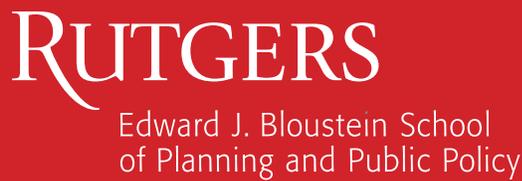
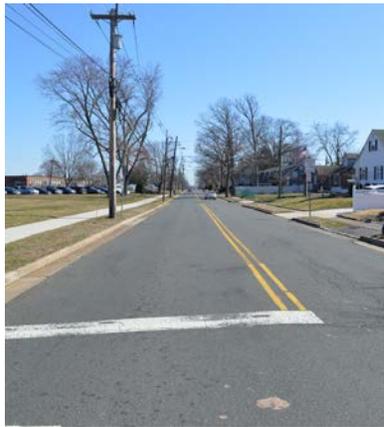




Bicycle Network Plan

Borough of Manville, Somerset County, NJ
2020



About the Report

This report has been prepared as part of the North Jersey Transportation Planning Authority (NJTPA) Complete Streets Technical Assistance Program, with financing by the Federal Transit Administration and the Federal Highway Administration of the U.S. Department of Transportation. This report is disseminated under the sponsorship of the U.S. Department of Transportation in the interest of information exchange. The United States Government assumes no liability for its contents or its use thereof.

The report was authored by James Sinclair, Lisa Cintron, and Charles T. Brown of the Alan M. Voorhees Transportation Center (VTC) at Rutgers, The State University of New Jersey, and reviewed by Sustainable Jersey and the NJTPA.

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Edward J. Bloustein School of Planning and Public Policy
Rutgers, The State University of New Jersey
33 Livingston Avenue, Fourth Floor
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Forcina Hall, 3rd Floor
2000 Pennington Rd.
Ewing, NJ 08628

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North Jersey Transportation Planning Authority

One Newark Center, 17th Floor
Newark, NJ 07102

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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 Manville, 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 potential infrastructure improvements to create a safe and attractive bicycle corridor connecting Little Weston, Weston Elementary School, Manville High School, and Roosevelt Elementary School. To develop these recommendations, the study team engaged municipal stakeholders in a collaborative process to identify existing conditions that pose obstacles to safe bicycle travel and develop practical solutions that enhance safety for all roadway users.

The recommendations in this report include conceptual plans and reference images that show what a variety of completed projects could look like if installed (Figure 1). Municipal officials may use these plans and images to facilitate discussions with the public and to assist in moving the project from concept to reality. Two major corridors were identified: a north-south route following 13th Avenue/Whalen Street and an east-west corridor along Brooks Boulevard. Most of the recommendations can be implemented through a reallocation of roadway space using new striping and signage. As such, the municipality can implement these improvements quickly and at a relatively low cost. Aside from facilitating bicycle travel, many of the recommendations aim to improve overall traffic safety by addressing speeding and improving pedestrian crossings. While the recommendations focus on direct bicycle routes between neighborhoods and schools, the same principals of connectivity apply to other municipal-owned roads in Manville.

In addition to the CSTA Program, which advises communities on engineering improvements, the NJTPA also has a pedestrian safety education program, Street Smart NJ, which provides resources for communities to improve safety through education and enforcement. Street Smart NJ aims to raise awareness of New Jersey's pedestrian-related laws and change the behaviors that contribute to pedestrian-vehicle crashes. Appendices to the report include additional information on Street Smart NJ and funding opportunities.



Figure 1. A photo simulation prepared for this report to show what an improvement could look like on Kennedy Boulevard.

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 by 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.

Manville is a small borough that is bisected by two railroad lines and a brook, limiting the number of north-south roadways available to residents. As a walking school district, Manville students walk, bicycle, or get dropped off at schools using a limited number of roadways. Manville is also near two popular bicycling facilities, the Delaware and Raritan Canal State Park and Duke Farms, which attract recreational bicyclists from around the state.

