Bound Brook and South Bound Brook, New Jersey

Pedestrian and Bicycle Travel Plan

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Edward J. Bloustein School
of Planning and Public Policy

Acknowledgements

The New Jersey Safe Routes to School Resource Center

The New Jersey Safe Routes to School Resource Center assists public officials, transportation and health professionals, and the general public in creating a safer and more accessible walking and bicycling environment through primary research, education and dissemination of information about best practices in policy and design. In partnership with the New Jersey Safe Routes to School Resource Center, Regional Coordinators at the state's eight Transportation Management Associations (TMAs) offer advice and assistance in getting programs off the ground in communities in all 21 counties.

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Introduction

Students learning the correct method of using a crosswalk. Picture provided by Ridewise, Inc.

WHAT IS SAFE ROUTES TO SCHOOL?

Safe Routes to School (SRTS) is an international, federal, state and local effort to create safe, convenient and fun opportunities that encourage children to walk and bicycle to and from school. In 2005, Congress passed legislation that established a National Safe Routes to School program dedicating funds administered through the Federal Highway Administration, and requiring each state to have a Safe Routes to School Coordinator as a central point of contact for the state.

New Jersey Safe Routes to School (NJ SRTS) is New Jersey's statewide initiative led by the New Jersey Department of Transportation (NJDOT) to enable and encourage students to safely walk and bicycle to and from school through education, training and research efforts. The mission of NJ SRTS is to empower and assist communities with identifying issues, creating partnerships and implementing projects and programs to encourage walking and biking to and from school as a safe, daily activity. Safe Routes to School projects can involve physical improvements to the environment as well as encouragement programs to promote more walking and bicycling to and from school. The vision of NJ SRTS is to develop a culture and environment where walking and bicycling to school is safer, more appealing and a part of daily life for students of all abilities throughout New Jersey.

WHAT IS A SCHOOL TRAVEL PLAN?

A School Travel Plan outlines actions to improve bicycle and pedestrian travel to and from schools. It identifies short-term solutions for immediate implementation in addition to long-term solutions that involve further planning. In order to create this document, a School Travel Plan first identifies where students currently walk and bike. Next, it describes where students would walk and bike if they could. Lastly, a School Travel Plan explains what changes are needed so students can and will walk and bike to school. The goal of a School Travel Plan is to increase the number of students who walk and bike to school through improved safety measures.

According to New Jersey Safe Routes to School, there are six required elements of a School Travel Plan. First, a school description is included for context. It should provide demographic information as well as identify special needs. Second, working groups and partnerships are listed. Third, the school neighborhood—approximately a 2-mile area—is mapped. This includes crossing guard and student drop-off/pick-up locations. Fourth, walking and biking barriers and opportunities are identified. This step involves gathering data and information from fieldwork and interviews with parents and the school. Fifth, goals and actions are developed, including a timeline and resources for completion. Sixth, a timeline for evaluation and follow-up steps are created for program monitoring and evaluation.

There are six steps in the process to develop a School Travel Plan. First, establish a working group, including principals, teachers, school board members, parents, students, crossing guards, the mayor, the town administrator, the municipal engineer, police officers, and/or local groups. Second, review existing school and district-wide rules and regulations regarding transportation of students. Third, outline short-term and long-term education and encouragement efforts. Fourth, develop a map of proposed walking and biking routes to school. Fifth, conduct a brainstorming session to identify potential solutions. Sixth, prepare action items based on the five E's—education, encouragement, engineering, evaluation, and enforcement.

A School Travel Plan is an important component of a Safe Routes to School program. It establishes partnerships between the school or school district, municipality, and the surrounding community to implement change. A School Travel Plan also incorporates ideas and actions to make walking and bicycling a safer and more desirable mode of transportation. The existence of a School Travel Plan makes SRTS grant applications more competitive as well. The New Jersey Department of Transportation and New Jersey Safe Routes to School Resource Center websites provide additional information and resources on creating School Travel Plans.

About Bound Brook & South Bound Brook

ABOUT BOUND BROOK

Bound Brook History and Characteristics

Bound Brook was first settled by the Dutch in the 1680s. Its historic Stone Arch Bridge was built in 1731. A bridge over the Raritan River was built in 1761, which connected the town to South Bound Brook. In 1777, this bridge played an important role in the Battle of Bound Brook during the Revolutionary War and it is where General Washington raised Betsy Ross's American flag for the first time.[4] Rail transportation came to Bound Brook in 1840 and the station was completed in 1919. In the mid-twentieth century, heavy industrialization was the backbone of the economy. Because it is surrounded by water on three sides, Bound Brook has been subjected to flooding throughout its history.[4] In 1999, Hurricane Floyd flooded Downtown Bound Brook destroying many residences and businesses. Recent Army Corps of Engineers projects including constructing levees, floodwalls, pump stations and other improvements to reduce or eliminate the impacts of heavy flooding events.[5]

Figure 1: Bound Brook Population Change, 2010-2016

Bound Brook Demographics

Bound Brooks' population has remained steady over the past five years, hovering between 10,200 and 10,500 residents. It's median age (34.3) is lower than that of New Jersey (39.5) and Somerset County (41.1). As such, it has a smaller proportion of seniors (10.1%) than New Jersey (21.3%) and Somerset County (20.4%). It has a higher proportion of school-aged children (18.8%) than New Jersey (16.6%) and Somerset County (17.9%).[6]

Table 1: Bound Brook Population Characteristics, 2010-2016

	Bound Brook	Somerset County	New Jersey
Median Age	34	41	40
School-Aged Children	19%	18%	17%
Senior Population	10%	20%	21%
Total Population	10,512	331,686	8,915,456

Bound Brook is 85% white, 5% black or African American, 2% Asian, <1% American Indian or Alaska Native, 1% two or more races, and 7% some other race. Almost half, 48.5%, of the population of any race identifies as Hispanic or Latino.[6]

Figure 2: Bound Brook Race, 2016

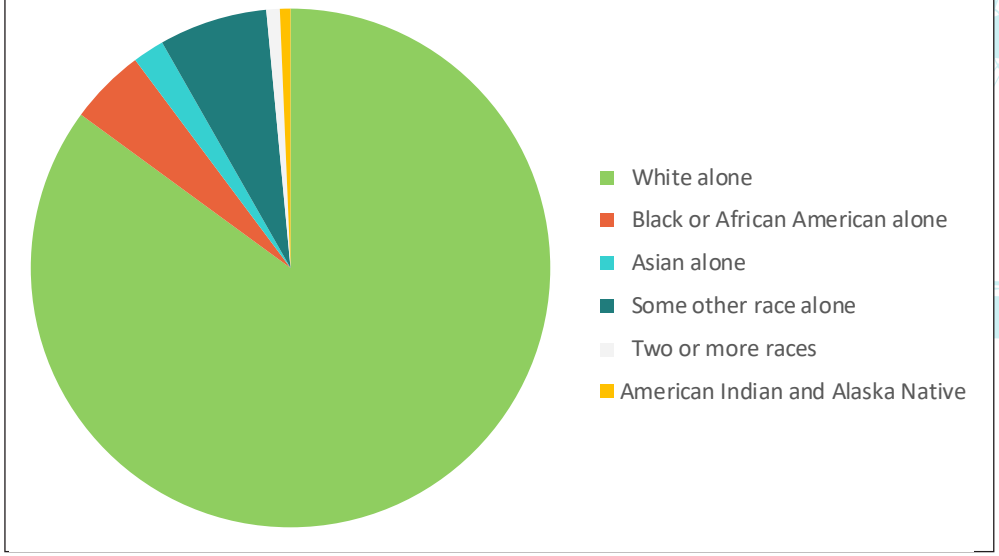
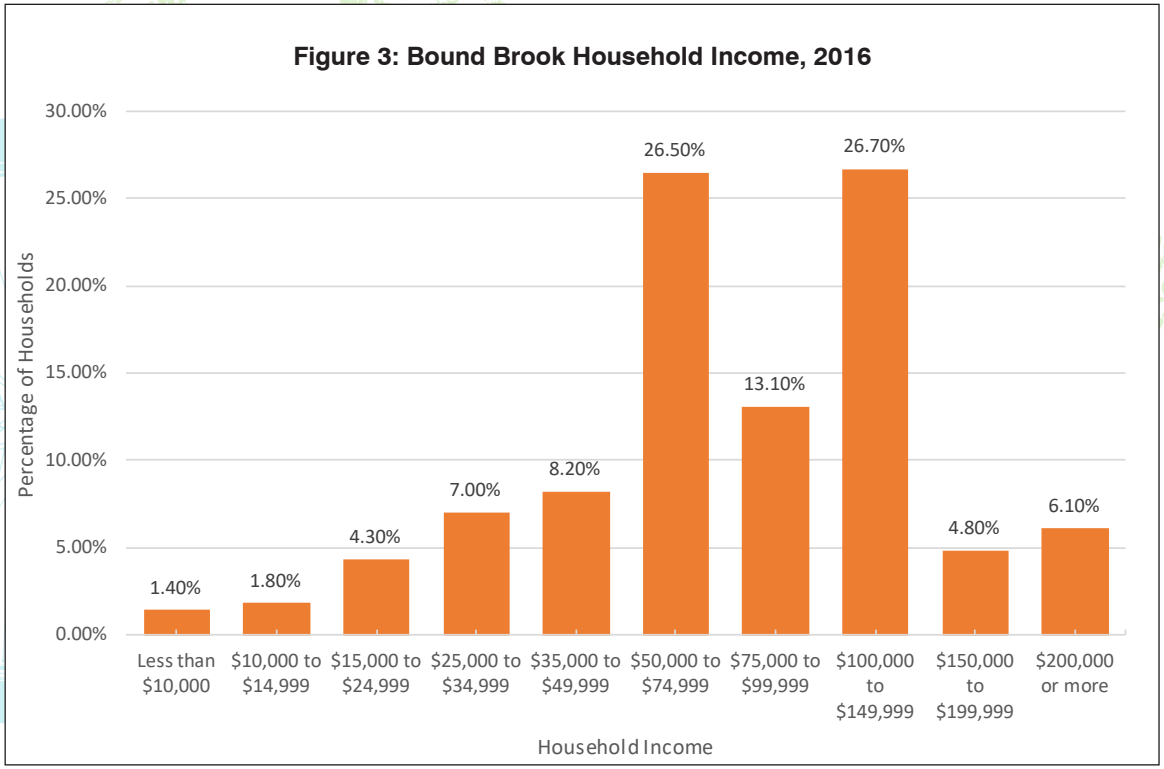


Figure 3: Bound Brook Household Income, 2016



Bound Brook's median household income is $66,300, and its mean household income is $86,140. Almost 4% of Bound Brook households make less than $10,000 annually.[6]

Existing Policies in Bound Brook

Downtown Bound Brook has received planning attention in recent years. It is designated by NJDOT and NJ Transit as a Transit Village and its street pattern lends itself to walking[7]. The Urban Land Institute published a redevelopment plan which highlighted the rehabilitation and restoration of the Historic Bound Brook Village Center, the preservation and restoration of the Old Town Preservation Neighborhood, and the development of a strong commercial tax base.[8]

A Downtown Urban Design Plan was released in 2010, which recommended limiting residential uses to the second floor and above, reevaluation of parking and set-back requirements, improving wayfinding, and investing in capital improvements.[9] A Complete Streets Resolution was passed in 2015 by the municipal council to meet the transportation and mobility needs of all of its citizens, regardless of age or ability.[10] In 2016, Bound Brook applied for a Safe Routes to School grant but was denied. Its plan centered upon physical improvements to sidewalks, its successful Walk to School Days, and treatments to slow traffic.

The Supporting Priority Investment in Somerset County Phase III, June 2017 report, encourages more development along Talmadge Avenue by reducing speeds and truck usage, increasing wayfinding, and improving the pedestrian experience through street trees and lighting. It promotes pedestrian accessibility to Queens Bridge and between South Bound Brook and Bound Brook, especially along routes to the train station.[11] A Master Plan Reexamination Report was released in 2017, which encourages greater consistency between planning sub-areas and reinvestment in the public right-of-ways.[12]

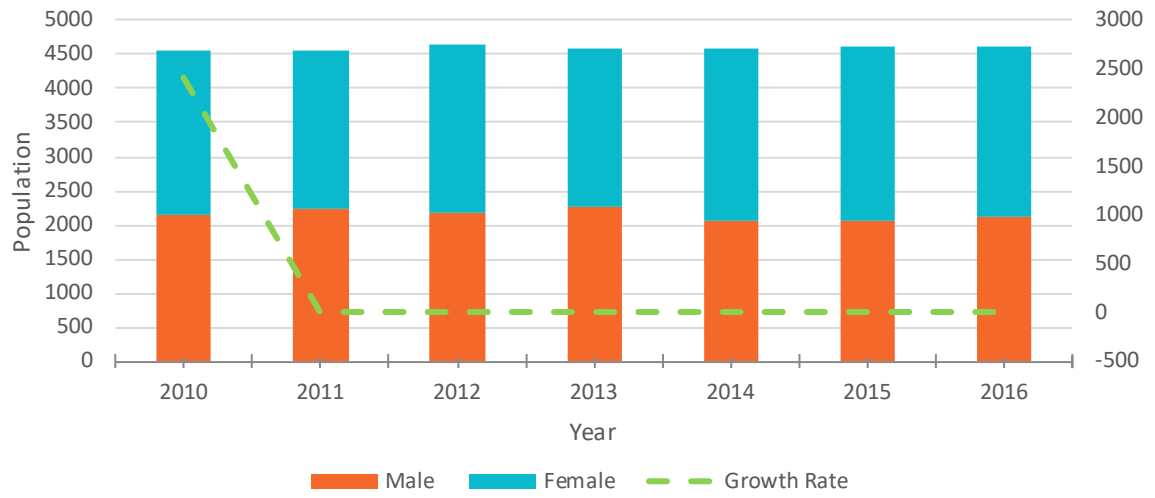
ABOUT SOUTH BOUND BROOK

South Bound Brook History and Characteristics

South Bound Brook was incorporated as a borough in 1907, but the area had been settled since 1681. In 1761, a bridge spanning the Raritan River was built and was used by both British and American armies during the Battle of Bound Brook in the Revolutionary War.[13] One of South Bound Brook's most important historical sites is the Abraham Staats House, which is listed on the National Register of Historic Places. It survives from the era of Dutch settlement.[14]

Throughout the 20th century, GAF Manufacturing was a major employer in South Bound Brook. It closed in 1984, and the site was recently redeveloped into townhouses. This project provided public access to the Delaware and Raritan Canal. The D&R Canal State Park runs along the northern and eastern boundaries of the town and is a popular spot for walking, bicycling and jogging, as well as fishing, kayaking, and canoeing.[15]

Figure 4: South Bound Brook Population Change, 2010-2016



South Bound Brook Demographic Profile

Based on the American Community Survey, the total population of South Bound Brook has been fluctuating between 4,555 to 4,653 since 2010 to 2016. In 2016, its median age at 38 is slightly lower than that of Somerset County (41.1) and the state of New Jersey (39.5). Similarly, its proportion of school-aged children (15.2%) is slightly lower than that of Somerset County (17.9%) and the state of New Jersey (16.6%). Noticeably, its proportion of senior population (9.4%) is significantly smaller than that of Somerset County (20.4%) and New Jersey (21.3%).[16]

Table 2: South Bound Brook Population Characteristics, 2010-2016

	South Bound Brook	Somerset County	New Jersey
Median Age	38	41	40
School-Aged Children	15%	18%	17%
Senior Population	9%	20%	21%
Total Population	4,613	331,686	8,915,456

Age by Sex South Bound Brook's population of males is 2,114 in 2016, while the female population is 2,499. The population pyramid in Figure 5 illustrates South Bound Brook as a developed borough. There is a large proportion of middle-age population. The largest cohorts are between 35-39 and 45-49 years old.[16]

Figure 5: Age-Sex of South Bound Brook, 2016

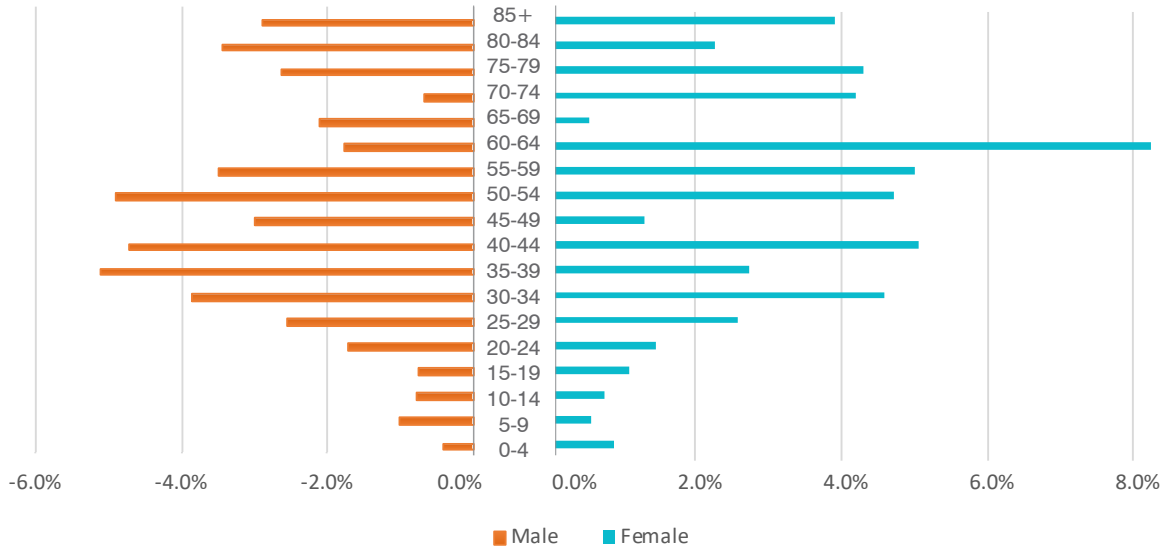
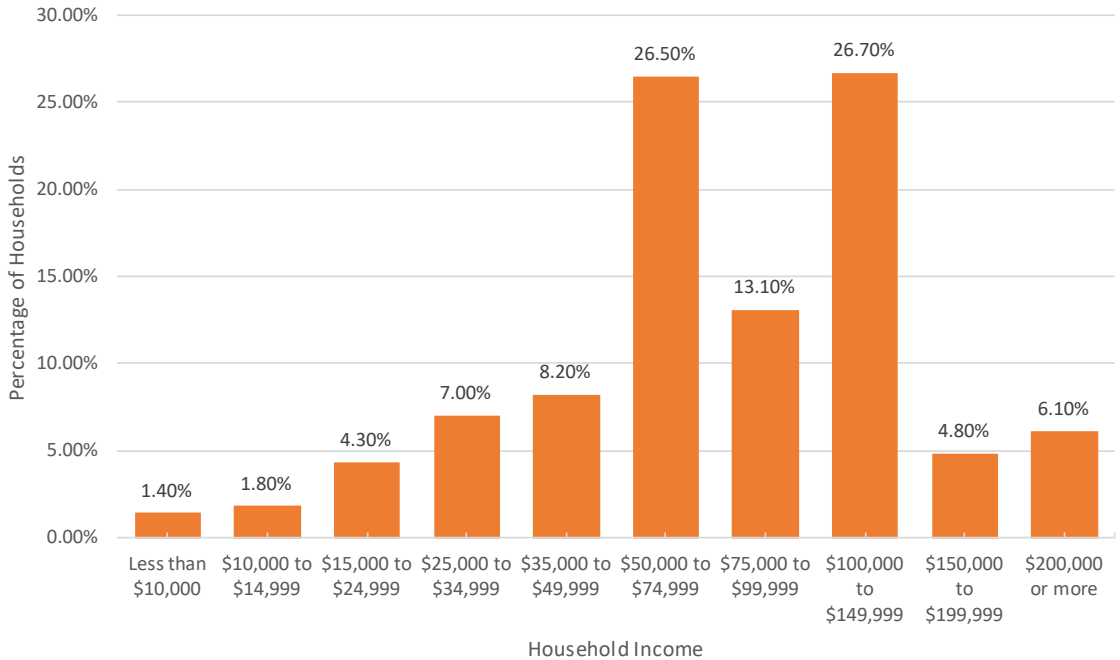


Figure 6: South Bound Brook Household Income, 2016



Races South Bound Brook is 70.1% white, 10.4% Asian, 8.4% black or African American, 8.2% two or more races, and 2.9% some other races.[16]

Income South Bound Brook's median income is $77,713 (2016), and its mean household income is $91,356, as shown in Figure 6. The largest proportions of household income groups are from $50,000 to $74,999 (26.5%) and from $100,000 to $149,999 (26.7%). 3.2% of households make less than $15,000 annually.[16]

Existing Policies in South Bound Brook

The Supporting Priority Investment in Somerset County Phase III Study report finds three potential redevelopment sites: the GAF Research Building, the Municipal Building and Garage, and the Black Belt Auto Site. This report also recommends a number of multimodal transportation improvements, including the adoption of a Complete Streets Policy, lowering the speed limit, developing a school travel plan, and improving access to Bound Brook and to the D&R Canal.[11]

The redevelopment of the former GAF site was in line with these recommendations. Working with the New Jersey Department of Environmental Protection, the area was designated Redevelopment Area in 1998. Two grants from the Hazardous Discharge Site Remediation Fund covered the costs of a Preliminary and Site Investigation with NJDEP oversight.[17] According to the NJ Office of Smart Growth's "Changing the Face of NJ" Handbook, the project includes 152 townhouses, public access to the D&R Canal, 23,000 square feet of retail, and 18 apartments.[18]

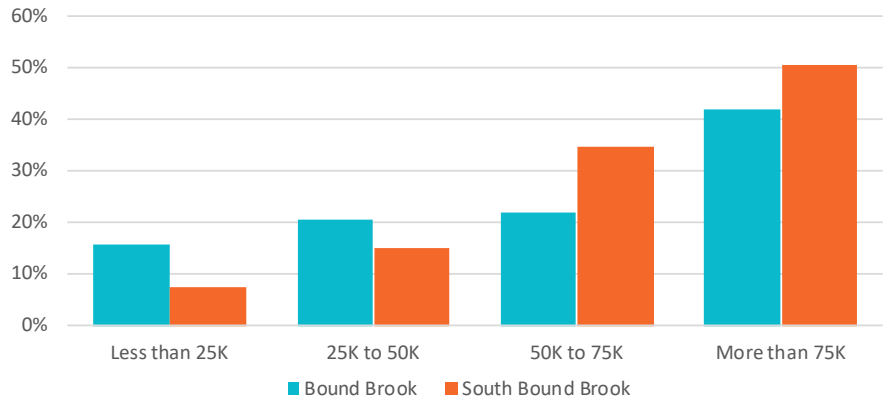
In May 2017, the Planning/Zoning Board approved a re-examination of the borough's Master Plan.[19] The re-examination included recommendations to changes in borough codes to define existing conditions such as the presence of family and child day care centers, restaurants and fast food, solar panels, and commercial signage. The reexamination also notes that parking standards are generally high and that shared parking on Main Street could help spur revitalization by lowering construction costs.[19] Notably, churches are not included in any zoning districts and must be added to the code. The re-examination also looks at previous plans and state policy changes and finds three sites for affordable housing development.[19]

HEALTH PROFILE

According to the US Census 2012-2016 American Community Survey, in Bound Brook, 16.6% of those under age 18 and 5.8% of those over age 65 are living below the poverty line.[6] In Bound Brook, the group with the highest rate of poverty at 23.4% is single mothers with related children under age 18. Household income, shown in Figure 7, is varied with 15.8% of the population earning less than 25K, 20.5% of the population earning 25K to 50K, 21.8% of the population earning 50K to 75K, and 41.9% of the population earning more than 75K. Of these annual earnings, 24.4% include Social Security, 3.8% include SNAP, and 1.3% nclude cash public assistance. Race and ethnicity in Bound Brook is 48.5% Hispanic, 44.3% White, 4.6 Black/African-American, and 1.9% Asian.

In South Bound Brook in 2016, 3.8% of those under age 18 and around 1.6% of those over age 65 are living below the poverty line.[16] In South Bound Brook, the group with the highest rate of poverty at 7.3% is single mothers with related children under age 18, shown in Figure 8. Total annual household earnings are relatively high with 7.5% earning less than $25 K, 15.2% earning $25 to 50K, 34.7% earning $35k to 75k, and 50.7% earning over $75K. Of these annual earnings, 22% include Social Security, 4.5% include SNAP, and

Figure 7: Household Income in Bound Brook and South Bound Brook, 2016



nearly no household received cash public assistance, shown in Figure 9. Race and ethnicity in South Bound Brook is 70.1% White, 10.4% Asian, 8.4% African American, followed by 8.2% of population with two or more races.[16]

Somerset County is ranked 3rd in NJ for Health Outcomes according to the County Health Rankings and Roadmaps from the Robert Wood Johnson Foundation.[20] The data also shows that Somerset County has better health factors, such as health behaviors, clinical care, social & economic factors, and physical environment than is typical of New Jersey.[20] It is ranked second in NJ for overall Health Factors. However, Bound Brook differs from Somerset County overall due to current social, economic, and environmental conditions.[20]

Figure 8: Poverty Status in Bound Brook and South Bound Brook, 2016

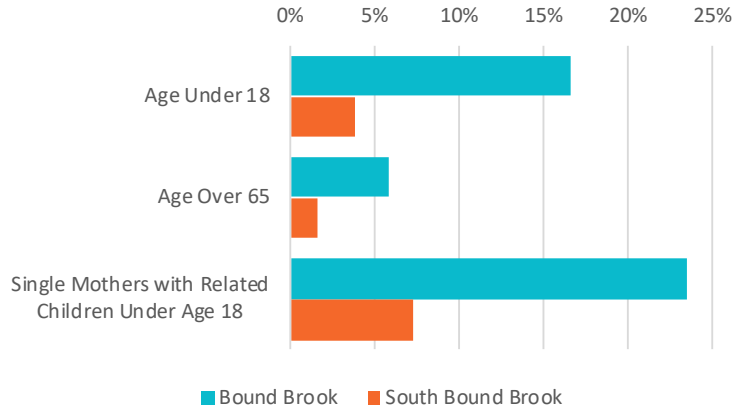
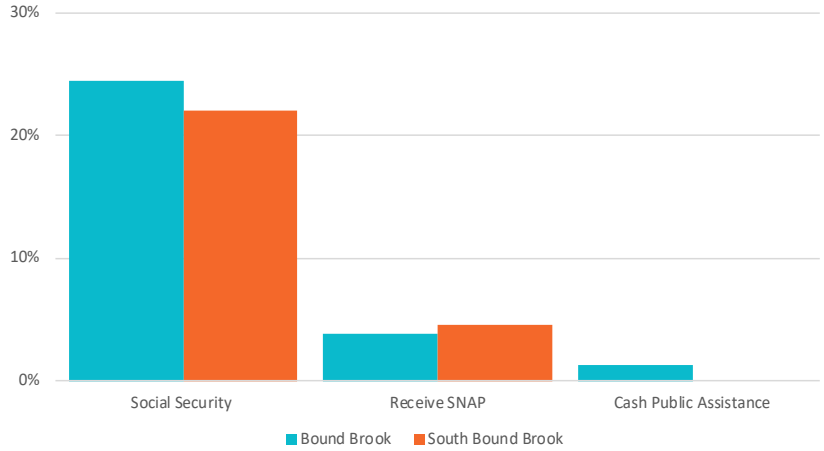


Figure 9: Percent of Population Receiving Public Assistance in Bound Brook and South Bound Brook, 2016

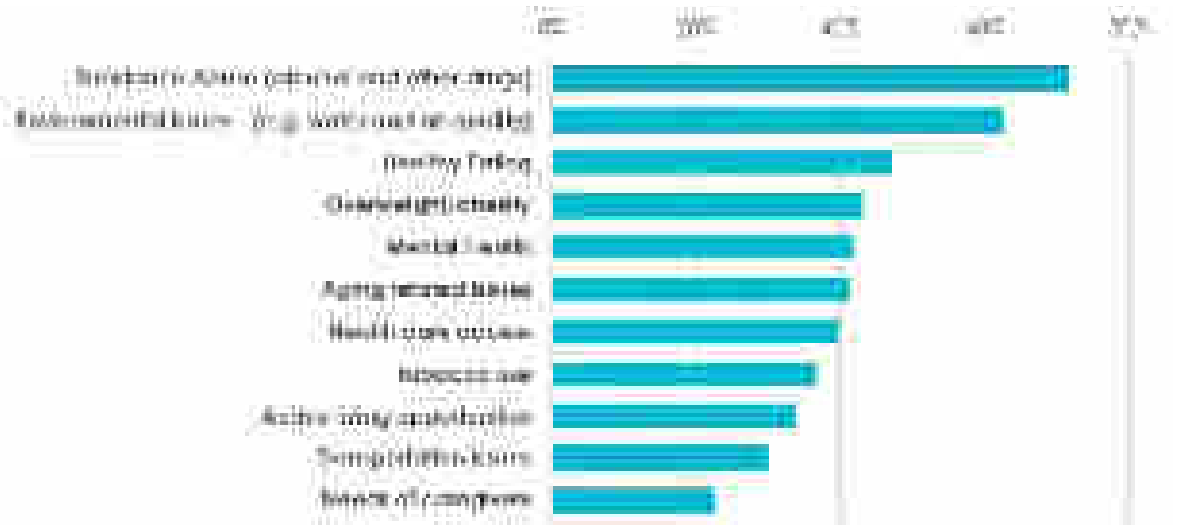


Health Concerns

In 2015, Robert Wood Johnson University Hospital (RWJUH) Somerset in partnership with the Healthier Somerset Coalition undertook a community health needs assessment (CHA) of the communities it serves. A telephone survey was administered using a random-digit dial sampling methodology with approximately 50% landline respondents and 50% cell phone respondents.[21] The aim was to yield a sample with similar characteristics to the Somerset County population overall. The survey was offered in English and Spanish. Qualified respondents were adults ages 18+ who live in Somerset County, NJ. A total of 2,002 respondents completed the 30-question telephone survey.[21]

The results, shown in Figure 10, are broken down to the regional level based on health commission jurisdictions.[1] Bound Brook and South Bound Brook are included in the data presented for the Middle Brook Regional Health Commission, which also includes Green Brook, Warren, and Watchung. This data is considered to be more representative of Bound Brook and South Bound Brook than the overall county data.

