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.

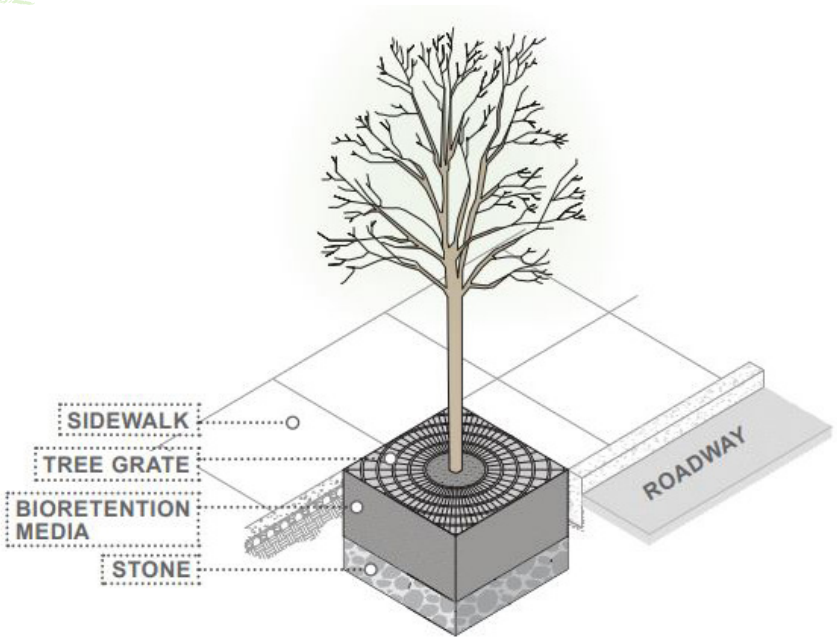
The trail alongside the Delaware and Raritan Canal in South Bound Brook.

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.

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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.

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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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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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