Although the borough is compact and has favorable terrain, there is currently no bicycling infrastructure in town. The borough passed a complete streets resolution in October 2014, but has not undertaken implementation efforts. In late 2019, the municipality applied for technical assistance under the CSTA Program to identify opportunities to implement complete streets projects aimed at improving bicycle connectivity within the borough. In its application, the borough identified a north-south corridor that would link the isolated "Little Weston" neighborhood to two elementary schools, the library, and the intermediate school and high school campus (Figure 2). In particular, the borough expressed concern about bicycle-vehicle interactions at intersections, the lack of sidewalks, and the need to calm traffic speeds.



Figure 2. Maps created by Manville and included in their application to the CSTAP showing the potential study corridor and some of the challenges along the route.

What is a Complete Street?

Complete streets are roads designed for all users, all modes of transportation, and all ability levels (Figure 3). 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 should 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 3. 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.

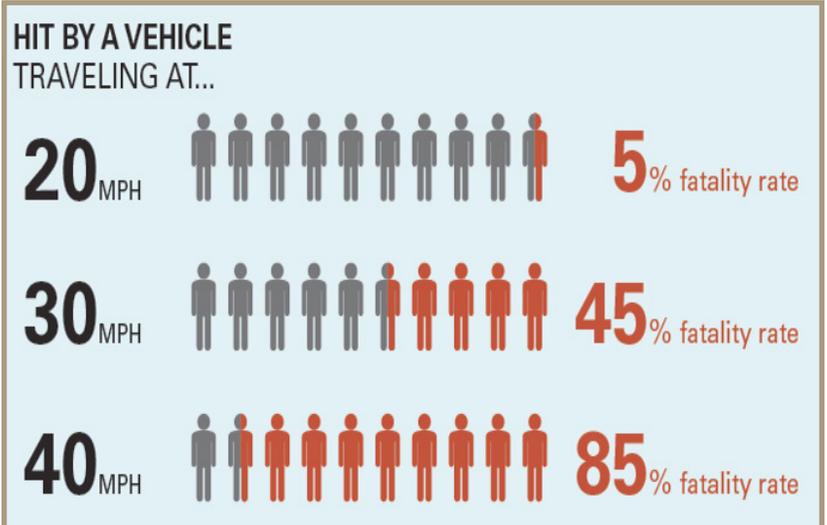


Figure 4. Graphic showing increased fatality rate as vehicle speeds increase.

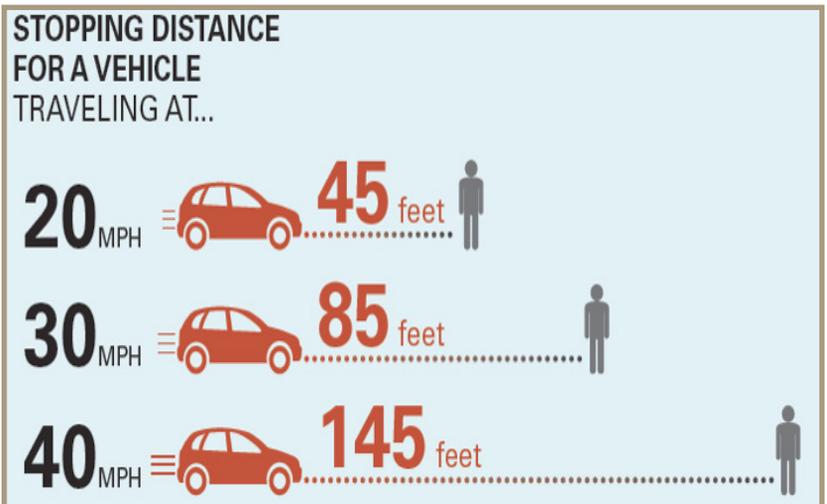


Figure 5. Graphic showing increased stopping distance as vehicle speeds increase.

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 6). 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 7).

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 8).



Figure 6. When a street lacks accessible sidewalks and ramps, it is not complete.



Figure 7. Trails, such as this one in Monroe, New Jersey, can encourage exercise and lead to improved health.



Figure 8. 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 9)¹.



Figure 9. Division Street in Somerville was converted into a pedestrian plaza that has become a popular gathering space.

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 10).



Figure 10. Green infrastructure used to narrow the roadway and provide a shorter crossing distance for pedestrians.