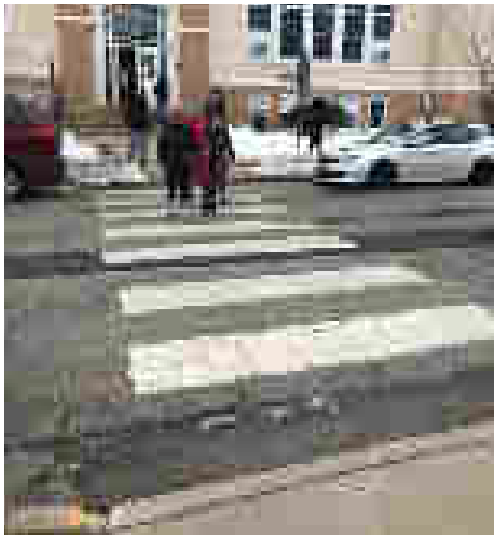
Figure 10: High Priority Health Topics of Middle Brook



Substance Abuse Around one-quarter (25.1%) of survey respondents in the Middle Brook Regional Health Commission area self-reported binge drinking at least one a month compared to the national rate of 16.8%. Yet, the CDC's Behavioral Risk Factor Surveillance System 2011 data for the central region of Somerset County did not show higher rates of alcohol consumption. It did show the percentage of people that reported smoking every day was more than twice as high than in the northern region of Somerset County.[1]

Obesity In the 2015 Middle Brook Regional Health Commission survey, a higher percentage of respondents reported being obese (9.1%) and eating no servings of vegetables daily (6.2%) in comparison to other regions of Somerset County. There are higher rates of obesity among the population of western Bound Brook than eastern Bound Brook or South Bound Brook. Middle Brook RHC residents were 50% more likely to have a diagnosis of diabetes (9.3%) than residents of the county as a whole (6.2%).[1]

The CDC's Behavioral Risk Factor Surveillance System 2011 data also showed that respondents from the central region of Somerset County were more likely to report high cholesterol levels (39%) than the northern (34.5%) or southern (35%) areas. Almost double the percentage of respondents from the central region were advised by physicians to lose weight in comparison to the northern region.[1]

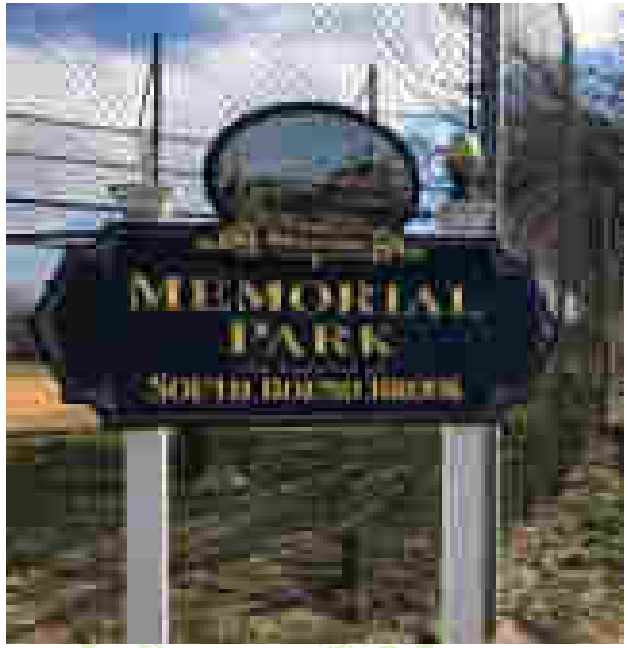


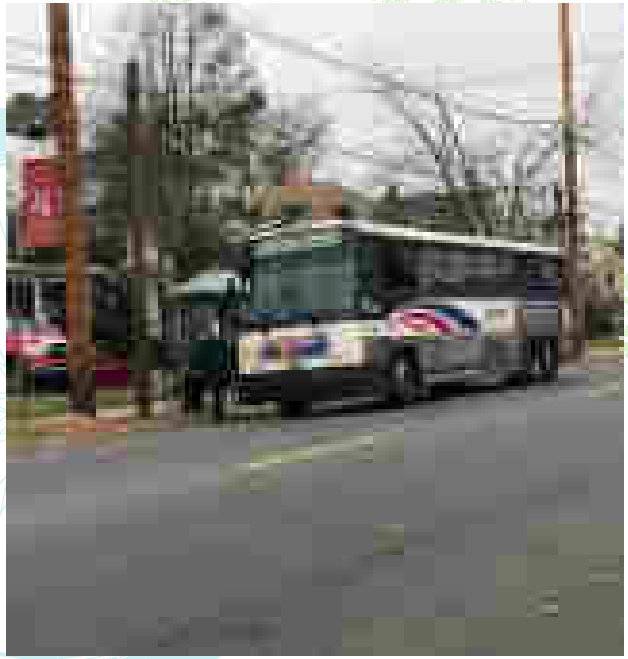
Asthma According to the CDC's Behavioral Risk Factor Surveillance System 2011 data, residents of central Somerset County reported asthma diagnoses at a higher percentage (14%) than the two nearby regions (11.6% and 9.8%).[1]

Mental Health According to the CDC's Behavioral Risk Factor Surveillance System 2011 data, a higher percentage of residents in central Somerset County reported suffering from both anxiety (12.3%) and depressive disorders (15.1%) than residents of the rest of the county. Also, significantly more residents of the central region reported 3 or more days in the past 14 days of feeling "down, depressed or hopeless" (13.8%) than those in the rest of the county.[1]

Health Access According to the CDC's Behavioral Risk Factor Surveillance System 2011 data, fewer residents of central Somerset County reported having health insurance of any kind (83.8%) than in other parts of Somerset County. The southern and western portions of Bound Brook have the highest proportion of uninsured populations (over 20%) while the northern area has the lowest.[1]

Residents of the central region of Somerset County were also much more likely—two to five times higher—to report they did not seek medical care or prescriptions due to cost or transportation. There is a behavioral health treatment facility located in central Bound Brook, but there are no major hospitals within these two towns. The Robert Wood Johnson University Hospitals in Somerville and New Brunswick and Saint Peter's Hospital in New Brunswick are within 15 miles, however public transit to these facilities is limited.[1]





Social Determinants of Health

As defined by Healthy People 2020, social determinants of health "are conditions in the environments in which people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks."[22] These determinants are shaped by the how much money, power, and resources people have. Factors that are included in determining health outcomes include safe and affordable housing, educational attainment, employment, safe and accessible transportation, food security, etc.[22] The following topics contribute to social determinants of health.

Crime According to annual crime data, the crime rate in Bound Brook is 21% lower than the average for New Jersey and 48% lower than the national average. For violent crimes, Bound Brook has a rate 53% lower than the average for New Jersey and 71% lower than the national average in 2016. South Bound Brook has a rate 47% lower than the average for New Jersey and 67% lower than the average for United States.[1]

In terms of property crime, Bound Brook has a rate 22% lower than the average for New Jersey and 51% lower than the national average. Similarly, the city property crime rate in South Bound Brook was 47% and 66% lower than the state and national property crime rate average. In 2015, the State Police reported the overall crime rate per 1,000 was 16 for Bound Brook Borough and 9.1 for South Bound Brook, while there is 11.1 for Somerset County.[23] CDC's Behavioral Risk Factor Surveillance System 2011 data for the central region of Somerset County, which includes Bound Brook and South Bound Brook, shows fewer people reporting feeling "very safe" in their neighborhoods (79.2%) than in the other two regions (93.5% and 87.3%).[1]

Food Access Based on the USDA's Food Access Research Atlas data for 2015, the southeastern portion of Bound Brook—south of Union Avenue and west of Thompson Avenue—is classified as a low income low access census tract, where a significant number of residents are more than 1/2 mile (urban) or 10 miles (rural) from the nearest supermarket. The whole South Bound Brook is classified as low access at ½ or 10 miles.[24] There are many food stores in and near Bound Brook while most of the food stores in South Bound Brook are located on Main Street.

Parks There are a variety of park and recreation areas in Bound Brook, including Billian Legion Park, Codrington Park/Ben Maggio Recreation Center, Middle Brook Park, Rock Machine Field, and Tea Street Sports Complex.[25] Due to the limited space in South Bound Brook, the numbers of park are limited, there are only Canal Park and Memorial Park.[26] [27]

Public Transportation NJ Transit bus routes 65, 114, and 117 have a stop in Bound Brook at the intersection of Union Avenue and Tea Street.[28] [29] Somerset County also offers several shuttle routes that stop in Bound Brook and South Bound Brook.[30] Lastly, there is an NJ Transit train station in Bound Brook along the Raritan Valley Line, serving both Bound Brook and South Bound Brook.[31]

Bound Brook & South Bound Brook School Districts

BOUND BROOK SCHOOL DISTRICT

Bound Brook is home to three elementary schools, one middle school, and one high school. LaMonte Annex serves 367 students in Pre-Kindergarten, Kindergarten, and Grade 1. Lafayette School serves 278 students in Grades 2 and 3. Smalley School serves 358 students in Grades 4, 5 and 6.[32] These schools open for student arrival at 7:50am and classes begin at 8:10am. School dismisses at 2:40pm.[33] Between 75% and 79% of students at these schools are considered economically disadvantaged, meaning these students are eligible for free or reduced lunch.[32] One in every 4 students in Grades 2 and 3 are English Language Learners, as are 1 in every 5 students in the other elementary schools. Each elementary school provides breakfast after the bell.[32]

Community Middle School serves 236 students in Grades 7 and 8. School begins at 7:35am and ends at 3:00pm. Bound Brook High School serves 551 students from Bound Brook and South Bound Brook, in Grades 9-12. School begins at 7:30am and ends at 2:52pm.[33] 80% of middle school and 63% of high school students are economically disadvantaged, as shown in the chart below. 11% of middle school students and 13% of high school students are English Language Learners. Both the middle and the high school provide breakfast after the bell.[32]

Existing Policies

Bound Brook School District's Wellness Policy encourages physical activities during recess and after school, but does not specifically outline walking or biking to school as a way achieve exercise goals. It primarily focuses on nutrition and healthy eating, and breakfast is provided after the bell in Bound Brook schools.[34] Bound Brook's elementary schools have hosted Walk to School Days. There are separate district policies regulating walking and biking to school, which are outlined below.

Students walking to school as part of a Walking School Bus. Picture provided by Ridewise, Inc.

The Bound Brook School District has in place three policies outside of the Wellness Policy that address walking and biking:

District Policy 5514—Student Use of Vehicles on School Grounds outlines student bicycle use. Students are allowed to ride bicycles to Bound Brook High School, Community Middle School, Smalley Elementary School, Lafayette Elementary School, LaMonte Elementary School, and LaMonte Annex Elementary School.Students must comply with state and local laws and must park bikes in a designated area outside the school building. Each school principal may develop school rules for the operation of student bicycles on school grounds.[35]

District Policy 5514.5—Walking and Biking to School was adopted in October of 2017 and is a comprehensive policy that lists the benefits of walking and bicycling to and from school and specific guidelines including that students under 17 years of age must wear a helmet, students in Grades 1-3 should be accompanied by an adult, bicycles should be walked on school grounds, bicycles should be locked, and students should wear bright and reflective clothing. [35]

Table 3: Bound Brook School District School Details							
School Name	**Enrollment**	**Grade Levels**	**Arrival Time**	**Dismissal Time**	**Economically Disadvantaged Students**	**English Learners**	**Homeless**
LaMonte / Annex	367	Pre-K, K, 1	7:50-8:10 AM	2:40 PM	75%	21%	1%
Lafayette	278	2-3	7:50-8:10 AM	2:40 PM	77%	25%	2%
Smalley	358	4-6	7:50-8:10 AM	2:40 PM	79%	20%	1%
Community Middle School	236	7-8	7:35 AM	3:00 PM	80%	11%	1%
Bound Brook High School	551	9-12	7:30 AM	2:52 PM	63%	13%	0%
Green Brook Academy	35	7-12+	n/a	n/a	n/a	n/a	n/a

Table 4: Bound Brook School District Ethnicity						
School Name	**Hispanic**	**White**	**Black/African American**	**Asian**	**American Indian or Alaska Native**	**Two or More Races**
LaMonte / Annex	76%	11%	7%	1%	2%	3%
Lafayette	76%	14%	10%	0%	1%	0%
Smalley	78%	10%	7%	2%	0%	2%
Community Middle School	75%	12%	11%	1%	0%	1%
Bound Brook High School	62%	20%	15%	2%	0%	1%

District Policy 7461— District Sustainability Policy was adopted in August of 2017 and states "Safe Routes to School is a nationwide movement aimed at encouraging elementary and middle school students to walk or bicycle to school. The goal of New Jersey's Safe Routes to School initiative is to get children walking and bicycling to school where it is safe and to make it safe where it is not safe. In support of this initiative, the Board has adopted Policy 8505—Local Wellness Policy/Nutrient Standards for Meals and Other Foods, Policy 8600—Transportation, and Policy 5514—Student Use of Vehicles. The Board of Education and the administration will collaborate with municipal, county or State transportation, land-use planning, law enforcement, and other agencies to plan, construct, and encourage the use of safe, accessible, and convenient pedestrian and bicycle routes to and from school.[37]

Bound Brook Student Expectation Manuals Some limited information about walking, bicycling or wheeled sport travel and behavior are part of the Student Expectation Manuals.[38] The Bound Brook High School Student Expectations Manual lists "walk on sidewalks" under school ground rules and does not have any information about bicycling.[39] The Bound Brook Elementary School Student Expectations Manual does not have any information about walking or bicycling, but does prohibit scooters and skateboards under the "Toys" section.[40] The Bound Brook Middle School Student Expectations Manual lists the following during arrival and dismissal:

- Stay in designated areas and on walkways.
- Walk
- Keep hands and feet to yourselves
- Pay attention to your surroundings
- Be respectful of community members
- No skateboarding or bicycle riding on school grounds[41]

Bound Brook School Travel Tallies

Student Arrival and Departure Travel Tallies show how children travel to and from school. They are taken by teachers for two or three days (Tuesday, Wednesday, Thursday) during one week. Travel Tallies were taken at all schools in each town, Bound Brook and South Bound Brook. The Bound Brook tallies were taken in October 2017 while the South Bound Brook tallies were taken in January 2018.

LaMonte/Annex School This elementary school includes Kindergarten and Grade 1. Figure 11 shows the results from the student arrival and departure travel tallies taken in October 2017. Based on the travel tallies, LaMonte/Annex students are predominantly driven to and from school in a family vehicle. A higher percentage of students travel by family vehicle in the morning as compared to the afternoon. The weather conditions did not significantly alter student travel overall. Travel by school bus and walking are the next most popular travel modes after family vehicles. Something interesting to note is three percent of students bike in the afternoon, yet zero percent bike in the morning.

Lafayette Elementary School This elementary school includes grades 2 and 3. Figure 12 shows the results from the student arrival and departure travel tallies taken in October 2017. Based on the travel tallies, Lafayette Elementary students are predominantly driven to and from school in a family vehicle. A higher percentage of students travel by family vehicle in the morning as compared to the afternoon. The weather conditions did not significantly alter student travel overall. Travel by school bus and walking are the next most popular travel modes after family vehicles. A higher percentage of students travel by school bus and walking in the afternoon as compared to the morning. There is more carpooling at Lafayette Elementary than biking. Even though “other” only accounts for 2% and 4% of daily travel, this is the highest percentage among Bound Brook Schools.

Figure 11: LaMonte/Annex School Morning and Afternoon Travel Modes Comparison, October 2017

Figure 12: Lafayette Elementary School Morning and Afternoon Travel Modes Comparison, October 2017

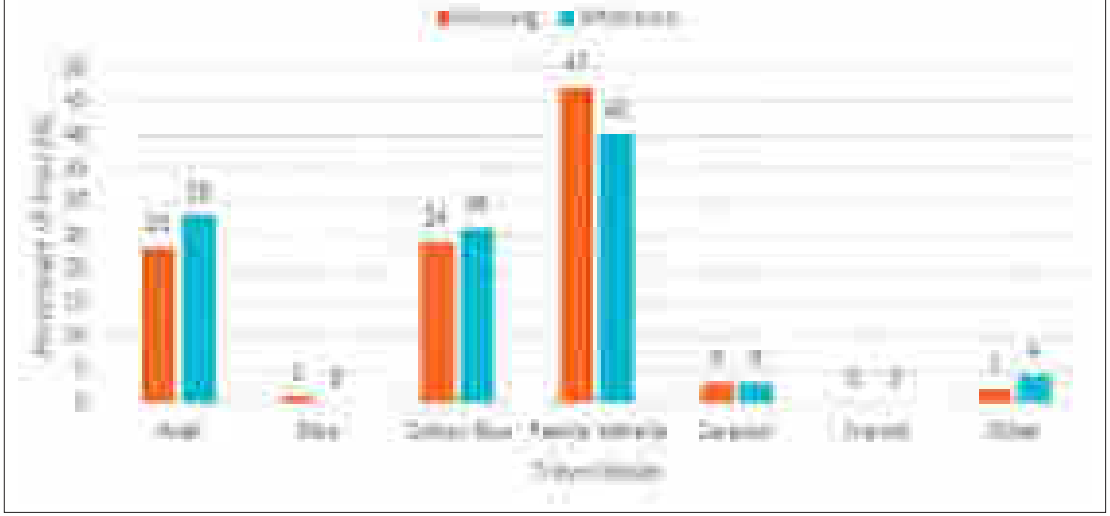


Figure 13: Smalley Elementary School Morning and Afternoon Travel Modes Comparison, October 2017

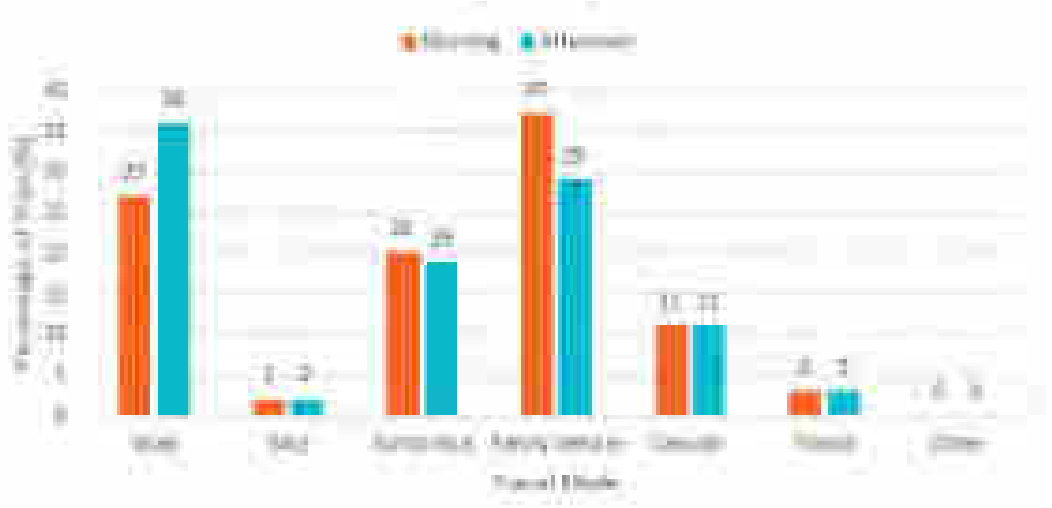


Figure 14: Community Middle School Morning and Afternoon Travel Modes Comparison, October 2017

Smalley Elementary School This elementary school includes Grades 4-6. Figure 13 shows the results from the student arrival and departure travel tallies taken in October 2017. Based on the travel tallies, most Smalley Elementary students are driven to and from school in a family vehicle or walk to and from school. A higher percentage of students travel by family vehicle in the morning and a higher percentage of students walk in the afternoon. The weather conditions did not significantly alter student travel overall. Travel by school bus is the next most popular travel mode. There is by far more carpooling at Smalley Elementary than other Bound Brook schools. This was the only school to have a notable level of transit use at three percent. Even though biking only accounts for 2% of daily travel, this is the second-highest percentage among schools.

Community Middle School This school includes the oldest students in grades 7 and 8. Figure 14 shows the results from the student arrival and departure travel tallies taken in October 2017. Based on the travel tallies, Community Middle students predominantly walk to and from school with a higher percentage of students walking home. The weather conditions did not deter students, as an even greater percentage (73%) walked in snowy conditions than sunny (67%). Travel by family vehicle is the second-most popular travel mode. The percentage of students arriving at school by family vehicle is over double the percentage departing school by family vehicle. Even though biking only accounts for 3% of daily travel, this is the highest percentage among Bound Brook Schools.

A Note on Bus Use A pair of private bus start-ups in Bound Brook run what is locally referred to as a school bus (there is no public school bus). They drive traditional yellow buses and charge students per-ride to get to and from school, with pricing varying from one dollar to five, based on distance. Bus ridership is believed to cut into bike and walk numbers, based on participation numbers at RideWise's local bike/ped events dropping since the buses came into operation. Bus ridership does not appear to reduce car use, based on current data, but not much is known at this time.

SOUTH BOUND BROOK SCHOOL DISTRICT

Robert Morris School, located roughly in the center of South Bound Brook, is the only school in this Borough. The school district name is South Bound Brook Public Schools. In 2014-2015 school year, Robert Morris School includes 465 students range from Grade PK-8. For K-8 students, the arrival time is 8:26 am, and dismissal time at 3:00 pm and 12:38 pm for full-day session and half-day sessions respectively.[42] There are 163 students eligible for free meal, and 55 students for reduced-price meal. In terms of race of students, 49% are Hispanic, 29% are white, 12% are black/African-American, and Asian/Pacific Islander and two or more races are 5% each.[43] This information is displayed in Tables 5 and 6.

Existing Policies

School Wellness Policy The wellness policy of Robert Morris School focuses on the nutrient standards for meals and other foods as well as physical activity. The standard follows the Healthy, Hunger Free Kids Act of 2010, which provide the nutrition standards for school lunch and breakfast program as well as provide fund to child nutrition program.[46] The goals of the wellness policy cover nutrition promotion, nutrition education, physical activity, and other school-based activities. The wellness policy has met most of the objectives by the division of food and nutrition under the department of food and nutrition.[45] However, there is no measurable goals for each sector and the school meal nutrition, calorie, and content information are not publicized to students and families.[45]

The policy also includes goals for physical activity which include providing properly certified physical activity teaching staff, age-appropriate equipment during recess, and school staff encouraging students to participate in walking, playing games and/or using playground equipment during recess.

Table 5: Robert Morris School Profile, 2014-2015 School Year

Enrollment	Grade Levels	Arrival Time	Dismissal Time	Free and Reduced Lunch Eligible	Economically Disadvantaged Students	English Learners	Homeless
465	PK-8	K-8: 8:26 PK: 8:26-10:56	K-8: 3:00 pm on full day and 12:38 pm for half-day sessions PK: 12:26 – 2:56	47%	47%	7%	0%

Table 6: Robert Morris School Racial Demographics, 2017

Hispanic	White	Black/African American	Asian	Two or More Races
49%	29%	12%	5%	5%

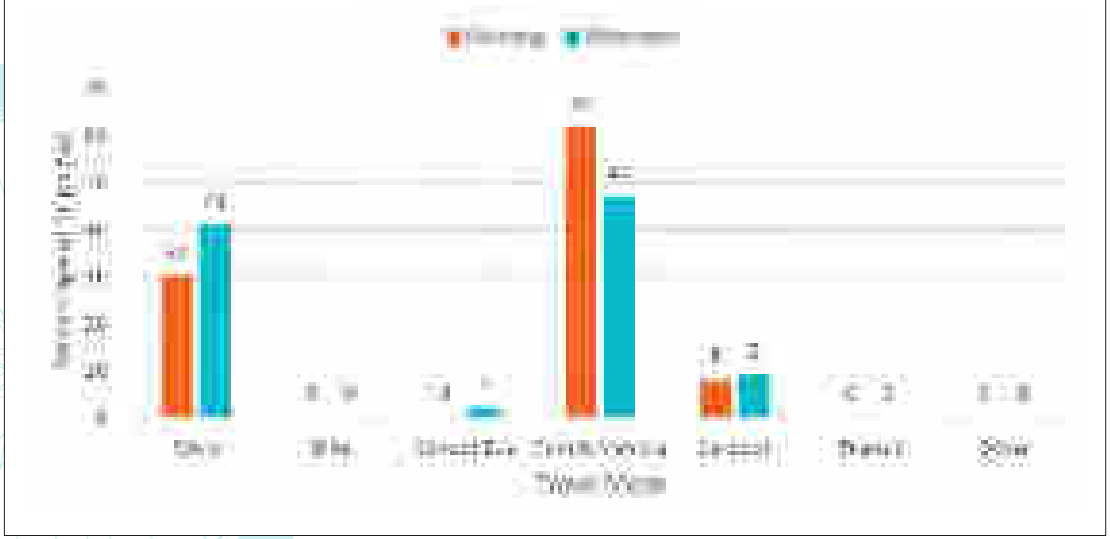
Classroom teachers are encouraged to include physical activity breaks during normal school hours and the school has special events like walkathons and activity tournaments. A designated Wellness Committee working with the principal provides annual school progress reports that list how goals are being met.[45]

School Meals In terms of school meals, Pomptonian, the school food service, offers a breakfast program before school and lunch. Both of the programs are served at regular price, reduced price, and at no cost, while additional lunch snacks and beverages can be purchased separately. Students must select at least three of fruits, vegetables, grains, protein, and dairy among which no less than one selection must be a fruit or a vegetable component. Beyond school meals, fruits and non-fried vegetables also provided in snack bars.[45]

Robert Morris School School Bicycling Policy The South Bound Brook School District includes the following statement about bicycle use in the Robert Morris School Student Handbook, "Bicycle riding to school is permitted for students with consent of their parents. When students reach school property, they are required to walk their bikes to the bike rack. Please make certain that the bike is chained and locked. At the end of the school day, bicycles must be walked off of school property. The school is not responsible for theft or damage. Scooters and skateboards are not permitted to be ridden to school."[44]

Robert Morris School School Arrival Policy The South Bound Brook School District includes the following statement about school arrival in the Robert Morris School Student Handbook, "Students must be in their classrooms by 8:30 a.m., or they will be considered late to school. Students should not arrive at their assigned entrances prior to 8:16 a.m. There is no supervision at school entrances before that time. Because of the number of students on school grounds in the morning before school, basketball, football, Frisbee, and other games which may create a safety hazard are not permitted."[44]

Figure 15: Robert Morris School Morning and Afternoon Travel Modes Comparison, January 2018



South Bound Brook School Travel Mode Tallies

Robert Morris School This school includes Kindergarten through 8th Grade. Figure 15 shows the results from the student arrival and departure travel tallies taken in January 2018. Based on the travel tallies, Robert Morris students are predominantly driven to and from school. The second-most popular travel mode is walking. More students are driven in the morning and more students walk in the afternoon. The weather conditions did not significantly deter students, as twenty-seven percent of students still walked in snowy conditions compared to thirty-six percent in sunny. A decent percentage (8% and 9%) of students carpool daily. There is notably no biking (0%) daily.

