very wide
6. Recommend repairing/re-paving existing sidewalks
7. Recommend addressing debris and vegetation overgrowth with owners
8. Recommend painting bike lanes in both directions



## Intersection of Raritan Road and Black Birch Road

Photo 37: Intersection of Raritan Road and Black Birch Road



### Observations and Recommendations

1. Cracked, uneven asphalt in crosswalk
2. No crosswalk striping
3. No truncated domes
4. No stop bar
5. No curbs
6. Wide turning radii
7. Recommend painting high visibility crosswalk and installing truncated domes
8. Recommend reducing turning radii by extending sidewalk, adding curbs



## **Intersection of Raritan Road and Green Hickory Hill**

Photo 38: Intersection of Raritan Road and Green Hickory Hill



### **Observations and Recommendations**

1. Sidewalk suddenly stops
2. Utility Pole in middle of path if sidewalk continued
3. No crosswalk striping
4. Truncated dome and curb ramp on far side are facing the wrong way
5. Near side has no curb ramp, no truncated dome, no sidewalk
6. Recommend painting high visibility crosswalk
7. Recommend fixing truncated dome and curb ramp direction
8. Recommend adding curb ramp, truncated dome and finishing sidewalk to curb

**Walking Along Terrill Road**  
Photo 39: Walking Along Terrill Road



**Observations and Recommendations**

1. Cracked, broken, narrow, uneven, raised asphalt sidewalks
2. Trees roots have damaged sidewalks
3. Sidewalks stop randomly and begin again
4. Shoulders very wide
5. Recommend repairing/re-paving level sidewalks
6. Recommend utilizing some shoulder lane width and install bike lanes with signage



## **Intersection of Colonial Drive and Terrill Road**

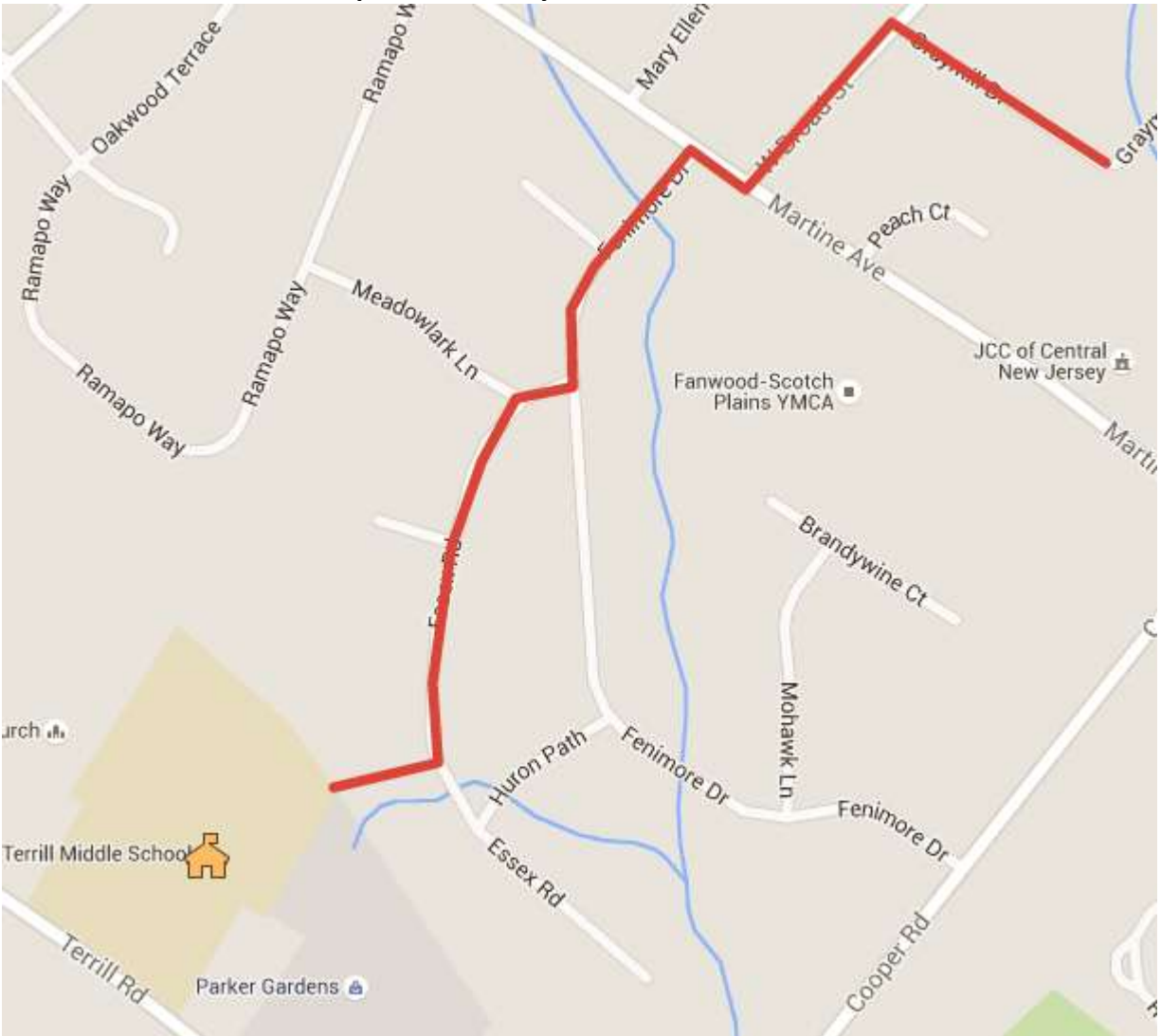
Photo 40: Intersection of Colonial Drive and Terrill Road



