Main Street
Walkable Community Workshop
Borough of Bradley Beach, Monmouth County, NJ

2020

About the Report

The Alan M. Voorhees Transportation Center

The Alan M. Voorhees Transportation Center (VTC) is a national leader in the research and development of innovative transportation policy. Located within the Edward J. Bloustein School of Planning and Public Policy at Rutgers University, VTC has the full array of resources from a major research university on transportation issues of regional and national significance.

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Sustainable Jersey

Sustainable Jersey (SJ) is a nonprofit organization that provides tools, training and financial incentives to support communities as they pursue sustainability programs. By supporting community efforts to reduce waste, cut greenhouse gas emissions, and improve environmental equity, Sustainable Jersey is empowering communities to build a better world for future generations.

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North Jersey Transportation Planning Authority

The North Jersey Transportation Planning Authority (NJTPA) is the federally authorized Metropolitan Planning Organization for 6.7 million people in the 13-county northern New Jersey region. Each year, the NJTPA oversees more than $2 billion in transportation improvement projects and provides a forum for interagency cooperation and public input. It also sponsors and conducts studies, assists county planning agencies, and monitors compliance with national air quality goals.

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Executive Summary

> *Complete Streets are streets designed for all users, all modes of transportation, and all ability levels. They balance the needs of drivers, pedestrians, bicyclists, transit riders, emergency responders, and goods movement based on local context.*
>
> **-State of New Jersey Complete Streets Design Guide**

The Borough of Bradley Beach, New Jersey, participated in the North Jersey Transportation Planning Authority (NJTPA) Complete Streets Technical Assistance (CSTA) Program in 2020. The CSTA Program selected eight municipalities to receive up to $10,000 in technical assistance to advance complete streets projects. This report identifies several recommendations to promote walking as a means of travel and improve the pedestrian experience along a section of Main Street in Bradley Beach. This report calls for developing a Complete Streets implementation plan; providing high quality pedestrian infrastructure/ facilities; improving bicycle infrastructure; rethinking the Second and Third Avenue intersection area near Main Street; and developing a unified look for the Main Street corridor. Long-term recommendations include developing standard designs for streetscape elements, exploring underground installation of power lines, and installing curb extensions and bus bulbs.

The recommendations in this report were developed using a collaborative process with municipal employees and borough stakeholders. The process included a virtual Walkable Community Workshop (WCW) that was held on July 21, 2020. A follow-up public meeting was conducted on August 10, 2020 to collect feedback before finalizing the recommendations. Both meetings were conducted virtually rather than in-person due to COVID-19. The Main Street corridor under consideration is a state highway which bisects Bradley Beach's downtown shopping and restaurant district. The corridor provides an important connection between the Borough's southern residential neighborhoods and the Bradley Beach train station, bus stops, and downtown shopping and restaurant district (Figure 1).

The lessons participants learned during the virtual workshop can be applied to other municipal- owned roadways in Bradley Beach. The field audit form, information about the NJTPA's pedestrian safety education program, Street Smart NJ, and a list of potential funding resources can be found in this report's appendices. These resources can be used to conduct other walk audits and projects within the Borough.

Figure 1. Bradley Beach Train Station.

Background

The North Jersey Transportation Planning Authority (NJTPA) created the Complete Streets Technical Assistance (CSTA) Program in 2018 to assist municipalities in advancing or implementing complete streets, a need identified through the Together North Jersey (TNJ) consortium. TNJ was created in 2011 to develop the first comprehensive plan for sustainable development for North Jersey. Sustainable Jersey (SJ) and the Alan M. Voorhees Transportation Center (VTC) at Rutgers University were retained to provide technical assistance for this program. In its first year, the program successfully supported nine municipal governments seeking to implement complete streets in their communities. This report is part of the second year of the CSTA Program, in which eight additional municipalities were selected to receive technical assistance. Municipalities were chosen for the program based on the following criteria: the need for technical assistance; commitment to project implementation; opportunity for public engagement; the strength of their respective municipal teams; and the project's potential effects on Environmental Justice (EJ) populations.

Through the CSTA Program, municipal employees and borough stakeholders participated in a virtual Walkable Community Workshop (WCW) on July 21, 2020 to learn about complete streets and proven strategies for making streets safer for the most vulnerable users—pedestrians and bicyclists. The workshop included an hour-long classroom-style training. The project team then guided participants through a virtual walking audit along Main Street between Monmouth and Ocean Park Avenue. The virtual walk audit, led by staff from VTC with support from SJ and the NJTPA, enabled participants to identify problems and potential improvements for the study corridor.

Bradley Beach has a thriving downtown with destinations such as the Bradley Beach train station, municipal offices, recreation center, and numerous popular restaurants and shops. The downtown neighborhood is also home to many of the borough's year-round residents. Main Street is a ten-minute walk from Bradley Beach's oceanfront attractions including the boardwalk, municipal gazebo, and other recreational facilities. It is surrounded by suburban neighborhoods just a short distance from the shore, providing excellent opportunities for residents to walk or bicycle around the borough.

Direct observations by the research team and feedback from local officials and residents suggests that walking and bicycling on Main Street is challenging due to an overall lack of appropriate, updated, and well-maintained pedestrian and bicycle infrastructure. In their application to the CSTA Program, Bradley Beach officials expressed interest in improving walkability and bikeability along Main Street with better connections to downtown, the train station, and the surrounding areas. The application further emphasized improving the existing streetscape and creating a cohesive look along the corridor. Bradley Beach officials also expressed interest in taking into account the needs of low-income and minority residents renting properties along Main Street. Providing safe pedestrian and bicycle infrastructure along Main Street will allow zero-car households to safely access the downtown shops, several of which serve the borough's Hispanic population.

Various policy, planning, and programming efforts have addressed pedestrian and bicyclist safety and mobility along Main Street. These efforts include the 2018 Master Plan reexamination report, which highlighted a need to support and encourage active transportation. The reexamination report also established the Downtown Excellence Taskforce to oversee improvements in the area, including pedestrian infrastructure upgrades. A 2014 TNJ project, Connecting Community Corridors, looked at improving transit access and the pedestrian realm along Main Street and Memorial Drive in Asbury Park, Neptune, and Bradley Beach. This report suggested a number of improvements along Main Street, including working with local business to identify locations for transit-oriented infill development, implementing pedestrian-oriented traffic signal upgrades, and improving bicycle infrastructure to discourage bicyclists from riding on the sidewalk. The plan also sought to promote pedestrian traffic and encourage patronage of the downtown businesses. Infrastructure improvements along Main Street have included Bradley Beach's installation of sidewalk pavers in 1989 and bicycle racks in 2013, as well as NJDOT's installation of shared-lane markings (sharrows) in 2011.

What is a Complete Street?

Complete streets are roads designed for all users, all modes of transportation, and all ability levels (Figure 2). They balance the needs of drivers, pedestrians, bicyclists, transit riders, emergency responders, and goods movement based on the local context. Complete streets should tailor to the specific needs of the surrounding environment. A school zone, for instance, may require reduced speed limits, narrower travel lanes, and wider sidewalks to achieve a safer setting for students. Meanwhile, streets along transit routes will incorporate the needs of bus and rail commuters by installing benches, shelters, and enhanced lighting and signs.

Regardless of the context, complete streets should be designed to improve safety for pedestrians and bicyclists who are the most vulnerable road users. Reduced speed limits, raised medians, and other design elements can help create a safer environment for seniors, children, and people with disabilities.

To put traffic speeds into perspective, a 10 mph reduction in vehicle speed dramatically decreases the chance of pedestrian fatalities in a collision. The U.S. Department of Transportation (USDOT) cites collisions in which pedestrians are struck by a vehicle traveling 40 mph as being fatal 85 percent of the time. Comparatively, at 30 mph, pedestrian fatality rates drop to 45 percent, and down to five percent at 20 mph (Figure 4 and Figure 5). Complete streets recognize that all users of the transportation network, whether traveling by car, bus, train, or taxi, become a pedestrian at some point during their journey. Creating a safer environment benefits everyone.

Figure 2. A complete street, as seen in New Brunswick, New Jersey. No two complete streets are alike, as they should always reflect the context of the street and the character of the community.

HIT BY A VEHICLE TRAVELING AT...

20 MPH — 5% fatality rate

30 MPH — 45% fatality rate

40 MPH — 85% fatality rate
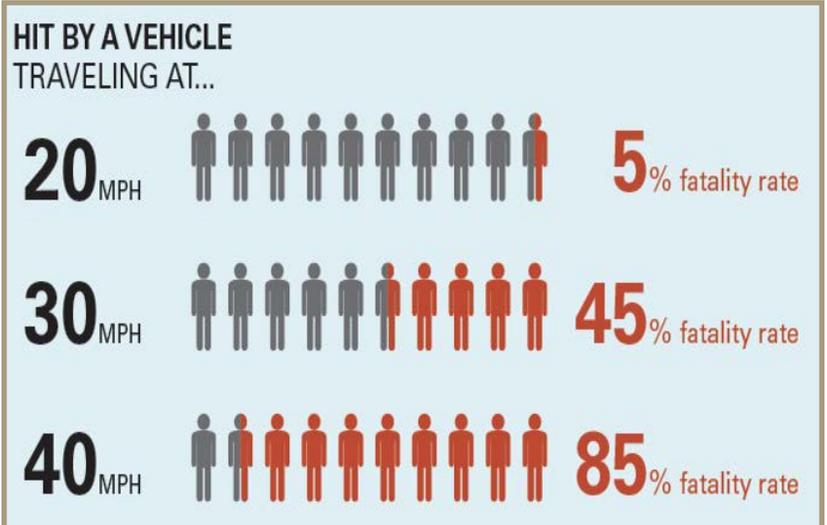
Figure 3. Graphic showing increased fatality rate as vehicle speeds increase.

STOPPING DISTANCE FOR A VEHICLE TRAVELING AT...

20 MPH = 45 feet
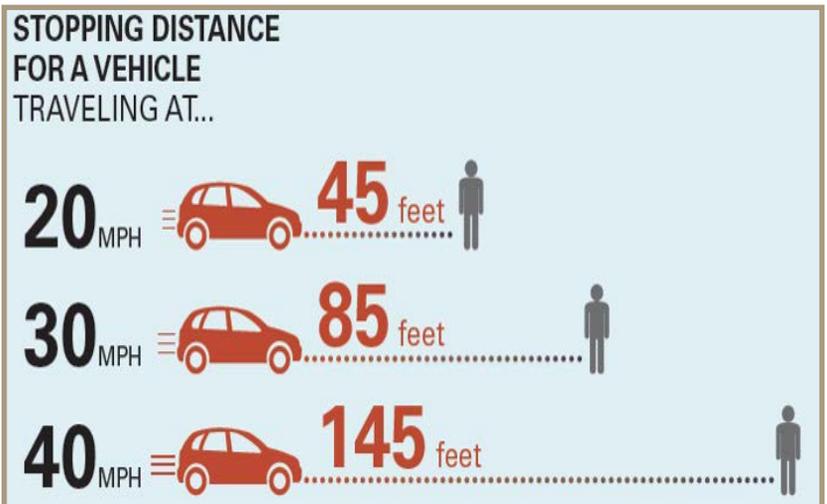
30 MPH = 85 feet

40 MPH = 145 feet

Figure 4. Graphic showing increased stopping distance as vehicle speeds increase.

Benefits of Complete Streets

While the primary benefit of complete streets is improved safety for all roadway users, there are other positive outcomes. Complete streets create better places to live, work, and do business. These benefits include mobility, equity, health, quality of life, economic vitality, and environmental health.

Mobility

Creating or enhancing multi-modal transportation options expands mobility opportunities for everyone, including nondrivers, youth, and senior citizens (Figure 5). In turn, increased mobility improves access to jobs and services, which is crucial for people who cannot afford or choose not to own a car, as well as those who are unable to drive due to a disability or their age.

Equity

Complete streets help decrease the necessity of the automobile for access to opportunity. Transportation costs comprise a significant portion of a household budget, approximately 20 percent in the United States. Much of this is due to the high cost of automobile ownership, including insurance, fuel, maintenance, registration fees, and financing. However, household transportation costs drop to just 9 percent in communities with improved street connectivity and accommodations for other modes.

Connected communities allow residents to use less energy and spend less money to get around, allowing for fewer car trips and the use of other less expensive modes of transportation like bicycling, walking, or public transit. Providing a variety of transportation choices across different price points allows families to free up more money for housing or other needs.

Health

Complete streets enhance opportunities for increased walking and bicycling which in turn leads to the numerous health benefits associated with increased physical activity. The Center for Disease Control (CDC) supports complete streets to combat obesity (Figure 6).

Quality of Life

Livable, walkable communities diminish the need for automobiles. Walking or bicycling around town creates a sociable environment, fostering interactions between family, friends, or clients and increasing community involvement. These interactions, in turn, entice users to enjoy the surroundings they would otherwise ignore in a car. A reduction in vehicle use can also increase the quality of life thanks to reductions in noise and stress associated with congestion and crashes (Figure 7).

Figure 5. When a street lacks accessible sidewalks and ramps, it is not complete.

Figure 6. Trails, such as this one in Monroe, New Jersey, can encourage exercise and lead to improved health.

Figure 7. Complete Streets in Asbury Park help foster a lively social environment.

Economic Vitality

Improving streetscapes revitalizes business districts. Complete streets generate more foot traffic when they create great places where people want to be, which can encourage both residents and visitors to spend more money at local shops and restaurants that they may have driven past before. Such is the experience in Somerville, New Jersey, where one block of Division Street was converted to a pedestrian plaza. The area witnessed a sharp decline in vacant commercial properties; vacancy dropped from 50 percent to zero after the plaza was developed (Figure 8).[1]

Environmental Health

By reducing automobile use, complete streets can contribute to cleaner air. Additional sustainable design elements installed along complete streets can also bring other environmental benefits. For example, landscape improvements (green streets) can reduce impervious cover, reduce or filter stormwater runoff, and contribute to water quality improvement (Figure 9).

Complete Streets in New Jersey and Bradley Beach

New Jersey is a leader in the complete streets movement. In 2009, NJDOT was among the first state DOTs in the nation to adopt an internal complete streets policy. In 2010, the National Complete Streets Coalition ranked NJDOT's complete streets policy first among 210 state, regional, county, and municipal policies nationwide. Since 2009, NJDOT has funded five Complete Streets Summits, and

Figure 8. Division Street in Somerville was converted into a pedestrian plaza that has become a popular gathering space.

Figure 9. Green infrastructure used to narrow the roadway and provide a shorter crossing distance for pedestrians.

over a dozen educational workshops intended to disseminate the latest information about complete streets to planners, engineers, elected officials, and advocates. In 2017, NJDOT released the *New Jersey Complete Streets Design Guide* to inform New Jersey communities on how to implement complete streets projects. In 2019, NJDOT released the *Complete & Green Streets for All: Model Complete Streets Policy and Guide* to serve as a new resource for local best practices in policy language. Communities of all sizes throughout the state have joined NJDOT in adopting complete streets policies. Of New Jersey's 21 counties, eight have adopted complete streets policies. Additionally, 167 municipalities have implemented complete streets policies affecting 3.8 million (44 percent) of the state's residents (Figure 10).[2]

Currently, Monmouth County has a complete streets policy; however, Bradley Beach does not.

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1. "Complete Streets Case Study: Somerville, New Jersey," Alan M. Voorhees Transportation Center, 2016.
2. New Jersey Bicycle and Pedestrian Resource Center, "NJ Complete Streets Policy Atlas," 2018. http://njbikeped.org/ complete-streets-2/.