Working Groups and Partnerships

WORKING GROUP PARTICIPANTS

This program aims to engage local organizations and community groups who will support the SRTS program. Tables 7, 8, and 9 list the representatives that were part of the travel plan working group.

Table 7: Working Group Participants, Bound Brook

Name	Title	Affiliation	Contact
Vito Bet	Chief of Police	Bound Brook Police Department	vbet@boundbrookpd.org
Abel Gomez	Borough Council	Borough of Bound Brook	agomez@boundbrook-nj.org
Hector Herrera	Borough Administrator	Borough of Bound Brook	hherrera@boundbrook-nj.org
Daniel Gallagher	Superintendent of Schools	Bound Brook School District	superintendent@bbrook.org
Beth Fischer	Asst Superintendent of Schools	Bound Brook School District	EFischer@bbrook.org

Table 8: Working Group Participants, South Bound Brook			
Name	**Title**	**Affiliation**	**Contact**
Richard Eickhorst	Council President	Borough of South Bound Brook	SBBREickhorst@optonline.net
Christina Fischer, RMC	Municipal Clerk	Borough of South Bound Brook	cfischer@southboundbrook.com
Chris Shoffner	Mayor	Borough of South Bound Brook	cshoffnet@southboundbrook.com
Jeff Titus	Chief of Police	Borough of South Bound Brook	jtitus@sbbpolice.org
Lorise Goeke, Ph.D.	Superintendent of Schools/ principal	South Bound Brook School District	goeke@rmschool.com
Vinnie Caravello	School Business Administrator	South Bound Brook School District	Caravello@rmschool.com

Table 9: Working Group Participants, Somerset County and Other Stakeholders			
Name	**Title**	**Affiliation**	**Contact**
Walter C. Lane, AICP/ PP	Director of Planning	Somerset County Planning Division	lane@co.somerset.nj.us
Saleena Marria, MBA	Corporate & Foundation Relations	RWJBarnabas Health, Healthier Somerset	Saleena.Marria@rwjbh.org
Sean Meehan	Project Manager	Alan M. Voorhees Transportation Center, Rutgers University	smeehan@ejb.rutgers.edu
Daniel Puntillo	Leadership Team/Action Team Chair	Big Dan's Bike Shop, Healthier Somerset	dpuntillo@optonline.net
Lisa Rothenburger	Somerset County 4H	NJHI- Bound Brook	Rothenburger@njaes.rutgers.edu
Maria Strada	Executive Director	Middle Earth	mstrada@middleearthnj.org
Leigh Ann Von Hagen	Senior Researcher	Alan M. Voorhees Transportation Center, Rutgers University	lavh@ejb.rutgers.edu
Elise Bremer-Nei, AICP/PP	Bicycle and Pedestrian Coordinator	New Jersey Department of Transportation Office of Bicycle and Pedestrian Programs	elise.bremer-nei@dot.nj.gov
Serena Collado	Leadership Team/Policy Action Team Chair	RWJBarnabas Health, Healthier Somerset	Serena.Collado@RWJBH.org
Heidi Cyr	4H/Middle Earth Coach	4/H Middle Earth	heidicyr@gmail.com
Donna Allison	Executive Director	Ridewise	donna@ridewise.org
Gerry Montague	Program Director	Ridewise	gerard@ridewise.org

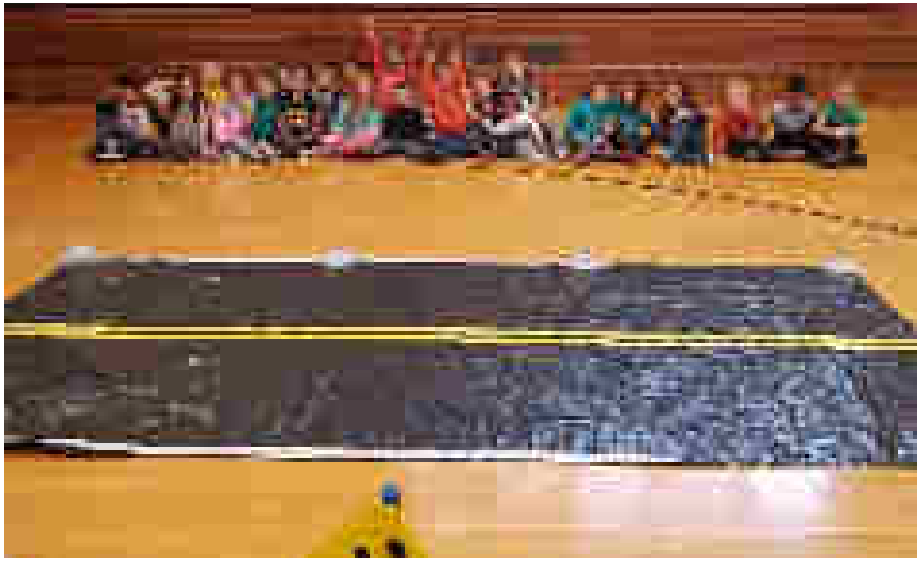
EXISTING SAFE ROUTES TO SCHOOL EFFORTS

There are Safe Routes to School educational and encouragement programs in both the Bound Brook and South Bound Brook schools. In 2017, Bound Brook as a municipality and all of the elementary schools, Smalley School, Lafayette Elementary School and LaMonte/ LaMonte Annex, received the silver designation for the NJ Safe Routes to School Recognition Program.[47] The Robert Morris School in South Bound Brook received "first step" designation through the Recognition Program. Municipalities and schools (public, private, or charter) are recognized for their commitment and support of the Safe Routes to School program by completing projects and programs that meet designation requirements. Certification is valid for three years.

Bound Brook Safe Routes to School Program

In Bound Brook, the program has been running for the past 5 years and involves students from LaMonte & LaMonte Annex, Lafayette, Smalley, and Community Middle School. The following are past and upcoming programs to encourage safe walking and bicycling:

- LaMonte, Smalley and Lafayette operate a monthly Walking School Bus on the first Thursday of September, October, April, May and June. Junior National Honor Society students at Community Middle School help escort younger students to schools.
- In the 2015-16 and 2016-17 school years, Lafayette School held a "Most Miles" contest every month to track how many miles students walked to and from school. Each classroom tracks number of miles for a combined classroom score which is tabulated and maintained on a scoreboard overseen by RideWise. The classroom with the most miles at the end of year receives a trophy that rotates between the winning classrooms and prizes.
- In 2016-2017 school year, Smalley School held a poster contest where students submitted artwork about safe walking and bicycling. Winners were selected by the school art department and RideWise.



Source: Ridewise, Inc.

Source: Ridewise, Inc.

- The Safety Town pedestrian education program was taught to students attending the Middle Earth aftercare programs in all 4 elementary schools in Bound Brook. The program was offered in the spring and fall of 2017 and taught by RideWise staff.
- Each fall, RideWise staff teaches Community Middle School students pedestrian safety skills that includes a mile walk to Smalley School, which is the main site for aftercare programs.
- In May of 2018, RideWise and Middle Earth staff will teach safe cycling classes to students in aftercare. Lafayette School is allowing Middle Earth to store their bikes on site and has approved cycling on their school grounds.
- RideWise partners with the Bound Brook High School driver education program to teach pedestrian and cycling safety as part of the new NJ Motor Vehicle Commission license requirements.
- Future plans include organizing a bike train with Community Middle School students to ensure students learn bike safety, the importance of wearing a helmet, and how to properly lock bikes.

South Bound Brook Safe Routes to School Program

In South Bound Brook, Safe Routes to School programs are newer to the district. The Robert Morris School students have celebrated International Walk to School Day in October annually over the past several years. The once per year Walk to School Day event is very well attended and has support from the school superintendent and participation from the South Bound Brook police. The following are other past and upcoming programs to encourage safe walking and bicycling:

- The fall of 2017 was the first time the Safety Town pedestrian education program was taught to students in all grades at Robert Morris School. It is anticipated this program will be offered annually.
- There is interest in expanding the once per year Walk to School Day to more frequent events.
- There is interest in setting up a walking school bus.

NJ SRTS RECOGNITION PROGRAM & SUSTAINABLE JERSEY/SUSTAINABLE JERSEY FOR SCHOOLS

Sustainable Jersey is a certification program for both New Jersey municipalities and public schools that want to go green, conserve resources and take steps to create a sustainable community. By enrolling and certifying through the Sustainable Jersey program, schools and communities have access to tools, training, financial incentives and grants for support toward becoming more sustainable including reducing waste, cutting greenhouse gas emissions and improving environmental equity.

Table 10: Sustainable Jersey Points

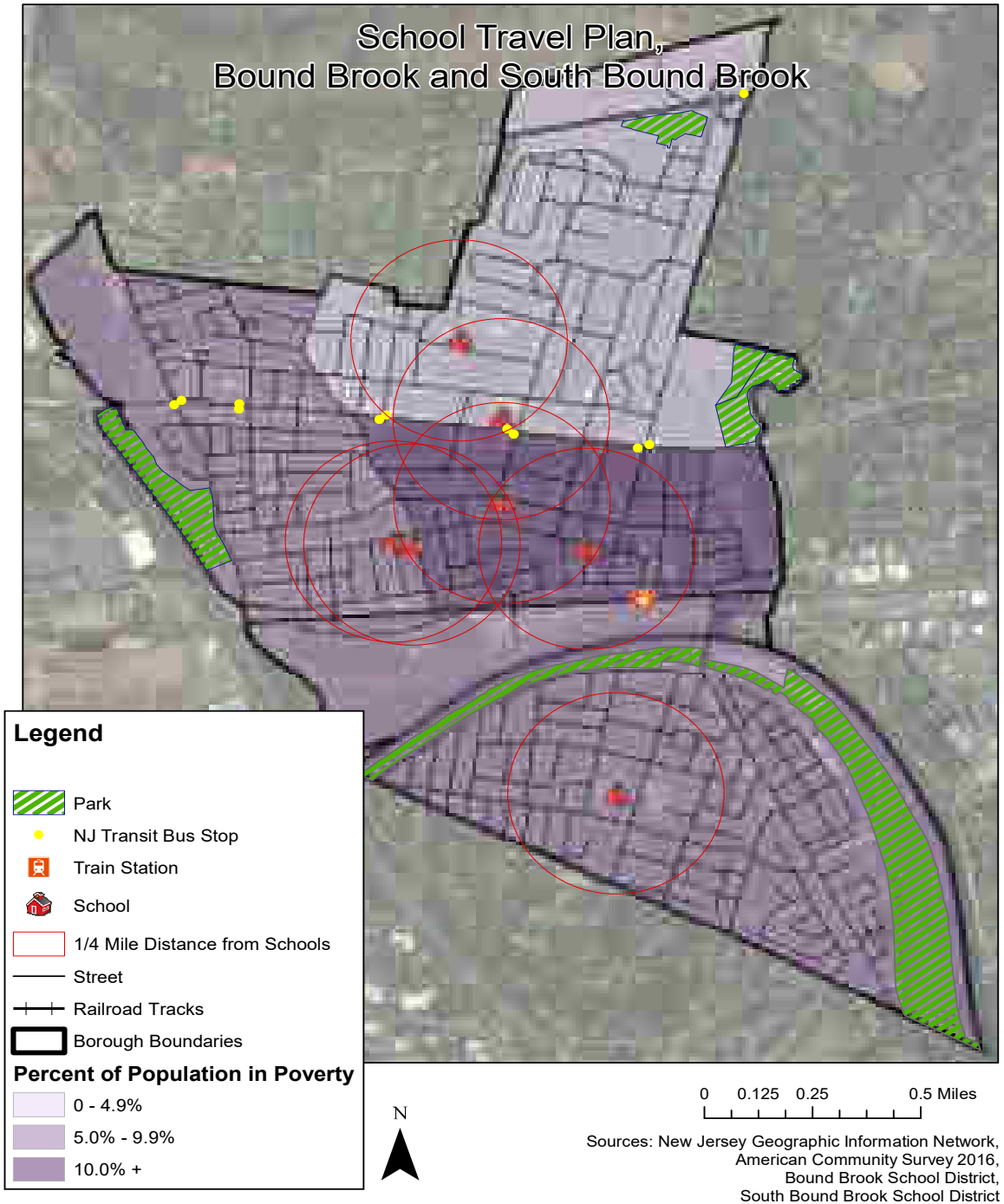
Sustainable Jersey for Municipalities			
Action	**Points**	**Bound Brook**	**South Bound Brook**
Safe Routes to School	10	×	Resolution of support for SRTS programs and assist at 2 or more events
Bicycle and/or Pedestrian Audit	5	×	×
Adopt a Complete Streets Policy	10	Update policy to include health text	Adopt CS Policy
Institute Complete Streets	10-15	Adopt CS checklists	Adopt CS checklists
Anti-Idling Education	10	Targeted education & enforcement	Targeted education & enforcement
Sustainable Jersey for Schools			
School Travel Plan for Walking and Bicyling	10	×	×
Safe Routes to School District Policy	10	×	Adopt supportive policies for walk/bike
Pedestrian and Bicycle Safety Promotion Initiatives	10	×	Host 2 walk/bike ed. programs and active transportation best practices
Anti-idling Education	10	Pass a Res. & implement 2 programs	Pass a Res. & implement 2 programs

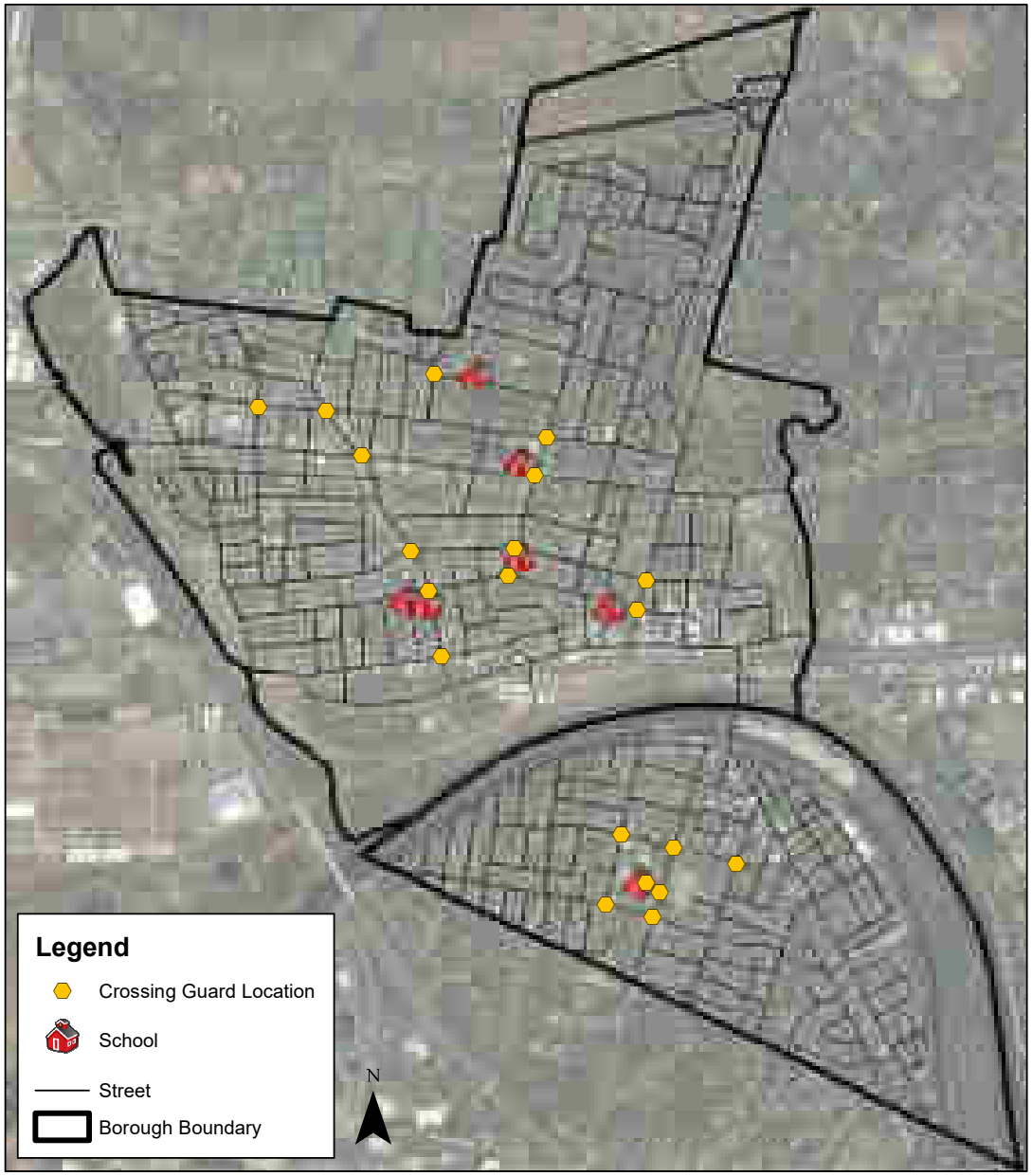
The NJ Safe Routes to School Recognition Program awards municipalities and schools for their commitment and support of the program, and there are many synergies between both the NJ SRTS Recognition Program and the Sustainable Jersey program, as points can be earned toward both programs. By completing this school travel plan, ten points are already earned toward the Sustainable Jersey for Schools program for all of the schools included in this school travel plan, and it can also count toward Gold level recognition for the SRTS program. Lafayette, LaMonte and Smalley Schools are already Silver level NJ SRTS Recognition Program winners and completing this school travel plan allows them to achieve Gold level status. Bound Brook Community School and Robert Morris School are both at the First Step level for the NJ SRTS Recognition Program, and by participating and completing this school travel plan, they have achieved some criteria to move up levels such as completing student arrival and departure tallies and walkability assessments.

Currently, the borough of Bound Brook is enrolled in Sustainable Jersey, however is not yet certified at either the bronze or silver level. The Borough of South Bound Brook is not currently enrolled in Sustainable Jersey. By completing this school travel plan, both the borough of Bound Brook and South Bound Brook qualify for the Pedestrian Audit action for five points towards Sustainable Jersey certification. Furthermore, the Borough of Bound Brook can move up to Gold level NJ SRTS Recognition Program status by completing this school travel plan. Since the Borough of Bound Brook is a Silver level NJ SRTS Recognition Program winner, they can easily receive ten points for the Safe Routes to School action for ten points from Sustainable Jersey. Lastly, this school travel plan could be the stepping-stone towards a Bicycle/Pedestrian Plan by adding a vision statement, goals & objectives and adopting it into their existing Master Plan for both Bound Brook and South Bound Brook, which would earn them ten points toward Sustainable Jersey certification.

There is a great partnership between the Sustainable Jersey and the NJ SRTS Recognition Program since municipalities and schools can meet the requirements and earn points for both programs just by completing this school travel plan. For more information, visit http://www.saferoutesnj.org/sustainable-jersey-and-sustainable-jersey-for-schools-actions.

Existing Conditions

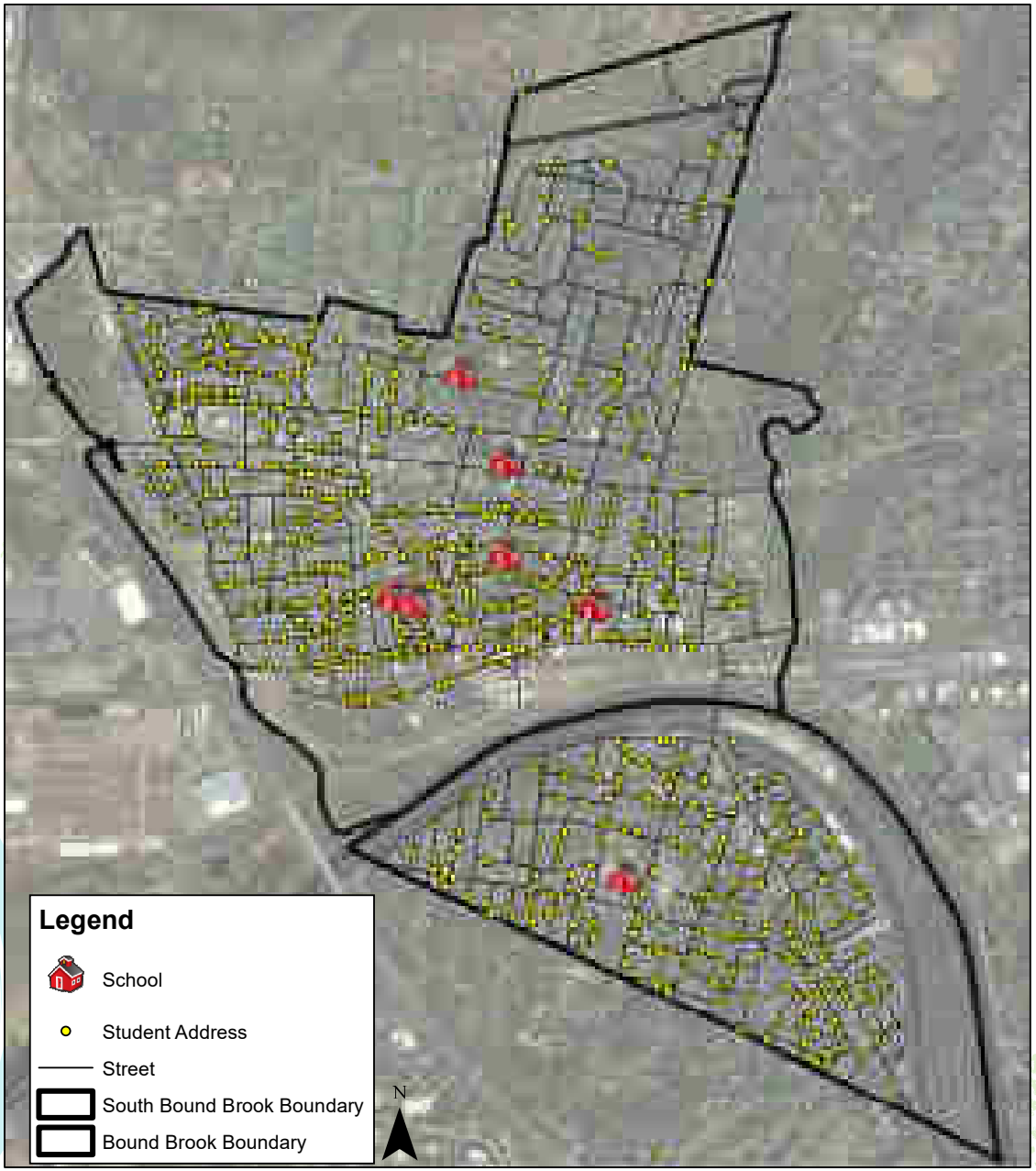




Bound Brook and
South Bound Brook,
Crossing Guard Locations

0 0.125 0.25 0.5 Miles

Sources: NJ Geographic Information Network,
Bound Brook School District,
Bound Brook Police Department,
South Bound Brook Police Department



Bound Brook and South Bound Brook Student Addresses

0 0.125 0.25 0.5 Miles

Source: NJ Geographic Information Network, South Bound Brook School District, Bound Brook School District

CRASH ANALYSIS

In New Jersey, there are three primary data sources for crashes: (1) New Jersey Department of Transportation Raw Data[48], (2) NJDOT Safety Voyager[49], and (3) NJ Division of Highway Traffic Safety Crash Analysis Tool.[50] However, the data in Safety Voyager and the Crash Analysis Tool are not always complete. Often, not all crash records received from the police NJTR-1 crash investigation reports include location information which allow for them to be mapped.[51] Therefore, the NJDOT Raw Data was used to provide the most complete number of crashes.

Figure 16: Total Crashes in Bound Brook, 2012-2016

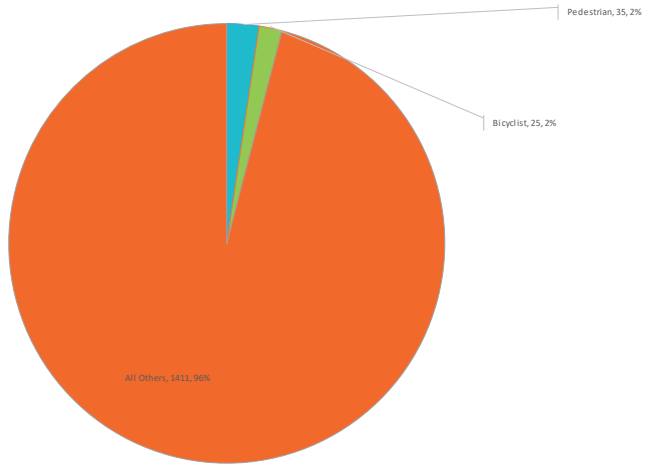


Table 11: Pedestrian and Bicyclist Crash Severity, Bound Brook		
Severity	**Pedestrian**	**Bicyclist**
Fatality	1	0
Injury	33	25
Property Damage Only	1	0
Total	35	25

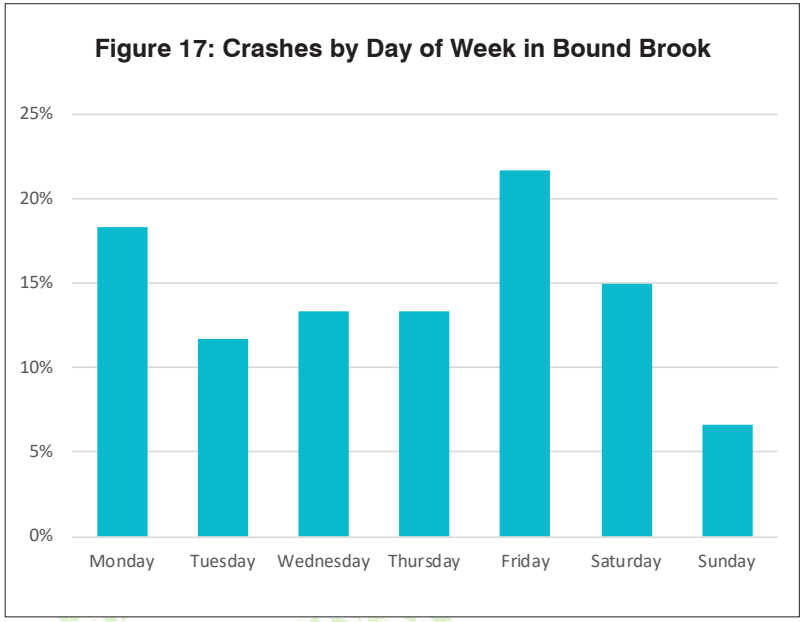
Table 12: Number of Pedestrian and Bicycle Crashes by Year, Bound Brook					
	2012	2013	2014	2015	2016
Pedestrian	5	6	7	10	7
Bicyclist	4	11	4	2	4
Total	9	17	11	12	11

Bound Brook Crash Analysis

According to NJDOT Crash Data (Raw Data files) for Somerset County, 1,471 motor vehicle crashes occurred between 2012-2016 in Bound Brook, shown in Figure 16. Among these crashes, 35 of the crashes were pedestrian and 25 were bicyclists. Of those crashes, there was one (1) pedestrian death, 33 pedestrian injuries, and one (1) that involved property damage, shown in Table 11. All 25 bicycle crashes included injuries to the cyclist.[48]

In terms of number of crashes by year, pedestrian crashes are a growing trend, shown in Table 12. The most bicyclist crashes occurred in 2013, while the numbers of bicyclist crashes hover between 2 and 4 during the other years.[48]

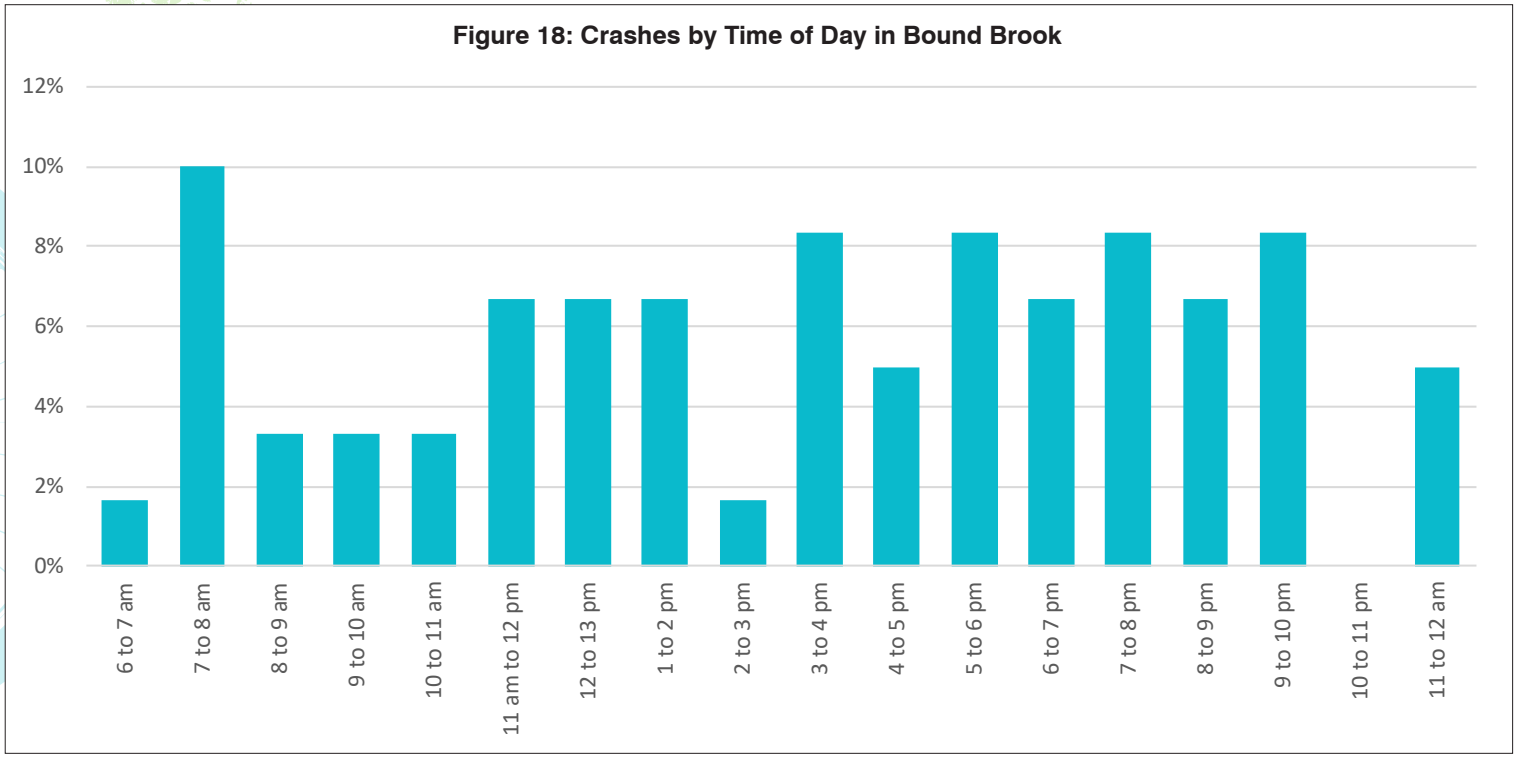
Intersection of Tea Street and Route 28 (Union Avenue), looking southbound from Shoprite. Picture provided by Ridewise, Inc.