### **Observations and Recommendations**

1. Intersection has truncated dome pads and curb ramps facing the wrong direction
2. Missing crosswalk
3. Missing stop bar
4. Cracked, uneven asphalt in what would be crosswalk area
5. Recommend repairing/re-paving crosswalk
6. Recommend painting crosswalk
7. Recommend fixing direction of truncated domes and curb ramps

**Map 8: Walkability Assessment of Route 5**



Terrill Middle School



Route 5



**Walking along Graymill Drive**  
**Photo 41: Walking along Graymill Drive**



**Observations and Recommendations**

1. No sidewalks
2. Wide street
3. Recommend installing sidewalks

**Intersection of Graymill Drive and West Broad Street**  
Photo 42: Intersection of Graymill Drive and West Broad Street



**Observations and Recommendations**

1. Intersection has working pedestrian signals
2. Cracked, uneven asphalt in crosswalk
3. Very faded crosswalk striping; practically cannot see it
4. No sidewalk
5. No curb ramp or truncated dome on near side
6. Recommend repairing/re-paving crosswalk
7. Recommend adding sidewalks, truncated dome

## **Walking Along West Broad Street**

Photo 43: Walking Along West Broad Street



### **Observations and Recommendations**

1. Cracked, uneven asphalt sidewalks in need of repair
2. Recommend repairing/re-paving sidewalks



## **Intersection of Fenimore Drive and Martine Avenue**

Photo 44: Intersection of Fenimore Drive and Martine Avenue



### **Observations and Recommendations**

1. Missing stop bar
2. No crosswalk striping
3. No sidewalk, forcing residents to walk in street
4. Very wide street
5. Recommend painting high visibility crosswalk and stop bar
6. Recommend adding sidewalks



## **Intersection of Fenimore Drive and Essex Road**

Photo 45: Intersection of Fenimore Drive and Essex Road



### **Observations and Recommendations**

1. Cracked, uneven, pot hole ridden street
2. No sidewalks
3. No high visibility crosswalk
4. No curbs, curb ramps, or truncated domes
5. Recommend repairing/re-paving street
6. Recommend installing sidewalks, curbs, curb ramps, truncated domes
7. Recommend painting high visibility crosswalk

### **Bike Path Behind Terrill Middle School**

Photo 46: Bike Path Behind Terrill Middle School



### **Observations and Recommendations**

1. Rear bike path from Essex Road that leads to Terrill Middle School
2. Path is in disrepair, uneven, narrows, and riddled with holes
3. Edges of path are dirt covered, get muddy, and can make the journey unpleasant
4. Recommend repaving path and addressing issues of flooding/mudding

### **Bike Path Behind Terrill Middle School**

Photo 46: Bike Path Behind Terrill Middle School



### **Observations and Recommendations**

1. Rear bike path from Essex Road that leads to Terrill Middle School
2. Bikes are lined up along the fence
3. Recommend installing several bike racks



## 4. Action Plan & Recommendations

The Safe Routes to School Action Plan is organized into the “Five E’s”: Education, Encouragement, Enforcement, Engineering and Evaluation. Additionally, each element of the Action Plan considers two parameters – time and cost as shown below. Together, they comprise a set of directions to help the community prioritize their action steps to increase safety for students. The tables below identify preliminary recommendations specific to Terrill Middle School and its immediate area. To realize the full benefit of the SRTS program, it is suggested that this School Travel Plan be used to apply for SRTS grant funds to assist with implementing the action steps.