NJDOT Complete Streets Policy

County Complete Streets Policy

Municipal Complete Streets Policy
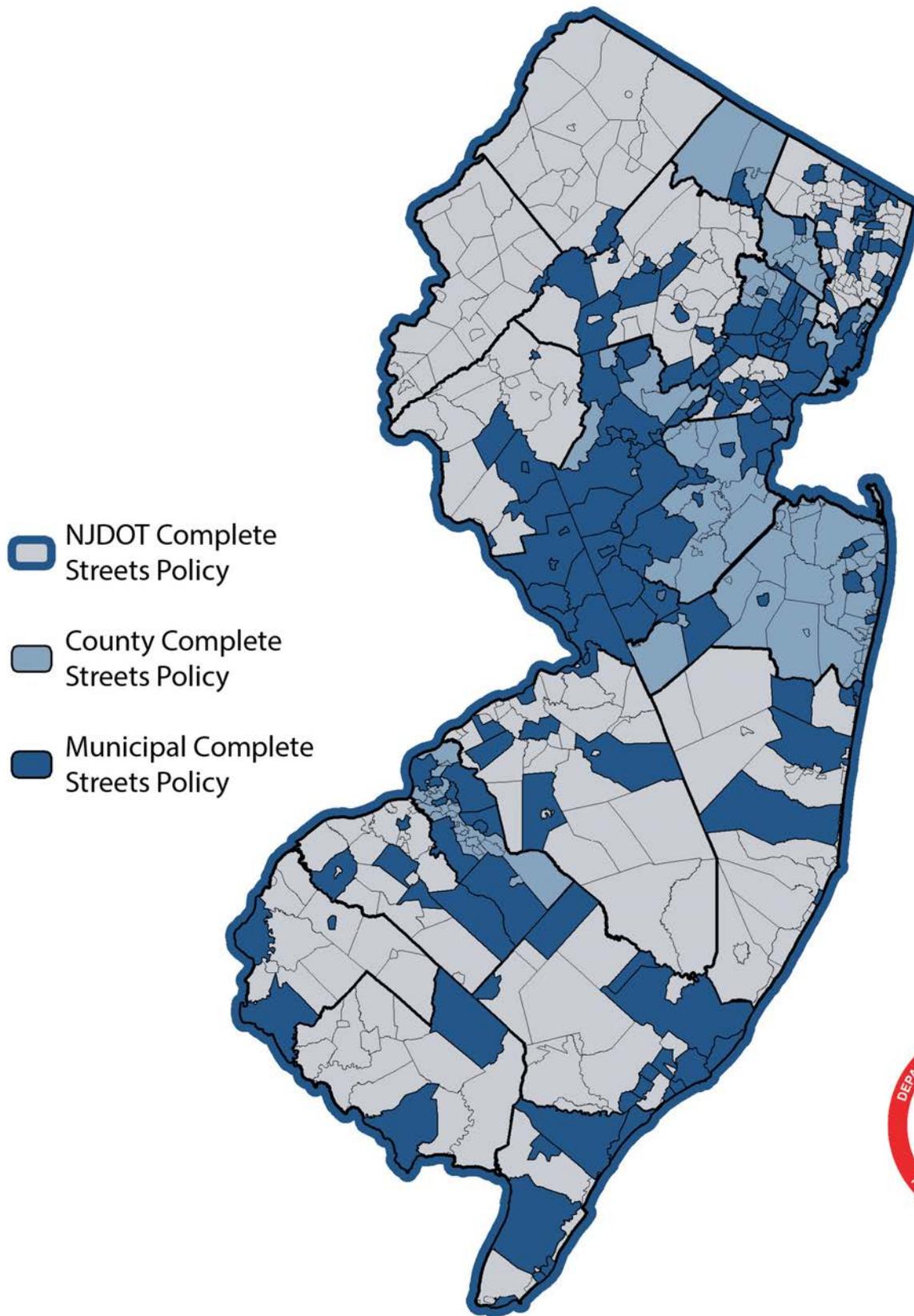
Figure 10. Complete Streets Policies in New Jersey, as of October 15, 2020. Visit http://njbikeped.org/services/complete-streets-policy-compilation/ for a constantly updated list of policies.

Walking Audit Location

Bradley Beach is home to approximately 4,223 residents and comprises an area of 0.6 square miles. The median age is 40.7, and the estimated median household income is $60,362. The median home value is $507,600, which is 1.5 times higher than the state median. Bradley Beach has a relatively high rate of bicycle commuters (3 percent), approximately triple the county rate. Sixty-eight percent of residents drive alone to work, while 3 percent walk to work. The population in Bradley Beach is majority white (75 percent), but nearly one in three children between ages 5 and 17 speak Spanish as their primary language at home (US Census Bureau, 2018). Bradley Beach is also home to a large population of renters as compared to homeowners. As a historic resort town, it sees a significant growth in its population during the summer season.

Main Street, also known as State Route 71, is a north-south corridor that runs near the borough's western edge. It is home to Bradley Beach's downtown businesses. The study area begins at Monmouth Avenue and continues north to Ocean Park Avenue (Figure 11). It connects to the Bradley Beach Train Station, Riley Park, Bradley Beach Recreation Center, municipal offices and popular businesses in the borough (Figure 12). Events and gatherings at Riley Park attract residents and visitors during the summer. A new mixed-use development is underway on Main Street at Third Avenue along the corridor. The northern section of the study area comprises downtown commercial uses that transition to a mixture of residential housing and commercial uses at Fifth Avenue. However, the type of businesses along the corridor range widely from restaurants and salons to auto repair centers and gas stations.

The Bradley Beach Train Station is centrally located along the corridor and provides NJ TRANSIT service on the North Jersey Coast Line. The station connects the borough with communities as far south as Bay Head and as far north as New York Penn Station. The line also stops at Newark Penn Station where transfers are available to other NJ TRANSIT lines, the Newark Light Rail, Amtrak, and the PATH. The train station has bicycle racks and also serves other travel modes. NJ TRANSIT bus lines 317 and 830 stop along Main Street and provide service to surrounding communities. The Bradley Beach Elementary School is located one block east of Main Street along Fifth Avenue and Brinley Avenue (also known as County Route 2).
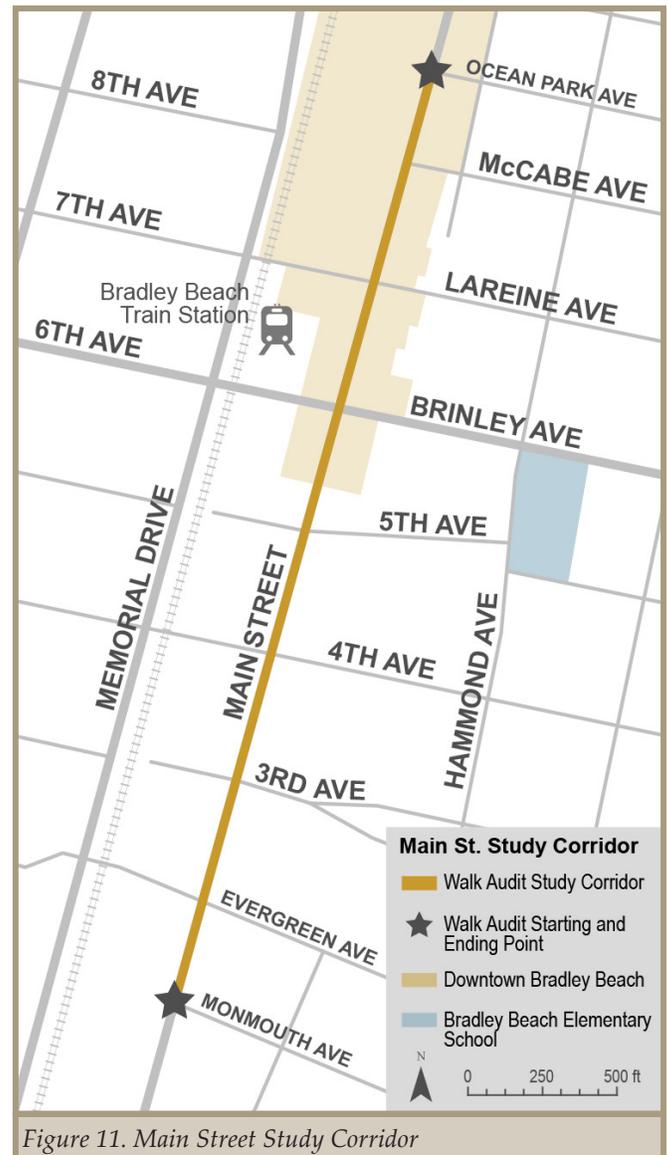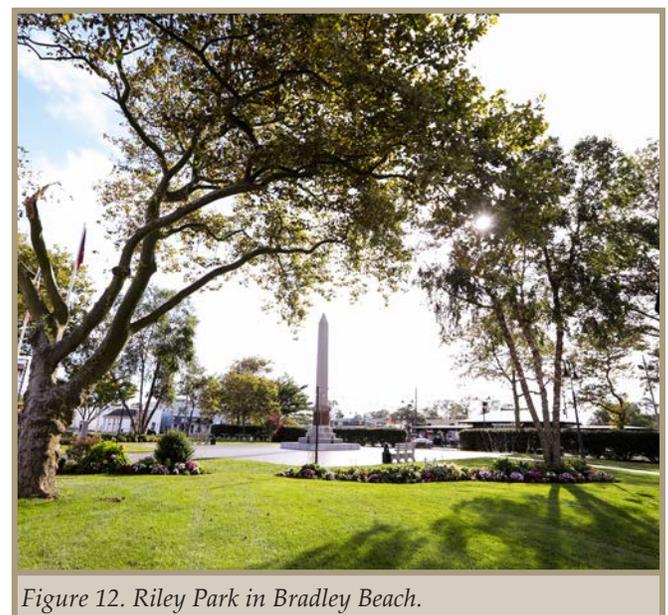

Figure 11. Main Street Study Corridor

Figure 12. Riley Park in Bradley Beach.

Assessment of Need

The borough selected Main Street, from Monmouth Avenue to Ocean Park Avenue, due to Bradley Beach's interest in creating safer pedestrian and bicyclist connections between the residential areas surrounding Main Street and the downtown commercial corridor. In the application, borough officials also expressed interest in using pedestrian infrastructure and signage to encourage visitors who arrive by train to explore the downtown shops and restaurants. Improving the pedestrian realm and creating a more attractive environment for pedestrians and bicyclists will help generate foot traffic for local businesses. Addressing safety concerns for bicyclists will further improve pedestrian access by encouraging bicyclists to ride on the road rather than on the sidewalk.

According to feedback from community members, the corridor accommodates some of the basic infrastructure elements such as sidewalks and pedestrian crossings; however, the pedestrian and bicyclist experience is inconsistent and somewhat unwelcoming due to missing pedestrian crossings, low visibility at intersections, and sidewalk quality. Uneven pavers, ramps that fail to me Americans with Disabilities Act (ADA) standards, and driveway slopes create safety hazards and accessibility issues for pedestrians along sidewalks. Additionally, the high volume of vehicular traffic can make walking uncomfortable, especially at intersections with limited sightlines when cars are parked close to the crosswalks.

Data

Traffic Volumes

In late June 2018, NJDOT observed an annual average daily traffic (AADT) volume of 8,282 vehicles on Main Street just south of Monmouth Avenue. This data helps determine appropriate improvements for the corridor. For example, the *New Jersey Complete Streets Design Guide* recommends that bicycle lanes are more appropriate than shared-lane markings (sharrows) on roads with an AADT between 5,000 and 10,000 that witness speeds of 30 miles per hour.

Speed

The speed limit is 30 mph throughout the study corridor, but recent data on actual traffic speed is not available. There is one lane of traffic in each direction, and sharrows are painted throughout the corridor. Sharrows indicate a shared lane environment for bicycles and automobiles. They help direct bicyclists to ride in the most appropriate location on the roadway and remind motorists to look for bicyclists on the roadway. Both on-street and off-street parking is available along much of the study corridor.

Crash History

According to NJDOT crash data, over the five-year period from 2015-2019, there were 14 crashes involving either a pedestrian or bicyclist in Bradley Beach. All but two of these crashes occurred along Main Street. Five crashes occurred just north of the study corridor between Park Place and Lake Terrace. The seven crashes that

Table 1. Pedestrian and bicycle crashes in study area, 2015-2019. Source: Safety Voyager.

Location	Date	Time	Crash Type	Ped./ Cyclist Age	Ped./ Cyclist Gender	Injury Severity	At Intersection	Lighting Condition
Main & McCabe	11/26/2015	9:01 pm	Pedestrian	66	Female	Injury	Yes	Dark (street lights on)
Main & McCabe	8/7/2015	11:42 am	Bicyclist	15	Male	No Apparent Injury	Yes	Daylight
Main & McCabe	4/9/2017	7:16 pm	Bicyclist	52	Male	No Apparent Injury	No	Daylight
Main & Brinley	1/15/2018	8:58 am	Pedestrian	82	Male	Injury	No	Daylight
Main & Third	9/27/2018	7:56 am	Bicyclist	41	Male	Injury	Yes	Daylight
Main & Evergreen	8/9/2015	12:46 am	Bicyclist	23	Male	Injury	Yes	Dark (street lights on)
Main & Monmouth	9/1/2017	9:54 am	Pedestrian	63	Female	Injury	No	Daylight

occurred within the study corridor involved three pedestrians and four bicyclists (see Figure 13 and Table 1). Three of these crashes involved pedestrians over 60 years old, two of which were females and one male.