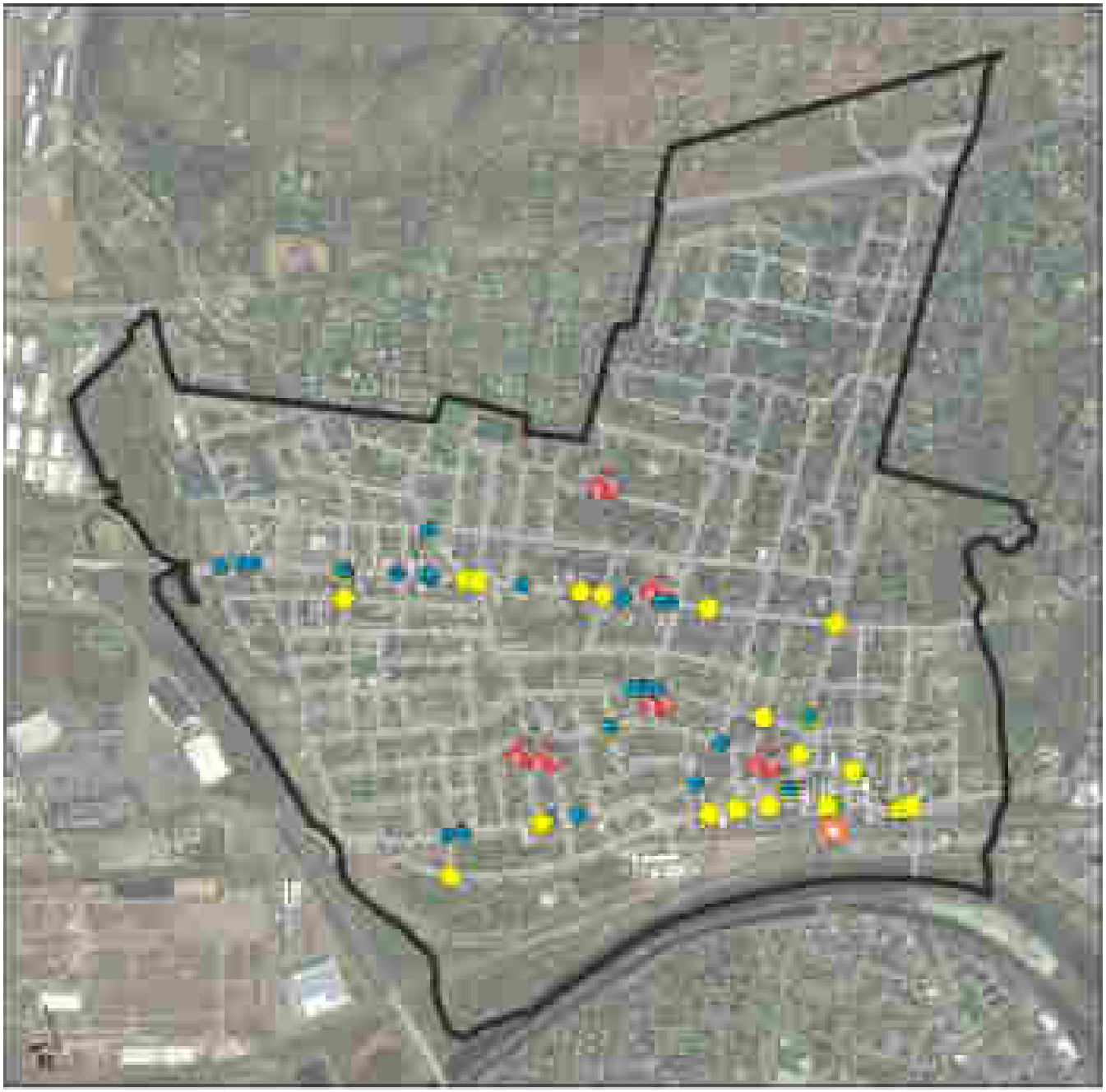
Of the pedestrian and bicycle crashes in this time period, Friday has the greatest possibility(21.7%, 13 crashes) for bicyclist and pedestrian crashes. Monday has the second most empirical possibility (18.3%, 11 crashes) of bike-pedestrian crashes. Among these 7 days, the least number of crashes happened on Sunday (6.7%, 4 crashes), shown in Figure 17.[48]

From the data, the time interval between 7 and 8 am has the most bicyclist and pedestrian crashes, while the least is from 10 to 11 pm, shown in Figure 18.[48]

Based on the crash data from 2012 to 2016, 15 pedestrian crashes and 3 bicyclist crashes occurred on State Route 28, which is the road with the most crashes in Bound Brook. Three additional areas of concern for pedestrian and bicycle crashes include, 1) the intersection of Route 28 and Tea Street where 6 pedestrian crashes occurred during past five years; 2) The neighborhood of Lafayette Elementary School which includes two intersections, the three-way intersection of Winsor Street and the intersection of Fairview Ave and West 2nd Street where 5 pedestrian crashes and 1 bicycle crash occurred; and 3) the downtown area of Bound Brook, north to East High Street, south to East Main Street, west to Drake Street, and east to Bolmer Blvd. where 4 pedestrian crashes and 8 bicycle crashes occurred. All four of these locations are high-traffic areas for all modes of transportation.



Bound Brook Pedestrian and Bicyclist Crash Locations



Source: NJ State Police Division of Traffic Safety Voyager

Figure 19: Total Crashes in South Bound Brook, 2012-2016

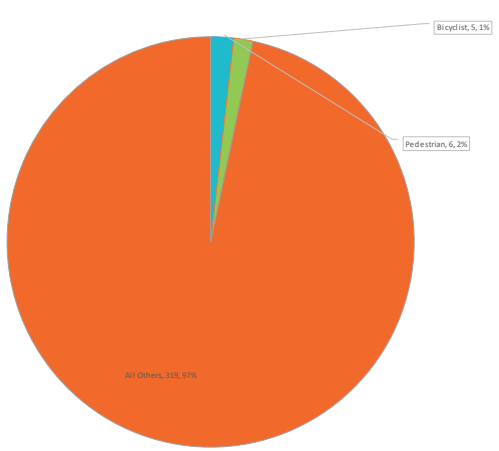


Table 13: Pedestrian and Bicyclist Crash Severity, South Bound Brook

Severity	Pedestrian	Bicyclist
Fatality	0	0
Injury	6	2
Property Damage Only	0	3
Total	6	5

Table 14: Number of Pedestrian and Bicycle Crashes by Year, South Bound Brook

	2012	2013	2014	2015	2016
Pedestrian	1	1	1	0	3
Bicyclist	0	1	1	1	2
Total	1	2	2	1	5

South Bound Brook Crash Analysis

According to NJDOT Crash Data (Raw Data files) for Somerset County, 330 crashes occurred in South Bound Brook between 2012 to 2016, shown in figure 19. Among these crashes, 6 involved pedestrians and 5 involved bicyclists. Regarding pedestrian crashes, all crashes involve injuries. For cyclist crashes, 2 involve injuries and 3 causes property damage only.[48]

In terms of number of crashes by year, one pedestrian crashes occurred each year from 2012 to 2014 with no pedestrian crash records in 2015. [48] In 2016, three pedestrian crashes occurred, which is the most in one year in South Bound Brook. [48] Similarly, there are no bicyclist crash records in 2012, but one bicyclist crash occurred each year from 2013 to 2015.[48]

View down Elm Street from Main Street in South Bound Brook. Sidewalk stop on right side, no sidewalk on left side. Picture provided by Ridewise, Inc.

Abandoned, half demolished building next to the South Bound Brook Police Station, taken from Queens Bridge. Picture provided by Ridewise, Inc.

Figure 20: Crashes by Day of Week in South Bound Brook,

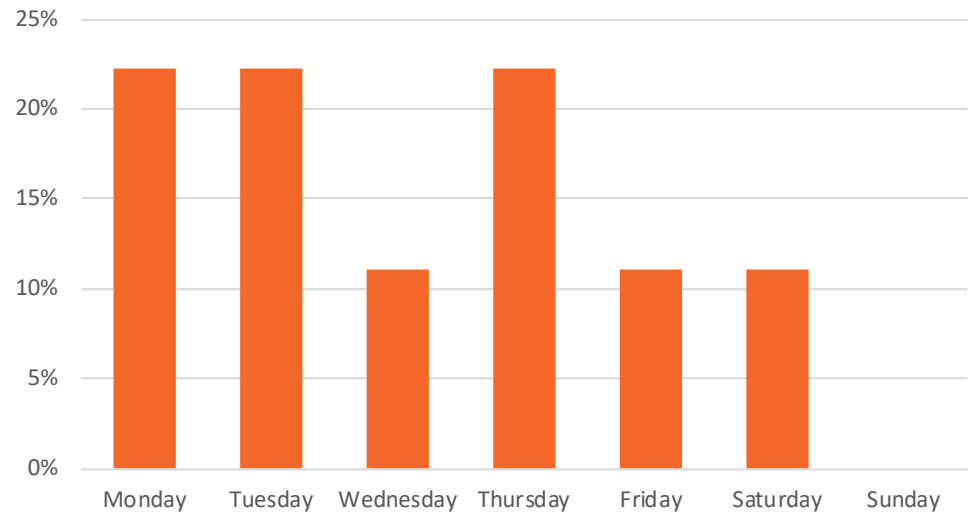
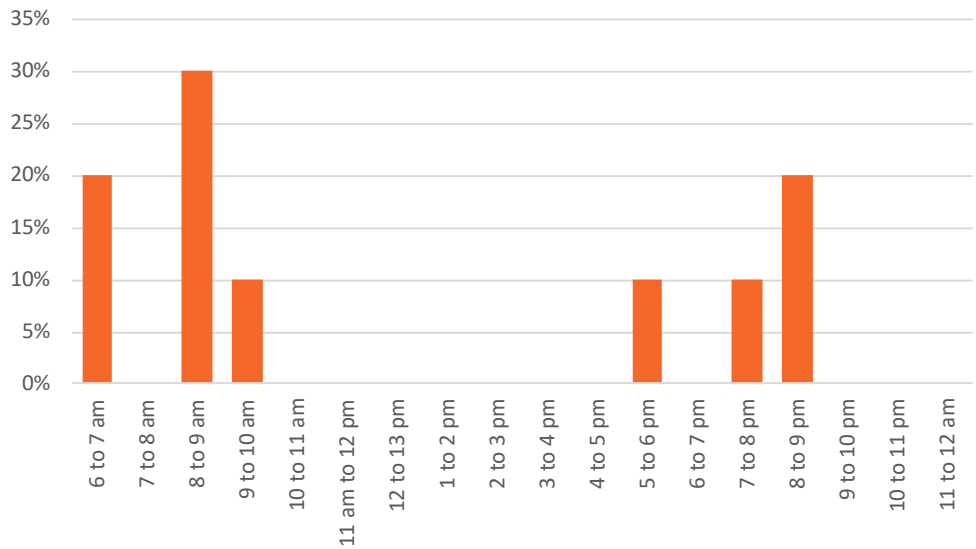


Figure 21: Crashes by Time of Day in South Bound Brook



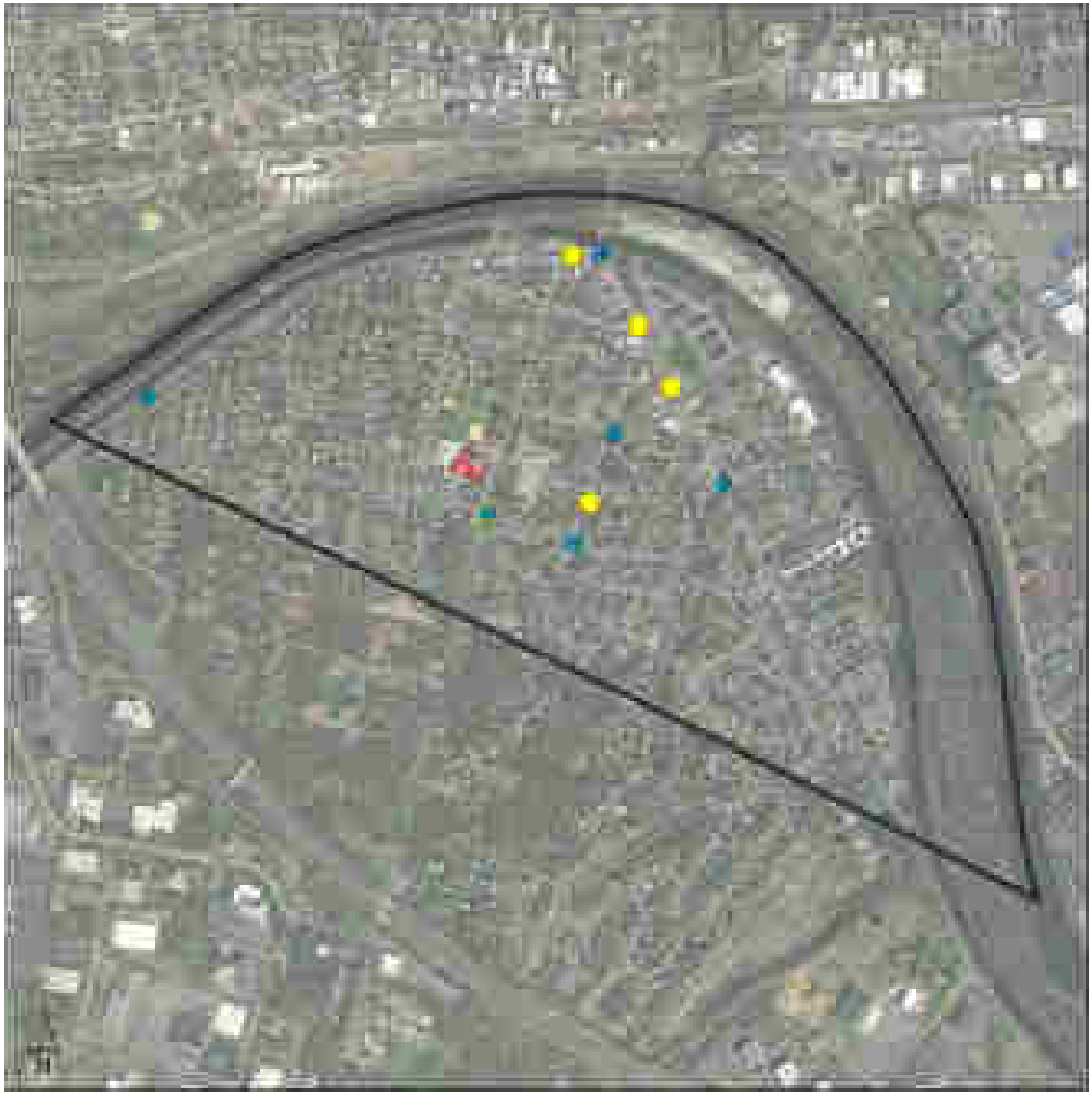
Due to the small numbers of crash record in South Bound Brook, there is no significant difference in number of crash by day of week. From the empirical data, two crashes occurred on Monday, Tuesday, and Thursday separately, one crash on Wednesday, Friday, and Saturday.There are no crash records for pedestrian and bicycle crashes on Sunday in South Bound Brook.

From the empirical data, the time interval between 8 and 9 am has the most bicyclist and pedestrian crashes, followed by 6 – 7 am and 8 – 9pm.

Due to the smaller size of South Bound Brook area and population, the number of pedestrian and bicyclist crashes are relatively smaller due to the smaller size of population. Nonetheless, we still identify County Route 527 (Main Street) as the top-priority area of pedestrian and bicyclist crashes in South Bound Brook. Between 2012 and 2016, 2 pedestrian crashes and bicyclists crashes occurred. In the year of 2016, 2 out of 5 pedestrian and bicyclist involved crashes happened on Main Street.

To control pedestrian and bicyclist involved crashes, we conducted walkability assessment to investigate current conditions of Main Street in South Bound Brook and provide recommendations to create a better walking and biking environment.

South Bound Brook Pedestrian and Bicyclist Crash Locations



Source: N. J. Department of Transportation, Safety Voyager

Walkability & Bikeability Assessment

Introduction

On February 13, 2018, the studio team met with the steering committee representatives from Bound Brook and South Bound Brook to present and discuss initial data and findings.

The studio team wanted to gather feedback about priority areas to include in the walkability/bikeability assessments. The steering committee expressed concerns about several locations in both towns which helped refine the locations for the assessments.

In addition, feedback was gathered from high school student ambassadors from Middle Earth about areas of concern from their perspective. Based on the crash mapping, location of crossing guards, and feedback from both the steering committee and the high school students, the studio team prioritized areas to cover during the walkability assessments. Assessments were subsequently conducted to identify specific barriers and opportunities that exist in each municipality with a focus on the safety of young pedestrians.

The walkability and bikeability assessments for Bound Brook and South Bound Brook were conducted on Tuesday March 20, 2018 and March 6, 2018 respectively, with support from Ridewise, Inc.

Bound Brook Borough
Walkability & Bikeability Assessment Route

SIGNS

The purpose of road signs is to give instructions and provide information for users. In Bound Brook, the signs for speed and parking in school zones are provided to notify drivers of the laws. However, the effectiveness of these signs has room for improvement.

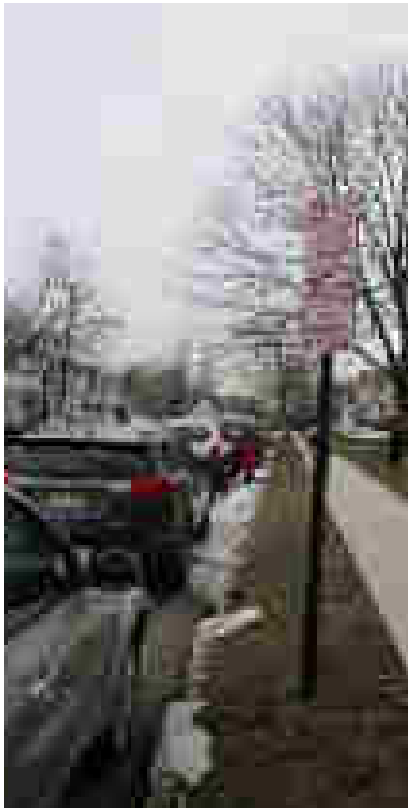
Findings

Speed Limit Signs

Bound Brook High School fronts a very busy state road, NJ-28. Many vehicles exceed the posted speed limit despite overhead flashing beacons warning of lower speed limits during school arrival and dismissal. School speed zone lights and signage (West Maple Ave) are limited and begin well within the school zone.

Ineffective No Parking Signs

Illegal parking around all schools is a common issue. At LaMonte School, a two-way street is converted into one-way during school hours which is an effective way to improve safety. However, parked vehicles line the road into the no parking zones up to and sometimes blocking the crosswalks. At Lafayette Elementary School, no parking signs did not stop parents from parking in front of the school causing the school buses to park further from the school. At both LaMonte and Lafayette, drivers without disability parking placards parked illegally in the spaces reserved for people with disabilities.



IDLING VEHICLES

Idling in front of all schools is a common issue. At both LaMonte and Lafayette schools, parents picking up students sat in idling vehicles for 10-20 minutes or more, far exceeding New Jersey's three-minute legal limit. Weather was above freezing with little if any need to run car heaters. Idling in school zones creates unhealthy air quality levels inside school buildings which has been shown to impact children's health, especially for children with asthma.

English Universal

Spanish Universal

No Idling Signs can be ordered from the NJ Department of Environmental Protection, but should also include an education component to parents and other residents.

https://www.nj.gov/dep/stopthesoot/sts-no-idle-sign.htm

SIDEWALKS

Sidewalks are the path for pedestrians. The conditions of sidewalks reveal the extent of friendliness to walkers. In Bound Brook, most streets include sidewalks which ensure a certain degree of safety. However, sidewalks are often uneven and heaved which may cause difficulty for users such as people with strollers, wheelchairs and the elderly.

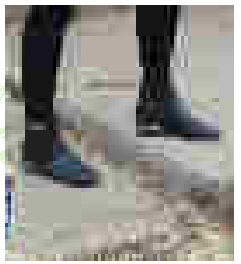
Findings

Blocked Sidewalks

Residents should be reminded that even temporary sidewalk obstructions (garbage cans, snow, tree limbs and leaves) can be hazardous for pedestrians.

Uneven Pavement

The sidewalks in many areas were cracked or uneven. This creates a risk of tripping and falling, especially for children and the elderly. It also makes it very difficult to push strollers and wheelchairs over cracks or damaged sidewalks.



CURBS

Curbs are the edge of a sidewalk. Curb ramps should be designed to federal accessibility requirements that meet the Americans with Disabilities Act (ADA). Corner radii impact vehicle speeds and pedestrian crossing distance. Minimizing a corner radius to creates safe turning speeds of 15 mph or less increases pedestrian safety.

Good Examples in Bround Brook

Truncated Domes

Truncated Domes are the bumpy pad placed right at the end of crosswalk to warn and guide users with sight impairments.

Incorrectly Placed Truncated Domes

Incorrectly placed truncated dome pad direct pedestrians into the middle of the street, not into crosswalks.

Painted Truncated Domes

Painted truncated domes are not in ADA compliance. Also, poor drainage around the curb is unfriendly to pedestrians, especially when frozen in winter.

Disconnected Cub Cut and Crosswalk

Curb cuts and crosswalks are disconnected forcing pedestrians with strollers or in wheelchairs to cross outside the crosswalk directly behind Lafayette School.

TURNING VEHICLE SPEEDS

Corner radii impact vehicle speeds and pedestrian crossing distance. Minimizing corner radii and defining driveway ingress and egress areas creates safer turning speeds of 15 mph or less which increases pedestrian safety.

Excessively Wide Driveways

Extremely wide driveways were found at some downtown blocks.

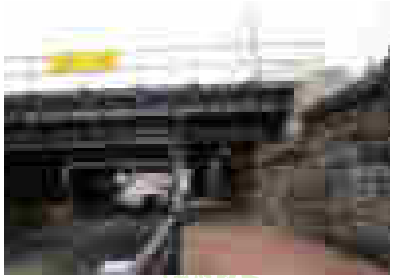
ROAD AND LANDSCAPE DESIGN

Road design is geometric positioning of the physical elements of roadway according to engineering standards. Road design directly impacts the efficiency and safety of traffic. Landscape design can create a cool vibe in a town and help increase foot-traffic. Landscape and road designs can be incorporated with each other to maintain traffic safety while providing a better aesthetic quality. In addition, landscape design can incorporate storm water management features, see Green Streets Chapter.

Findings

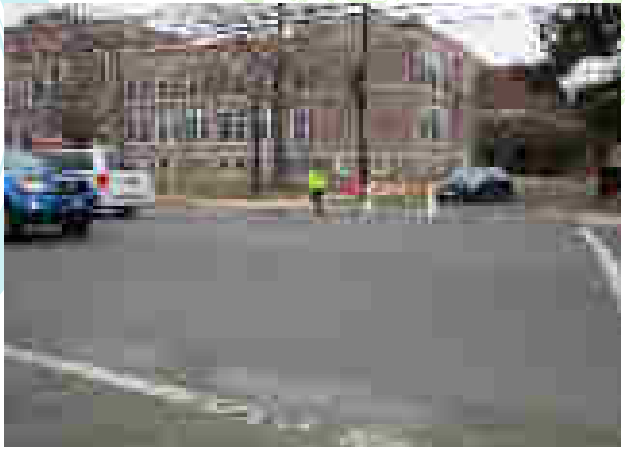
Uninviting Entrance

A dark and uninviting entrance to Bound Brook from South Bound Brook could be made friendlier with brighter, concrete sidewalks, better lighting and hanging planters.



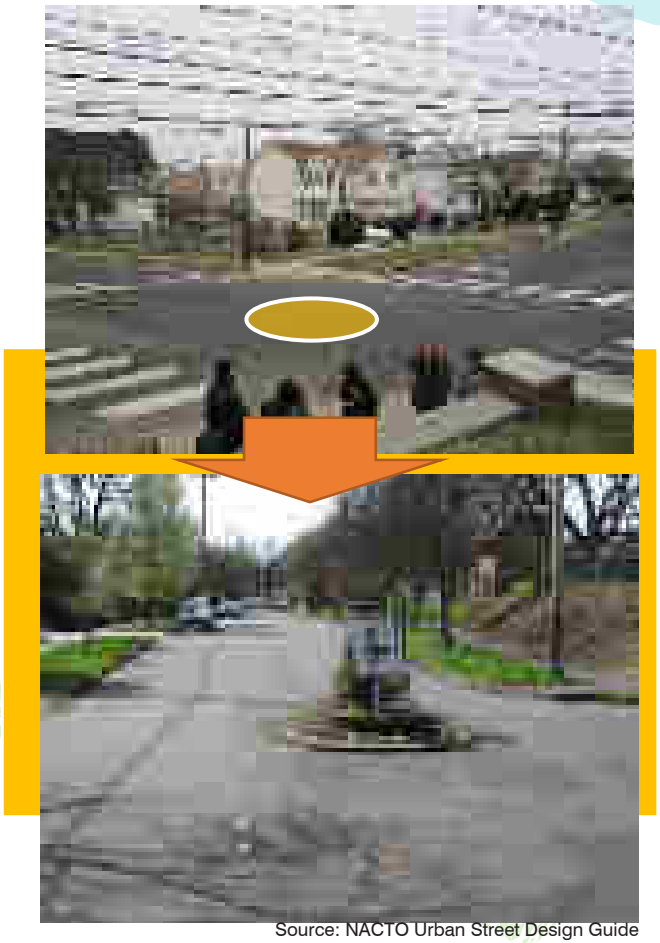
Fast Traffic at the front of Bound Brook High School

There is speeding traffic at the intersection closest to Bound Brook High School (NJ-28 and Winsor St) with no traffic signals. Wide crossings along this straight, flat stretch could be safer with pedestrian refuge island(s) or other treatments that include plantings.