Timeframe Definition	Cost Definition
<b>Short-term</b> = less than 3 months	<b>Low</b> = Less than \$2,000
<b>Mid-term</b> = between 3 to 6 months	<b>Medium</b> = between \$2,000 and \$10,000
<b>Long-term</b> = longer than 6 months	<b>High</b> = more than \$10,000

### 1. Education: Programs to educate students, parents and the public about safe walking and biking

Education Actions	Responsibility	Time Frame	Cost
Circulate Travel Plan Report on school website	Board of Education	Short-term, Mid-term, Long-term	Low
Confirm School Zone signs adequately identify the school area	Board of Education	Short-term, Mid-term, Long-term	Low
Create and update Family Handbook that defines arrival and dismissal procedures with map and text that defines drop-off/pick-up areas, the rules and procedures for driving along local streets within school campus and school driveway	School, School Liaison, PTO	Long-term	Low
Notify parents/guardians and school staff by publishing information/updates in the Parent/Family Handbook, School Newsletters and on the school website	School	Long-term	Low
Invite EZ Ride to help with bicycle and pedestrian safety education with assemblies or Bike Rodeos	School, EZ Ride	Short-term, Mid-term, Long-term	Low
Integrate walking and safety education into classroom curriculum	School, EZ Ride	Short-term, Mid-term, Long-term	Low
Leverage Social Media to spread awareness of school zone and enforcement activities	School Action Team, PTA	Short-term, Mid-term, Long-term	Low



Drop-off line instructions, help to reduce length of car lines and conflicts	School, PTA, Principal	Short-term, Mid-term, Long-term	Low
Cell phone free zone: In school, Outside during arrival and dismissal	Principal	Short-term, Mid-term, Long-term	Low

## 2. Encouragement: Programs to encourage or promote walking and biking

Encouragement Actions	Responsibility	Time Frame	Cost
The town can pass a Complete Streets Policy	Township	Mid-term	Low
Hold a student poster or bookmark contest about Walking and Biking to school	School, EZ Ride	Short-term	Low
Circulate Time Radius Map and Travel Plan Report via the school website	VTC, EZ Ride, School	Short-term	Low
Host Bike/Walk to School Days throughout the school year	School, PTA, School Liaison, EZ Ride	Short-term, Mid-term, Long-term	Low
Participate in International Walk to School Day in October, National Bike to School Day, and NJ Walk and Bike to School Day	School Action Team, PTA, EZ Ride	Short-term, Mid-term, Long-term	Low
Utilize the school website to advance Safe Routes to School safety messages at least 1 week in advance	EZ Ride, School Tech Coordinator	Mid-term, Long-term	Low
Establish and organize Bike Trains/Walking School Buses to connect students and families who are already walking or are considering walking/biking	School, EZ Ride	Mid-term, Long-term	Low

## 3. Enforcement: Activities to improve safety and security for those walking and biking to school

Enforcement Actions	Responsibility	Time Frame	Cost
Conduct bicycle registration and helmet giveaways at Back to School night	School, Police	Short-term, Mid-term, Long-term	Low
Investigate training Walking School Bus volunteers	School Liaison, Police	Mid-term, Long-term	Low
Conduct speed studies along Terrill Road and Raritan Road	Police	Short-term, Long-term	Medium
Ask police to setup electric signs that post drivers speeds and remind people to not speed as its school zone – twice a year	Police, School Liaison	Short-term, Long-term	Low
Discuss property maintenance with owners to keep existing sidewalks free of debris,	School, PTA, Police	Short-term, Long-term	Low

plants, trees, and brush so as to not impede pedestrians' journey			
Enforce the "No Parking" sign on Aberdeen Road behind Coles Elementary	School, Police	Short-term, Long-term	Low
Pedestrian Decoy Operation – target unsafe drivers, especially during school commute time	Police, Board of Education	Long-term	Low