Figure 13. Map showing number and location of crashes along the study corridor, 2015-2019.
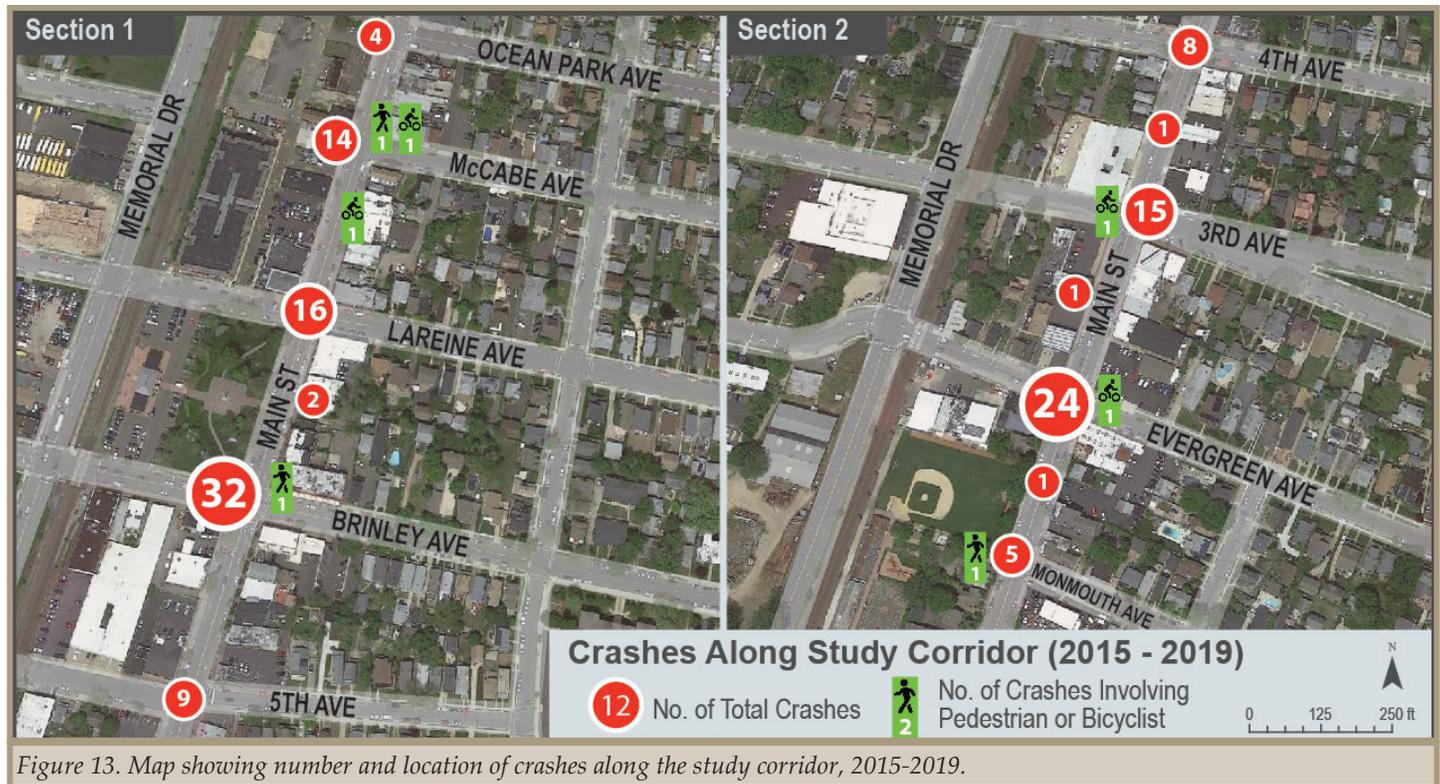
Source - Safety Voyager

Workshop Methodology

Prior to conducting the workshop, the CSTA project team met virtually with Bradley Beach officials to discuss the study area and gain a better understanding of the corridor, its location, use, and the appropriateness for a walking audit. The workshop was held on July 21, 2020 and participants included local residents, elected officials, the borough planner and engineer, representatives from the Bradley Beach Business Community Alliance, Main Street Task Force, Police Department, Department of Public Works, Monmouth County Health Department, New Jersey Department of Transportation (NJDOT), EZ Ride Transportation Management Association, and the NJTPA.

The virtual WCW included a one-hour presentation on the fundamentals of complete streets and best practices concerning pedestrian design to ensure that all attendees had a common understanding of complete streets and the relationship between road design and behavior. It included instruction on ways to better support walking and bicycling, and insight into the causes of vehicular speeding. Additionally, the presentation covered traffic engineering techniques to better accommodate bicyclists and pedestrians, and proven measures that could reduce speeding and improve overall safety along the corridor.

Following the presentation, the project team provided participants with a link to the walking audit form so that they could complete it during the virtual audit of the corridor. The project team conducted the virtual walk audit using Google Street View. The audit began at the intersection of Main Street and Monmouth Avenue, continued north along the corridor and ended at the intersection of Main Street and Ocean Park Avenue. The audit consisted of discussing issues, writing observations, and identifying the existing conditions witnessed by participants familiar with the area. The project team then conducted a post-audit debrief to review the most important findings and potential recommendations for improvements.

Following the virtual walking audit, the project team developed a series of recommendations for the corridor. The team presented the recommendations during a virtual public meeting on September 15, 2020, gathered community feedback, and revised the designs for inclusion in this report.

Workshop Findings

This section highlights the existing conditions of the study corridor that were identified during the walk audit. It begins with corridor-wide commonalities of the study area, including sidewalks, intersections, safety, and comfort. This is followed by a detailed description of conditions along the route.

Corridor Summary

Sidewalks

Sidewalks along the Main Street corridor are wide and continuous but vary in their width, quality, and surrounding uses. For instance, the sidewalk on the southbound side between Fifth and Brinley avenues changes from 8 to 14 feet in width (Figure 14). Quality issues along the corridor include uneven pavement condition, driveway ramp cross slopes that do not appear to be ADA-compliant, and a general lack of cleanliness at various locations (Figure 15 and Figure 16). Many of these issues create a tripping hazard for pedestrians and impact accessibility, particularly for seniors and people with disabilities.

A 5-foot minimum width is required to meet accessibility standards, according to the *New Jersey Complete Streets Guide*, but sidewalks should be constructed as wide as possible to accommodate pedestrian demand (Figure 17). Although the sidewalk along the corridor is at least 8 feet wide, in some areas tree wells or street furniture reduce this width (Figure 18).

Intersections and Crosswalks

Main Street has nine intersections along the study corridor, five signalized and four unsignalized. Most of these intersections have standard parallel marked crosswalks and curb ramps that are not ADA-compliant. Main Street at Third Avenue is the only intersection along the corridor with high visibility ladder crosswalks (Figure 19). During the walking audit, residents advocated for installing ladder crosswalks at all unsignalized intersections along the route to encourage drivers to look for adults and children crossing the street. This recommendation was particularly emphasized for the intersections at Monmouth Avenue and Fifth Avenue that connect to the recreation center and the elementary school.

Figure 14. Changing sidewalk width on Main Street, between Fifth and Brinley avenues

Figure 15. Likely non-compliant driveway ramp cross slopes on Main Street, between Fifth and Brinley Avenue.

Figure 18. Tree wells on a 9-foot sidewalk north of Fourth Avenue on Main Street.

Figure 16. Uneven sidewalk on Main Street, between Fifth and Brinley Avenue.

Figure 17. Buffers around Pedestrian Zone.
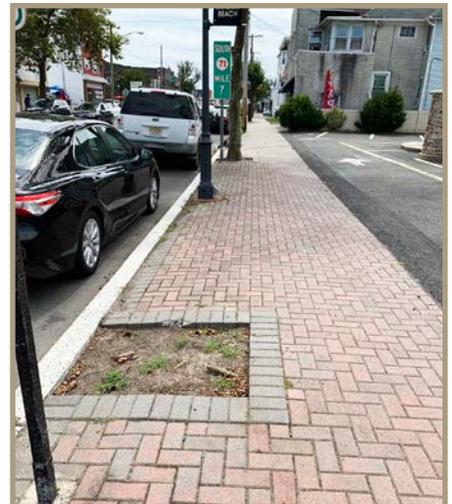
Some Main Street intersections lack marked crosswalks, for example, there are no marked crosswalks going across Main Street at Ocean Park Avenue (Figure 20). One block south of Ocean Park Avenue, the McCabe Avenue intersection features newly installed curb ramps; however, one of the three ramps aligns towards the center of the intersection, which is not a preferred design for the blind and visually impaired (Figure 21). Many curb ramps on Main Street do not appear to meet ADA accessibility guidelines due to maintenance issues, slope, and misaligned or absent detectable warning surfaces (truncated domes). For instance, curb ramps on Main Street at Fourth Avenue do not appear to smoothly transition to the crosswalks (Figure 22). The audit team also observed evidence of drainage issues on some curb ramps along the route.

Figure 19. Highly visible ladder crosswalks on Main Street at Third Avenue.

Figure 20. Main Street at Ocean Park Avenue intersection.

Figure 21. Diagonally aligned curb ramp on Main Street at McCabe Avenue.

Figure 22. Curb ramps on Main Street at Fourth Avenue.

Safety

Both overhead cobra and pedestrian-scale lighting exists along the corridor. Although the audit used daytime imagery within Google Street View, the size and spacing between the lighting fixtures appeared to be even, indicating uniform lighting along the corridor. A nighttime observation could help ascertain whether any changes are necessary to improve pedestrian visibility along the route.

Pedestrian-scale lighting along Main Street is provided by two types of fixtures—older downward-facing lights from the 1997 Main Street renovation and newer upward/scattered lights that are less effective than the older model as these illuminate the sky rather than the ground (Figure 23 and Figure 24). In their application, Bradley Beach officials noted that replacement parts for the older light are no longer available; however, residents emphasized the downward lights' effectiveness in illuminating the sidewalk at night.

Although a speed study for the corridor was not available, residents noted the need for reducing vehicle speeds at the unsignalized pedestrian crossings. Participants noted that parking near intersections is a significant issue impacting pedestrian visibility, with cars and delivery vehicles stopping in the no parking areas near crosswalks. Additionally, in several locations residents pointed out that vehicles parking close to the corners obstructed sightlines. This is especially true for Main Street at Brinley Avenue and McCabe Avenue, where parking is allowed about 17 feet from the corner as opposed to the required 25 feet.

Figure 23. Downward-facing pedestrian lighting on Main Street.

Figure 24. Upward/scattered pedestrian lighting on Main Street.

Comfort and Appeal

The corridor includes a variety of streetscape elements—such as trees, planting pots, benches, and streetlights with signage banners—that can help create a comfortable and aesthetically pleasing environment for pedestrians and bicyclists. There are several sections where these elements create an attractive sidewalk experience; however, the aesthetic is not consistent across the corridor (Figure 25 and Figure 26). In many locations, poor maintenance of facilities reduces their utility and appeal among users. For instance, residents noted benches in poor condition and poorly maintained tree wells throughout the corridor. The area would benefit from standardizing streetscape elements to increase the comfort and visual appeal along the corridor. Additionally, some residents noted that overhead wires detract from the visual appeal of the street and suggested moving these wires underground. It is also important to note that Bradley Beach's downtown does not have wayfinding signs to help tourists and other visitors navigate.

Detailed Conditions

Main Street (State Route 71) is a two-lane state roadway with on-street parking in both directions and a 30 mph speed limit. It is 47 feet wide between Monmouth Avenue and Fifth Avenue, north of which it is 46-feet wide. The street has 8- to 14-foot wide sidewalks for pedestrians and shared-lane markings (sharrows) for bicycle travel in both directions. However, walking audit participants identified bicycling on Main Street as "dangerous" and "terrifying," while riding on sidewalks was deemed unfitting due to high pedestrian volume, especially during the summer. Bradley Beach has an ordinance prohibiting bicycling on sidewalks, which is marked through signage all along the corridor, but it was noted that bicyclists still choose to do so because they do not feel comfortable riding on the road (Figure 27 and Figure 28). Participants indicated that safe bicycle accommodations along the corridor could enable bicyclists to ride on the road, improving safety for both bicyclists and pedestrians. Additionally, the study team noticed bicycles secured to light posts and service poles throughout the corridor at the time of their visit, which highlighted the need for additional bicycle parking at various locations along the entire corridor.

Figure 25. Closely spaced trees and pedestrian lighting with signage on Main Street.

Figure 26. A vacant tree well, pedestrian lighting without signage, and two varieties of planting pots on Main Street.

Figure 27. No riding signage prohibiting bicycling on sidewalks on Main Street.

Figure 28. A bicyclist riding on the sidewalk.

Figure 29. Detailed conditions of the study corridor.

Main Street: Monmouth Avenue to Third Avenue

The study corridor begins at the Monmouth Avenue intersection in front of the Bradley Beach Recreation Center (Figure 29). It has 9- to 12-foot wide sidewalks on both sides with an extended sidewalk space in front of the Recreation Center. Although wide and continuous, residents highlighted that the sidewalks were in poor condition due to uneven pavers and a lack of cleanliness (Figure 30). This section is lined by trees on both sides that vary in size and spacing. For instance, there are no trees between Evergreen Avenue and Third Avenue on the northbound side (Figure 31). The corridor has benches and outdoor eating spaces installed by private businesses, but no public benches (Figure 32). Additionally, walking audit participants highlighted the lack of recycling bins next to trash cans in the area.

This section has a variety of land uses including a gas station, Recreation Center, parking lot, and a single-family home, which impacts the sidewalk character especially in the absence of consistently placed trees/greenery or seating (Figure 33). Additionally, driveways occupy a considerable share of the sidewalk length between Evergreen and Third avenues, which contributes to the irregular spacing of sidewalk amenities, since the driveways cannot be obstructed.

Two of the three intersections along the section are unsignalized, but Main Street at Evergreen Avenue has a traffic signal. The intersection also has push-button operated pedestrian signals, which the residents suggested should change to an automatic pedestrian phase so that pedestrians do not have to manually activate them when the signal is red. The intersection has standard crosswalks on all sides and is surrounded by a gas station or surface parking on three of its corners. It feels very auto-centric because of low-visibility crosswalks, surrounding auto-oriented uses, and a noticeable lack of trees/greenery in the area (Figure 34). The bus stop at the southeast corner of the intersection is only indicated by a sign – there is no bus shelter or seating.

Figure 30. Uneven pavement near the Evergreen Avenue intersection.

Figure 31. Looking north on Main Street south of Third Avenue.

Figure 32. Benches installed by a private business.

Figure 33. A gas station and driveway along the south sidewalk near the Evergreen Avenue intersection.

Figure 34. Looking north on Main Street at Evergreen Avenue. (Photo Credits: Google Street View)

Additionally, the curb ramps at the Monmouth Avenue and Evergreen Avenue intersections lack truncated domes and have debris (Figure 35 and Figure 36). The Monmouth Avenue intersection is T-shaped with standard crosswalks on two sides—there is no crosswalk on the north side across Main Street. Residents who participated in the walking audit noted that children commonly use the crosswalks and a crossing guard helps regulate this intersection using traffic cones to increase their visibility during summertime camp hours.

The section ends at the Third Avenue intersection that has high visibility ladder crosswalks on all four sides; its eastern crosswalk along Main Street is especially long with a length of 50 feet (Figure 29 and Figure 37). All corners of the intersection but one have curb ramps that lack truncated domes; the newly constructed curb ramps on its northeast corner appear to be ADA-compliant. A new mixed-use development is underway on one of its corners, while it is fronted by parking on two of its other corners. There are a few angled parking spaces on Third Avenue east of Main Street that audit participants deemed dangerous due to conflicts between the parked vehicles backing out into the lane and the traffic turning on to Third Avenue (Figure 37). Less than 400 feet east of the intersection, Second Avenue meets Third Avenue at a Y-shaped intersection (Figure 38). Both Second and Third avenues are two-lane roadways with parking on either side. The intersection lacks signage and guidance on the right-of-way along either of the two streets, which audit participants stated results in confusion and conflict between road users.

Both overhead cobra and pedestrian-scale lights are present in this section. While the study team did not observe the corridor at night, their size and spacing suggests that the corridor is uniformly lit. Welcome banners are hung on pedestrian light posts along the section, as can be seen in Figure 23 and Figure 24.

Figure 35. Curb ramps and standard crosswalks at the Monmouth Avenue intersection.

Figure 36. Curb ramps and standard crosswalks at the Evergreen Avenue intersection.