Intersection with Frequent Speeding

Frequent speeding along Vosseller Ave can be mitigated with traffic calming techniques such as a mini-roundabout which can include plantings and mountable curbs. Other options include curb extensions and/or narrowing travel lanes.



Source: NACTO Urban Street Design Guide

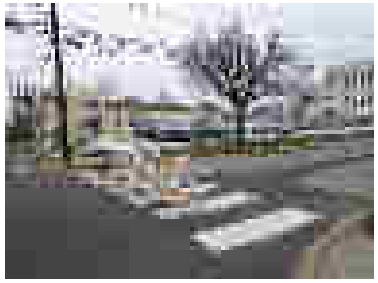
PEDESTRIAN ACCESS

Good pedestrian access not only ensures safety and accessibility of walkers but increases foot traffic and improves quality of life.

Good Examples in Bround Brook

Closed Streets Provide Better Safety

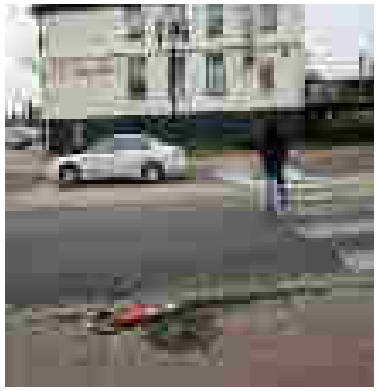
One side of street is closed for safety during school hours. (Left: Bound Brook High School; Right: LaMonte School)



Findings

Need for Maintenance

Decorative brick pavers may look great when newly installed, however, can get beat up quickly and can cause uneven surfaces and tripping hazards. Brick pavers are better used for buffer areas between the sidewalk and road while using smooth, more durable concrete for sidewalk surfaces. Crosswalks should be striped on all four corners of the roundabout.



BIKE FACILITIES

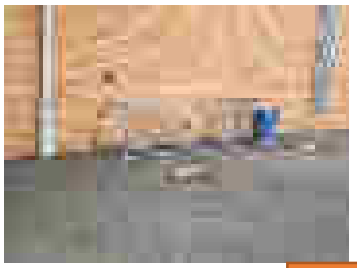
There are very few bike friendly roads and facilities in Bound Brook including a lack of secure bike parking.

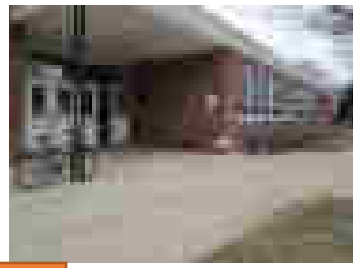
Findings

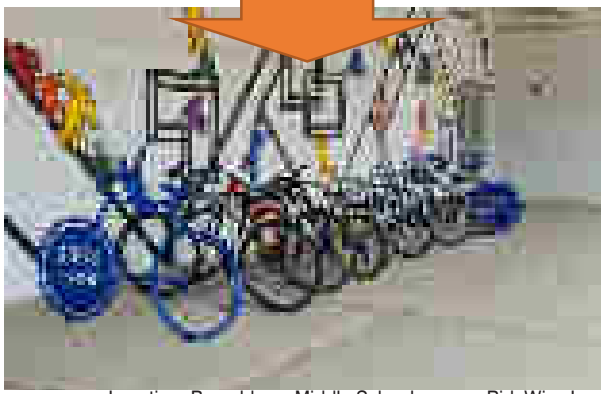
Poor Bike Rack Placement at Schools

The bike parking rack at Lafayette School is intended to be double-sided but only one side is available since the rack is placed against the wall. The position should be changed to make both sides accessible. In addition, it is located in an area with no windows or oversight from the school putting bikes at risk for theft.

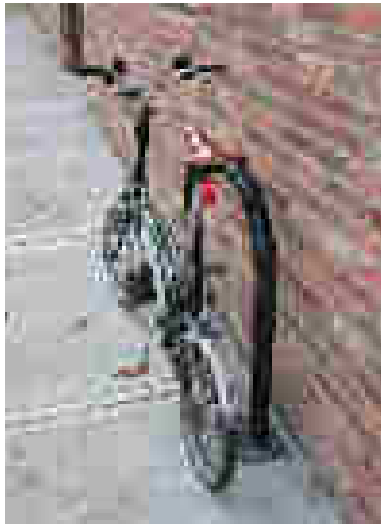
At Bound Brook High School, pillars at entrances are used to lock bikes which may partially block entrances/exits during an emergency. More secure inverted U-racks are recommended to be placed in high visibility, sheltered areas to deter theft.







Location: Branchburg Middle School, source RideWise Inc.



Bike Parking on Main Street

Adding inverted U-shaped bike racks to Main Street is recommended to improve bike access and reduce vehicle parking needs. Racks can be customized to fit into streetscapes. Any decorative bike rack should first and foremost be functional for locking bikes.

See NJ School Bike Parking Guide, www.saferoutesnj.org/school-bicycle-parking-guide

BETWEEN THE BROOKS

The Queens Bridge spans the Raritan River to connect Bound Brook and South Bound Brook via South Main Street. The best way to experience the bridge and surrounding water views is by walking or biking along the sidewalks on both sides of the bridge. Given the historic nature of the bridge itself and connections to the Battle of Bound Brook and the Delaware and Raritan Canal State Park, it is an opportunity to bring visitors and economic development to both downtowns through increased foot and bike traffic.

Findings

Access Points and Historic Significance

The Queens Bridge is an excellent opportunity for wayfinding and placemaking to help visitors connect with history and access the D&R Canal, the Raritan River, and downtown shops and amenities on either side. The entry points to the bridge are not well signed to alert users to the historic significance or river and canal access points. Partnering with the D&R Canal State Park, Crossroads to the American Revolution, and Somerset County Cultural and Historical Commission to improve wayfinding, additional historic informational signs along the bridge, landscaping at entry points, seasonal flags and decorations, and additional lighting could help make the bridge a primary destination for history buffs and visitors accessing land and water trails while providing information about downtown food and shopping destinations in both towns.

Signs provide historic information but lack landscaping and wayfinding to trail and downtown destinations.

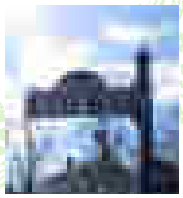
Borough of South Bound Brook
Walkability & Bikeability Asssessment

SIGNS

The blue theme color of the signs in South Bound Brook is attractive. The consistency of color and information provided on the signs creates a unique vibe throughout South Bound Brook.

Color and Design

The street signs on Main Street are attractive, historic-looking and share the same blue theme-color with other street furniture and infrastructure in the downtown area.



Findings

Sharp corner of sign at head height

Sharp corner of sign at head height poses risk to pedestrians.

Difficult to read wayfinding signs

There are nice wayfinding signs but many are difficult to see as they are oddly placed high above the street. The signage placement is primarily oriented towards motorists not pedestrians, yet the smaller font size would suggest they are more likely to be seen at slower walking and bicycling speeds. Walking distance can be added to encourage foot-traffic and increase healthy behaviors.

Plain Utility Box

Utility boxes are an opportunity for adding wayfinding and placemaking. For example, this box could be wrapped in a sign providing historic information or used to identify an entry point to the canal walk and potential kayak access point.

IDLING VEHICLES

Idling in front of all schools is a common issue. At both LaMonte and Lafayette schools, parents picking up students sat in idling vehicles for 10-20 minutes or more, far exceeding New Jersey's three-minute legal limit. Weather was above freezing with little if any need to run car heaters. Idling in school zones creates unhealthy air quality levels inside school buildings which has been shown to impact children's health, especially for children with asthma.

English Universal Spanish Universal

No Idling Signs can be ordered from the NJ Department of Environmental Protection, but should also include an education component to parents and other residents.

https://www.nj.gov/dep/stopthesoot/sts-no-idle-sign.htm

SIDEWALKS AND TRAILS

South Bound Brook has a mixture of roads with and without sidewalks. Many residential streets do not have sidewalk yet have speeding drivers. The Borough should conduct a sidewalk inventory to identify priority areas to add sidewalk. The canal trail is a unique and inviting feature that is an attractive amenity.

Good Examples in South Bound Brook

Quality Sidewalk and Street Furniture

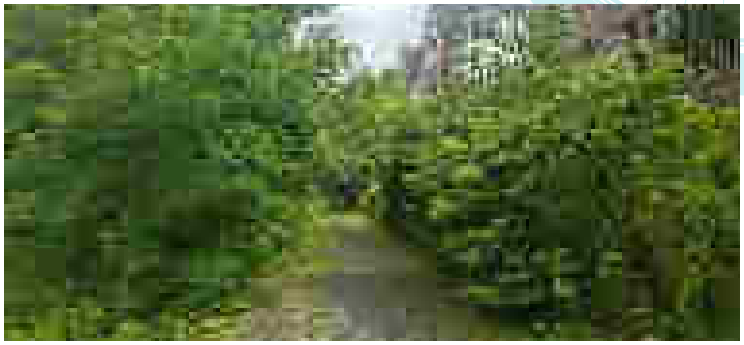
Newer residential development on Elizabeth Ave across from the Robert Morris School features quality sidewalk and street furniture which is inviting to pedestrians.

ADA Pedestrian Infrastructure

New construction or renovations featured the most up-to-date, ADA compliant pedestrian infrastructure.

Canal Path in SBB

The canal path off Main Street is an enjoyable walk with nice natural features, however, it feels like visitors are unwanted due to the lack of signage, poor trail upkeep and lack of foliage maintenance.



Missing and Uneven Pavement

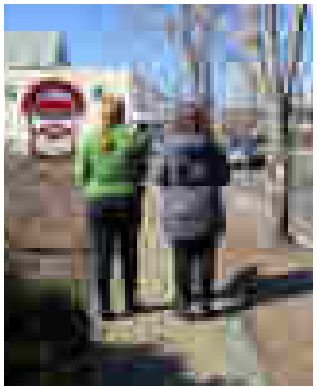
There are many area around town with poor sidewalk conditions including missing and cracked pavement and areas where vegetation encroaches onto the path.

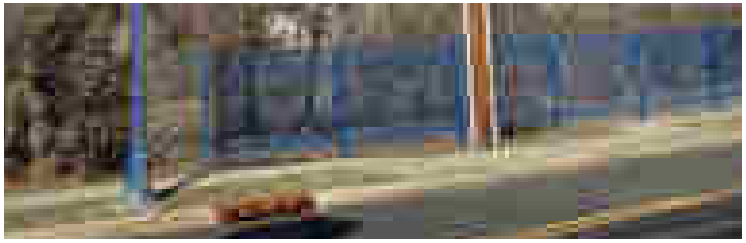
PEDESTRIAN ACCESS

Good pedestrian access not only ensures safety and accessibility of walkers but increases foot traffic and improves quality of life.

Narrow and Bumpy Sidewalks

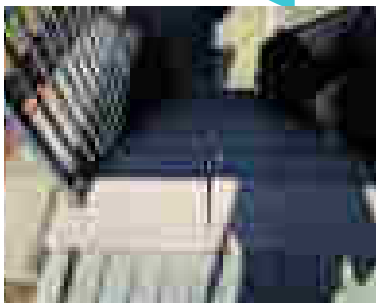
Sidewalks along Main St. are narrower than standard and barely accommodates two pedestrians walking side-by-side. Although decorative brick pavers can provide an attractive aesthetic, they are discouraging for use by seniors, parents with strollers, and people with disabilities due to the bumpy surface. In addition, property owners have added other materials like stones in the buffer zones that further narrow the walking areas and decrease ADA compatibility.





Exclusive Design of Access to Canal Path

The access to the canal path near the swing bridge does not have directional or informational signs which note it is a public area. The stairway to river through the new development is steep and in poor repair.

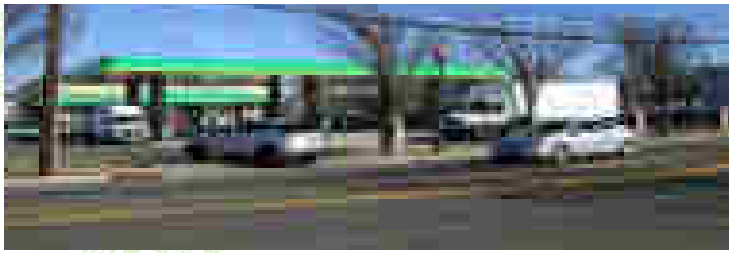


Bus Shelter Facilities on Sidewalk

The bus shelter on Main Street has a no setback from the curb which blocks access for some users, including people with disabilities.

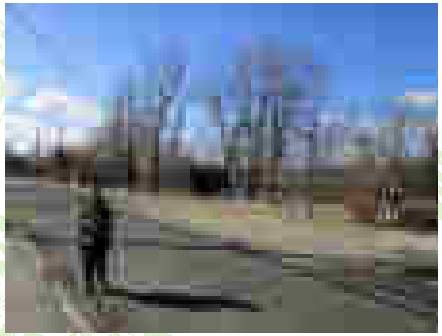
Lack of Pedestrian Access at Commercial Sites

Even though pedestrians have the right-of-way on sidewalks, people walking in front of QuickChek face fast turning vehicles and lack of better defined pedestrian space.



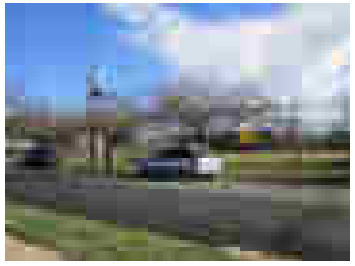
Unfriendly Crosswalk Location

Crosswalk location on Canal Rd. is too far from the canal park. The corner radius in front of the post office is wide creating longer crossing distances for pedestrians.



Lack of Pedestrian Access around school

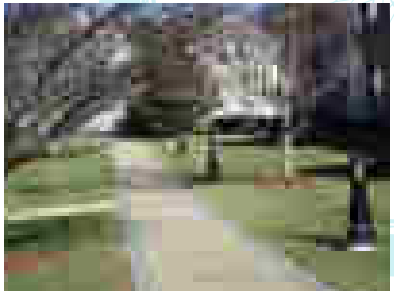
Several sides of Memorial Park, near Robert Morris School, lack sidewalks



AMENITIES

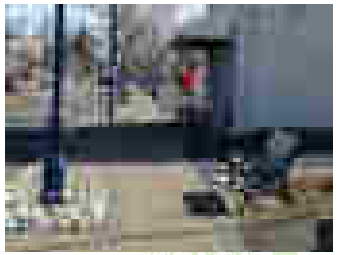
Walkway Lighting

Walkway lighting is provided along a pathway accessing the canal trail.



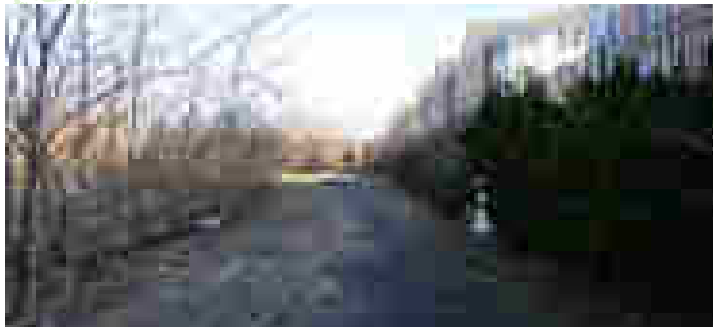
Isolated Benches, Need for Shade

Placement of benches are often not close enough to shopping facilities.[See woman sitting on the curb instead of using bench.] Benches are often lacking shade which would encourage pedestrians to linger and enjoy the area. Additional street trees would enhance aesthetics and provide needed shade.



Lifeless Canal Front

Canal pathway needs seating, garbage cans, and upkeep. This is a potential location for improved placemaking.



TURNING VEHICLE SPEEDS

Corner radii impact vehicle speeds and pedestrian crossing distance. Minimizing corner radii and defining driveway ingress and egress areas creates safer turning speeds of 15 mph or less which increases pedestrian safety.

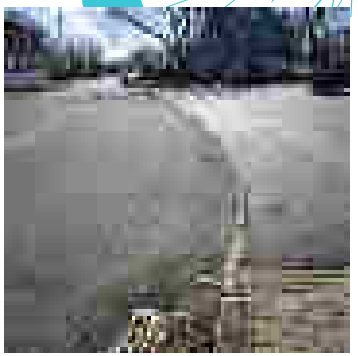
Wide Corner Radius

Vehicles turn at high speeds at the intersection of Main Street and Maple Avenue due to the wide curb radius. Poor crosswalk, curb cut and pavement conditions are also visible. Water pools at the intersection and turning vehicles will splash waiting pedestrians.

Extremely wide turning radii off Main Street leads to higher vehicle turning speeds which creates increased risk for pedestrians and a longer crossing distance.

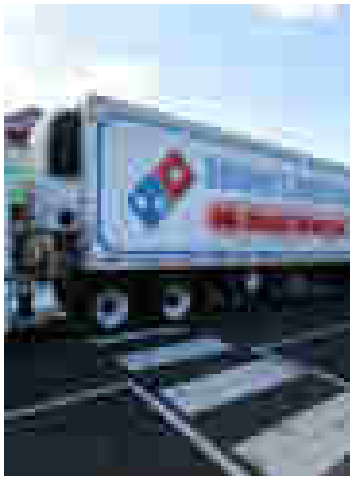
Excessive driveway width

Excessive driveway width on Warren St. to the commercial plaza off of Main Street puts pedestrians at risk due to turning vehicles and many conflict points.



Pedestrian Unfriendly Parking lot

Large trucks create an unfriendly environment for both vehicles and pedestrians. Many trucks parked in crosswalks in the downtown corridor.



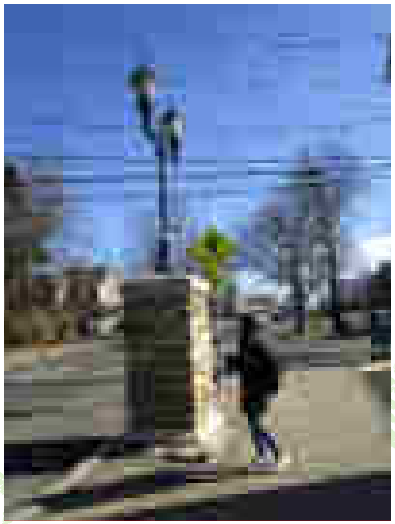
OBSTACLES

Sometimes objects get in the way. Pedestrian scale means creating human-proportioned features oriented to pedestrian activity, especial when considering the smaller heights of children who cross the street. When signage and architectural features obscure pedestrians, safety is compromised.

Findings

Decorative Street Light Obscures Pedestrians from Drivers

While aesthetically pleasing, the decorative street lights are not at pedestrian scale and obstructs the visibility of pedestrians crossing Main Street at Canal Walk.



Too Many Signs

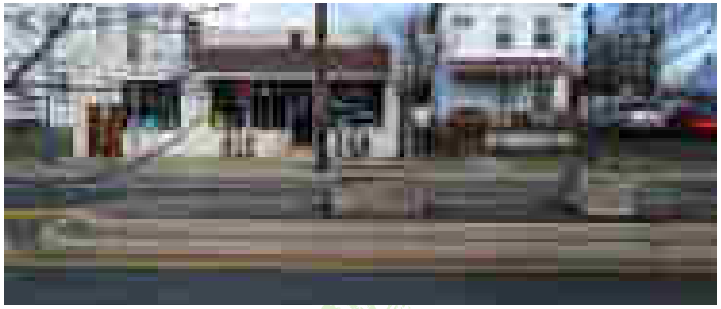
Pedestrians crossing at crosswalk in front of Joe's Meat Market are hidden from driver's view by too many traffic signs. Sign post can be moved to provide increased pedestrian visibility.

ROAD DESIGN AND STREET SCAPE

Road and street scape designs can create a cool vibe in a town and help increase foot-traffic. Landscape and road designs can be incorporated with each other to maintain traffic safety while providing a better aesthetic quality and can incorporate storm water management features, see Green Streets Chapter.

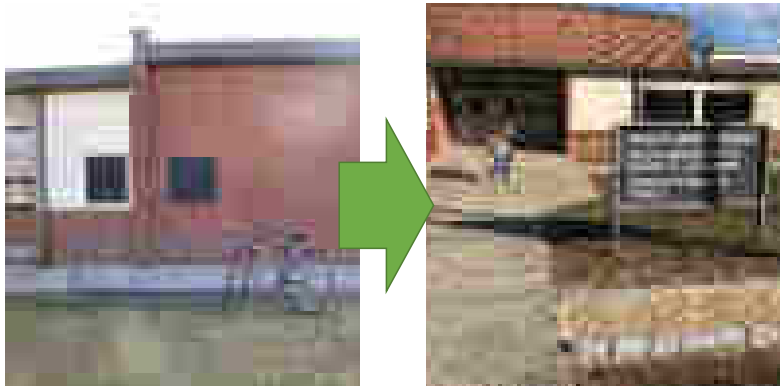
Traffic-Calming Island

Main Street includes a nice island that provides space for flowers. Adding trees and year-round plantings to this area would be helpful to create boulevard feel and encourage slower speeds. There is also an opportunity to extend the island to create protected pedestrian refuge areas. Incorporating storm water management through green infrastructure can be explored.



BICYCLE FACILITIES

There are very few bike friendly roads and facilities in South Bound Brook including a lack of secure bike parking.



Poor Bike Rack Location at School

The bike rack located at Robert Morris School is a double-sided rack which should allowed bicycles to be parked at both sides. Since risk of bicycles being stolen is a concern, the rack should be moved to a more visible location in font of windows. A new rack should be installed in front of the windows to the main office/superintendent's office. See NJ School Bike Parking Guide, www.saferoutesnj.org/school-bicycle-parking-guide

Bike Parking on Main Street

Adding inverted U-shaped bike racks to Main Street is recommended to improve bike access and reduce vehicle parking needs.

BOARDED UP BUILDINGS

Abandoned Buildings at Gateway

Sadly, there are abandoned buildings causing an unsightly entrance to an otherwise pretty town. Vacant and broken buildings contribute to unfriendly walking environments, especially for children and seniors. Renovation and reuse of these buildings is paramount to further economic growth in the community. However, they provide an opportunity for interim improvements that can reflex positively on the neighborhood and be part of larger cultural programing through adding artwork, murals and wayfinding highlighting the history of the town. These murals can be designed by the community or commissioned by a local artist. See Crime Prevention Through Environmental Design chapter.

Source: Crime Prevention Through Environmental Design City of Paterson, NJ Audit

PRIORITY AREAS

The studio team has made a series of recommendations based on its walkability assessments, and engagement with community stakeholders. These recommendations based on the 5 E's of bicycle and pedestrian planning - engineering, education, encouragement, enforcement, and evaluation - will help make Bound Brook and South Bound Brook safer places for to walk and bike. In the following section, proposed design changes at certain priority locations have been discussed in further detail to help better illustrate the benefits of more pedestrian and bike friendly design.

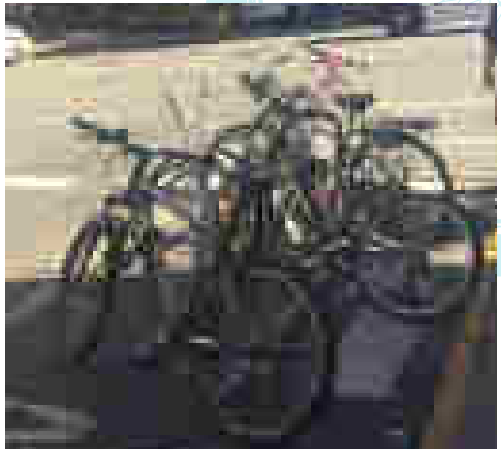


TABLE 15: NEW JERSEY TITLE 39 PARKING DISTANCE

CROSWALK	25 FEET
STOP SIGN	50 FEET
FIRE HYDRANT	10 FEET
RAILROAD CROSSING	50 FEET
DRIVEWAY ENTRANCE TO FIRE STATION	20 FEET

Source: NJ statue 39:4-138

Use of flexible bollards & bike corrals

Flexible plastic bollards are an inexpensive way to improve pedestrian visibility and safety at crossings. Bollards can be used to create curb extensions or bulb-outs that extend the sidewalk into the parking lane to narrow the street crossing. They can be used at corners and at mid-block crossings to curtail illegal parking too close to crosswalks (see NJ statue 39:4-138, parking distance laws), shorten crossing distances, slow turning vehicles, and visually narrow the roadway to decrease speeding. Maintenance options need to be explored when considering the use of flexible bollards.

Additionally, these curb extensions can provide additional space for bike parking. Bike corrals are rows of bike racks that are installed in the no parking area on either side of a crosswalk. One corral can effectively accommodate up to 12 bicycles on 6 racks without obstructing sightlines, unlike parked vehicles.

BOUND BROOK

NJ-28 in front of Bound Brook High School

This is a wide busy street with a long crossing that serves as a transit corridor. Middle Earth students noted this as one of the most difficult crossings in Bound Brook.

Concerns:

- Higher traffic volume
- Long, difficult crossings
- Speeding vehicles
- Wide travel lanes
- No bicycle infrastructure (e.g. racks, lanes, bicycle compatible shoulders
- Lack of school zone markings & incorrect placement of school zone signage

Recommendations:

-Upgrade school zone flashing beacons (larger & MUTCD compliant, correct placement & updated tech)

-Add radar feedback signs

-Add “School Zone” & hi-viz crosswalk markings in street

-Improve Transit bus pull out areas

-Enforce no parking during school day

-Narrow travel lanes to add bike friendly shoulders/NJT bus pull outs

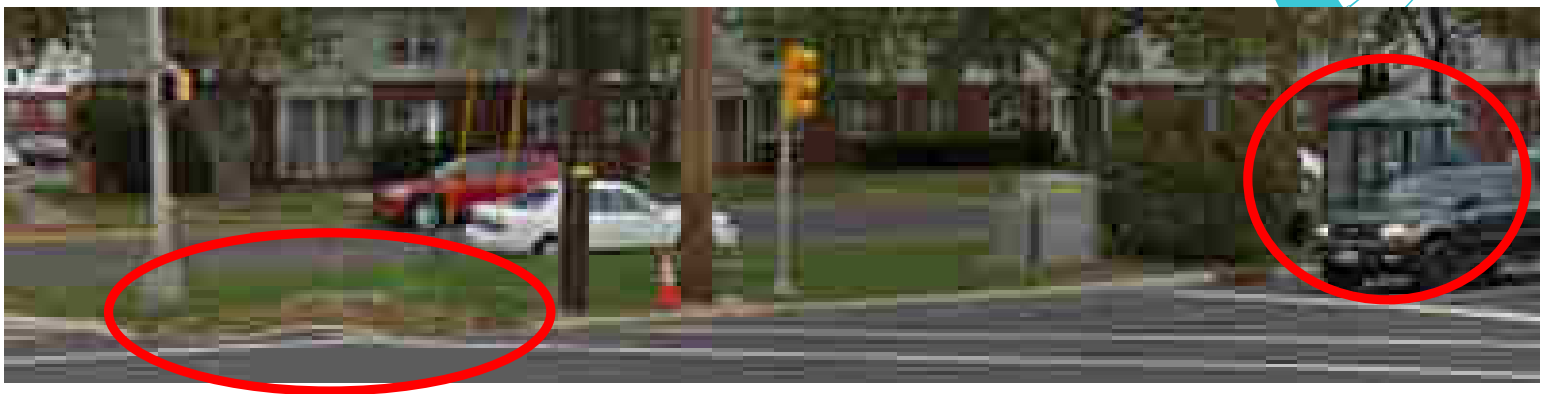
-Use curb extensions, bollards, or pedestrian refuge islands to shorten the crossing.

Intersection of NJ-28 and Tea Street

Though a difficult bicycle and pedestrian environment, this intersection is surrounded by trip attractors such as shops, restaurants, medical offices, and commercial businesses that are likely to generate bicycle and pedestrian travel.

Concerns:

- Relatively high pedestrian and cyclist crashes from empirical data
- Long crossings
- Missing sidewalk at crossing and to reach bus stop
- Wide curb radius



Intersection of NJ-28 and Tea Street

Recommendations:

- Add sidewalk to the island and connect bus shelter
- Add crosswalk between the island and residential blocks
- Make all crosswalks high visibility
- Shorten crossings by reducing curb radii
- Upgrade Ped crossing times to MUTCD standards
- Update infrastructure for ADA compliance (detectable warning surfaces and curb cuts)

Behind Lafayette Elementary School (2nd Street)

The area behind Lafayette School serves as an arrival and dismissial location for students walking and getting driven to and from school, creating conflicts.