Complete Streets in New Jersey and Manville

New Jersey is a national leader in the complete streets movement. In 2009, NJDOT was among the first state departments of transportation (DOTs) in the nation to adopt an internal complete streets policy. In 2010, the National Complete Streets Coalition ranked that policy first among 210 state, regional, county, and municipal policies nationwide. Since 2009, NJDOT has funded five Complete Streets Summits, and over a dozen local, regional and statewide in-person and online 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. One of the positive outcomes of these efforts is that 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 11).

In adopting its ordinance, the Manville Borough Council resolved that "new construction and reconstruction of all public roads or bridges, or other portions of the transportation network, undertaken by the borough of Manville; or new construction and reconstruction of transportation facilities that are intended to be dedicated to the Borough of Manville, shall be designed and constructed as complete streets whenever feasible to do so in order to safely accommodate travel by pedestrians, bicyclists, public transit, and motorized vehicles and their passengers, with special priority given to pedestrian safety."

1. "Complete Streets Case Study: Somerville, New Jersey," Alan M. Voorhees Transportation Center, 2016.

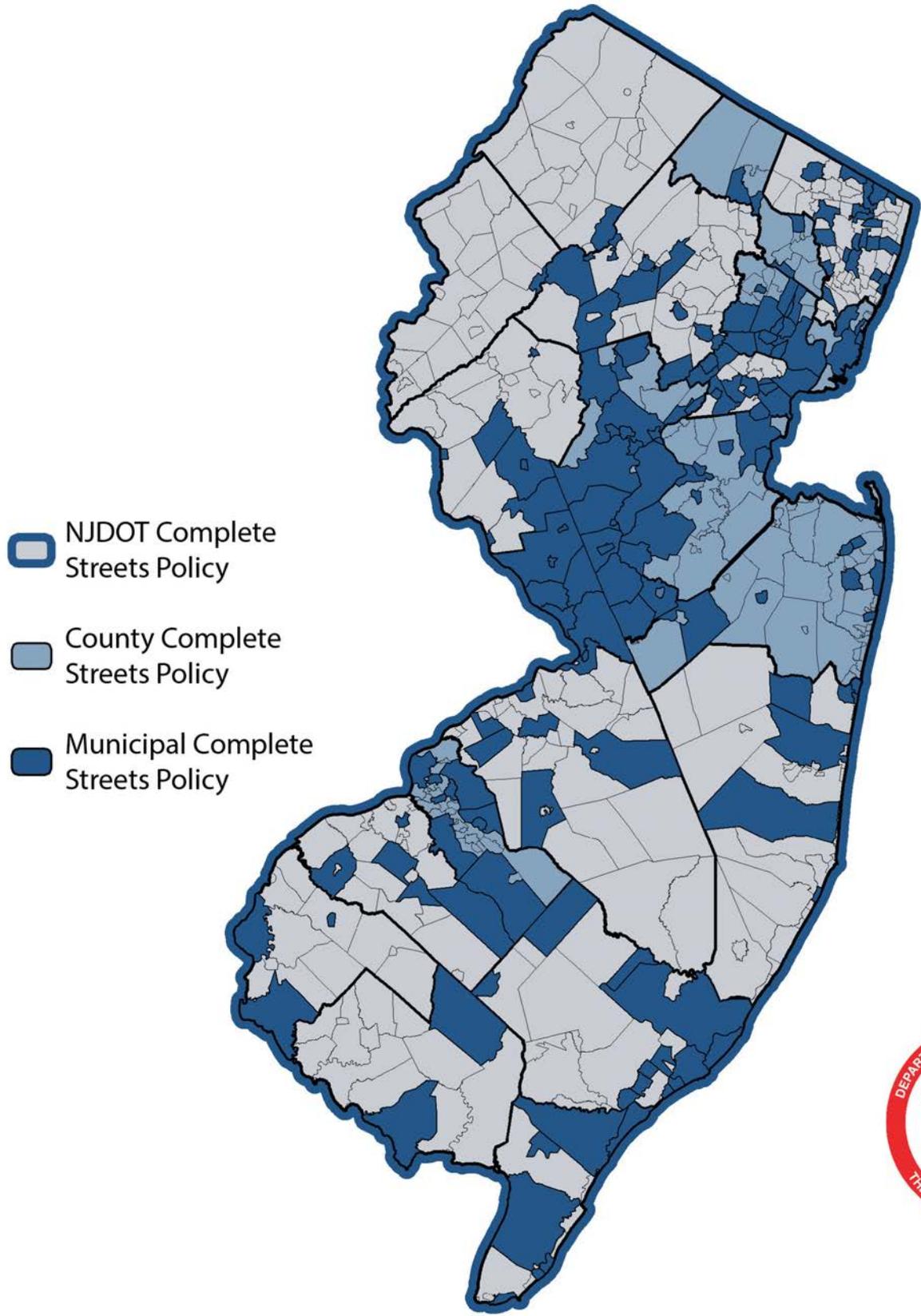


Figure 11. Complete Streets Policies in New Jersey, as of October 15, 2020. Visit <http://njbikeped.org/services/complete-streets-policy-compilation/> for a constantly updated list of policies.

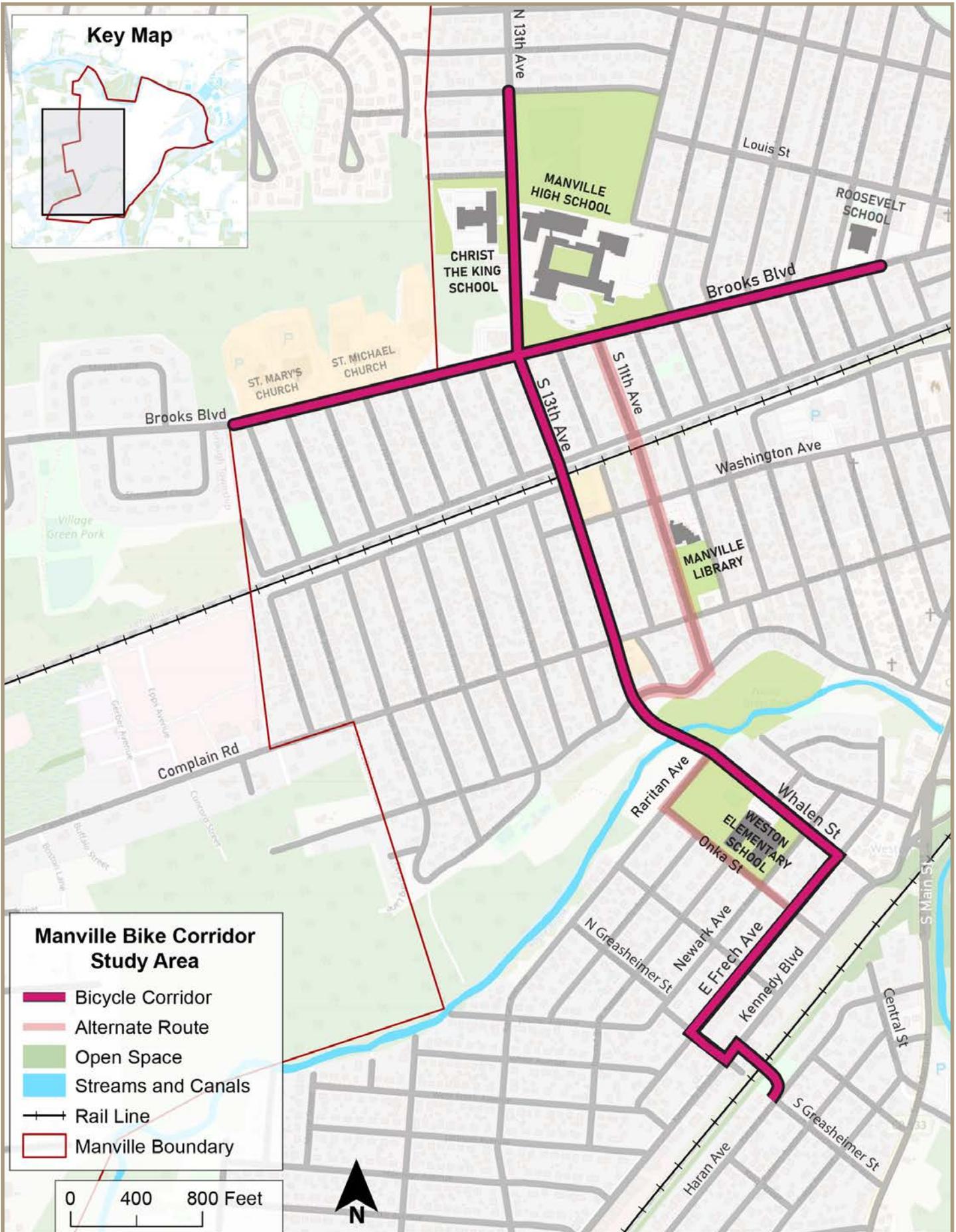


Figure 12. Map of Study Area in Manville, New Jersey.