Figure 37. Main Street at Third Avenue intersection. Note the angled parking spaces on one side of Third Avenue just after the intersection.
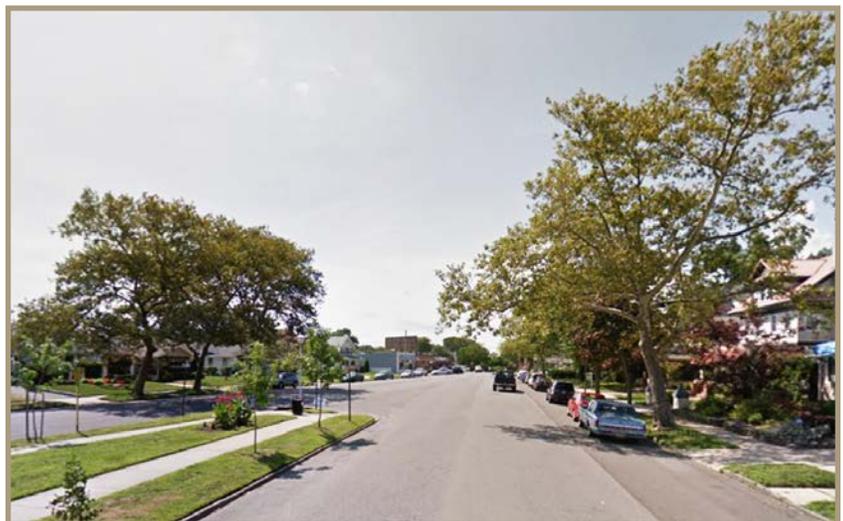

Figure 38. Looking west on the Second and Third Avenue intersection, towards Main Street. (Photo Credits: Google Street View)

Main Street: Third Avenue to Brinley Avenue

Between Third Avenue and Brinley Avenue, Main Street is lined by businesses and some single-family homes (Figure 29). Sidewalks exist on both sides and are about 8 to 14 feet wide; however, the audit team noticed uneven pavement conditions and driveway ramp cross slopes that appear to be non-ADA-compliant along the corridor (Figure 15). In some locations, residents noted how sidewalks were narrowed by sandwich boards placed in the walking path (Figure 39). Some residents also stated they found sandwich boards to be unattractive clutter and suggested a sign ordinance to regulate them; while others noted their importance for advertising local businesses.

The section includes inconsistently spaced trees of different sizes. The sidewalk on the northbound side between Third and Fourth avenues has few trees, but they are more frequently placed south of the Brinley Avenue intersection (Figure 40 and Figure 41). There are limited seating options between Third and Fifth avenues, north of which few benches are available; however, outdoor seating spaces are installed by private business at various locations throughout the sidewalks (Figure 42).

The intersections of Fifth and Brinley avenues provide access to the Bradley Beach Elementary School, which is a block east of Main Street. As an unsignalized intersection near the school, residents highlighted that Fifth Avenue has a long crossing—especially for children—and would benefit from high visibility ladder crosswalks (Figure 43). They further expressed interest in installing a mural at this intersection to alert drivers to the presence of children and to calm traffic. The intersection has standard crosswalks on three sides; there is no marked crosswalk on the north side of the intersection across Main Street. Curb cuts are missing on the northern side of the intersection and detectable warning surfaces (truncated domes) are either missing or diagonally aligned on about half of the curb ramps. Walking audit participants said installing a crosswalk at the missing approach could improve pedestrian visibility and safety.

Figure 39. Sandwich boards blocking the north sidewalk on Main Street.

Figure 40. Tree cover on Main Street, south of Brinley Avenue.

Figure 41. Tree cover on the northbound side of Main Street, between Third and Fourth avenues.

Figure 42. A parking lot turned into outdoor seating on Main Street at Fifth Avenue during COVID-19.

Figure 43. Main Street and Fifth Avenue intersection.

The other two intersections along the corridor—Fourth Avenue and Brinley Avenue—have traffic and pedestrian signals. The curb ramps at the Brinley Avenue intersection are either missing or have misaligned truncated domes and most curb ramps at the Fourth Avenue intersection do not appear to provide a smooth transition to the crosswalks, possibly due to non-compliant slopes (Figure 44 and Figure 22).

Walking audit participants identified Main Street at Brinley Avenue as a "dangerous" intersection because of trucks stopping on the westbound side of Brinley Avenue for loading/unloading, which obstructs the driving lanes and limits sightlines for drivers approaching the intersection. Residents said cars also park too close to the corners exacerbating poor driver visibility at the intersection. Note that the corridor has a designated space for loading/unloading north of the intersection on Main Street. Both of the intersection's north corners have bus stops; one has a bus shelter and the other is marked by a sign (Figure 45). At times, cars park in the area designated for buses on the northbound side of Main Street, forcing the buses to stop in the travel lane (Figure 46). A third bus stop is located at the corner of Main Street at Fourth Avenue.

Lighting is provided by both overhead cobra and pedestrian-scale lights, the latter of which mostly includes the older downward-facing light posts, with only a few of the new upward/scattered lights. Some pedestrian light have signage banners. Although the fixtures were not observed at night, the corridor is likely uniformly lit given their size and spacing.

Figure 44. Main Street and Brinley Avenue intersection.

Figure 45. A person sitting in the bus shelter on the northwest corner of the Brinley Avenue intersection.

Figure 46. Cars parked in the yellow curb area designated for buses.

Main Street: Brinley Avenue to Ocean Park Avenue

Between Brinley and Ocean Park avenues, Main Street is lined by Riley Park, businesses, municipal offices, and a few residential units (Figure 29). It has 8- to 12-foot sidewalks on both sides with few vacant tree wells and protruding objects in the pavement. The section has closely placed trees and other plantings on some portions of the sidewalk, whereas others do not have any landscaping elements (Figure 47 and Figure 48). The audit team also observed disparities in the maintenance and aesthetics of these elements (Figure 26). Large trees border the sidewalk in front of Riley Park, between Brinley and LaReine avenues.

Figure 47. Closely spaced trees along Main Street north of the Brinley Avenue intersection.

Figure 48. Planters but no trees on Main Street south of the LaReine Avenue intersection.

Parking lots and driveways front significant portions of the sidewalk between LaReine and McCabe avenues, but they are screened using plantings (Figure 49). Various seating options are available along the route, including municipal benches and seating provided by private businesses. Residents noted the poor condition of borough-installed benches, particularly in front of Riley Park (Figure 50). They also expressed the need for more seating options in the park area (Figure 51).

Two of the intersections along the corridor—LaReine and Ocean Park avenues—are signalized, while the McCabe Avenue intersection does not have a traffic signal. That intersection is T-shaped with standard crosswalks on two sides; there is no marked crosswalk on the north side across Main Street (Figure 52). Residents noted that vehicle speeds, lack of signals, parked cars near corners, and low crosswalk visibility make this pedestrian crossing particularly challenging. The intersection also has newly installed curb ramps, but the ramp at one of the three corners is aligned towards the center of the intersection (Figure 21). Truncated domes are either missing or misaligned at Main Street and LaReine Avenue (Figure 53), and one of the two ramps at the Ocean Park Avenue intersection lacks truncated domes and is not ADA-complaint. Both intersections have standard crosswalks, with the exception of the one approach at Ocean Park Avenue, as noted earlier (Figure 53 and Figure 20).

The section ends at the Ocean Park Avenue intersection (Figure 29). It abuts two driveways on its southbound side, including the driveway for the Bradley Beach Fire Department, which may create additional conflicts for everyone at the intersection (Figure 20 and Figure 54). It also has a bus stop on the southbound side that is indicated by signage.

Lighting is provided by a combination of overhead cobra and pedestrian-oriented lights, the latter of which includes the older downward-facing lights as well as newer upward/scattered lights. Both types of lights are installed with and without signage banners, contributing to the lack of uniformity along the corridor. Although the fixtures were not observed at night, their size and spacing indicates that the corridor is likely uniformly lit. However, residents noted the need for adequate pedestrian lighting at the crossings on Main Street at LaReine Avenue.

Figure 49. Landscaping in front of the Bradley Beach Municipal Complex screening the sidewalk from the parking.

Figure 50. A bench on the opposite sidewalk in front of Riley Park.

Figure 51. Seating spaces in Riley Park.

Figure 52. Looking north on Main Street towards McCabe Avenue intersection.

Figure 53. Main Street and LaReine Avenue intersection

Figure 54. Driveways on the southbound side of Main Street at Ocean Park Avenue.

Recommendations

During the workshop, participants expressed the desire to improve pedestrian infrastructure/amenities and incorporate bicycle infrastructure along the corridor, encouraging walking and bicycling among residents and improving the safety of those already walking and bicycling around the neighborhood. As an active commercial/recreational destination, they expressed particular interest in standardizing roadway features to create a uniform look along the corridor.

As Main Street is a state highway, many of these recommendations would need to be installed or approved by NJDOT. Bradley Beach should work in partnership with the NJDOT in advancing these improvements along Main Street.

1. Adopt a Complete Streets Policy

Adopting a complete streets policy is an important first step toward implementing complete streets, as it defines the meaning of complete streets, establishes goals, and lays out the ways in which the municipality will accomplish the goals. The most successful policies state that complete street practices and principles should be a standard part of regular roadway maintenance, planning, and design. An implementation plan and checklist can also be developed to ensure that the municipality remains on the right path year after year.

Additionally, points are available to municipalities who are seeking SJ certification for adopting and instituting a complete streets policy. The NJDOT offers a guide to policy development and a separate guide on how to create an implementation plan. These resources are among those available at http://njbikeped.org/complete-streets-resources. The state recently released a new model policy guide, which should be used as a template for a new municipal policy (https://www.state.nj.us/transportation/eng/completestreets/pdf/CS_Model_Policy_2019.pdf).

While Main Street is a state route and the borough does not have jurisdiction on the roadway, adopting a complete streets policy will allow the borough to develop a vision and ensure that their accommodations remain consistent and be a part of the broader transportation network.

2. Explore Bicycle Infrastructure Options

The borough should work with the NJDOT to explore opportunities for incorporating bicycle infrastructure on Main Street due to heavy traffic on the roadway and concerns related to riding on sidewalks. While municipal representatives expressed interest in encouraging and supporting bicycling, the road is not wide enough to accommodate bicycle lanes on both sides according to current NJDOT standards (Figure 56). As an alternative, the borough could create a southbound bicycle lane on Hammond Avenue and work with NJDOT to install a northbound bicycle lane on Main Street (Figure 57 and 55). As bicyclists would need to use the east-west streets to travel between Main Street and Hammond Avenue, it is important to consider bicycle infrastructure on those streets. While these side streets are not part of the study area, some of them are generally wide enough to accommodate bicycle lanes while keeping the existing

Figure 55. Proposed bicycle network along Main Street and connecting roadways in Bradley Beach.
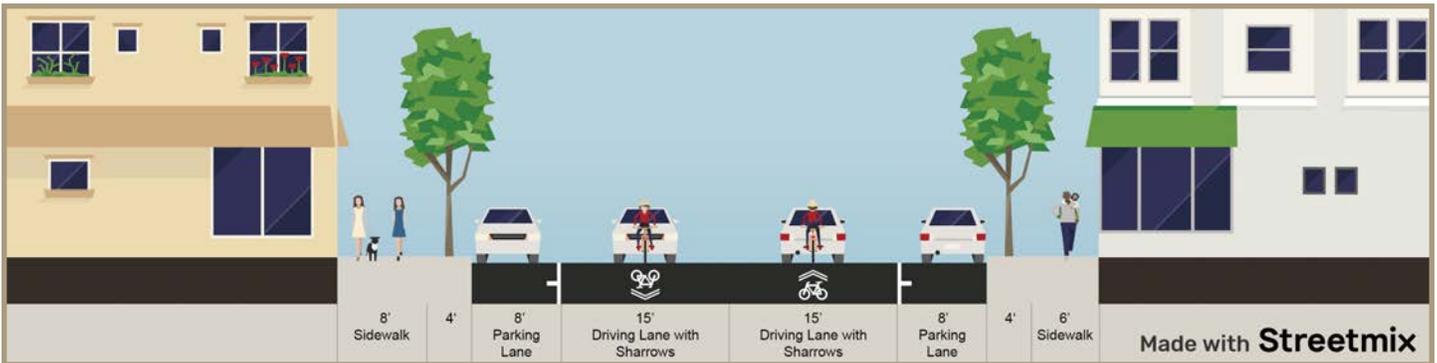
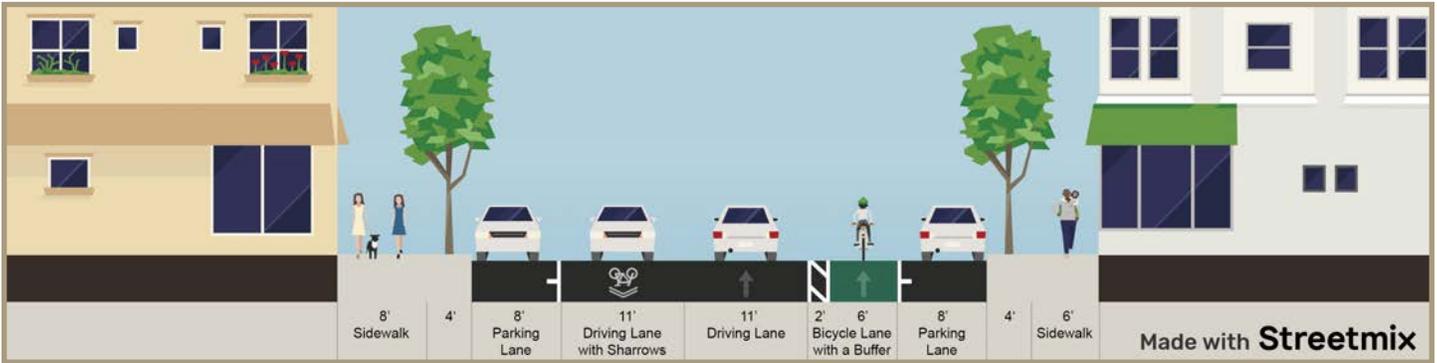*Figure 56. Looking north on Main Street - Existing Design.*

Figure 57. Looking north on Main Street - Proposed Design (Alternative I).
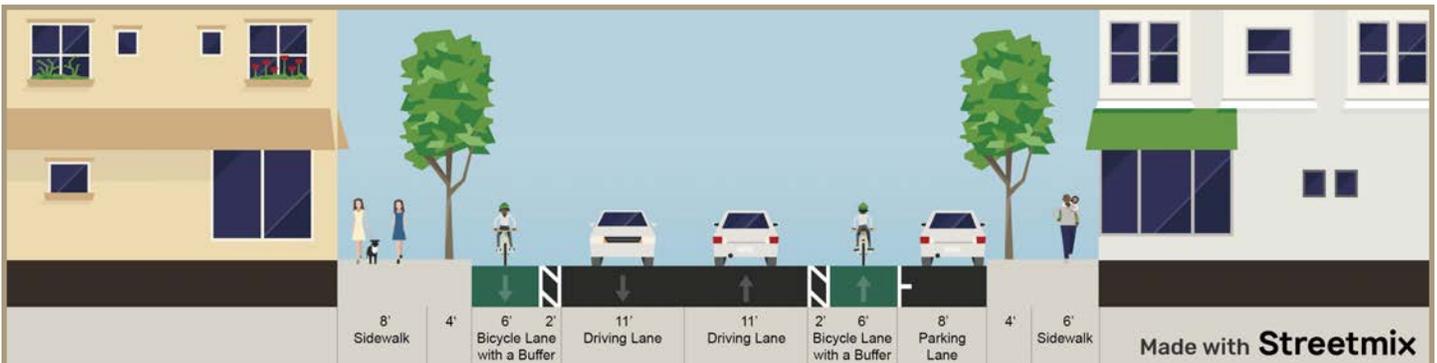

Figure 58. Looking north on Main Street - Proposed Design (Alternative II).

parking and travel lanes. For instance, Ocean Park Avenue is a 48-foot wide roadway that can accommodate dedicated bicycle lanes in both directions. By improving the east-west bicycle connections, the borough would make it easier for residents and visitors to travel between the beach and Main Street, which can then help relieve parking stress near the boardwalk. Additionally, as shown in Figure 57, the proposed alternative includes shared-lane markings for southbound bicyclists on Main Street.