#### 4. Engineering: Infrastructure upgrades that improve walking and biking environment

Engineering Actions	Responsibility	Time Frame	Cost
Install sturdy state of the art bike racks and skateboard racks near school's front and rear entrances	Twp. Engineering, Police, School	Mid-term, Long-term	Medium
Post "School Zone" signs and paint "school zone" on roadways surrounding the school	Twp. Engineering, Police	Mid-term, Long-term	Low
Post signs and paint area on street to define Bus and Car drop-off zones	Twp. Engineering, Police	Short-term, Mid-term, Long-term	Medium
Investigate driveway and parking lot circulation at school and enact measures for safety	Twp. Engineering, Police	Short-term, Mid-term, Long-term	High
Paint or repaint high visibility crosswalks at Aberdeen Road and Highlander Drive, Highlander Drive and Argyle Court, Highlander Drive and Clydesdale Road, Highlander Drive and Heather Lane, Heather Lane and Cooper Road, King Street and Martine Avenue, Tanglewood Lane and King Street, King Street and Terrill Road, Terrill Road and Cushing Road, Kevin Road by Coles Elementary, Heritage Court and Cooper Road, Cooper Road and Terrill Road, Raritan Road and Black Birch Road, Raritan Road and Green Hickory Hill, Colonial Drive and Terrill Road, Graymill Drive and West Broad Street, Fenimore Drive and Martine Avenue, Fenimore Drive and Essex Road	Twp. Engineering, Police	Short-term, Mid-term, Long-term	High
Repair and repave sidewalks along Terrill Road, Cooper Road, King Street, Kevin Road, Coles Elementary Bike Path, Terrill Middle School Back Bike Path, Coles	Twp. Engineering, Police	Short-term, Mid-term, Long-term	High

Elementary Parking lot, Raritan Road, West Broad Street, Heather Lane, and Heritage Court			
Install sidewalks where missing along Terrill Road, Cooper Road, Martine Avenue, Highlander Drive, Aberdeen Road, Raritan Road, Kevin Road, Graymill Drive, Fenimore Drive, Essex Road, West Broad Street, King Street	Twp. Engineering, Police	Short-term, Mid-term, Long-term	High
Install curb ramp at Coles Elementary Back Bike Path	Twp. Engineering, Police	Short-term, Mid-term, Long-term	Medium
Installing new curb ramps, truncated domes, along majority of the side roads such as Aberdeen Road and Highlander Drive, Highlander Drive and Argyle Court, Highlander Drive and Clydesdale Road, Highlander Drive and Heather Lane, Heather Lane and Cooper Road, King Street and Martine Avenue, Tanglewood Lane and King Street, Heritage Court and Cooper Road, Raritan Road and Black Birch Road, Raritan Road and Green Hickory Hill, Colonial Drive and Terrill Road, Graymill Drive and West Broad Street, Fenimore Drive and Essex Road	Twp. Engineering, Police	Short-term, Mid-term, Long-term	High
Paint Bike Lanes or sharrows along Raritan Road, Terrill Road, Cooper Road	Twp. Engineering, Police	Short-term, Mid-term, Long-term	High
Investigate traffic speeds around the school and post speed limit signs as traffic calming concepts	Twp. Engineering, Police	Short-term, Mid-term, Long-term	Medium
Install School Zone signs that define the school area; install signs with augmented flashing beacons	Twp. Engineering, Police	Short-term, Mid-term, Long-term	Medium

**5. Evaluation:** Efforts to monitor and evaluate progress towards the achievement of SRTS goals

Evaluation Actions	Responsibility	Time Frame	Cost
The town can pass a Complete Streets Policy	Township	Mid-term	Low
Continue to conduct student travel tallies to measure how effective the SRTS program has been in increasing the number of students walking, biking or carpooling	School, EZ Ride	Short-term, Mid-term, Long-term	Low
Improve communications between school officials and families establishing a convenient mechanism to share information and get feedback	School Action Team, PTA, School Tech Coordinator	Short-term, Mid-term, Long-term	Low

**Conclusion**

Community priorities should include repairing, repaving, widening, and ensuring that current sidewalks are level and even. There is a need to install new sidewalks, add or fix curb ramps and truncated dome pads, and paint or repaint high visibility crosswalks and stop bars, paint bike lanes, and install bike parking in front of and behind Terrill Middle School.