Concerns:

- Cracked and uneven sidewalks
- No “School Crossing” signs
- Missing curb cuts and ADA detectable warning surfaces
- Not a highly visible crossing
- Parent pick-up/drop-off too close to crosswalk

Recommendations:

- Repair broken sidewalk
- Improve crosswalk with high visibility crosswalk painting, ADA compliant curb ramps with detectable warning surfaces, and school crossing signage
- Use bollards or curb extensions to keep parents from parking too close to the crossing

W. Union Ave & Vosseller Ave

This long and difficult crossing is located within close proximity to the high school and shops and restaurants that serves as bicycle and pedestrian trip, generators.

Concerns:

- Long crossings
- Wide curb radii
- No countdown pedestrian signals

Recommendations:

- Extend painted median to create pedestrian refuge
- Add countdown pedestrian signals and increase crossing time to new MUTCD standards
- Tighten curb radii to shorten crossings, especially by Memorial and Dunkin Donuts

Vosseller Ave & West High Street

Speeding was observed along this long, straight sectuion of Vosseller Ave.

Concerns:

- Speeding

Recommendations:

- Add mini roundabout using simple markings or a raised island with plantings using “green street” storm water management designs
- Add radar feedback signs

Source: NACTO Urban Street Design Guide

SOUTH BOUND BROOK

South Bound Brook Main Street Corridor

Main Street serves as a major thoroughfare and is home to the community's business area. As a result, higher pedestrian traffic should be expected and encouraged in this area.

Concerns:

- Crossings are long
- Drivers do not stop and stay stopped for pedestrians
- Wide turning radii at intersections
- Several barriers to pedestrian visibility
- Bus Shelters on road edge
- Quick Check driveways difficult to cross & access on foot

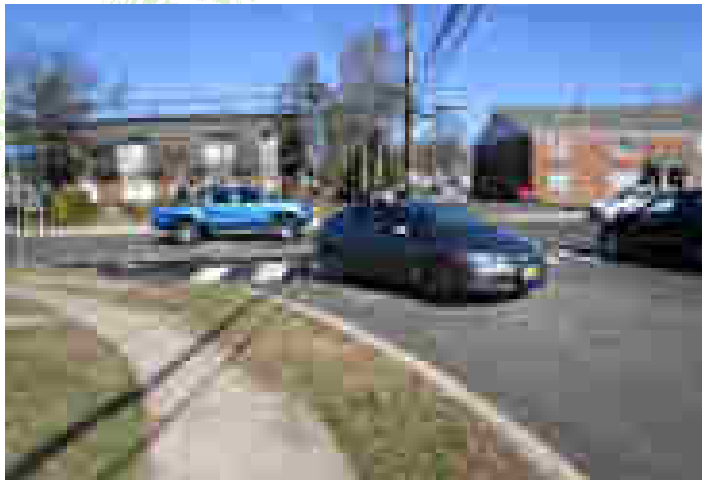
Recommendations:

- Create pedestrian refuge islands
- Explore adding ‘green street’ stormwater management treatments in medians
- Move signage that blocks pedestrian visibility
- Add wayfinding to canal trail
- Add bicycle parking
- Minimize turning speeds from major to minor streets. Flexible bollards at crosswalks enforces no parking areas, keep turning drivers off the crosswalk and reduce crashes with pedestrians.
- Reduce turning radius at corners

South Bound Brook Main Street Corridor Crossings - Edgewood Terrace, Maple, Washington, Cedar, Canal

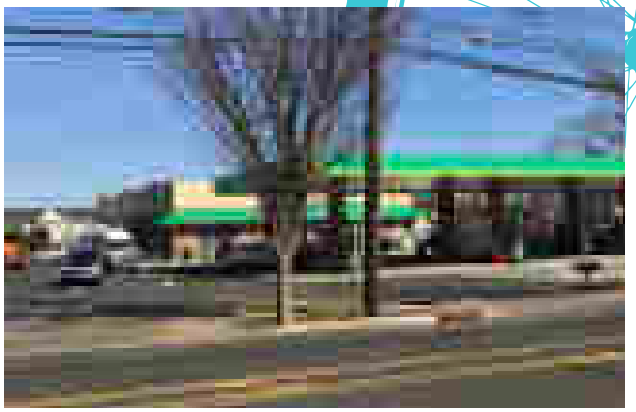
Recommendations:

- Reduce curb radius (1st step) use paint and flexible bollards, (2nd step) concrete.
- Add ADA compliant curb cuts (To be installed 2018/2019 by Somerset County)
- Prohibit right turn on red
- Adjust wayfinding signage (some are too high and some are in the pedestrian headway)



South Bound Brook Main Street Corridor

QuickChek & Family Dollar



Recommendations:

- Work with owner to create clearly marked pedestrian paths to store entrances
- Continue sidewalk along Main Street
- Driveways should be designed for continuous and level pedestrian passage (New Jersey Complete Streets Design Guide pg 38)

South Bound Brook Main Street Sidewalks

Wider, ADA friendly sidewalks in a downtown area create a more welcome walking environment and have been shown to increase foot traffic and improve the local economy.

Concerns:

- Narrow, bumpy sidewalk
- Lack of ADA-compliant surface and curb ramps
- Many wide driveways
- Muddy buffer areas between sidewalk and road
- Lack of seating
- Auto-oriented

Recommendations:

- Update 4-foot sidewalk width to a 5-foot minimum clear path width to accomodate 2 wheelchairs passing each other to meet minimum ADA standards (NJDOT Complete Streets Design Guidelines pg 34)
- Replace sidewalk pavers with smooth concrete
- Use existing pavers to create attractive buffer areas
- Reduce driveway widths
- Add more seating

Edgewood Terrace & Armstrong Street

This extremely wide intersection was noted as an especially difficult place to cross by a Middle Earth student from South Bound Brook.

Concerns:

- Poor quality or missing crosswalks and sidewalks (ADA compliant curb ramps will be installed by Somerset County in 2018/2019)
- High motor vehicle speeds
- Wide curb radii

Recommendations:

- Sidewalk repair
- Shorten crossing distances and reduce width of pavement through use of paint and flexible bollards or curb extensions
- Add additional crosswalks

Robert Morris School

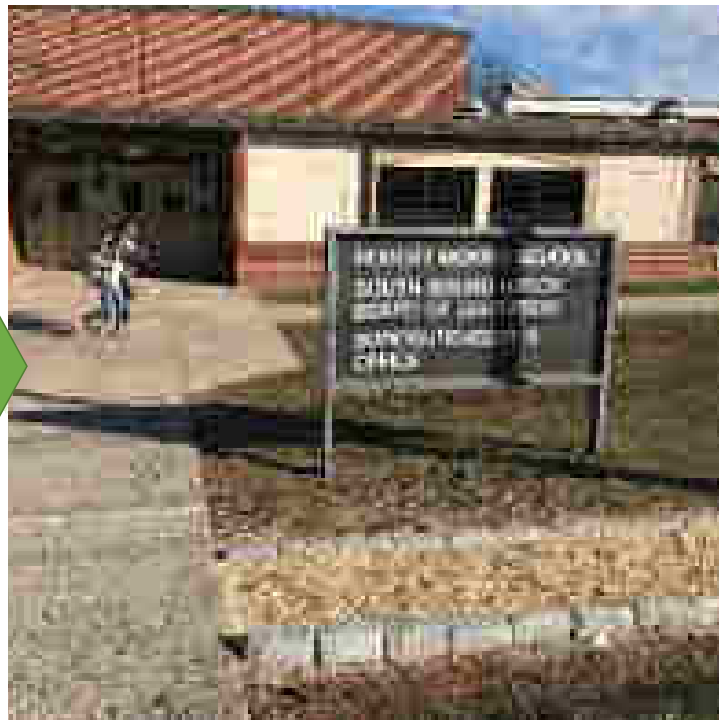
High quality bicycle parking located in a visible location could encourage more students to bicycle to school.

Concerns:

- Lack of bicycle facilities
- Current bike rack is poorly placed and in poor condition

Recommendations:

- Install new back rack to a more convinient location visible from inside the school.
- Consider additional bicycle parking
- See NJ School Bike Parking Guide, www.saferoutesnj.com



Memorial Park

Both Robert Morris School and adjacent Memeorial Park serve as significant bicycle and pedestrian traffic generators.

Concerns:

- Lack of well-placed bicycle facilities
- Lack of sidewalk

Recommendations:

- Add sidewalk along High Street
- Install radar feedback signs
- Investigate restriping Elizabeth Ave. to narrow travel lanes to 10.5 foot and add on-street bike lanes.
- Move school bike rack to an area of school where there are more windows for visibility.
- Add bike racks for park.

Placemaking in Bound Brook & South Bound Brook

Battle of Bound Brook historical markers adjacent to Queens Bridge. Picture provided by Ridewise, Inc.

Flowers planted in front of a vacant building in South Bound Brook. Picture provided by Ridewise, Inc.

Public space is ideally open, accessible and inviting to everyone. Community public space not only includes parks, trails or government-owned buildings and grounds but also streets and sidewalks. In our daily lives, public space functions as an interface between our homes, our offices, our schools, and destinations where we shop and recreate. A good quality public space can gather people to do activities and attract more people, which indirectly boosts local economy and creates a safer environments for the community.[52] The quality of public space can determine the vibrancy of a community and contribute to walkable and bikeable neighborhoods. [52] The quality of public space can be measured by four criteria:

Access & Linkages Is a place easy to get to, easy to enter, and easy to navigate?

Comfort & Images Does a place looks inviting regarding safety, cleanliness, and availability of places to sit?

Uses & Activities Does a place give people a reason to visit, stay or return?

Sociability Is a place provide a good environment for people to interact with friends, neighbors, and strangers? [52]

In this studio, we had a workshop led by Laura Torchio from Project for Public Spaces to learn how to create better public spaces by a strategy called Placemaking. Placemaking refers to a collaborative process where the public realm can be shaped by strengthening the connection between people and the places they share. More than just promoting better urban design, placemaking facilitates creative patterns of use, paying particular attention to the physical, cultural, and social identities that define a place and support its ongoing evolution. Placemaking helps both planners and communities create better public spaces. Partnered with Voorhees Transportation Center, we are inspired by placemaking to collectively reimagine and reinvent public spaces as the heart of the community.

The process of Placemaking includes (1) define place and identify stakeholders; (2) evaluate space and identify issues; (3) create a place vision; (4) conduct short-term experiments; and (5) provide ongoing reevaluation and plan for long-term improvements.

Project for Public Spaces also established a guideline for short-term experiments called, Lighter, Quicker, Cheaper (LQC). [53] LQC is a low-cost, high-impact incremental framework for improving public spaces in short order that capitalizes on the creative energy of the community to efficiently generate new uses and revenue for places in transition. [53] LQC experiments range in scale and impact, from small neighborhood amenities and art to large downtown temporary structures and events. [53] Before and after LQC experiments, planners need to work with community to create a vision around the places they view as important to community life and to their daily experience. While conducting short-term experiment and reevaluation, community may change their expectations of places. It may be necessary to go through the step of place vision again to redefine what is the true vision that a community desires. For information regarding materials for these projects, please visit the Tactical Urbanism Guide: http://tacticalurbanismguide.com.

To create better public places for both Bound Brook and South Bound Brook, we utilizes a placemaking model named Power of 10+. The process of Power of 10+ includes (1) initial survey for study areas, (2) vision planning regarding to safe route to school and towns, (3) public place evaluation in terms of current conditions and utilization, (4) identification of the best and most potential public spaces based on vibrancy and friendliness of infrastructure to users, (5) improvement strategies to one of the most potential space along with time frame and cost estimates.

POWER OF 10 FOR BOUND BROOK

Best Places

1. Main Street Corridor (by Dunkin Donuts)
2. Officer Sam Kriney Memorial Park
3. Queens Bridge
4. Codrington Park
5. Bound Brook Public Library / Adjacent Open Space

Places with most Potential

1. Train Station
2. Traffic Circle
3. Levy/Riverfront Access
4. Underpass underneath the railroad
5. Bound Brook High School

RECOMMENDATIONS FOR BOUND BROOK

Site: Bound Brook High School

Time frame: short-term (6 months to 1 year), medium-term (1 to 5 years), and long-term (5 years +)

Cost: low (under $2,000), medium ($2,000 to $10,000), and high ($10,000 +)

Bound Brook High School has excellent potential for short, medium, and long term placemaking projects. In the short term (within 6 months to 1 year), the school's large front lawn area can be used for public events such as outdoor movies and community yard sales. These events would be low-cost (under $2,000). In the medium term, (1 to 5 years), larger undertakings are feasible including wayfinding signage, outdoor art exhibits, and the installation of outdoor furniture such as picnic tables, benches, and bike racks. These projects are low cost, although depending on the scope of the outdoor furniture project, it could become a medium cost project ($2,000-$10,000). It is important to keep in mind that cheaper, temporary versions of each of these projects are feasible and effective, and they are a great way to get community feedback before installing more permanent fixtures. Lastly, a long-term project that would benefit the High School is adding a midblock crossing in front of the school. This would be quite expensive ($10,000+) and a long process (5+ years) but would slow traffic and create a more pleasant front lawn area for the school, adding to its potential as a town-wide destination.

Table 16: Bound Brook High School Placemaking Recommendations

	Uses & Activities	Sociability	Comfort & Image	Access & Linkages	Time Frame
Activities & Events	• Activating the front lawn area with amenities and programming; underutilization of existing space • Formal events as well as gathering place • Evening and weekend community events when school is not in session	• Recreation opportunities for school kids and community members • Cookout or picnic event • Outdoor movies • Outdoor school concert • School art show • Community yard sale	• Tactical urbanism opportunities for placemaking and traffic calming ex. Parklets or pop-up bike lanes • Street art	• Pilot drop-off zone for private vehicles	• Short-term for activities and events
Amenities	• Add seating such as benches and picnic tables	• Add seasonal seating such as adirondack chairs and hammocks • Rotating and permanent art. such as sculptures and student work	• Mid-block crossing and appropriate signage	• Bike racks • Bike lanes • Mid-block crossing • Wayfinding signage to nearby destinations via transit, biking, or walking around the bus stop shelter	• Mid-term for furniture • Long-term for infrastructure

POWER OF 10 FOR SOUTH BOUND BROOK

Best Places

1. Memorial Park
2. Main Street
3. D & R Canal State Park Trail
4. Queens Bridge
5. High Tams Ice Cream

Places with most Potential

1. Abraham Staats House
2. Riverfront trail behind the development

RECOMMENDATIONS FOR SOUTH BOUND BROOK

Site: Abraham Staats House

Time frame: short-term (6 months to 1 year), medium-term (1 to 5 years), and long-term (5 years +)

Cost: low (under $2,000), medium ($2,000 to $10,000), and high ($10,000 +)

The Abraham Staats House already hosts community events throughout the year, and it has excellent potential for additional short, medium, and long term placemaking projects. In the short term to medium term (within 6 months to 1 year, or 1 to 5 years), additional programming designed specifically for age groups that typically do not attend events at the Staats House can be created at a low cost (under $2,000). From our outreach, it was stated that teens do not typically attend Staats House events. Additionally, a pedestrian wayfinding campaign can be implemented from Main Street for a low cost (under $2,000). Community members can brainstorm placement for these signs, which should point from community gathering places, such as near Hi-Tams Ice Cream and Quick Check, towards the Staats House and indicate how many minutes the Staats is by walking or biking. This is a short to medium term project. In the medium-term (1 to 5 years), a community garden could be added to the large lawn area of the Staats House at a medium cost ($2,000-$10,000). Community gardens are a great way for neighbors to connect with one another, and they draw residents of all ages to take part. Movable chairs and tables with shade umbrellas could then be added to create a place to cool off, rest, and socialize. Depending on the amount of seating, this could become a medium cost project ($2,000-$10,000). Bike racks should also be added (short term, low cost). A long term project (5+ years) would be a connecting bridge to the D&R Canal State Park ($10,000). The time and expense of this project is high due to coordination with the state.

Table 17: Abraham Staats House Placemaking Recommendations

	Uses & Activities	Sociability	Comfort & Image	Access & Linkages	Time Frame
Activities & Events	• Already hosts events including holiday celebrations and historical events	• Specifically designed tours for less represented age groups (teens)	• Movable chairs outside during warm-weather events	• Wayfinding signage can be created by community members	• Short-term to medium-term for activities and events • Short-term to medium-term for wayfinding
Amenities	• Community Garden • Movable furniture including chairs and tables with shade umbrellas	• Community garden to bring neighbors together • Movable outdoor furniture for socializing	• Movable chairs • Tables with umbrellas	• Pedestrian wayfinding signs from Main Street • Potential future connection to D&R Canal Trail • Bike racks	• Short-term to medium-term for wayfinding • Medium-term for furniture • Medium-term for garden • Long-term for D&R Canal Trail connection

OUTREACH TO BOUND BROOK & SOUTH BOUND BROOK

Middle Earth is a non-profit agency providing services to teens and adolescents in Somerset County, New Jersey. For four decades, its goal has been to help youth develop into responsible and productive members of the community. 4-H and Middle Earth have formed a team of Bound Brook and South Bound Brook youth to mentor them in leadership and population health issues. This team of high school student 'health ambassadors' will design and implement projects addressing bikeability and walkability challenges in Bound Brook and South Bound Brook during the summer of 2018. Therefore, the project team was interested in connecting with Middle Earth students to brainstorm ideas and hear concerns about biking and walking in their communities.

The project team invited Middle Earth to the Rutgers University - New Brunswick campus during their school spring break on Tuesday March 27, 2018. In addition to exploring the campuses, the seven Middle Earth students met with the project team at the Bloustein School to discuss the conditions observed, discuss and prioritize their concerns, and present potential improvements for their opinion. Members of Middle Earth were invited to view, discuss, and react to the walkability assessments, Power of 10 placemaking assignments, and an existing conditions map with crash data (2012-2016), crossing guard locations, and all school locations.

Middle Earth students visit Bloustein and learn about placemaking strategies.

Working group meeting with represenatives from Bound Brook and South Bound Brook.

Summary of Concerns

During the meeting with Middle Earth students, attendees were encouraged to view the information presented, offer comments, and generate discussions amongst their fellow participants to express their concerns. Many students commented on the existing conditions in Bound Brook and South Bound Brook during the meeting. A summary of common concerns and ideas are presented below:

- Bike racks and additional pedestrian infrastructure are needed at the high school to encourage alternative transportation and provide a safer environment for it. Suggestions include:
  - Moving the bus shelter structure that is too close to the road for better access.
  - Providing NJ Transit bus service information at the bus shelter.
- Placemaking infrastructure and programming ideas for Bound Brook and South Bound Brook were discussed.
  - Strong interest in organizing an environmental cleanup and providing river access, recreation opportunities, and seating.
  - Interest in reviving the Bound Brook train station parking lot events programming.
  - Various event ideas for South Bound Brook, particularly focusing on making the downtown a destination. Others ideas include movie nights and sports day at parks.
- Safety concerns specific to certain areas and streets were identified.
  - The train station and surrounding area was identified as a place purposefully avoided by students due to unsavory businesses (gentleman's club) and unwelcoming infrastructure (tunnel). Additional lighting, especially in the tunnel, was suggested by the students to create greater feelings of comfort.
  - Edgewood Terrace was identified as a street with safety concerns for pedestrians due to speeding vehicles and lack of sidewalk infrastructure.

Implementation Strategies

PLANNING IN TERMS OF THE 5 Es

In bicycle and pedestrian planning, planners frequently break broader goals down into smaller steps. Here, we consider our recommendations in terms of the 5 Es—education, enforcement, encouragement, evaluation, engineering and green engineering. Education involves teaching community members about safety for bikers and walkers, while enforcement means ensuring drivers are obeying local traffic law for the safety of everyone on the road. Encouragement involves helping the community take ownership of shared spaces, and building enthusiasm for bike and pedestrian participation. Engineering involves changes to the physical streetscape, and evaluation means checking up on the progress the community has made and what steps are needed moving forward. These are different complementary approaches that help create change across a town both in the physical infrastructure and in community attitudes. All the Es are further broken down by cost and timeline for ease of planning and budgeting. Projects at less than $2,000 are considered low cost, projects between $2,000 and $10,000 are medium cost, and projects over $10,000 are high cost. Short-term refers to projects taking six months to a year, medium-term is projects taking one to five years, and long term projects are those taking more than five years.

In order to understand the effectiveness of the Safe Route to School Program, schools should keep up with the changing needs of students and parents' concerns regarding travel modes to school; also, the municipal governments in partnership with county or state-level governments should use various data collection methods to assess the performance of its SRTS Program over time. The importance of the evaluation of the SRTS Program is understanding what works and how best to plan for future infrastructure improvements and investments. Evaluation is a continuous process and its time frame may be short-term, mid-term, or long-term, depending on each implementation plan for SRTS programs.

Table 18: Bound Brook Education Implementation Strategies

Recommended Program or Improvement	Time Frame	Responsibility	Next Step	Cost	Funding Sources
Leverage school and municipal websites/ social media to spread awareness of school zone issues and enforcement activites, including information on the "Stop & Stay Stopped" crosswalk law, stoping for and obeying crossing guards, not parking in the "no parking" zones, and the NJ anti-idling law.	Short term/ Ongoing	Schools/ Municipality	Revise annual back to school literature & Student Handbooks. Work with RideWise to incorporate into SRTS programs	Low	School District, Municipal Government
Provide periodic reminders about no-idling to partents as part of school email/ website/paper information.	Ongoing	Schools/RideWise Inc	Revise annual back to school literature & Student Handbooks, work with RideWise to incorporate into SRTS programs	Low	School District
Organize bike rodeo programs and other on-bicycle education opportunities for students.	Medium term	Schools/ RideWise Inc	Work with RideWise Inc to schedule and organize event	Low	School District, Municipal Government, RideWise Inc
Attend NJ BikeSchool PE Teacher training and apply for a NJ Association of Health, Physical Education, Recreation, and Dance (AHPERD) mini-grant to fund purchasing a few bicycles for on-bike PE education, Due Sept. 30th annually	Short to Medium term	School/District PE Department	Visit, http://www.njahperd.org/new/index.php/awards-and-grants/njahperd-grants	Low	NJ AHPERD
Organize a regular walking school bus and bike trains.	Ongoing	Schools/ RideWise Inc	Work with RideWise Inc to evaluate current plan	Low	School District, RideWise Inc
Provide pedestrian and bicycling safety education programming in schools in all grades.	Ongoing	Schools/ RideWise Inc	Work with RideWise Inc to organize and schedule further events	Low	School District, RideWise Inc
Educate residents and property owners about the importance of maintaining shrubbery that encroaches on sidewalks and/or blocks drivers view of intersections.	Ongoing	Municipality/ Schools	Municipal social media, website, annual bill letters, newsletter, etc.	Low	Municipal Government, School District

*Time frame: short-term (6 months to 1 year), medium-term (1 to 5 years), and long-term (5 years +)
*Cost: low (under $2,000), medium ($2,000 to $10,000), and high ($10,000 +)

Table 18 Continued: Bound Brook Encouragement Implementation Strategies

Recommended Program or Improvement	Time Frame	Responsibility	Next Step	Cost	Funding Sources
Host Bike/Walk to School Days throughout the school year, participating in International Walk to School Day in October as well as New Jersey Walk and Bike to School Month in May.	Short term	Schools/ RideWise Inc	Schedule and organize events	Low	School District, Municipal Government, RideWise Inc
Promote the use of the East Coast Greenway along the D&R Canal as an opportunity to encourage residents to use the facility and to bring bicyclists/tourists into the community to support local businesses.	Short term	Municipal government, Non-profits	Coordinate with East Coast Greenway representatives on outreach plans	Low	Municipal Government, Business District, RideWise Inc., Non-profits
Sponsor student poster contest(s), walking mileage clubs, golden sneaker awards or other events and contests centered on walking and bicyling to school.	Short term	Schools/ RideWise Inc	Schedule and organize events	Low	School District, Municipal Government, RideWise Inc
Encourage and provide infomation about how residents can approach the municipality about creating street art and murals.	Medium term	Municipal governments, Non-Profits	Evaluate interest	Low	Municipal governments, Non-Profits
Instal wayfinding signs for downtown and park areas. Include walking distance in minutes.	Medium term	Municipal government	Determine locations, schedule	Medium	Municipal government
Organize Active/Open Streets event(s) at Hamilton Street along with the farmer's market.	Long term	Municipal governments, Non-Profits	Evaluate interest and develop a plan	Medium	Municipal governments, Non-Profits

Table 18 Continued: Bound Brook Enforcement Implementation Strategies

Recommended Program or Improvement	Time Frame	Responsibility	Next Step	Cost	Funding Sources
Conduct periodic stop and stay stopped enforcement campaigns to educate drivers about crosswalk laws and pedestrian right-of-way	Short term	Bound Brook Police Department	Determine priority locations, schedule	Medium	Municipal Government
Increase enforcement of speed limits, especially in school zones.	Ongoing	Bound Brook Police Department	Determine priority locations, schedule	Medium	Municipal Government
Increase enforcement of anti-idling laws in school zones.	Ongoing	Bound Brook Police Department	Determine priority locations, schedule	Medium	Municipal Government
Increase enforcement of distracted driving laws, especially in school zones.	Ongoing	Bound Brook Police Department	Determine priority locations, schedule	Medium	Municipal Government
Increase enforcement of no parking in school zone areas during the school day.	Ongoing	Bound Brook Police Department	Determine priority locations, schedule	Medium	Municipal Government
Educate residents about the importance of not blocking sidewalks with temporary obstructions including yard and tree clippings, garbage cans, and motor vehicles. If necessary, enforce sidewalk obstruction codes.	Ongoing	Bound Brook Police Department	Determine priority locations, schedule	Medium	Municipal Government
Provide helmet and lights give-aways or other bike/walk encouragement programs for K-8 students.	Ongoing	Bound Brook Police Department with RideWise Inc.	Coordinate with RideWise & RWJ-Barnabas bike educational programs.	Low	Municipal government, RideWise Inc., RWJ - Barnabas, grants

*Time frame: short-term (6 months to 1 year), medium-term (1 to 5 years), and long-term (5 years +)
*Cost: low (under $2,000), medium ($2,000 to $10,000), and high ($10,000 +)

Table 18 Continued: Bound Brook Engineering Implementation Strategies

Recommended Program or Improvement	Time Frame	Responsibility	Next Step	Cost	Funding Sources
Conduct a sidewalk inventory to itemize areas where cracked and heaved sidewalks need maintenance, (behind Lafayette School). Include areas where broken slate sidewalk needs to be remove (2nd Street). Create a sidewalk maintenance prioritization plan and identify areas where sidewalk grinding can smooth surfaces versus removal and replacement of concrete.	Medium term	Municipal government, property owners	Code enforcement	High	Property owners, municipal government, grants
Install ADA truncated domes (bumpy pads) on curb ramps at marked street crossings and intersections where currently missing and in non-compliance with ADA (2nd Street). Prioritize school crosswalks where crossing guards work, commercial areas, and crosswalks near senior housing and local parks.	Medium term	Municipal governments, County DOT	Determine locations, schedule	High	Municipal governments, County DOT
Consider replacing brick sidewalk in commercial areas with concrete, while keeping brick pavers for a buffer area between the sidewalk and curb. Brick pavers are less durable and have increased maintenance costs while decreasing accessibility due to tripping hazards.	Long term	Municipal government, property owners	Investigate opportunities for funding	High	Property owners, municipal government, grants
Prioritize areas for adding pedestrian countdown signals (W. Union Ave & Vosseller Ave.) Prioritize long crossings, school crosswalks where crossing guards work, commercial areas, and crosswalks near senior housing and local parks.	Medium term	Road ownership (Municipal, County or State government)	Investigate opportunities for funding	High	Municipal government