As another alternative, the municipality and the NJDOT could consider installing bicycle lanes on both sides of Main Street by eliminating parking on the southbound side (roughly 70 parking spaces, which is less than the 85 spaces on the northbound side) (Figure 58). Some of these parking spaces could be recovered in the Main Street and Second/Third Avenue intersection area redesign proposed in this report (see Page 25). However, participants have consistently noted the importance of parking spaces along the corridor, so the previous alternative may be preferred.

In either case, incorporating bicycle lanes on Main Street would narrow the 15-foot wide driving lanes to 11 feet, which continues to allow for existing traffic, but will discourage speeding along the corridor. According to the National Association of City Transportation Official (NACTO) 2013 *Urban Street Design Guide*, 11-foot lanes are appropriate for designated truck or bus routes, while 11- to 13-foot lanes "should not be used as they may cause unintended speeding." Reducing the lane width would discourage speeding, which in turn

will reduce the severity of crashes and increase safety. Additionally, Bradley Beach could also investigate lowering the posted speed limit from 30 mph to 25 mph so that the permissible speed aligns with the design limit and function of the roadway.

Although not discussed here, bicycle infrastructure must also include secured parking facilities and bicycle lockers to protect bicycles from theft and inclement weather.

3. Provide and Maintain High Quality Pedestrian Infrastructure/Facilities

Figure 59. ADA-compliant curb ramp design standards. (Photo Credits: NJDOT Complete Streets Design Guide)

Main Street is both a major throughway and a mixed-use destination for tourists, residents, and workers. Bradley Beach Train Station and the businesses nearby serve the municipality's low-income, minority, and senior populations, making pedestrian safety and accessibility a priority. However, much of the corridor lacks amenities that help create an accessible and attractive environment for walkers and bicyclists. The corridor does not have high visibility ladder crosswalks or ADA-compliant curb ramps at all intersections. While sidewalks are present and continuous, they are characterized by uneven pavements and driveway ramp cross slopes that do not appear to be ADA-compliant. Incorporating high visibility ladder crosswalks, ADA-compliant curb ramps, levelled sidewalk pavement condition, and ADA-complaint driveway designs would improve safety and accessibility for everyone (Figure 59 and Figure 60).

Figure 60. One way to design ADA-compliant driveway ramps. (Photo Credits: NJDOT Complete Streets Design Guide)

Walking audit participants also noted an overall inconsistency in the provision of trees/greenery, seating spaces, and trash/recycle bins along the corridor – all of which are important amenities for creating a pedestrian-friendly environment. Consistently providing these amenities would improve corridor attractiveness and comfort for pedestrians. One way to achieve this would be implementing a standardized layout optimizing the use of the furnishings zone to incorporate these amenities into the corridor. Figure 61 depicts the recommended typical design from the City of Plainfield's *Streetscape Design Manual*. It includes trash cans and recycle bins within 20 feet of the intersection, trees 30 to 40 feet apart starting from the center
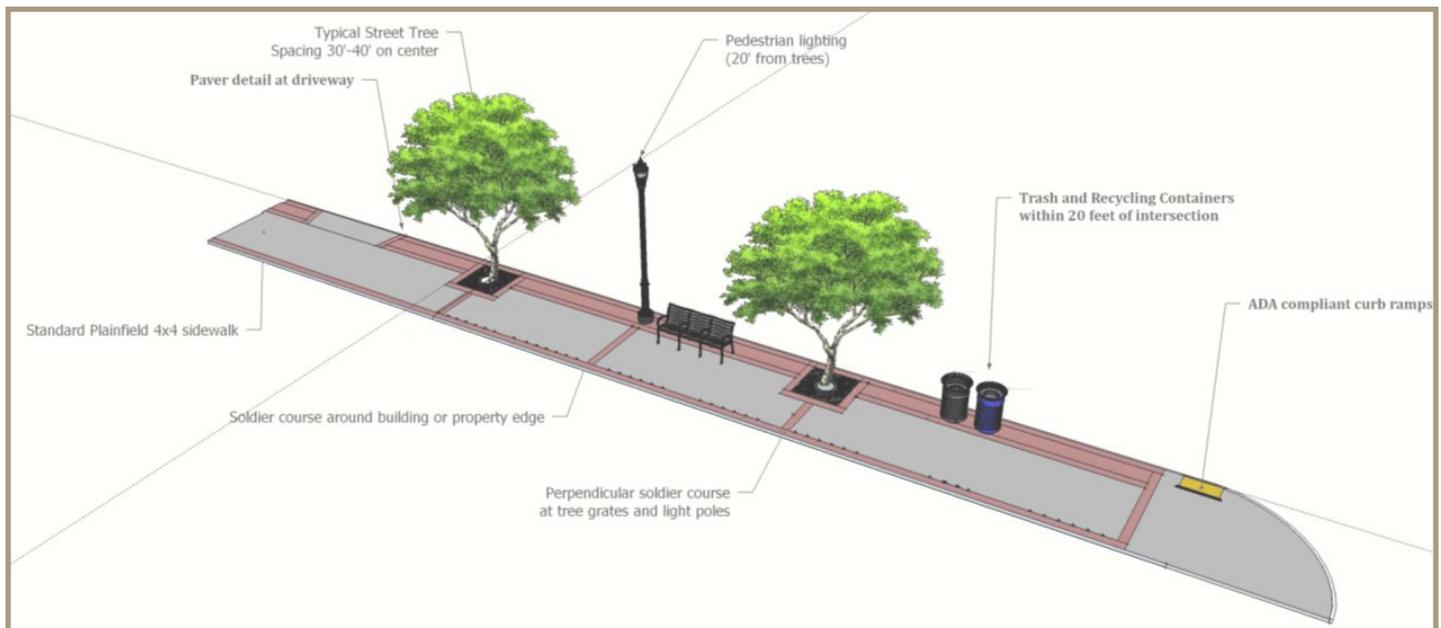

Figure 61. A "typical" streetscape layout depicted in the City of Plainfield's Streetscape Design Manual. Note that the drawing is not on a scale. (Photo credits: City of Plainfield Streetscape Design Manual)

of the block in both directions, and streetlights and benches centered between adjacent trees. As a popular tourist destination, Main Street should also incorporate wayfinding signage to improve the comfort and experience of visitors to the corridor. It is critical to note that the design and placement of these amenities on the sidewalk would need to account for the clearance space required by on-street parking.

Main Street could also accommodate useful amenities for transit users such as shade and shelter, lighting, spaces to sit and wait, bicycle parking, and route information. Incorporating these facilities into the design could encourage walking or bicycling to the bus stops and for more people to take transit. One way to do so would be to work with the NJDOT to investigate the feasibility of installing bus bulbs. Bus bulbs are curb extensions that align the curb with the travel lane, allowing buses to stop and board passengers without leaving the travel lane (Figure 62). However, on a two-lane roadway where blocking the travel lane might be undesired, buses can continue to stop in the parking lane before or after a bus bulb such as shown in the example from New Brunswick, NJ (Figure 63). Adding bus bulbs would expand the pedestrian realm providing additional space for bus shelters and other amenities such as seating, greenery, and bicycle parking along the corridor. With increased focus on transit and walking/bicycling in the area, Bradley Beach could also consider applying for the Transit Village Designation. Currently, Neptune Township is a designated Transit Village due to its proximity to the Bradley Beach Train Station.

Figure 64 depicts what a bus bulb could look like in front of Riley Park. The bus bulb would replace five parking spaces. It needs to be at least 6 feet wide in order to create the 4 feet buffer required in front of the bus shelter, however the length can vary. According to the NACTO *Urban Street Design Guide*, bus bulbs

Figure 62. Bus bulb design standards. (Photo Credits: NACTO)

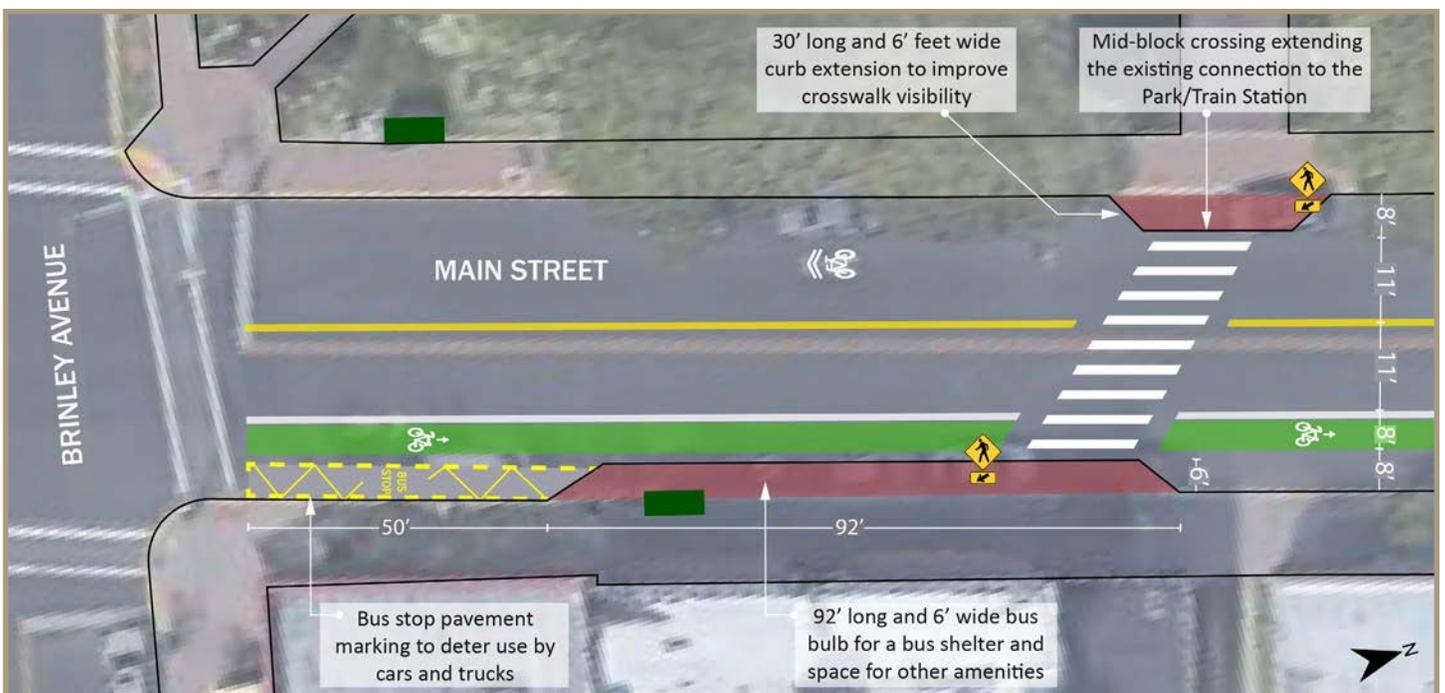*Figure 63. A bus bulb in Downtown New Brunswick, NJ. (Photo Credits: Google Street View)*

Figure 64. Proposed bus bulb and mid-block crossing on Main Street, between Brinley and LaReine Avenue.

can be 30 feet long on routes with less frequent service, which would only require the use of two parking spaces. Additional parking proposed in the Main Street at Second/Third Avenue redesign would offset the loss of these spaces (see Page 25). The design also includes installing a mid-block crossing to connect Riley Park and the train station. During the public meeting, residents highlighted several factors that the borough needs to consider, such as the potential demand, benefits of installing this crossing, and the process for NJDOT approval. Residents further noted that the intersections on both sides of the proposed crossing are signalized and might be safer for people.

Lastly, maintaining the existing infrastructure/facilities in good condition is essential for the safety and visual appeal of the corridor. This requires keeping the space clean and safe, and upgrading degrading infrastructure as needed. During the walking audit, participants observed issues such as lack of proper pruning, vacant or unmaintained tree wells, poor condition of benches, and cluttered overhead power lines, all of which impact pedestrian comfort and friendliness along the corridor.

4. Create a Unified Look and Sense of Place along the Corridor

Bradley Beach is a historic resort town that sees significant growth in its population during the summer season. The Bradley Beach Train Station and downtown businesses attract both commuters and tourists from the surrounding area. However, walking audit participants noted that the Main Street streetscape lacks some of the visual cues and uniformity in its appearance that are characteristic of an inviting downtown. Creating a unified look and sense of place along Main Street would make the corridor more appealing to residents, commuters, and tourists.

Many of the streetscape elements along the corridor—trees, streetlights, benches, signage, landscaping, etc.—can help create a sense of place when designed in a consistent and coordinated manner. For instance, consistently placed and properly maintained trees could create a pleasant rhythm along the street, which can help both define and reinforce the street character (Figure 65). Planting trees in the parking zone at regular intervals could add a unique look to the street and using the same tree species could completely transform the sidewalk experience (Figure 66 and Figure 67). Tree well designs can also be paired with benches, as in the Union Township example that has benches next to the trees (Figure 67).

Figure 65. Large trees with a railing tree well design in Somerville, NJ.

Figure 66. Trees interspersed in a parking lane in Downtown Houston, TX. (Photo Credits: Matt Korner)

Figure 67. Smaller trees with a different look in Union, NJ compared to the larger trees in Somerville, NJ in Figure 64. (Photo Credits: Arterial LLC)

Following a standard design and layout for signage and pedestrian-oriented lighting would also help the area's sense of place. Light posts could be alternately combined with signage banners and planters, such as with the light posts shown in Figure 68 along Stuyvesant Avenue in Union Township, NJ. The Union Township image also highlights several additional key aspects of an attractive and safe downtown–wide sidewalks, highly visible crosswalks, abundant seating, and cleanliness–that were discussed in the previous section.

Additionally, other roadway elements such as crosswalk ramps and curb extensions could provide several new opportunities to add to the corridor's appearance. For instance, curb extensions can be combined with green infrastructure elements, more seating, and bicycle parking. An example of both high visibility midblock crossings and curb extensions with green infrastructure and seating can be seen in Union Township (Figure 68). A standard design for curb extensions would also contribute to the corridor's uniform look (Figure 69). Figure 70 depicts a photo rendering of a proposed bus bulb and mid-block crossing between Brinley and LaReine avenues on Main Street. The design includes additional plantings, seating spaces, bicycle parking, and a bus shelter.

Figure 68. A well-lit midblock crossing with seating and green infrastructure in Union, NJ. (Photo: Arterial LLC)

Figure 69. Curb extension design for reducing large turning radii. (Photo Credits: PBIC Image Library)

Figure 70. Photo rendering of the proposed bus bulb and mid-block crossing on Main Street, between Brinley and LaReine Avenue.

Figure 71. A curbed planting bed with a railing (left) and a tree grate (right) design for planting trees. (Photo Credits: City of Plainfield Streetscape Design Manual)

Figure 72. A 6-foot long metal frame bench design. (Photo credits: City of Plainfield Streetscape Design Manual)

Figure 73. Information kiosk design. (Photo credits: City of Plainfield Streetscape Design Manual)

It is important that the borough focuses on the discussed streetscape elements in a coordinated fashion to create a unified character for the street rather than looking at them as individual elements. The City of Plainfield, NJ developed a Streetscape Design Manual in 2016 for this purpose. The manual covers design details for all public right-of-way improvements to pursue coordinated, consistent and comprehensive development in its commercial district (Figure 71 to 73).