The walkability audit demonstrated that Scotch Plains is an attractive community but it is not very walkable. The lack of sidewalks and crosswalks reduce safe spaces for students to travel. The measures that are recommended in this travel plan will improve the city's walkability, increase pedestrian safety, and encourage students and parents to walk or bike to school. Through increased use of active transportation, residents will make Scotch Plains a more appealing community by reducing air pollution and traffic congestion. Additionally, if more residents are able to safely walk and bicycle, they may be more active and healthy. EZ Ride is proud to work with the community to improve safety and bring SRTS programming to the schools. It is hoped this School Travel Plan report will be used to apply for an SRTS infrastructure grant or other DOT grants to make the intersections, sidewalks, and streets safer for students to walk and bike to Terrill Middle School.



## Appendix A

### **How to Approach Residents Who Oppose Sidewalk Installation**

**What objections might homeowners make to installing sidewalks in their neighborhoods and how can I address these concerns?**

Walking is the most recommended form of exercise. People are more likely to do it when the "gym" is just outside the door. Yet landowner objections sometimes result in disconnected sidewalk systems that make walking in neighborhoods or on work breaks difficult and/or dangerous.

Common concerns about sidewalks and potential answers to address them include:

**Concern:** Sidewalks are associated with urban settings and we live in a rural or suburban setting.

**Answer:** Roadways are part of urban, suburban, and rural settings. Few people would argue against streets being built in suburban or rural environments. A sidewalk is part of a complete street. Moreover, the majority of quaint, small towns sport sidewalks that provide freedom and mobility to young and old alike.

**Concern:** We'll lose established trees if we install sidewalks.

**Answer:** Sidewalks do not have to be linear. They can curve around trees. Does a neighborhood or community concerned about removing trees to install sidewalks apply the same logic to removing trees to build new homes, schools, and commercial buildings?

**Concern:** I don't want my neighbors walking near my house; that's an invasion of privacy.

**Answer:** Walkers are the eyes and ears of a neighborhood. This can be a good thing if your house is on fire or you need help. Sidewalks and walking paths promote neighborliness and good health. Motorists drive by houses every day. Those who pull into residential driveways for one reason or another may get closer to a house than would a walker on a sidewalk.

**Concern:** Sidewalks are conveyer belts for crime, strangers, undesirables and renters.

**Answer:** Statistically, cars and trucks are the conveyance of choice for the perpetrators of home burglaries and assaults by strangers in a home. Streets convey all manners of people passed and to our homes, and there is little evidence to show that sidewalks increase the chance of crime.

**Concern:** I don't want to pay for a sidewalk.

**Answer:** In new development, sidewalks are typically required by the design standards of the local jurisdiction and should be paid for and installed by the developer of the property.

Whether sidewalks actually appear is another question. If a developer waits until all the lots are built before installing sidewalks, this opens the door to homeowners objecting to a sidewalk in front of their home. Some communities pay half — or all — the cost of installing sidewalks, viewing sidewalks no differently than streets.

**Concern:** A sidewalk will reduce my property value.

**Answer:** Sidewalks seldom negatively affect property value unless they are in poor condition. The property value may actually increase for homes in walkable neighborhoods.

**Concern:** Snow removal is a problem for me; I don't want to (or can't) shovel snow.

**Answer:** Sidewalks save lives by keeping walkers, joggers, and children off busy roads. The Swedish believe cold fresh air is good for the immune system. Teenagers can earn extra money by shoveling your sidewalk. Perhaps the person who clears your driveway of snow could also shovel your walk.

**Concern:** Sidewalks are a sign of suburban sprawl in rural neighborhoods.

**Answer:** Where feasible to install and likely to be used, sidewalks in rural areas give children a place to walk to the school bus or to a friend's home for transportation and for healthy, daily physical activity. A lack of sidewalks has contributed to the sprawl of waistlines in the U.S.

Source: Pedestrian and Biking Information Center FAQ. Accessed: [http://www.pedbikeinfo.org/data/faq\\_details.cfm?id=3456](http://www.pedbikeinfo.org/data/faq_details.cfm?id=3456)

## Appendix B

### Typical Opportunities for Improvement



#### **LONG CROSSING DISTANCES**

Long crossing distances prolong the exposure time of pedestrians to motorists and make it difficult to see the pedestrian signal head on the other side of the road.