Table 18 Continued: Bound Brook Engineering Implementation Strategies

Recommended Program or Improvement	Time Frame	Responsibility	Next Step	Cost	Funding Sources
Consider re-timing intersection traffic signals to add Lead Pedestrian Intervals (LPI) to reinfore pedestrian right-of-way over turning vehicles. LPI typically gives pedestrians a 3–7 second head start when entering an intersection with a corresponding green signal in the same direction of travel. Prioritize long crossing and intersections with a higher number of turning vehicles especially in locations with a history of crashes.	Medium term	Road ownership (Municipal, County or State government)	Investigate opportunities for funding	High	Municipal government
Improve lighting at the Bound Brook train station, especially the tunnel connection.	Short term	Municipal government, NJ Transit	Investigate opportunities for funding	High	Municipal government, NJ Transit
Explore adding a bike depot at the train station.	Medium term	Municipal government, NJ Transit	Investigate opportunities for funding	High	Municipal government, NJ Transit
Investigate installation of a speed table on Main Street at the intersection of Van Horne Plaza and Hamilton Street, improving pedestrian connectivity to the train station and calming traffic. (Supporting Priority Investment in Somerset County Phase III Study)	Long term	Municipal government	Investigate opportunities for funding	High	Municipal government
Designate low speed residential streets as bicycle routes with the installation of corresponding signage and sharrows (pavement markings).	Short term	Municipal governments	Determine locations, evaluate interest, schedule	Medium	Municipal government, grants
Conduct and inventory of and maintenance plan for re-stiping high visibility crosswalks where faded. Prioritize school crosswalks where crossing guards work, commercial areas, and crosswalks near senior housing and local parks.	Short term	Municipal government, County government, State Government	Determine locations, schedule	High	Municipal government, County Government, grants

*Time frame: short-term (6 months to 1 year), medium-term (1 to 5 years), and long-term (5 years +)
*Cost: low (under $2,000), medium ($2,000 to $10,000), and high ($10,000 +)

Table 18 Continued: Bound Brook Engineering Implementation Strategies

Recommended Program or Improvement	Time Frame	Responsibility	Next Step	Cost	Funding Sources
Add additional high-visibility crosswalk treatments in prority areas with high pedestrian crossings or where there are a high number of motorist-pedestrian conflicts, including all intersections where crossing guards are placed.	Short term	Municipal government, County government, State Government	Determine locations, schedule	High	Municipal government, County Government, grants
“Daylight” crosswalks using curb extensions with flexible bollards and bike corrals to better define no parking areas (N.J.S.A 39:4-138, parking is not permitted: within 50 feet of a “stop” sign; or within 25 feet of the nearest crosswalk). Prioritize school crosswalks where crossing guards work, commercial areas, and crosswalks near senior housing and local parks. Explore drainage needs where ponding ends up in crosswalks and consider including green infrastructure design in making improvements.	Medium term	Municipal government, County government, State government	Determine locations, determine treatment, schedule	High	Municipal government, County government, State government, grants
Install high visability crosswalk behind Layfaette School to line up with curb cut. Update ADA infrastructure. Include flexible bollards to discourage parking in no parking zones around crosswalk.	Medium term	Municipal government	Engineering Plan	High	Municipal government, grants
Add appropriate ‘school zone’ pavement markings and signage in school zones for maximum awareness.	Medium term	Municipal government, County government, State government	Determine locations, determine treatment, schedule	High	Municipal government, County government, State government, grants
Install curb extensions, high visibility crosswalks, pedestrian crossing signage, and/or pedestrian refuge islands on commerical corridors, county roads, major thoroughfares, and near schools as part of a larger road narrowing re-striping.	Long term	Municipal government, County government, State government	Determine locations, evaluate interest, schedule	High	Municipal government, County government, State government, grants

Table 18 Continued: Bound Brook Engineering Implementation Strategies

Recommended Program or Improvement	Time Frame	Responsibility	Next Step	Cost	Funding Sources
With support from NJDOT, move the current school zone signs along Route 28 in front of the high school to location just outside school property instead of the current location within school property. Upgrade current overhead flashing school zone beacons to LED lights with radar feedback. Explore moving flashing beacon sign to outside school boundaries instead of within school property.	Long term	Municipal government, County government, State government	Determine locations, evaluate interest, schedule	High	Municipal government, County government, State government, grants
Shorten wide curb radii and decrease speeds of turning vehicles with curb extensions, flexible bollards and/or other treatments at intersections such as NJ-28 and Tea Street and W. Union Ave & Vosseller Ave.	Medium term	Municipal government, County Government, State Government	Determine locations, schedule	High	Municipal government, State Government, grants
Explore adding a mini-roundabout to slow vehicle speeds at the intersection of Vosseller Ave (CR 635) & West High Street. Mini-roundabouts can be tested with paint and cones prior to more permenent infrastructure and plantings.	Medium term	Municipal government, County Government	Short-term test with temporary materials to evaluate for long-term infrastructure improvement	Medium	Municipal government, County Government
Promote sidewalk connectivity by installing connections between existing pedestrian infrastructure and destinations missing pedestrian infrastructure. This would include issues such as the missing connection between the intersection of NJ-28 and Tea Street with the westbound NJ Transit bus shelter.	Medium term	Municipal government, County government, State government	Determine locations, schedule	High	Municipal government, State Government, County Government, grants

*Time frame: short-term (6 months to 1 year), medium-term (1 to 5 years), and long-term (5 years +)
*Cost: low (under $2,000), medium ($2,000 to $10,000), and high ($10,000 +)

Table 18 Continued: Bound Brook Engineering Implementation Strategies

Recommended Program or Improvement	Time Frame	Responsibility	Next Step	Cost	Funding Sources
Install ADA curb ramps at marked street crossings and intersections where currently missing, such as NJ-28 and Tea Street.	Medium term	Municipal governments, County government, State government	Determine locations, schedule	High	Municipal government, County government, State government, grnats
Explore ways to further install pedestrian scale lighting around towns, prioritizing main commercial areas and school zones.	Medium term	Municipal government, County Government	Investigate opportunities for funding	High	Municipal government, County government, grants
Improve lighting for the pedestrian path underneath the railroad bridges on Main Street/ Bolmer Blvd. (CR527)	Short term	Municipal government, County Government	Investigate opportunities for funding	High	Municipal government, County government, grants
Explore installing bicycle lanes and/or narrowing lane widths on muninicpal road such as Main and High Streets and West Maple Avenue.	Mid to Long term	Municipal government, County government, State government	Determine locations, evaluate interest, schedule	High	Municipal government, County government, State government, grants
Install additonal and re-position current bike racks in a safe, visible locations at all schools. Add inverted-U shaped bike racks to Bound Brook High School near the entrances in well-traveled areas. Areas in front of administration offices or other windows are often the best locations.	Short term	School District	Determine locations	Medium	School district
Install inverted U-shaped bike racks to Main Street to improve bike access and reduce vehicle parking needs. Racks can be customized to fit into streetscapes. Any decorative bike rack should first and foremost be functional for locking bikes.	Short term	Municipal goverment	Determine locations	Medium	Municipal goverment, property owners, grants
Improve bus stop accessibility (ADA) including adding sidewalk connections, benches, trash cans, lighting and shelter proritizing the stops near the high school.	Medium term	Municipal governments, NJTransit	Conduct assessment, determine locations, select the appropriate treatments to implement	High	Municipal governments, NJ Transit

Table 18 Continued: Bound Brook Engineering Implementation Strategies

Recommended Program or Improvement	Time Frame	Responsibility	Next Step	Cost	Funding Sources
Partner with the D&R Canal State Park, Crossroads to the American Revolution, South Bound Brook, and Somerset County Cultural and Historical Commission to improve wayfinding, additional historic informational signs along the bridge, landscaping at entry points, seasonal flags and decorations, and additional lighting at the entry point and along the Queens Bridge.	Medium term	Municipal governments, County government, State government	Evaluate interest	High	Municipal government, County government, State government, grants
Install a pedestrian-activated rectangular rapid flashing (RRFB) beacon where the D&R Canal Towpath traverses Queens Bridge. (Supporting Priority Investment in Somerset County Phase III Study)	Medium term	Municipal governments, County government, State government	Determine location	High	Municipal government, County government, State government, grants
Reassess roundabout design to slow vehicle speeds to 15 mph through the intersection. Include high visability crosswalks on all corners (see page 43).	Medium term	Municipal government, County government, State government	Evaluate interest, determine treatment, schedule	High	Municipal government, County government, State government, grants
Repair pavement where the road surface has potholes in crosswalks or at curb cuts.	Medium term	Municipal government, County government, State government	Determine locations, schedule	High	Municipal government, State Government, County Government, grants
Install trees with drained tree pits along Main St corridor in place of existing stone fill, to improve drainage and produce more comfortable pedestrian environment.	Medium term	Municipal government, county DOT	Determine locations, evaluate interest, schedule	Medium (depending on project extent)	Municipal Government, County Government, grants
Explore creating and adopting a green street mainteance plan as part of implemenation of the Borough's complete streets policy.	Medium term	Municipal government, county DOT	Determine locations, evaluate interest, schedule	Medium (depending on project extent)	Municipal Government, County Government, grants

*Time frame: short-term (6 months to 1 year), medium-term (1 to 5 years), and long-term (5 years +)
*Cost: low (under $2,000), medium ($2,000 to $10,000), and high ($10,000 +)

Table 18 Continued: Bound Brook Engineering Implementation Strategies					
Recommended Program or Improvement	**Time Frame**	**Responsibility**	**Next Step**	**Cost**	**Funding Sources**
Introduce green infrastructure as a standard design, including bioswales or rain gardens in curb extensions for stormwater collection and groundwater infiltration and recharge, as well as traffic calming and streetscape enhancements. (Supporting Priority Investment in Somerset County Phase III Study)	Medium term	Municipal government, county DOT	Determine locations, evaluate interest, schedule	Medium (depending on project extent)	Municipal Government, County Government, grants

Table 18 Continued: Bound Brook Evaluation Implementation Strategies					
Recommended Program or Improvement	**Time Frame**	**Responsibility**	**Next Step**	**Cost**	**Funding Sources**
Conduct periodic Walk & Bike Assessments which inlude taking photos or video to document the good and challenging conditions related to walking and bicycling.	Ongoing	Schools, Municipal Goverment, County Government, RideWise Inc	Schools, Municipal Goverment, County Government, RideWise Inc	Low	Municipal government, School district, RideWise Inc
Periodically complete Student Arrival and Departure Tallies to track how student travel modes change over time.	Ongoing	Schools, RideWise Inc, VTC	Determine schedule	Low	Municipal government, school district, RideWise Inc
Conduct crash analysis before and after implementation of infrastructure improvements to monitor impact of changes.	Short term	Municipal government, County government, State government	Coordinate analysis	Low to medium	Municipal government, County government, State government, grants
Conduct speed studies before and after implementation of infrastructure and policy improvements.	Short term	Municipal government, County government, State government	Coordinate study	Low	Municipal government, County government, State government, grants
*Time frame: short-term (6 months to 1 year), medium-term (1 to 5 years), and long-term (5 years +) *Cost: low (under $2,000), medium ($2,000 to $10,000), and high ($10,000 +)					

Table 19: South Bound Brook Education Implementation Strategies

Recommended Program or Improvement	Time Frame	Responsibility	Next Step	Cost	Funding Sources
Leverage school and municipal websites/social media to spread awareness of school zone issues and enforcement activites, including information on the "Stop & Stay Stopped" crosswalk law, stoping for and obeying crossing guards, not parking in the "no parking" zones, and the NJ anti-idling law.	Short term/ Ongoing	Schools/Municipality	Revise annual back to school literature & Student Handbooks. Work with RideWise to incorporate into SRTS programs	Low	School Dstrict, Municipal Government
Provide periodic reminders about no-idling to partents as part of school email/website/ paper information.	Ongoing	Schools/RideWise Inc	Revise annual back to school literature & Student Handbooks, work with RideWise to incorporate into SRTS programs	Low	School District
Organize bike rodeo programs and other on bicycle education opportunities for students.	Medium term	Schools/ RideWise Inc	Work with RideWise Inc to schedule and organize event	Low	School District, Municipal Government, RideWise Inc
Attend NJ BikeSchool PE Teacher training and apply for a NJ Association of Health, Physical Education, Recreation, and Dance (AHPERD) mini-grant to fund purchasing a few bicycles for on-bike PE education, Due Sept. 30th annually.	Short to medium term	School/District PE Department	Visit, http://www.njahperd.org/new/index.php/awards-and-grants/njahperd-grants	Low	NJ AHPERD
Organize a regular walking school bus and bike trains.	Ongoing	Schools/ RideWise Inc	Work with RideWise Inc to evaluate current plan	Low	School District, RideWise Inc
Provide pedestrian and bicycling safety education programming in schools in all grades.	Ongoing	Schools/ RideWise Inc	Work with RideWise Inc to organize and schedule further events	Low	Schools, RideWise Inc
Educate residents and property owners about the importance of maintaining shrubbery that encroaches on sidewalks and/or blocks drivers view of intersections.	Ongoing	Municipality/Schools	Municipal social media, website, annual bill letters, newsletter, etc.	Low	Municipal Government, School District

*Time frame: short-term (6 months to 1 year), medium-term (1 to 5 years), and long-term (5 years +)
*Cost: low (under $2,000), medium ($2,000 to $10,000), and high ($10,000 +)

Table 19 Continued: South Bound Brook Encouragement Implementation Strategies

Recommended Program or Improvement	Time Frame	Responsibility	Next Step	Cost	Funding Sources
Organize street art and mural painting events with residents. Explore cultural programming through adding artwork, murals and wayfinding highlighting the history of the town using the boarded up building windows and wall surfaces at the corner of South Main Street and the Queens Bridge as temporary installations.	Medium term	Municipality, Non-Profits	Work with local business and Main Street property owners to develop a pedestrian circulation economic development plan to address adding additional trees, benches, trash cans, historic and art locations, and other ammenities to help draw more foot-traffic in the downtown.	Low	Municipal Government, non-profits
Lower wayfinding signage to make it more pedestrian friendly	Medium term	Municipality, Non-Profits	Determine locations, schedule	Low to medium	Municipal Government
Sponsor student poster contest, walking mileage clubs, golden sneaker awards or other events and contests centered on walking and bicyling to school.	Short term	Schools, Municipality, RideWise Inc	Schedule and organize events	Low	School District, Municipal Government, RidewiseRideWise Inc
Host Bike/Walk to School Days throughout the school year, participating in International Walk to School Day in October as well as New Jersey Walk and Bike to School Month in May	Short term	Schools, Municiplaity, RideWise Inc	Schedule and organize events	Low	School District, Municipal Government, RideWise Inc
Promote the use of the East Coast Greenway along the D&R Canal as an opportunity to encourage residents to use the facility and to bring bicyclists/ tourists into the community to support local businesses.	Short term	Municipal government, Non-profits	Coordinate with East Coast Greenway representatives on outreach plans	Low	Municipal Government, Business District, RideWise Inc., Non-profits
Adopt a complete streets policy using best practice policy language from Sustainable Jersey. Include green streets principals to help improve stormwater runoff.	Short term	Municipal government	Contact Rutgers SRTS Resource Center and RideWise, Inc. for best practice in policy language	Low	Municipal goverment

Table 19 Continued: South Bound Brook Engineering Implementation Strategies

Recommended Program or Improvement	Time Frame	Responsibility	Next Step	Cost	Funding Sources
Conduct a sidewalk inventory to itemize areas where cracked and heaved sidewalks need maintenance.Create a sidewalk maintenance prioritization plan and identify areas where sidewalk grinding can smooth surfaces versus removal and replacement of concrete.	Medium term	Municipal government, property owners	Code enforcement	Low	Property owners, municipal government, grants
Repair sidewalk on Edgewood Terrace between Main Street and Elizabeth Street	Medium term	Municipal government, property owners	Code enforcement	High	Municipal government, grants
Install ADA detectable warning surfaces on curb ramps at marked street crossings and intersections where currently missing and in non-compliance with ADA. Prioritize school crosswalks where crossing guards work, commercial areas, and crosswalks near senior housing and Memorial Park. Note: All crosswalks on county roads in S. Bound Brook are being updated for compliance in 2018/2019	Medium term	Municipal governments, County DOT	Determine locations, schedule	Medium to high	Municipal government, County DOT
Consider replacing brick sidewalk in commercial areas with concrete, while keeping brick pavers for a buffer area between the sidewalk and curb. Brick pavers are less durable and have increased maintenance costs while decreasing accessibility due to tripping hazards. Current sidewalks are too narrow and muddy buffer areas are unpleasant for walking, which is discouraging to shoppers and people with disabilities visitng local businesses. Widen sidewalks to a minimum of a 5-foot width (6-foot preferred.)	Long term	Municipal government, property owners	Investigate opportunities for funding	High	Property owners, municipal government, grants

*Time frame: short-term (6 months to 1 year), medium-term (1 to 5 years), and long-term (5 years +)
*Cost: low (under $2,000), medium ($2,000 to $10,000), and high ($10,000 +)

Table 19 Continued: South Bound Brook Engineering Implementation Strategies

Recommended Program or Improvement	Time Frame	Responsibility	Next Step	Cost	Funding Sources
Explore reducing wide curb radii using curb extensions, flexible bollards, or other treatments at the intersections of residential side streets with Main Street (CR 527)	Short to long term	Municipal government, County government	Determine locations, select appropriate short- and long-term actions to implement	Medium to high	Municipal government, grants
Consider re-timing intersection traffic signals to add Lead Pedestrian Intervals (LPI) to reinfore pedestrian right-of-way over turning vehicles. LPI typically gives pedestrians a 3–7 second head start when entering an intersection with a corresponding green signal in the same direction of travel. Prioritize long crossing and intersections with a higher number of turning vehicles especially in locations with a history of crashes.	Medium term	Road ownership (Municipal, County or State government)	Investigate opportunities for funding	Medium	Municipal government, County DOT
Consider adding trees and year-round plantings to the center islands to create a boulevard feel and encourage slower speeds. Extend each island at intersections to create protected pedestrian refuge areas.	Medium to long term	Road ownership (Municipal, County or State government)	Investigate opportunities for funding	Medium to high	Municipal government, County DOT
Create a plan to plant additional trees along Main Street (CR 527) to create shade and reduce urban heat island issues. Look for ways to add benches in proximity to trees.	Medium term	Municipal government, County government	Work with local business and Main Street property owners to develop a pedestrian circulation economic development plan to address adding additional trees, benches, trash cans, historic and art locations, and other ammenities to help draw more foot-traffic in the downtown.	Medium to high	Municipal government, County government, grants
Upgrade pedestrian signals to include countdown timers.	Medium term	Road ownership (Municipal, County or State government)	Investigate opportunities for funding	Medium	Municipal government, County DOT

Table 19 Continued: South Bound Brook Engineering Implementation Strategies

Recommended Program or Improvement	Time Frame	Responsibility	Next Step	Cost	Funding Sources
Add radar feedback signs around Robert Morris Elementary School. Consider other locations for installing radar signs.	Medium term	Road ownership (Municipal, County or State government)	Investigate opportunities for funding	Medium	Municipal government, County DOT
Prohibit Right Turn on Red from side streets into commercial areas along Main Street (CR 527) where creating better foot traffic for local businesses is a priority.	Short to medium term	Road ownership (Municipal, County or State government)	Discuss options with muncipal and county engineers	Low	Municipal government, County DOT
Take inventory of roadway signs and sign heights. Consider moving wayfinding signs to a shorter height for more visiability for pedestrians. However, be aware of signs that are too low directly in the pedestrian path where sharp corners can be problematic. Move signs that block driver's view of pedestrians crossing the street (Joe's Meat Market crosswalk).	Short to medium term	Road ownership (Municipal, County or State government)	Work with local business and Main Street property owners to develop a pedestrian circulation economic development plan to address adding additional trees, benches, trash cans, historic and art locations, and other ammenities to help draw more foot-traffic in the downtown.	Low	Municipal government, County DOT
Designate low speed residential streets as bicycle routes with the installation of corresponding signage and sharrows (pavement markings)	Short term	Municipal government	Determine locations, evaluate interest, schedule	Low to medium	Municipal government, grants
Install inverted U-shaped bike racks to Main Street (CR 527) to improve bike access and reduce vehicle parking needs. Racks can be customized to fit into streetscapes. Any decorative bike rack should first and foremost be functional for locking bikes.	Short term	Municipal goverment	Determine locations	Low to medium	municipal goverment, property owners, grants

*Time frame: short-term (6 months to 1 year), medium-term (1 to 5 years), and long-term (5 years +)
*Cost: low (under $2,000), medium ($2,000 to $10,000), and high ($10,000 +)

Table 19 Continued: South Bound Brook Engineering Implementation Strategies

Recommended Program or Improvement	Time Frame	Responsibility	Next Step	Cost	Funding Sources
Narrow lane width to 10.5 or 11 feet on commercial corridors and major thoroughfares such as Main Street (527) as part of a larger road diet re-striping project. (Supporting Priority Investment in Somerset County Phase III Study)	Long term	Municipal government, County government	Determine locations, evaluate interest, schedule	Medium to high	Municipal government, County government, grants
Explore installing bicycle lanes on commercial corridors and major thoroughfares such as Main Street (CR527) as part of a larger road diet re-striping project to promote complete streets.	Long term	Municipal government, County government	Determine locations, evaluate interest, schedule	Medium to high	Municipal government, County government, grants
Add additional high-visibility crosswalk treatments in prority areas with high pedestrian crossings or high number of motorist-pedestrian conflicts, such as Main Street (CR 527) and all intersections where crossing guards are placed.	Short term	Municipal government, County government	Determine locations, schedule	Medium to high	Municipal government, County government, grants
Work with QuickChek & Family Dollar to create marked pedestrian paths to store entrances.	Long term	Municipal government, County government	Determine locations, evaluate interest, schedule	Medium to high	Municipal government, County DOT
Install school bike racks in a safe, visible location at Robert Morris School. Add inverted-U shaped bike racks in well-traveled areas. Areas in front of the superintendent's office or other administrative office windows are often the best locations.	Short term	School District	Determine locations	Medium	School district
Promote sidewalk connectivity by installing sidewalk connections between existing pedestrian infrastructure and destinations missing pedestrian infrastructure, such as the missing connection on the northern perimeter of Memorial Park.	Medium term	Municipal government, County government	Determine locations, schedule	High	Municipal government, County government, grants

Table 19 Continued: South Bound Brook Engineering Implementation Strategies

Recommended Program or Improvement	Time Frame	Responsibility	Next Step	Cost	Funding Sources
Install curb extensions, high visibility crosswalks, pedestrian crossing signage, and/or pedestrian refuge islands on commerical corridors, county roads, major thoroughfares, and near schools as part of a larger road diet re-striping project to promote complete streets philosophy	Long term	Municipal government, County government	Determine locations, evaluate interest, schedule	High	Municipal government, County government, grants
Add appropriate 'school zone' pavement markings and signage in the Robert Morris School Zone	Medium term	Municipal government, County government	Determine locations, determine treatment, schedule	Medium	School district, municpal government, county government, grants
Improve bus stop accessibility (ADA) along Main Street by moving shelters to a location where people with disabilities can access them without manervering over a curb in the street.	Medium term	Municipal government, NJ Transit	Conduct assessment, determine locations, select the appropriate treatments to implement	Medium to high	Municipal government, NJ Transit
"Daylight" crosswalks using bike corrals, curb extensions, and flexible bollards to better define no parking areas (N.J.S.A 39:4-138, parking is not permitted: within 50 feet of a "stop" sign; or within 25 feet of the nearest crosswalk or side line of a street or intersecting highway)	Medium term	Municipal government, County government	Determine locations, determine treatment, schedule	Medium to high	Municipal governments, County government, grants
Assess the current placement of the sidewalk infrastructure on the Main Street (CR 527) corridor, such as benches and bus shelters, to assure accessibilty and to ensure adequate room for pedestrians to pass.	Short term	Municipal government, County government	Evaluate, determine problematic placements, relocation	Low	Municipal government
Repair pavement where the road surface has potholes in crosswalks or at curb cuts.	Medium term	Municipal government, County government	Determine locations, schedule	High	Municipal government, County government, grants

*Time frame: short-term (6 months to 1 year), medium-term (1 to 5 years), and long-term (5 years +)
*Cost: low (under $2,000), medium ($2,000 to $10,000), and high ($10,000 +)

Table 19 Continued: South Bound Brook Engineering Implementation Strategies

Recommended Program or Improvement	Time Frame	Responsibility	Next Step	Cost	Funding Sources
Investigare opportunities to limit the frequency of commerical driveway access points and in front parking at properties along the Main Street (CR 527) corridor	Short term	Municipal government, County government	Evaluate, determine locations, propose consolidating and eliminating driveways, determine treatment, schedule	High	Municpal government, County government
Investigate areas where directional signs to historic areas and recreational paths can be installed. For example, the utility box on Main Street can be wrapped with directional information to the canal paths and Queens Bridge.	Medium term	Municipal government, County government	Create a trail and historic site economic development committee to work on trail improvements and maintenance	Low	Municipal government, County government, grants
Improve local canal access points and trails by adding directional signs to the facilities, historic information signs along trails, seating, and investigating ways to imrpove ADA access.	Medium term	Municipal government, County government	Determine locations, schedule	Low to medium	Municipal government, County government, grants
Create and adopt a trail maintenance plan.	Medium term	Municipal government, County government	Create a trail and historic site economic development committee to work on trail improvements and maintenance	Low	Municipal government, County government, grants
Partner with the D&R Canal State Park, Crossroads to the American Revolution, Bound Brook, and Somerset County Cultural and Historical Commission to improve wayfinding, additional historic informational signs along the bridge, landscaping at entry points, seasonal flags and decorations, seating, and additional lighting at the entry points and along the Queens Bridge.	Medium term	Municipal governments, County government, State government	Create a trail and historic site economic development committee to work on trail improvements and maintenance	Low	Municipal government, County government, State government, grants

Table 19 Continued: South Bound Brook Engineering Implementation Strategies

Recommended Program or Improvement	Time Frame	Responsibility	Next Step	Cost	Funding Sources
Install trees with drained tree pits along Main St corridor in the center islands and in place of existing stone fill, to improve drainage and produce more comfortable pedestrian environment.	Medium term	Municipal government, county DOT	Determine locations, evaluate interest, schedule	Medium (depending on project extent)	Municipal Government, County Government, grants
Introduce green infrastructure as a standard design, including bioswales or rain gardens in curb extensions for stormwater collection and groundwater infiltration and recharge, as well as traffic calming and streetscape enhancements.	Medium term	Municipal government, county DOT	Determine locations, evaluate interest, schedule	Medium (depending on project extent)	Municipal Government, County Government, grants
Explore creating and adopting a green street mainteance plan.	Medium term	Municipal government, county DOT	Determine locations, evaluate interest, schedule	Medium (depending on project extent)	Municipal Government, County Government, grants

*Time frame: short-term (6 months to 1 year), medium-term (1 to 5 years), and long-term (5 years +)
*Cost: low (under $2,000), medium ($2,000 to $10,000), and high ($10,000 +)

Table 19 Continued: South Bound Brook Enforcement Implementation Strategies

Recommended Program or Improvement	Time Frame	Responsibility	Next Step	Cost	Funding Sources
Increase enforcement of anti-idling laws, especially in school zones	Ongoing	South Bound Brook Police Department	Determine priority locations, schedule	Low to medium	Municipal Government
Increase enforcement of speed limits, especially in school zones	Ongoing	South Bound Brook Police Department	Determine priority locations, schedule	Low to medium	Municipal Government
Increased enforcement of distracted driving laws, especially in school zones	Ongoing	South Bound Brook Police Department	Determine priority locations, schedule	Low to medium	Municipal Government
Increase enforcement of no parking in school zone areas during the school day.	Ongoing	South Bound Brook Police Department	Determine priority locations, schedule	Low to medium	Municipal Government
Conduct periodic stop and stay stopped enforcement campaigns to educate drivers about crosswalk laws and pedestrian right-of-way.	Short term, Ongoing	South Bound Brook Police Department	Determine priority locations, schedule	Low to medium	Municipal Government
Educate residents about the importance of not blocking sidewalks with temporary obstructions including yard and tree clippings, garbage cans, and motor vehicles. If necessary, enforce sidewalk obstruction codes.	Ongoing	South Bound Brook Police Department	Determine priority locations, schedule	Low	Municipal Government
Provide helmet and lights give-aways or other bike/walk encouragement items for K-8 students.	Ongoing	South Bound Brook Police Department	Coordinate with RideWise & RWJ-Barnabas bike educational programs.	Low	Municipal government, RideWise Inc., RWJ - Barnabas, grants

Table 19 Continued: South Bound Brook Evaluation Implementation Strategies

Recommended Program or Improvement	Time Frame	Responsibility	Next Step	Cost	Funding Sources
Conduct periodic Walk and Bike Assessments taking photo or video to document the good and challeneging conditions related to walking and bicycling.	Ongoing	Schools, Municipal Goverment, County DOT, RideWise, Inc.	Determine schedule	Low	Municipal government, School district, RideWise Inc
Periodically complete Student Arrival and Departure Tallies to track how student travel modes changes over time.	Ongoing	Schools, RideWise Inc, VTC	Determine schedule	Low	Municipal government, School district, RideWise Inc
Conduct crash analysis before and after implementation of infrastructure improvements to monitor changes.	Short term	Municipal government, County government	Coordinate analysis	Low to medium	Municipal Goverment, County Government
Conduct speed studies before and after implementation of infrastructure and policy improvements.	Short term	Municipal government, County government	Coordinate study	Low	Municipal Goverment, County Government

*Time frame: short-term (6 months to 1 year), medium-term (1 to 5 years), and long-term (5 years +)
*Cost: low (under $2,000), medium ($2,000 to $10,000), and high ($10,000 +)

Grant & Funding Opportunities

There are several ways to fund infrastructure and non-infrastructure projects and programs to increase walking and bicycling. The following is a list of common grant programs both large and small available to New Jersey communities. All grants listed are very competitive. All grant application requirements should be read carefully. Applications are time-consuming and will not be reviewed if all the requirements are not submitted on time. The best applications tell the story of which populations are in most need of the improvement, detail the problems and concerns using compelling pictures and data and other documentation, and indicate how and why improvements are prioritized.