Additional Recommendations

During the walking audit, participants noted a few roadway elements that they felt reduced the corridor's visual appeal. These included the "unappealing" business signage and overhead "spaghetti" wiring. To tackle these concerns, the Bradley Beach Business Community Alliance should work with the Borough of Bradley Beach to promote creative signage designs and styles along the corridor, and encourage businesses to follow certain sizes and ensure that the pedestrian path is not obstructed by their placement (Figure 74). The borough could also consider a standardized signage design as depicted in Figure 75 from the *Commercial Historic District Signage & Awning Guidelines* for the City of Platteville that recommends using general guidelines, style, illumination, and materials for a historic look. Additionally, Bradley Beach could also explore opportunities to incorporate sidewalk art to beautify and personalize its pedestrian environment (Figure 76).

As a long-term measure, the business alliance in partnership with the borough could coordinate with NJDOT and the Department of Public Works to adjust and neaten the overhead electricity wires and explore underground installation of power lines.

Figure 74. Signage design example used by Downtown Somerville Alliance.
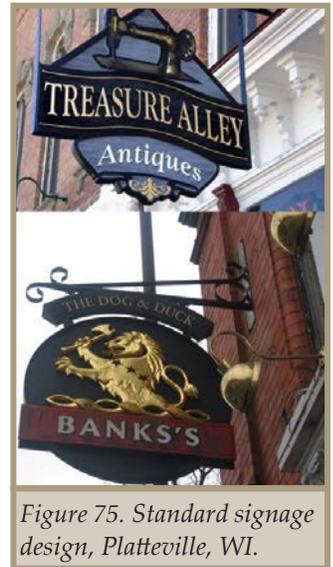
Figure 75. Standard signage design, Platteville, WI.

Figure 76. Sidewalk art installed by a student-led project in Peoria, IL. (Photo: Cass Herrington, Peoria Public Radio)

5. Rethink the Second and Third Avenue Intersection Area

Figure 77. Proposed improvements on Second and Third Avenue, between Main Street and Hammond Avenue.

During the walkable community workshop, the audit team noted that the intersection between Second and Third avenues appears to lack necessary guidance on the movement of traffic. Rethinking the allocation of space and traffic needs in the area could reduce confusion, streamline the traffic movement, and provide opportunities to add bicycle lanes, greenery, and parking spaces.

Figure 77 depicts the proposed improvements along Second and Third avenues between Main Street and Hammond Avenue. The design converts both Second and Third avenues into one-way roads with a dividing median in the center, which would create additional greenery in the area. Both roads would include parallel parking on one side and angled (or parallel) parking on the other side. Reverse angle parking is recommended for these spaces as it allows drivers to see oncoming traffic while exiting the space rather than backing into traffic (Figure 78). With angled parking, the proposed design would create about 42 new parking spaces compared to the existing design; with parallel parking, 16 new parking spaces would be created. This design includes replacing the existing angled parking near the Main Street intersection with parallel parking to eliminate the extra conflict with turning vehicles. It also includes adding curb extensions at the eastern corners of Main Street to reduce the 50-foot pedestrian crossing at the Third Avenue intersection. The borough must work with a traffic engineer to implement these recommendations as they will significantly impact motor vehicle movement in the area.

During the public input meeting, residents acknowledged the recommendations' benefits and noted that the borough would need to engage with the residents and nearby property owners to gather their feedback in developing and implementing the final design. As part of that process, the design could be modified to address resident concerns. For example, some of the parking spaces could be replaced with more green space, or a traffic crossover could be added to allow residents to make a U-turn without going up to Main Street.

Additionally, the proposed design could be tested through a short-term, low-cost demonstration project, allowing residents to experience the changes before spending money on costly capital improvements.

Figure 78. Reverse angle parking on a residential street in Hoboken, NJ. (Photo Credits: Google Street View)

Detailed Recommendations

Main Street: Monmouth Avenue to Third Avenue

- Investigate adding curb extensions at the Main Street and Monmouth Avenue intersection (Figure 79), which could serve several purposes:
  - Enhance visibility of pedestrians by eliminating parking near crosswalks.
  - Reduce crossing distances for children heading to or from the Recreation Center.
  - Provide additional space for bicycle parking and other amenities such as seating or trash cans.
- Explore incorporating art along the wide sidewalk space in front of the Recreation Center, if it comes under the public right-of-way (Figure 79).
- Upgrade all curb ramps to be ADA-compliant and angle them such that they direct pedestrians into the crosswalks rather than into the center of the intersection.
- Install ladder crosswalks on all sides of the Monmouth Avenue intersection to improve visibility (Figure 79).

Figure 79. Proposed improvements on Main Street and Monmouth Avenue intersection.

- Modify the pedestrian signals at the Evergreen Avenue intersection to include an automatic pedestrian phase so that pedestrians do not have to manually activate it, and adjust the signal timing at the intersection to optimize delay time for both pedestrians and vehicles.
- The Bradley Beach Business Community Alliance and the Borough of Bradley Beach should explore opportunities to work with private businesses to add landscaping around surface parking lots (Figure 77), especially at the Evergreen Avenue intersection where there is parking or a gas station on three of the corners.
- Delineate individual on-street parking spaces using paint to eliminate scattered parking patterns and make it easy for drivers to locate available spots.
- Add trees between Evergreen Avenue and Third Avenue to provide shade and greenery consistent with the standards and look along the street.
- Investigate adding curb extensions at all intersections, especially on the eastern corners of Main Street at Third Avenue to reduce the 50-foot unsignalized crossing distance (Figure 77).
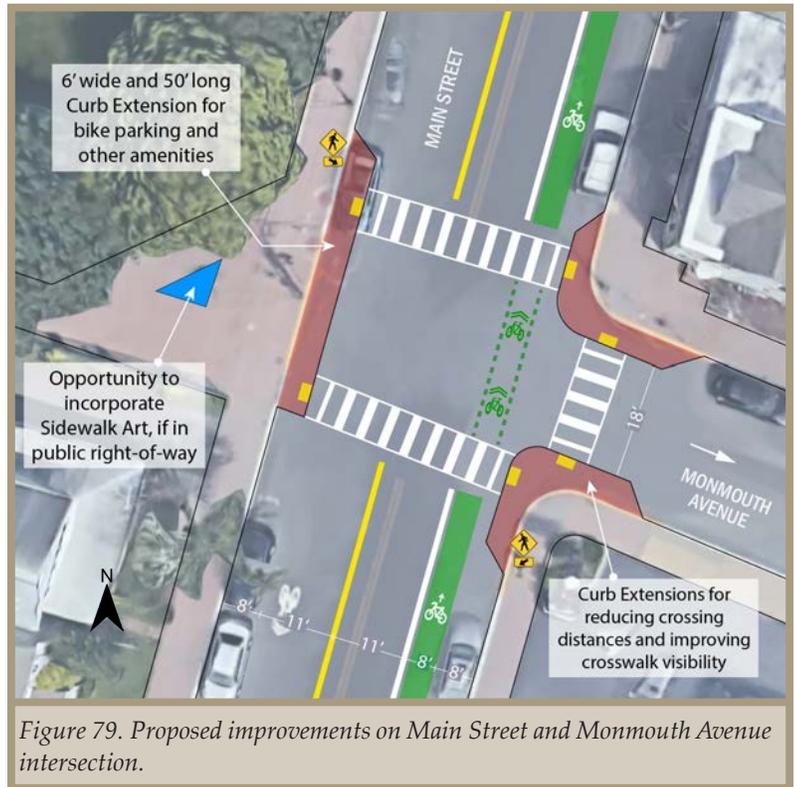
Main Street: Third Avenue to Brinley Avenue

- Coordinate with private businesses to ensure that sandwich boards do not block the pedestrian path on the sidewalks (see the Additional Recommendations section on Page 25).
- Increase the tree cover along the sidewalks to achieve as much consistent tree spacing as possible, especially between Third and Fourth avenues where there are not many trees.
- Upgrade all curb ramps to be ADA-compliant and angle them such that they direct pedestrians into the crosswalks rather than into the center of the intersection.
- Install high visibility ladder crosswalks at all intersections, especially unsignalized intersections, to increase pedestrian visibility and safety, and maintain the visual characteristics of intersections along the corridor.

- Install high visibility ladder crosswalks at all intersections, especially unsignalized intersections, to increase pedestrian visibility and safety, and maintain the visual characteristics of intersections along the corridor. This is especially important at Fifth Avenue, which children use to access the Bradley Beach Elementary School (Figure 80).
- Coordinate with NJDOT to add a mural at the Fifth Avenue intersection to lower vehicle speeds and reinforce that the intersection provides access to the school (Figure 80). The mural can be designed and installed by the borough or elementary school through an art project.
- Investigate installing Pedestrian Hybrid Beacons (PHBs), Rectangular Rapid-Flashing Beacons (RRFBs), or raised crosswalks if the need to lower vehicle speed persists at the Fifth Avenue intersection.
  - RRFBs are standard crosswalk signs that produce a flashing light pattern when activated (Figure 81). They can be activated passively with a sensor that detects pedestrians, or directly via a button that pedestrians push when they are ready to cross. This flashing light is highly visible to motorists, and more drivers comply with the requirement to stop for pedestrians when it is used. The lights are only activated on demand, and last for just a few seconds, so they are not disruptive to nearby residents. These installations can be powered by solar panels or connected to the electrical grid.

Figure 80. Proposed improvements on Main Street and Fifth Avenue intersection.
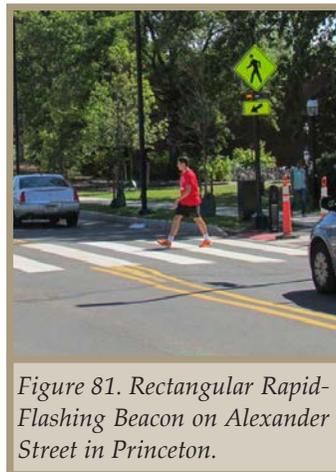
Figure 81. Rectangular Rapid-Flashing Beacon on Alexander Street in Princeton.
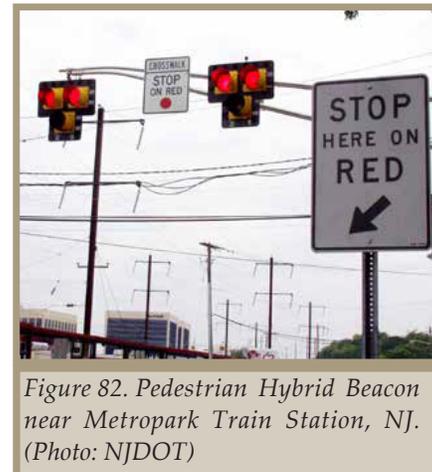
Figure 82. Pedestrian Hybrid Beacon near Metropark Train Station, NJ. (Photo: NJDOT)

  - PHBs are pedestrian-activated signals with three lights (Figure 82) that go through a sequence of yellow and red light phases when activated. The signal remains dark until activated by a pedestrian using the push-button, or via a sensor that detects pedestrians. PHBs allow pedestrians to safely cross while roadway traffic is stopped and have high motorist yielding rates as they require motorists to come to a stop when the signal has a red light indication. They are a potential solution for unsignalized crossing locations characterized by high pedestrian or traffic volume, high speed, or multiple lanes.
- The Bradley Beach Business Community Alliance and the Borough of Bradley Beach should explore opportunities to work with private businesses to install landscaping around parking lots, especially at the Fifth Avenue intersection that is surrounded by parking on three sides (Figure 80).
- Delineate individual on-street parking spaces using paint to eliminate scattered parking patterns and make it easy for drivers to locate available spots.

- Investigate adding curb extensions at all intersections, including:
  - Main Street at Fifth Avenue to reduce the crossing distance for children and improve the intersection's lane alignment (Figure 80).
  - Main Street at Brinley Avenue to prevent the visibility issues caused by loading/unloading trucks and cars parked too close to the crosswalks. Note that this would require coordination with the state and county because Brinley Avenue is a county road.
- Stripe the bus stop pavement at the northeast corner of Main Street at Brinley Avenue to deter cars/ trucks from using the space (Figure 64).

Main Street: Brinley Avenue to Ocean Park Avenue
- Increase the tree cover along the sidewalks to achieve as much consistent tree spacing as possible.
- Install pedestrian-scale lighting over all crosswalks on Main Street at LaReine Avenue.
- Investigate installing curb extensions at all intersections, especially at the McCabe Avenue intersection where vehicle parking extends too close to the crosswalks.
- Upgrade all curb ramps to be ADA-compliant and angle them such that they direct pedestrians into the crosswalks rather than into the center of the intersection.
- Install high visibility ladder crosswalks on all intersections, especially unsignalized intersections, to increase pedestrian visibility and safety, and maintain the visual characteristics of intersections along the corridor.
- The Bradley Beach Business Community Alliance in partnership with the Borough of Bradley Beach should try to work with private businesses to install landscaping around parking lots, especially at the southbound side of Ocean Park Avenue.
- Delineate individual on-street parking spaces using paint to eliminate scattered parking patterns and make it easy for drivers to locate available spots.

Conclusion

The Main Street corridor provides an important connection to the Bradley Beach Train Station, recreation center and downtown commercial district. It is also a great resource for the area's minority and senior populations. With appropriate infrastructural improvements, the corridor could become a safer, more comfortable and more attractive destination for walking and bicycling. Bradley Beach residents, students, businesses, commuters, and visitors can all benefit from the improved safety and visual aesthetics in the area.

Local officials interested in improving the Main Street corridor applied to the CSTA Program to audit current conditions and develop recommendations for potential improvements. As part of this assistance, local stakeholders received an educational presentation on complete streets and participated in a walkability audit.

Sidewalk improvements, adding high visibility crosswalks at intersections, and nstalling bicycle infrastructure, and high-quality pedestrian amenities could encourage more people to walk and bicycle along the corridor. These changes will require coordination with NJDOT, and in some cases with county officials as well. Findings and recommendations from this report can be used to help develop Bradley Beach's future complete streets plans.

Figure 83. People on Main Street.

Appendix

A. Workshop Flyers

B. Workshop Agenda and Field Audit Form

C. Street Smart NJ Campaign Resources

D. Potential Funding Resources

E. Design Resources

A. Workshop Flyers

Bradley Beach
Walkable Community Workshop

ONLINE MEETING   TUESDAY, JULY 21, 2020   10:00AM TO NOON

BRADLEY BEACH IS INTERESTED in improving the pedestrian experience along Main Street near the Bradley Beach Train Station and downtown commercial district. Workshop participants will learn to identify safety concerns for pedestrians and discuss possible solutions. The suggestions made during the workshop will be compiled into a final report along with recommendations to make walking a safer and more attractive option for residents of all ages and abilities.

Please join us in a virtual meeting to learn about making Bradley Beach's streets safer for pedestrians and provide your feedback! The meeting is open to all, pre-registration is required.
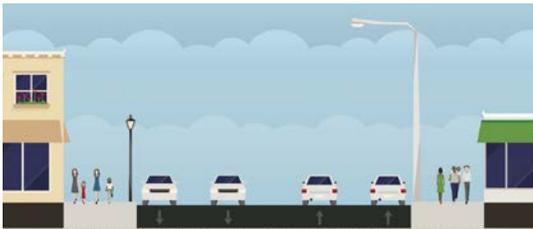
Register here: https://go.rutgers.edu/BradleyBeachWCW
For more information, email: heaslya@tcnj.edu

The Complete Streets Technical Assistance Program is a collaboration between Sustainable Jersey, the Voorhees Transportation Center at Rutgers University, and the North Jersey Transportation Planning Authority. Funded by the NJTPA, the program is designed to support municipal government efforts to advance complete streets initiatives.