#### **PEDESTRIAN OBSTRUCTIONS**

Obstructions in the pedestrian right-of-way impede pedestrian movement and safety.



#### **LACK OF CURB CUTS**

Sidewalks without curb cuts are an obstacle to parents with baby carriages as well as people with disabilities.



#### **POOR MAINTENANCE**

Without maintenance pedestrians can trip, it can be a liability issue, and people with disabilities can have trouble negotiating the area.

## Typical Bicycle/Pedestrian Treatments



### SHARED-USE ROADWAY

Can be a safe for bicyclists when:

- Width is sufficient
- Speeds are low
- Traffic volumes are low



### BICYCLE LANE

- Provides a safe and comfortable environment for bicyclists
- An area that is delineated, but not separated from the roadway
- Typically 4' wide with a bicycle stencil



### SHARED USE PATH (TRAIL)

- Offers connections and opportunities not provided in the roadway system
- Can provide valuable connections and recreational opportunities
- Typically 8'-10' wide



### OTHER FACILITIES

- Bicycle Lockers
- Bicycle Racks on Transit
- Bicycle Racks
- Bicycle Safety Programs



## Typical Bicycle/Pedestrian Treatments



### SIDEWALKS

- A portion of the road ROW for the preferential or exclusive use of pedestrians
- Typically at least 5' wide
- Should be free of obstructions along its width and 80" high



### CROSSWALKS

- Provides a designated crossing point
- Helps provide more predictable pedestrian movements
- Alerts drivers to pedestrian areas



### SIGNAGE AND STRIPING

- Can help define pedestrian realm
- Provide visual cues for pedestrians and motorists
- Can augment other facilities



### AMENITIES AND AESTHETICS

- Lets pedestrians know area was designed for their use
- Helps provide a safe and comfortable environment
- Helps provide sense of "place"

## Typical Bicycle/Pedestrian Treatments



### **CURB EXTENSION**

- Reduces Vehicle Speeds
- Reduces Pedestrian Crossing Distance
- Increases Pedestrian Visibility
- Protects Parking Area & Prevents Parking Close to Intersection



### **FULL CLOSURE**

- Can be used to eliminate neighborhood cut-throughs
- Eliminates vehicular access
- Allows pedestrian and bicycle access and egress



### **MID-BLOCK CROSSING**

- Reduces Vehicle Speeds
- Increases Pedestrians Visibility
- Reduces Pedestrian Crossing Distance
- Connects Pedestrian Generators



### **RAISED MEDIAN GATEWAY**

- Provides Defined Entry
- Provides Cue to a Transition Area
- Aesthetically Pleasing
- Provides Pedestrian Refuge
- Reduction in Vehicle Speeds



## Typical Traffic Calming Devices



### **GATEWAY**

- Provides Defined Entry
- Provides Cue to a Transition Area
- Aesthetically Pleasing



### **CURB EXTENSION REDUCED TURNING**

- Reduces Vehicle Speeds
- Reduces Pedestrian Crossing Distance
- Increases Pedestrian Visibility
- Protects Parking Area & Prevents Parking Close to Intersection



### **RAISED**

- Reduces Vehicle Speeds
- Increases Pedestrians Visibility
- Reduces Pedestrian Crossing Distance
- Provides Pedestrian Refuge



### **BIKELANE**

- Reduces Vehicle Speeds
- Produces Designated Lane for Bicyclists
- Provides Additional Buffer for Pedestrians

## Typical Traffic Calming Devices



### **CURB EXTENSION**

- Reduces Vehicle Speeds
- Reduces Pedestrian Crossing Distance
- Increases Pedestrian Visibility
- Protects Parking Area & Prevents Parking Close to Intersection



### **MEDIAN REFUGE**

- Reduces Vehicle Speeds
- Reduces Pedestrian- Vehicle Conflict
- Reduces Pedestrian Crossing Distance
- Improves Aesthetics if well-maintained



### **MID-BLOCK CROSSING**

- Reduces Vehicle Speeds
- Increases Pedestrians Visibility
- Reduces Pedestrian Crossing Distance
- Connects Pedestrian Generators



### **Sidewalks and Access**

- Simplifies Crossing Movement
- Reinforces pedestrian priority
- Improves visibility
- Provides safe accessibility