The trail alongide the Delaware and Raritan Canal. Picture provided by Ridewise, Inc.

New Jersey Department of Transportation

The Division of Local Aid and Economic Development at the New Jersey Department of Transportation provides funds to Local Public Agencies such as municipal governments for construction projects to improve the state's transportation system. The state's Transportation Trust Fund and the federal Safe, Accountable, Flexible, Efficient Transportation Equity Act - A Legacy for Users (SAFETEA-LU) legislation provides the opportunity for funding assistance to local governments for road, bridge and other transportation projects. NJDOT and the NJ Metropolitan Planning Organizations administer Federal Aid Programs. NJDOT administers state aid programs. Below are some options for funding infrastructure projects through NJDOT.

State Aid Infrastructure Grant Programs

Municipal Aid This program assists municipalities in funding local transportation projects, and all municipalities in New Jersey are eligible to apply. NJDOT specifically encourages applications for pedestrian safety improvements, bikeways, and streetscapes, encouraging at least 10% of all Municipal Aid funds for these projects specifically.[55]

County Aid County Aid funds are used for the improvement of public roads and bridges under county jurisdiction. Public transportation and other transportation projects are also included. [55]

Bikeways This program funds bicycle projects that create new bike path mileage, working towards NJDOTs goal of 1,000 miles of dedicated

bikeways in New Jersey. Special consideration will be given to bikeways physically separated from vehicle traffic, but on-road bike lanes or other bike routes are also eligible for funding. [55]

Safe Streets to Transit This program encourages counties and municipalities to construct safe and accessible pedestrian linkages to all types of transit facilities and stations, in order to promote increased usage of transit by all segments of the population and decrease private vehicle use. [55]

Transit Village This program awards grants for transportation projects that enhance walking, biking, and/or transit ridership within ½ mile of the transit facility. Municipalities must already be designated as Transit Villages by the Commissioner of Transportation and the inter-agency Transit Village Task Force in order to apply. [55]

Planters, a traffic calming island, and a bench on Main Street in South Bound Brook. Picture provided by Ridewise, Inc.

Other NJDOT Assistance

Bicycle and Pedestrian Planning Assistance NJDOT Local Technical Assistance (LTA) funding through the Office of Bicycle and Pedestrian Programs. Under this program, on-call consultants are paired with communities to complete a variety of projects including bicycle and pedestrian circulation and master plan studies, safety assessments, trail feasibility studies, bikeway plans, and improvement plans for traffic calming projects.

Federal Aid Infrastructure Grant Programs

Safe Routes to School The Safe Routes to School Program provides federal-aid highway funds for infrastructure projects that enable and encourage children in grades K-8, including those with disabilities, to safely walk and bicycle to school. Bonus points on the grant are given to applicants with School Travel Plans, a Complete Street Policy and Transit Village Designation. [54]

Transportation Alternatives Program The Transportation Alternatives Program provides federal funds for community based "non-traditional" transportation projects designed to strengthen the cultural, aesthetic and environmental aspects of the nation's intermodal system. Bonus points on the grant are given to municipalities that have an adopted Complete Street Policy and Transit Village Designation. [54]

New Jersey Department of Environmental Protection Recreational Trails Grant Program The Recreational Trails Program is administered by the NJDEP Green Acres Program with federal funds for developing new trails and maintaining and restoring existing trails and trail facilities including trails for non-motorized, multi-use (including land and water) and motorized purposes. [54]

Health and Environment Funding

Sustainable Jersey The Sustainable Jersey Small Grants program provides capacity building awards to municipalities to support local green teams and their programs, and is not project specific.

Sustainable Jersey for Schools Sustainable Jersey for Schools grants are intended to help districts and schools make progress toward Sustainable Jersey for Schools certification.

New Jersey Healthy Communities Network The New Jersey Healthy Communities Network is a partnership of grantees, funders and advocate organizations who seek to have collective impact on community well-being to support healthy eating and active living. The Community Grant Program provides opportunities to develop healthy environments for people to live, work, learn and play by funding policies, projects and programs that support walking and bicycling.

A traffic calming island on Main Street. Picture provided by Ridewise, Inc.

Municipal & School Opportunities

SCHOOL POLICIES

Bound Brook already has in place a Walking & Biking to School Policy (District Policy 5514.5) [36], which outlines the benefits of walking and biking to school and encouraging walking and biking to school as long as students and staff can do so safely. [36] Its Walking Guidelines section recommends that students in Kindergarten through Third Grade walk with adult supervision, and that all students cross the road safely and properly, and wear bright or reflective clothing. The Bicycling Guidelines section also recommends that students in Kindergarten through Third Grade bike with adult supervision, that traffic laws are obeyed, and that all students under the age of 17 wear a helmet as required by law. [36] Bound Brook's policy states that parents, not the schools, are responsible for children walking and biking to or from school. Both Bound Brook and South Bound Brook's student handbooks/expectation manuals state that bicycles must be walked while on school property and that bicycles should be locked. [36]

It is recommended that South Bound Brook adopt a Walking and Biking to School Policy. Bound Brook's Policy provides a good example to follow. [36] In addition to providing clear transportation rules for Robert Morris School, a comprehensive walking and bicycling to school policy earns a municipality an extra point on NJDOT grant applications. A Walking and Biking to School Policy should include the following elements:

1. A description of the benefits of walking and bicycling to school
2. A list of conditions explaining the rules and expectations of the student, guardian, and school
3. A disclaimer that states that walking or bicycling is an assumption of responsibility by guardians and students

For more information, please visit http://www.saferoutesnj.org.

MUNICIPAL POLICIES

In addition to school district policies which address walking and biking, municipal-level policies can encourage walking and biking to school. Complete Streets policies ensure the design of roadways for all users: motorists, bicyclists, pedestrians, and transit riders. Complete Streets prioritize road users of all abilities and ages by providing sidewalks, safe road crossings, bike lanes, and transit amenities such as bus stop shelters.

Bound Brook adopted a Complete Streets policy in June 2015.[10] South Bound Brook does not have a Complete Streets policy, and it is our recommendation that one is adopted. In addition to health and social benefits that complete streets provide, Sustainable Jersey points can be earned through two actions, 1. Adopt a Complete Streets policy and 2. Institute Complete Streets. In order for Bound Brook to earn Sustainable Jersey points for their Complete Streets policy, it will need to be updated to include language which acknowledges the health benefits of complete streets. [56]

It is important to remember that not all complete streets policies are created equal. A thorough and most effective complete streets policy will earn the full 10 points possible through Sustainable Jersey. [56] It will also provide the greatest public health benefit. A 10-point policy will include the following pieces:

1. State an intent to plan, design, build & maintain all roads to meet the needs of all users.
2. Specify that “all users” include pedestrians, bicyclists, transit & motorists of all ages & abilities.
3. Commit to create a comprehensive, integrated, connected multi-modal transportation network within the community.
4. Recognize the need for flexibility in that all streets are different; user needs must be balanced & fit into the context of the community.
5. Apply to both new and retrofit projects, including design, planning, construction, maintenance, and operations, for the entire right-of-way.
6. Include language which acknowledges the potential health benefits of complete streets.
7. Articulate the intent of the community to consider public health during the planning and design program phases.

Complementary Policies, Programs and Tools

COST REDUCTION AND ECONOMIC BENEFITS

The New Jersey Safe Routes to School Program enables and encourages safer and more accessible walking and bicycling environments for school-aged children through education, training, research, and funding. Funding and expenditures for Safe Routes to School Programs can be regarded as an investment to create a better living environment and healthy lifestyles for students.

Safe Routes to School projects generate economic benefits and cost reduction in many aspects, both directly and indirectly. Although infrastructure costs vary with size and number of installations, there are direct economic benefits from improved infrastructure for pedestrians and bicyclists. There are also indirect benefits and cost savings from the health outcomes from Safe Routes to School programs such as reductions in chronic diseases, such as diabetes and cardiovascular disease. The economic benefits and cost reduction also vary by community characteristics. This section presents the economic benefits and cost reduction in a micro scale.

Based on research conducted by Muenning at el. (2014) and McDonald at el. (2014), the cost reductions generated by Safe Routes to School are classified into three primary groups with corresponding items shown in Table 20.

Table 20 Cost Reduction Generated from Safe Routes to School

No.	Cost	Description	Monetary Costs
1 Student Transportation Expenses			
1.a	School Bus Service Costs	This is the cost to the public sector for school bus operations & infrastructure.	$956/ pupil[a]
1.b	Hazard Busing	Hazard busing is a school bus service provided to students who do not meet the distance threshold between their residence and school, but their walking conditions are unsafe. Measurement of hazard busing costs should consider percentage of students using hazard busing service and the proportion transformation from normal cost to hazard busing.	$956/pupil × % of hazard busing Pupil × Proportion
1.c	Private Vehicle Costs	The cost for students reaching school by private vehicles. Private vehicle costs include time cost (35% - 60% of hourly wages b). However, some parents place a positive value on driving their children to school due to the opportunity to spend time with their children.	$13.60/h[c] × travel time (hr) × % of Private-vehicle Pupil

Table 20 Cost Reduction Generated from Safe Routes to School

No.	Cost	Description	Monetary Costs
2 External Costs			
2.a	Health Impacts of Vehicle Emissions	An external cost from vehicle emissions that may cause increases in the incidence of asthma, respiratory illness, etc. Harmful pollutants include ozone, PM10 and PM2.5 (particular matter), CO, NO, SO2, and Lead.[d]	PM: $337,459/short ton[f] SO2: $43,600/short ton[f] (2016$)
2.b	Climate Impacts of Greenhouse Gas Emissions and Climate Change	Emissions contain pollutants that are harmful to the climate, which are CO2, CFCs and HCFC, CH4, NOx, N2O, and VOC (volatile organic hydrocarbons).[d]	CO2: (2020) Social Cost of CO2 per metric ton of CO2 – Discount Rate $12 – 5.0% / $43 – 3.0% $64 – 2.5% / $128 – 3.0% (95th) (Applied at high, medium, low level with different discount rate)[e] VOC: $1,872/short ton[f] NOx: $7,377/short ton[f] (2016$)
2.c	Time Costs Imposed on Other Road Users Due to Congestion	If students walk or bike to school, the number of their parents' automobiles on roads may decline and ease congestion during peak hours. As traffic changes are dynamics, using congestion cost software for NJ is recommended.	Estimate in Congestion Model 4 - https://www.nj.gov/transportation/refdata/
3 Medical Costs			
3.a	Injury and Fatality	Refers to the direct cost of crashes resulting in injuries and fatalities. USDOT defines the value of statistical life (VSL) as the cost of fatality ($9,600,000). The costs of injuries are defined by relative disutility factors by injury severity level (AIS) multiplied by VSL[e] presented as follow: AIS Level – Severity – Fraction of VSL AIS 1 – Minor – 0.003 AIS 2 – Moderate – 0.047 AIS 3 – Serious – 0.105 AIS 4 – Severe – 0.266 AIS 5 – Critical – 0.593 AIS 6 – Unsurvivable – 1.000	Fatality: $9,600,000 (2016$) Injury: VSL × AIS (Should be applied with rates of fatality and injury severity)
3.b	Chronic disease, (e.g. Diabetes and Cardiovascular Disease)	By walking or biking to school instead of traveling by bus or car, students have better opportunities to exercise and cultivate a healthier lifestyle, to further control the risk of chronic diseases.	N/A

[a] New Jersey Student Transportation Current Expenditures 2013-14
[b] Source: Department of Transportation 2011
[c] New Jersey Minimum Wage in 2018
[d] Transportation Cost and Benefit Analysis II – Air Pollution Costs, Victoria Transport Policy Institute
[e] Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis - Under Executive Order 12866, Interagency Working Group on Social Cost of Carbon, United States Government
[f] Benefit-Cost Analysis Guidance for Discretionary Grant Programs, US Department of Transportation (2017)

Table 21. Economic Benefits Generated from Biking and Walking-Related Improvement*				
Economic Benefits Generated from Biking and Walking-Related Infrastructure Construction				
Economic Benefit	Output	Employment	Compensation	GDP
Multipliers**	2.435	2.747	2.367	2.747
Economic Benefits Generated from Biking and Walking-Related Business				
Economic Benefit	Output	Employment	Compensation	GDP
Multipliers**	2.269	1.332	2.154	2.233

*The data is based on 2011 New Jersey biking and walking-related investments.
** Multiplier indicates the extent of outcome that $1 is invested. For example, $1 invested in biking and walking-related infrastructure will cause 2.747 jobs created in 2011.

The external costs and chronic disease medical costs are recommended to be calculated into a number based on the characteristics of communities and assumptions. Parameters for each criterion may alter by characters of municipalities and selected study year. With the criteria of economic benefits and cost reduction, planners are able to conduct a cost-benefit analysis for Safe Route to School in their municipalities along with the estimated improvement costs from SRTS[62] (http://www.saferoutesnj.org/estimating-improvement-costs-for-srts).

Other than cost reduction, Alan M. Voorhees Transportation Center (2013)[63] also reveals economic benefits are generated from bicycling and walking-related infrastructure and improvements in the form of employment, wages and salary, and gross domestic product (GDP) shown in Table 21.

Pictures provided by Ridewise, Inc.

CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN

Crime Prevention Through Environmental Design (CPTED) is a multi-disciplinary approach towards deterring criminal behaviour through the design or modification of the built environment.[64] The origins of the concept of CPTED can be traced back to Jane Jacob's 1961 publication, "The Death and Life of Great American Cities." Jacobs suggests that the planning and design of the community play a major role in the crime and safety of that communit.[65] The concepts and proposed interventions introduced in early CPTED works are based on the premise that offenders exhibit rational behavior. Offenders evaluate alternative courses of action, weigh risk and rewards, and assess targets. As these assessments are made, the offender decides whether to pursue or abandon the criminal act. CPTED presupposes that cues in the physical environment may affect this decision-making process.[64]

There are twelve CPTED principles which are divided into three categories:

First Generation CPTED The strategies proposed in early works in the 1970's are referred to as first generation CPTED and mainly focus on the assertion of ownership and control of a space by legitimate users. The categories of strategies that emerged during this period are described briefly below:

- Territoriality: Turning a space, whether public, private, or semi-public, over to legitimate users so they adopt ownership. Signs of ownership signal that the space is not available for illegitimate use.[64]
- Access Control: Controlling who goes into or out of a space, focusing on entry and exit points.[64]
- Image: Properly maintaining and managing an area to indicate that the space is valued and cared for and illegal activities will not be tolerated.[64]
- Natural Surveillance: Enhancing sight-lines and putting "eyes on the street". Distinct from organized surveillance, such as street patrols, or mechanical surveillance, such as security cameras.[64]

Advanced First Generation In the 1980's the first generation principles were studied and evolved to include strategies focusing on larger urban planning considerations.These are referred to as "Advanced 1st Generation CPTED" and include:

- Incompatible Land Uses: Consideration of land use types, diversity, and adjacencies and influence on opportunities for crime. For example, the location of liquor stores near schools.[64]
- Movement Predictors: Consideration of how pedestrian and cyclist routes allow offenders to easily predict a potential victim's path of travel.[64]
- Activity Support: Filling a place with legitimate users to claim ownership and reduce the ability of criminals to commit crimes without being witnessed.[64]
- Displacement: Consideration of the displacement of crime from one area to another area due to CPTED interventions, as well as positive displacement of activities that may clash with other activities and generate conflict. For example, a community might build a skate park as a solution to teenagers skateboarding in a grocery store parking lot.[64]

Damaged building and limited sidewalks on Elm Street looking towards Main Street in South Bound Brook. Picture provided by Ridewise, Inc.

Heavily damaged sidewalk with utility box frames protruding from concrete on Talmage near West Main Street. Picture provided by Ridewise, Inc.

Second Generation CPTED In the 1990's, the second generation principles were established. They focused on proactively preventing crime by fostering social arrangements. 2nd Generation CPTED employs four additional strategies:

- Cohesion: Enhancing supportive relationships between residents, merchants and other key participants in a neighborhood by increasing community members' problem solving and conflict resolution capacity and empowering them to take communal action.[64]
- Connectivity: Fostering formal and informal communication and relationships with outside parties, such as law enforcement officials, local elected officials and potential funders.[64]
- Culture: Using place-based cultural expression, such as murals and music festivals, to instill a sense of pride and ownership in the local community.[64]
- Capacity: Balancing activities or land uses so that a community does not reach a tipping point. For example, a single liquor store may be of no consequence, but a large number of bars and liquor stores in one neighborhood may lead to a rise in public disorder.[64]

CPTED and Safe Routes To School

Most School Travel Plans focus primarily, and typically exclusively, on traffic safety, however crime and perception of crime is often identified as a barrier to walking and biking to and from school. Enhanced safety and reduced fear of victimization yields broad benefits for students and their communities. Going forward, communities should look for opportunities to incorporate CPTED into SRTS programs with the aims of reducing fear as a barrier to walking and biking and enhancing the safety of students who already walk and bike, particularly in disadvantaged urban communities. More information on CPTED and Safe Routes to School can be found in the NJ School Zone Design Guide.

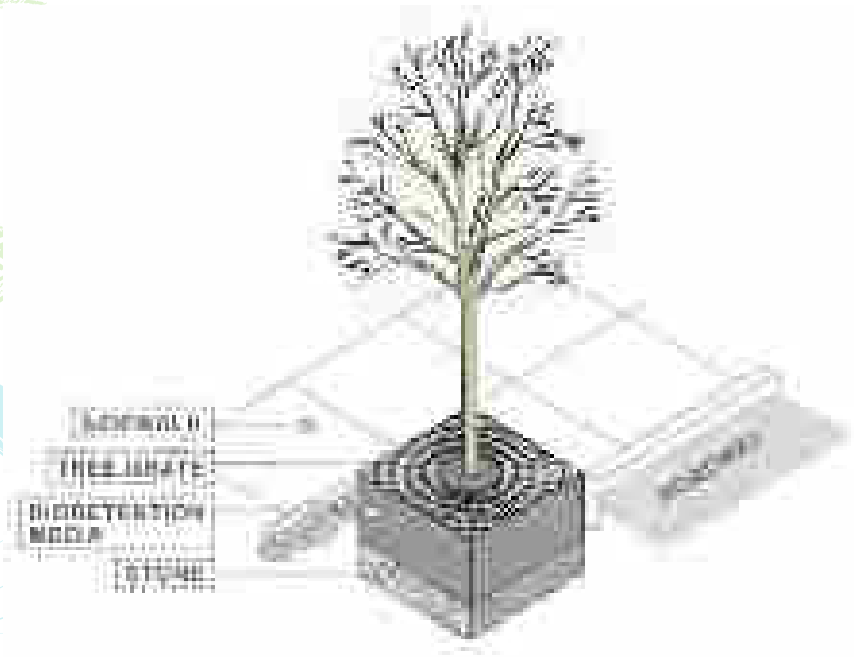
The trail alongside the Delaware and Raritan Canal in South Bound Brook.

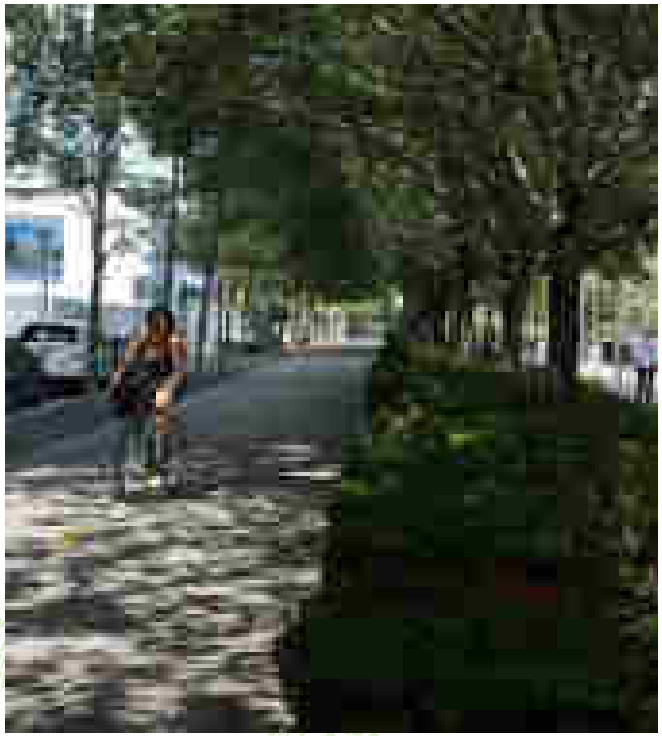
Benches near Joe's Meat Market in South Bound Brook.

GREEN STREETS

What are Green Streets?

Green Streets and Green Street principles generally refer to a toolset for mitigating the impacts of impervious street surfaces on environmental factors including stormwater mitigation. The concept does not refer to just adding vegetation or planters, but more widely to a variety of environmentally-minded street infrastructure retrofits. Green street tools include bioswales, street trees in specialized tree pits, rain gardens and pervious pavers to improve stormwater absorption.[66] These tools keep water cleaner, reduce stormwater costs, and reduce nuisance flooding on heavy rain days. Other tools include street trees (which provide shade to bicyclists and pedestrians, make cleaner air, and reduce urban heat island effects) and various plantings to encourage slower traffic. These tools are typically paired with classic "complete streets" tools such as bump-outs, road diets, improved bike lanes and intentionally-designed sidewalks. Together, this combination can improve pedestrian safety, slow cars, and reduce environmental impacts. Although Safe Routes to School's first mission is a safer pedestrian and bike experience, environmental concepts are also relevant in places with a history of nuisance flooding, and may be a good fit in both Bound Brook and South Bound Brook.





Green Infrastructure Tree Filter Box for stormwater storage and infiltration.
Source: Green Infrastructure Guidance Manual for New Jersey, Rutgers Cooperative Extension

How can Green Streets Principles help Safe Routes to School?

Green Street principles are defined a variety of ways, but for a local example, they're defined by Passaic County, NJ as "reducing stormwater flow, improving water quality, reducing urban heating, improving pedestrian safety, reducing carbon footprint, beautifying neighborhoods and completing streets to allow for multimodal use", a list which is largely compatible with the goals of Safe Routes to School.[67] Concerns about safety and health are clearly part of the Safe Routes mission. These additional tools to slow cars, improve air quality, and improve the feel of neighborhoods would likely be helpful in working with communities.

How have other municipalities funded and used Green Streets?

Many cities use Green Street principles to bring funding in from a variety of unusual sources. Because this type of design does double duty as pedestrian improvement and stormwater management, funding is often pulled from traditional stormwater funding sources allowing improvement dollars to stretch further. In Passaic County, the focus on the water management value of Green Streets allowed them to pursue improvements with a 319(h) grant from NJDEP, a source that's rarely seen as a place for pedestrian funding. The EPA offers a variety of workshops under their "Building Blocks for Technical Assistance for Sustainable Communities", a source that can be combined with more traditional approaches to complete streets.[68] Since Bound Brook already has a Complete Streets Policy, Green Streets could be a complementary addition as both towns expand their pedestrian safety engineering.

Green Street design is often used by cities that are concerned about stormwater flow or overflow (such as the Passaic County project) or by as part of a road diet by areas concerned about the interface between pedestrians, bikes, water, and cars. Portland, Oregon has used this model to build multiple bioswales supporting bump-outs for pedestrian safety, and slow car traffic[cite 69]. In addition, they've used some green street infrastructure to further separate bike/ped traffic from cars, creating a visual barrier. The city of Hoboken was able to acquire just over one million dollars in Municipal Aid Grant funding, in part because of their focus on the double duty curb extensions and other Complete/Green Street projects could do to improve the community.[70]

On a soft data side, Green Street improvements are often seen as improving more intangible quality of life in neighborhoods, and even raising property values. At low cost, many municipalities across New Jersey's Somerset County pursue low-cost complements like rain gardens and decorated rain barrels, which can be sponsored by local groups like Rotary Clubs, or as promotional work by local landscapers.[71] When planning Green Streets-style infrastructure, it's important to plan for the future, as these types of projects require low-level, ongoing upkeep to keep performing effectively. Budgeting for long term use can be a foremost question for taxpayers and street departments alike, and the EPA's National Stormwater Calculator is a useful way of pricing out what kinds of green streets tools are right for specific communities.[72]

Green Infrastructure Tree Filter Box for stormwater storage and infiltration.
Source: Green Infrastructure Guidance Manual for New Jersey, Rutgers Cooperative Extension

About the Students

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Kristiana is a candidate for the Master of City and Regional Planning (MCRP) degree with a concentration in Transportation Planning and Policy at the Edward J. Bloustein School of Planning and Public Policy at Rutgers, the State University of New Jersey. She received a Bachelor of Arts (B.A.) with Honors in Environmental Studies and Political Science and a minor in Earth and Environmental Science from Lehigh University in Bethlehem, Pennsylvania. Kristiana is interested in the design and implementation of transportation infrastructure improvements focused on accessibility, equity, and safety for all users. She enjoys reading and traveling for inspiration. She is also a student assistant to the management of the Department of Transportation Services (DOTS) at Rutgers University–New Brunswick. Previously, Kristiana was a graduate research assistant for the New Jersey Bicycle and Pedestrian Resource Center at the Alan M. Voorhees Transportation Center, Rutgers University. Her internship experience includes working for Delta Development Group, a private multi-disciplinary consulting firm in Pennsylvania, and Tri-County Regional Planning Commission, which houses the Harrisburg, Pennsylvania-area MPO.

Li-Yan Chang

Candidate, Master of City and Regional Planning, Rutgers University

Li-Yan works in the area of transportation planning and data analysis with a goal to provide better quality for pedestrian and transit riders. Originally from Taiwan, she received her bachelor's degree in civil engineering from National Taiwan University with concentrations in city planning and transportation planning. Li-Yan specialized in coding and software that models travel behaviors. She values user-friendly and appealing transportation systems that give users the opportunities to travel without automobiles. Prior to Rutgers University, Li-Yan has been working in Taiwan Mott MacDonald with MRT (Mass Rapid Transit) rail techniques as well as business development and tourism planning for seaports in Taiwan.

Rachel Fifield

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Rachel is focused on the intersections between planning and health, with interests in redevelopment. She has worked as a finance research intern for redevelopment projects through LCOR out of Jersey City, focusing on public-private partnerships for bike/ped infrastructure. Previously, Rachel has explored planning and policy as a zoning coordinator for the town of Underhill, VT, and environmental law researcher for the CCRPC (a county-wide MPO), and politics journalist for a string of small dailies. She has also served as a restorative justice liaison with the Vermont Department of Corrections on issues of substance abuse. Rachel graduated from Willamette University in 2014 with a degree in Environmental Science.

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Riddhi is a candidate for the Master of City and Regional Planning (MCRP) degree with a concentration in Transportation Planning and Urban Design at the Edward J. Bloustein School of Planning and Public Policy at Rutgers, the State University of New Jersey. She received her Bachelors of Urban Planning and Public Policy from CEPT University, Ahmedabad, India. The concept of people-friendly cities and pedestrian-friendly streets have always interested her. With an immense love for travel; she aspires to join the travel and tourism industry someday. Currently she is working with Topology Urban Planners, a land use and zoning planning firm based in Newark. Previously she has held internship positions at Nishuane Group LLC, Montclair; a land use regulation and redevelopment firm and Town and Country Planning Department of Goa, India.

Jill Walsh

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Jill's studies center on historic preservation and active transportation. She has interned at the Municipal Art Society of New York, Metro North Railroad, and was a research assistant at the New Jersey Bicycle and Pedestrian Resource Center. She previously worked on neighborhood revitalization projects as an AmeriCorps VISTA for the City of Las Vegas in the Office of Community Services. Jill graduated from Fordham University in 2015, where she majored in Urban Studies and International Political Economy.

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