Bradley Beach
Walkable Community Workshop

BRADLEY BEACH IS INTERESTED in improving the pedestrian experience along Main Street near the Bradley Beach Train Station and downtown commercial district. The study team needs your help to finalize the draft recommendations that aim to make walking a safer and more attractive option for residents of all ages and abilities. These recommendations were based on public input we received during the July 21 virtual public workshop where participants analyzed the corridor, discussed pedestrian safety concerns, and possible solutions.

Please join us in a virtual meeting to learn about the audit findings, view the initial design concepts, and provide your feedback!! The meeting is open to all, but pre-registration is required.

Register here: https://go.rutgers.edu/BradleyBeachWCW2
For more information, email: heaslya@tcnj.edu

Main St. Study Corridor
- Walk Audit Study Corridor
- ★ Walk Audit Starting and Ending Point
- Downtown Bradley Beach
- Bradley Beach Elementary School

The Complete Streets Technical Assistance Program is a collaboration between Sustainable Jersey, the Voorhees Transportation Center at Rutgers University, and the North Jersey Transportation Planning Authority (NJTPA). Funded by the NJTPA, the program is designed to support municipal government efforts to advance complete streets initiatives.

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BRADLEY BEACH
WALKABLE COMMUNITY WORKSHOP
MAIN STREET
July 21, 2020 | 10:00 AM to NOON

VIRTUAL WORKSHOP AGENDA

Main St. Study Corridor
- ▬▬ Walk Audit Study Corridor
- ★ Walk Audit Starting and Ending Point
- Downtown Bradley Beach
- Bradley Beach Elementary School

0   250   500 ft

10:00 am **Walkable Community Presentation**
The Complete Streets Technical Assistance project team will lead a presentation for people who live and work in Bradley Beach about what to look for when auditing walking and biking infrastructure.

11:00 am **Virtual Walking Audit**
Participants will virtually walk the corridor using Google Street View, assessing the existing streets and sidewalks and identifying issues to overcome to provide safer conditions for pedestrians and bicyclists.

11:45 am **Debrief and Next Steps**
Participants will share recommendations to improve the safety, convenience, and comfort of the walking environment based upon what they observed during the walking audit.

12:00 pm **Adjourn**

Please print and complete this audit form, then scan or take a picture of each page and email it along with any photos to heaslya@tcnj.edu by August 11.

The Complete Streets Technical Assistance Program is a collaboration between Sustainable Jersey, the Voorhees Transportation Center at Rutgers University, and the North Jersey Transportation Planning Authority (NJTPA). Funded by the NJTPA, the program is designed to support municipal government efforts to advance complete streets initiatives.

Contact

Person Completing: _____

Email: _____

Phone: _____

Section 1: Main Street – Monmouth Avenue to 4ᵗʰ Avenue

Design

How many lanes are there?   Are there crosswalks?

What is the speed limit?   Is there a median?

Driver Behavior

Circle all that apply:

a. Speeding   e. Loud music

b. Blocking crosswalk   f. Loud engine

c. Not stopping for pedestrians   g. Not stopping for traffic control

d. Double parking

Sidewalk Condition

Are sidewalks present?

No   One Side (Which?)   Both Sides

Any problems you observed:

a. Sidewalks or paths started and stopped, where?

b. Sidewalks were broken or cracked, where?

c. Sidewalk slope problems, where?

d. Sidewalks were blocked with parked cars, signs, shrubs, etc., where?

e. Sidewalks not wide enough, where?

f. Sight obstructions, where?

Curb Cuts/Ramps

Circle all that apply:

a. Missing

b. Non ADA compliant curb cuts/ramps (too steep, not passable, etc.)

c. Aligned with crosswalk: yes or no

d. Truncated domes present: yes or no

e. Truncated domes placed correctly: yes or no

f. Curb extensions: yes or no

g. Other concerns:

Signage

Streets are labeled: Excellent   Average   Poor   None

Pedestrian oriented directions: Excellent   Average   Poor   None

Car oriented directions: Excellent   Average   Poor   None

Parking

Side 1

☐ Yes: Parallel or Angled

☐ No

Side 2

☐ Yes: Parallel or Angled

☐ No

Amenities

Check all that apply:

☐ Bench

☐ Trash Can
  ▪ Overflowing? Yes or No

☐ Bus shelter

☐ Bicycle Racks

Lighting

☐ Overhead cobra

☐ Historic

☐ Pedestrian oriented

Is there lighting over the crosswalk?

☐ Yes

☐ No

Trees

☐ Frequent, good shape   ☐ Infrequent, good shape

☐ Frequent, poor shape   ☐ Infrequent, poor shape

☐ Mostly empty tree wells   ☐ No tree wells

Additional Notes:

_____

_____

_____

_____

_____

_____

_____

_____

Section 2: Main Street – 4th Avenue to Brinley Avenue	
Design	How many lanes are there? Are there crosswalks? What is the speed limit? Is there a median?

Driver Behavior

Circle all that apply:

a. Speeding   e. Loud music

b. Blocking crosswalk   f. Loud engine

c. Not stopping for pedestrians   g. Not stopping for traffic control

d. Double parking

Sidewalk Condition

Are sidewalks present?

No   One Side (Which?)   Both Sides

Any problems you observed:

a. Sidewalks or paths started and stopped, where?

b. Sidewalks were broken or cracked, where?

c. Sidewalk slope problems, where?

d. Sidewalks were blocked with parked cars, signs, shrubs, etc., where?

e. Sidewalks not wide enough, where?

f. Sight obstructions, where?

Curb Cuts/Ramps

Circle all that apply:

a.   Missing

b. Non ADA compliant curb cuts/ramps (too steep, not passable, etc.)

c. Aligned with crosswalk: yes or no

d. Truncated domes present: yes or no

e. Truncated domes placed correctly: yes or no

f. Curb extensions: yes or no

g. Other concerns:

Signage

Streets are labeled: Excellent   Average   Poor   None

Pedestrian oriented directions: Excellent   Average   Poor   None

Car oriented directions: Excellent   Average   Poor   None

Parking	Side 1 ☐ Yes: Parallel or Angled ☐ No	Side 2 ☐ Yes: Parallel or Angled ☐ No
Amenities	**Check all that apply:** ☐ Bench ☐ Trash Can ▪ Overflowing? Yes or No	☐ Bus shelter ☐ Bicycle Racks
Lighting	☐ Overhead cobra ☐ Historic ☐ Pedestrian oriented	Is there lighting over the crosswalk? ☐ Yes ☐ No
Trees	☐ Frequent, good shape ☐ Frequent, poor shape ☐ Mostly empty tree wells	☐ Infrequent, good shape ☐ Infrequent, poor shape ☐ No tree wells

Additional Notes:

_____

_____

_____

_____

_____

_____

_____

	Section 3: Main Street – Brinley Avenue to Ocean Park Avenue

Design

How many lanes are there?	Are there crosswalks?
What is the speed limit?	Is there a median?

Driver Behavior

Circle all that apply:

a. Speeding

b. Blocking crosswalk

c. Not stopping for pedestrians

d. Double parking

e. Loud music

f. Loud engine

g. Not stopping for traffic control

Sidewalk Condition

Are sidewalks present?

No   One Side (Which?)   Both Sides

Any problems you observed:

a. Sidewalks or paths started and stopped, where?

b. Sidewalks were broken or cracked, where?

c. Sidewalk slope problems, where?

d. Sidewalks were blocked with parked cars, signs, shrubs, etc., where?

e. Sidewalks not wide enough, where?

f. Sight obstructions, where?

Curb Cuts/Ramps

Circle all that apply:

a. Missing

b. Non ADA compliant curb cuts/ramps (too steep, not passable, etc.)

c. Aligned with crosswalk: yes or no

d. Truncated domes present: yes or no

e. Truncated domes placed correctly: yes or no

f. Curb extensions: yes or no

g. Other concerns:

Signage

Streets are labeled: Excellent   Average   Poor   None

Pedestrian oriented directions: Excellent   Average   Poor   None

Car oriented directions: Excellent   Average   Poor   None

Parking

Side 1

☐ Yes: Parallel or Angled

☐ No

Side 2

☐ Yes: Parallel or Angled

☐ No

Amenities

Check all that apply:

☐ Bench

☐ Trash Can
  ▪ Overflowing? Yes or No

☐ Bus shelter

☐ Bicycle Racks

Lighting

☐ Overhead cobra

☐ Historic

☐ Pedestrian oriented

Is there lighting over the crosswalk?

☐ Yes

☐ No

Trees

☐ Frequent, good shape   ☐ Infrequent, good shape

☐ Frequent, poor shape   ☐ Infrequent, poor shape

☐ Mostly empty tree wells   ☐ No tree wells

Additional Notes:

_____

_____

_____

_____

_____

_____

_____

_____

_____

Final Questions

How safe did this area feel?	0	1	2	3	4	5	6	7	8	9	10
How afraid would you be to walk ALONE in the area during *daytime*?	0	1	2	3	4	5	6	7	8	9	10
How afraid would you be to walk ALONE in the area during *night*?	0	1	2	3	4	5	6	7	8	9	10
How well cared for did this area feel?	0	1	2	3	4	5	6	7	8	9	10

Additional Notes:

Please print and complete this audit form, then scan or take a picture of each page and email it along with any photos to heaslya@tcnj.edu by August 11.

NJTPA NORTH JERSEY TRANSPORTATION PLANNING AUTHORITY   SUSTAINABLE JERSEY CERTIFIED   RUTGERS

C. Street Smart NJ Campaign Resources

STREET SMART

STREET SMART NJ FACT SHEET

What is Street Smart NJ?

Street Smart NJ is a public education, awareness and behavioral change pedes- trian safety campaign created by the North Jersey Transportation Planning Authority (NJTPA). The campaign combines grassroots public awareness efforts with social media, public outreach efforts and law enforcement to address pedestrian safety.

There are a number of different ways communities can participate. Nearly all campaigns enlist the involvement of community leaders, businesses and organizations and ask police to step up enforcement of pedestrian safety laws. Some campaigns have an evaluation component, including pre- and post-campaign surveys and observations at crash prone locations. Smaller campaigns may be limited to handing out information at community events and dis-playing signage around town.

More than 140 communities have participated in Street Smart in some way since the program's inception in 2013. NJTPA's goal is to continue growing the program across the state. Communities everywhere are invited to use the strategies and materials on the Street Smart website, bestreetsmartnj.org, to create their own campaigns. The website includes a 'How To' guide, printable materials, social media posts and a sample press release among other resources.

NJTPA staff are available to sit down with interested towns to discuss how to bring Street Smart NJ to their community.

BeStreetSmartNJ.org

f *StreetSmartNJ*   *NJStreetSmart*

WALK SMART — We cross at corners — STREET SMART — BeStreetSmartNJ.org

DRIVE SMART — Heads up, phones down — STREET SMART — BeStreetSmartNJ.org

WALK SMART — We wait for the walk — STREET SMART — BeStreetSmartNJ.org

DRIVE SMART — We STOP for people — It's the law — STREET SMART — BeStreetSmartNJ.org

Why do we need Street Smart?

Part of the impetus behind Street Smart NJ was that the Federal Highway Administration identified New Jersey as a pedestrian "focus" state due to the high incidence of pedestrian injuries and fatalities. In 2019, 179 pedestrians died as a result of pedestrian-vehicle crashes in New Jersey. From 2015 to 2019, 876 pedestrians were killed and thousands were injured on New Jersey's roadways. That translates to one death every two days and 12 injuries daily.

Campaign Messages

The Street Smart NJ campaign urges pedestrians and motorists to keep safety in mind when traveling New Jersey's roads. The program's core message is "Walk Smart – Drive Smart – Be Street Smart" with specific messages including We look before crossing; Heads up, phones down; We slow down for safety; We stop for people – it's the law; We use crosswalks; We cross at corners; We cross at the light; and We wait for the walk. The NJTPA has developed pedestrian safety tip cards, in English and Spanish, for public distribution built around the messages. The messages are also printed on posters, banners, street signs, coasters, tent cards and coffee sleeves.

Police Enforcement

One of the keys to Street Smart NJ's success is law enforcement participation. Police officers engage and educate, rather than simply issue citations. In many communities that participate in Street Smart NJ police have issued warnings rather than citations and even rewarded good behavior with coupons, gift cards and free t-shirts. Street Smart NJ public awareness efforts are often conducted in conjunction with this increased enforcement.

BeStreetSmartNJ.org

f *StreetSmartNJ*   🐦 *NJStreetSmart*

Results

Evaluations of previous Street Smart NJ campaigns have shown positive results. There was a 60 percent improvement in drivers stopping for people crossing before turning right at a red light or stop sign and 45 percent reduction in drivers running a red light or stop sign, based on an analysis of eight campaigns conducted in 2018 and 2019. There was also a 40 percent improvement in drivers stopping for pedestrians before turning at a green light and a 21 percent reduction in the number of people crossing unsafely against a signal or outside a crosswalk. The full report can be viewed at **BeStreetSmartNJ.org**.
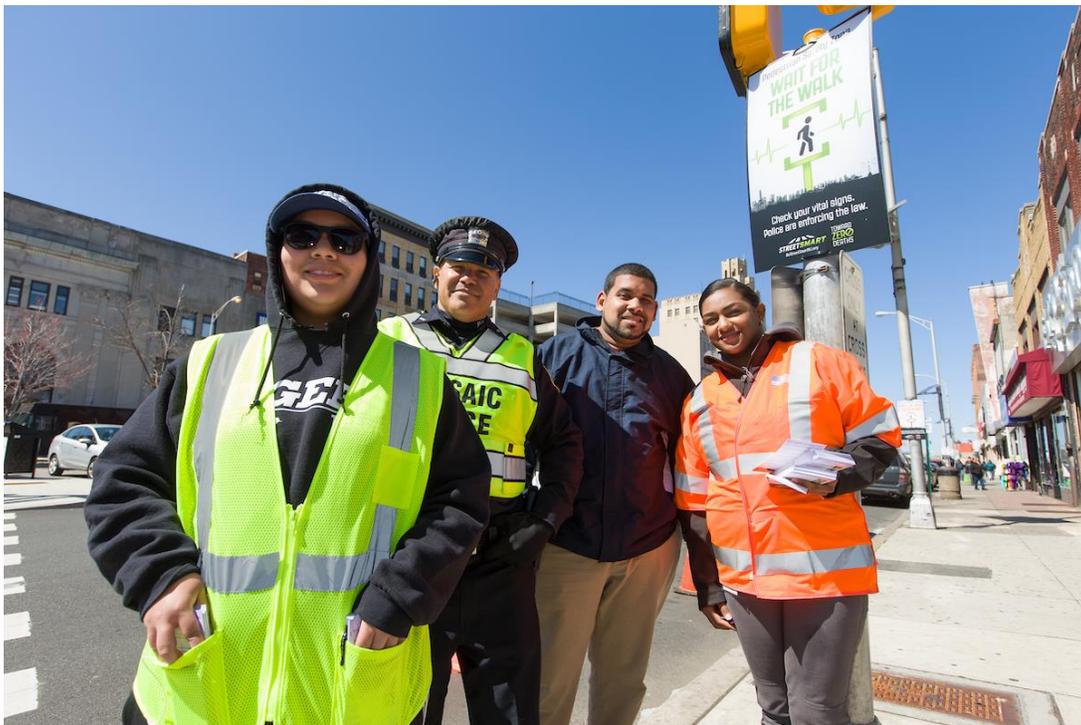
BeStreetSmartNJ.org

f *StreetSmartNJ*   🐦 *NJStreetSmart*

D. Potential Funding Resources

This appendix provides a list of common grant programs available to New Jersey communities for the advancement of complete streets initiatives, including both infrastructure and non-infrastructure projects, and programs to increase walking and bicycling. A table has been included that lists the most common grant sources for complete street related projects. Links to two online databases with additional funding sources has also been included. Grants listed are highly competitive and grant application requirements should be carefully reviewed before making the decision to apply. From the reviewers' perspective, application review is time-consuming and often applications will not be reviewed if all the required elements are not received by the published deadline. The most successful applications tell the story of the populations most in need of the proposed improvements, especially disadvantaged communities or vulnerable groups such as seniors. Applications should use compelling pictures, data and other documentation, and indicate how and why improvements are prioritized.

New Jersey Department of Transportation

The Division of Local Aid and Economic Development at the New Jersey Department of Transportation (NJDOT) 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 three metropolitan planning organizations that cover the state 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 encourages applications for pedestrian safety improvements, bikeways, and streetscapes. Additionally, a common strategy to implement on-street bike lanes is to include bike lane striping within repaving projects that are funded through this program. Learn more here: https://www.state.nj.us/transportation/business/localaid/municaid.shtm

County Aid: County Aid funds are available for the improvement of public roads and bridges under county jurisdiction. Public transportation and other transportation projects are also included. Learn more here: https://www.state.nj.us/transportation/business/localaid/countyaid.shtm

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. Learn more here: https://www.state.nj.us/transportation/business/localaid/bikewaysf.shtm

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. Learn more here: https://www.state.nj.us/transportation/business/localaid/safe.shtm

Transit Village: This program awards grants for transportation projects that enhance walking, biking, and/or transit ridership within a ½ mile of the transit facility. Municipalities must already be designated as a Transit Village by the Commissioner of Transportation and the inter-agency Transit Village Task Force in order to be eligible to apply. Learn more here: https://www.state.nj.us/transportation/business/localaid/transitvillagef.shtm

Bicycle and Pedestrian Planning Assistance: NJDOT offers 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. For more information, please contact the state bicycle and pedestrian program coordinator at bikeped@dot.nj.gov

Federal Aid Infrastructure Grant Programs

Safe Routes to School: The Safe Routes to School Program provides federal funds for infrastructure projects that enable and encourage children in grades K-8, including those with disabilities, to safely walk and bicycle to school. Applicants can receive bonus points on the grant if they have School Travel Plans, a Complete Street Policy and Transit Village designation. Learn more here: https://njdotlocalaidrc.com/federally-funded-programs/safe-routes-to-school

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. Municipalities can receive bonus points on the grant if they have an adopted Complete Street Policy and are a designated Transit Village. Learn more here: https://njdotlocalaidrc.com/federally-funded-programs/transportation-alternatives

New Jersey Department of Environmental Protection: The Recreational Trails Program administered by the NJDEP Green Acres Program provides 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. Learn more here: https://www.nj.gov/dep/greenacres/trails/grants.html

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. Learn more here: http://www.sustainablejersey.com/

Sustainable Jersey for Schools: Sustainable Jersey for Schools grants are intended to help districts and schools make progress toward Sustainable Jersey for Schools certification. Learn more here: http://www.sustainablejerseyschools.com

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. Learn more here: https://www.njhcn.org/

Funding from Other Sources

Various other funding sources exist that may help municipalities further complete streets projects. Both Sustainable Jersey and Together North Jersey have developed comprehensive online databases that catalog the many funding sources available. They can be found at the following locations:
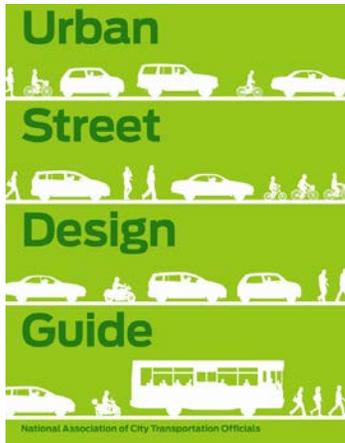
Sustainable Jersey Grants Portal: https://www.sustainablejersey.com/grants/

Together North Jersey Funding and Resources Database: https://togethernorthjersey.com/funding-tools-database/

Federal Funding

1. **US Department of Transportation (USDOT)**
   a. Better Utilizing Investments to Leverage Development (BUILD, replaced TIGER)

2. **Federal Highway Administration (FHWA) Programs**
   a. Congestion Mitigation and Air Quality Improvement (CMAQ)
   b. Surface Transportation Program (STP)
   c. Highway Safety Improvement Program (HSIP)
   d. National Highway Performance Program (NHPP)
   e. Transportation Alternatives Program (TAP)
   f. Safe Routes to School (SRTS)
   g. Local Safety / High Risk Rural Roads Program (HRRR)
   h. National Highway System (NHS)
   i. Recreational Trails Program - Including hiking, bicycling, in-line skating, equestrian use, cross-country skiing, snowmobiling, off-road motorcycling, all-terrain vehicle riding, four-wheel driving, or using other off-road motorized vehicles.
   j. Federal Lands Access Program (FLAP) - The Access Program supplements State and local resources for public roads, transit systems, and other transportation facilities, with an emphasis on high-use recreation sites and economic generators.
   k. Emergency Relief - Repair or reconstruction after national disaster, can include bicycle and pedestrian facilities

3. **National Highway Traffic Safety Association**
   a. NHTSA Section 402 State Highway Safety Program
   b. NHTSA Section 405 Non-Motorized Safety Grants

4. **Federal Transit Administration Programs**
   a. Urbanized Area Formula Program (UZA) - Public transit and bike routes to transit
   b. Fixed Guideway Capital Investment Grants - Transit systems and bike parking
   c. Bus and Bus Facilities Formula Grants - Includes bike parking facilities
   d. Enhanced Mobility of Seniors and Individuals with Disabilities - Access to transit facilities for seniors

State Funding

5. **Municipal Aid ($140m)**
6. **County Aid ($150m)**
7. **Local Bridges ($44m)**
8. **Safe Streets to Transit ($1m)**
9. **Transit Village ($1m)**
10. **Bikeways ($1m)**
11. **Local Aid Infrastructure Fund ($7.5m)**
12. **Safe Corridors Highway Safety Funds**
13. **Urban Aid ($10m)**
14. **New Jersey Trails Program (Department of Environmental Protection)**
15. **Other Funding Sources**
16. **Regional/Local CMAQ Initiatives Program (NJTPA)**
17. **NJ Division of Highway Traffic Safety**
18. **Open Space &Farmland Preservation**
19. **Homeland Security Transit Security Grant Program (TSGP)**

Other Sources

20. **County Capital Program**
21. **Municipal Capital Programs**
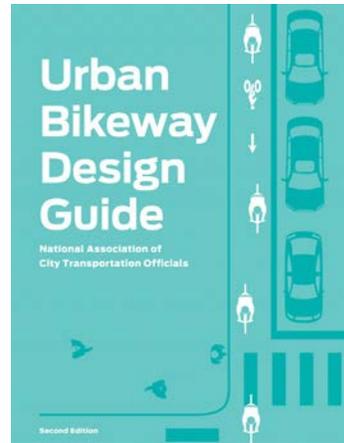22. **Foundations**

E. Design Resources

NACTO Guides
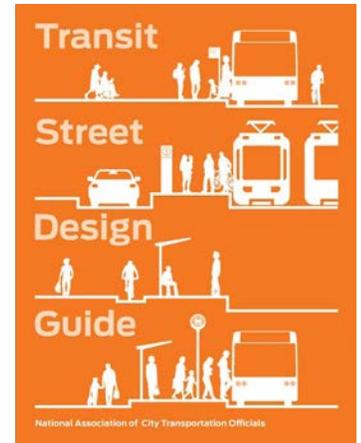

Urban Street Design Guide
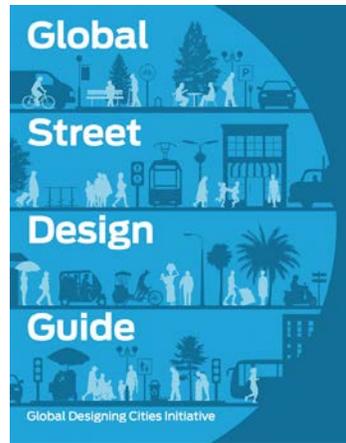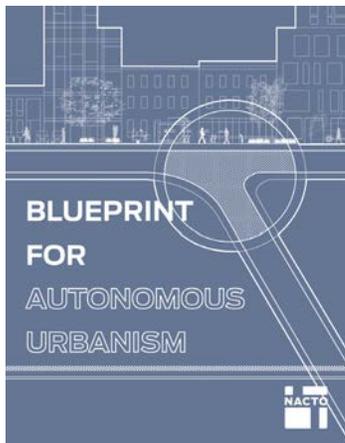

Global Street Design Guide
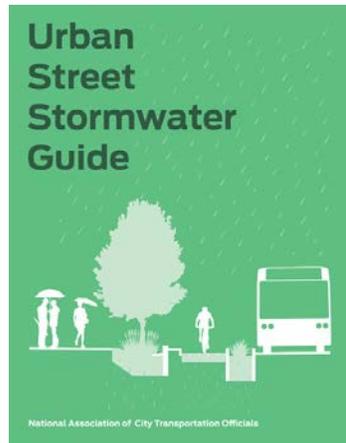

Urban Bikeway Design Guide

Transit Street Design Guide

Blueprint for Autonomous Urbanism
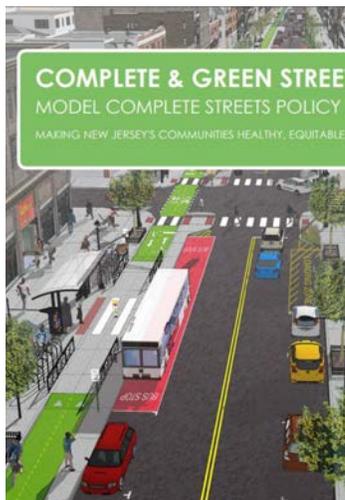

Urban Street Stormwater Guide

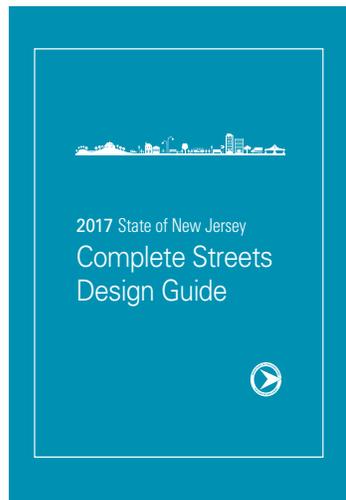
Bike Share Station Siting Guide

NJDOT Guides

Complete & Green Streets for All: Model Policy and Guide

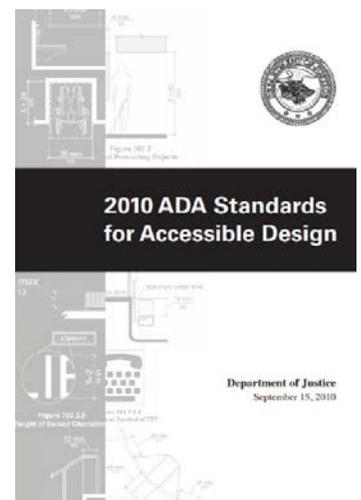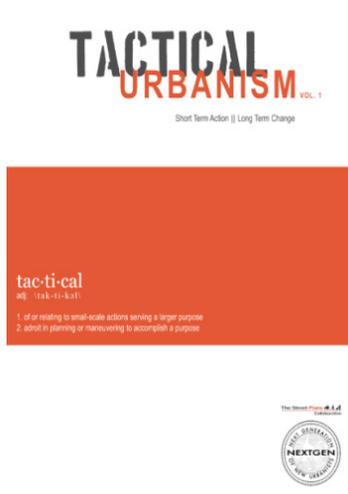2017 State of New Jersey Complete Streets Design Guide

A Guide to Policy Development

A Guide to Creating A Complete Streets Implementation Plan

ADA Guidelines

ADA Standards for Accessible Design

Tactical Urbanism Guides
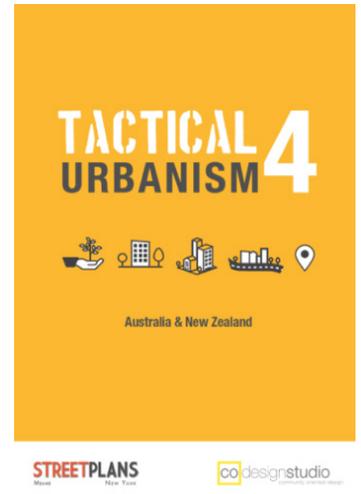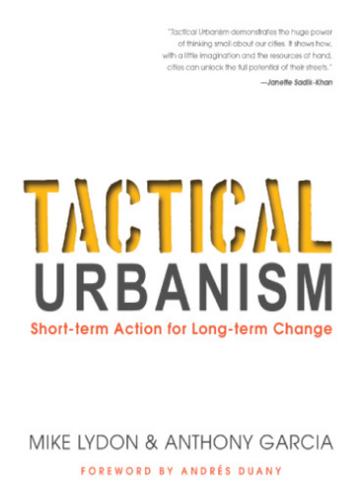

Tactical Urbanism 1
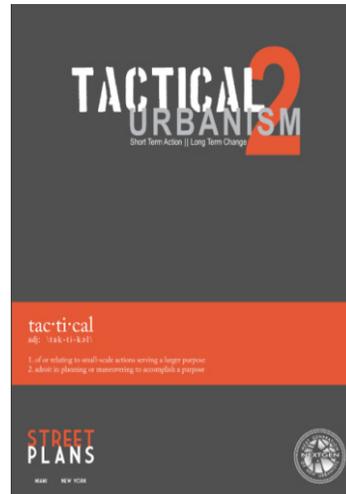
Tactical Urbanism 2

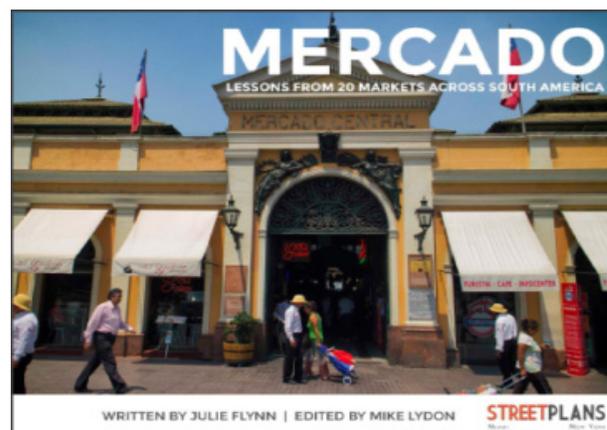Tactical Urbanism 3

Tactical Urbanism 4

Tactical Urbanism 5

Tactical Urbanism

Tactical Urbanist's Guide to Materials and Design Version 1.0

The Open Streets Guide

Mercado: Lessons from 20 Markets Across South America

Public Space Stewardship Guide