Study Area

The Borough of Manville is home to approximately 10,283 residents within an area of 2.4 square miles. The median age is 37.4 and the estimated median household income is \$69,654, which is lower than Somerset County's median income of \$111,772. The poverty rate in Manville is 9 percent, which is nearly double Somerset County's rate of 4.7 percent. Manville is a diverse community with 24 percent of residents speaking a language other than English at home, including 14.5 percent who speak Spanish (US Census Bureau, 2018).

Almost 80 percent of Manville residents drive alone to work, followed by 13.4 percent who carpool. Nearly 3 percent of residents walk to work, which exceeds the number who use public transit (2 percent) or bicycle to work (less than 1 percent). Historically, Manville residents had access to three train stations, but today the town is no longer served by passenger rail; only the Somerset County SCOOT bus line provides transit connectivity to Manville. Just 324 residents both live and work in Manville, while 5,606 residents commute to jobs outside the borough. Nearly half of those commuters (2,406) work within Somerset County, followed by 1,165 who work in neighboring Middlesex County (US Census Bureau, OnTheMap, 2018).

Manville is bisected by Main Street (Somerset County Route 533), which also acts as the borough's primary commercial corridor (Figure 13). While most of the corridor resembles a typical New Jersey downtown, with a variety of local businesses, a Walmart Supercenter that is set behind a large surface parking lot occupies the northeast corner of town. Behind the Walmart sits a sprawling surface parking lot for a vehicle auction company. Both businesses attract significant vehicular traffic.

Manville is bordered by the Raritan River to the north and the Millstone River to the east, limiting the number of access points in and out of the borough. Main Street is the only roadway exiting the north side of the borough, connecting into Bridgewater Township. To the west, three roadways (Dukes Parkway, Brooks Boulevard, and Camplain Road) provide connectivity to NJ 206 in Hillsborough Township. On the south side of town, Kennedy Boulevard and Main Street also connect into Hillsborough. Only one roadway, Manville Causeway, provides access into Franklin Township to the east.

Roadway connectivity within the borough is also hindered by two railroads and a brook, which cut across the borough from east to west (Figure 14). Limited roadway connections have created two isolated neighborhoods in Manville: Lost Valley and Little Weston. The Lost Valley section of the borough lies on the eastern edge of town and only has two roadway connections. The Little Weston neighborhood, on the southern edge of town, only has one. Aside from these limitations, Manville neighborhoods are laid out along a fairly dense roadway network, making them suitable for walking and biking.

In its application, the borough identified a north-south corridor that would link various residential neighborhoods in Manville with the Roosevelt and Weston Elementary Schools, the Manville Intermediate and High School campus, and the Public Library (Figure 12). The municipality proposed a study corridor that begins at the base of an existing pedestrian bridge at the intersection of Haran Avenue and S. Greasheimer Street in Little Weston. The initial proposed route continues over the pedestrian bridge to Kennedy Boulevard and proceeds east to Whalen Street. The route then follows Whalen Street, passing Weston Elementary School, onto S. 13th Avenue until Brooks Boulevard, where it turns right at the high school. The proposed study corridor then ends at Roosevelt Elementary School.



Figure 13. Main Street, Manville's downtown.



Figure 14. One of two railroads dividing Manville.

Assessment of need

As discussed in the previous section, the most significant barrier to bicycle connectivity is the limited number of roadways that cross Manville and serve as chokepoints that direct vehicular traffic to the same locations where bicyclists need to travel. None of Manville's roads have bicycle infrastructure, leaving riders vulnerable to potential traffic conflicts. Additionally, many roadways lack sidewalks and, in places where sidewalks exist, there are multiple gaps in connectivity. Even where sidewalks are continuous and in good shape, they are too narrow for bicyclists and pedestrians to share.

In its application, the borough noted that driver behavior can be problematic, especially in cases where drivers fail to stop for pedestrians in crosswalks. While most of the study area has 25 mph speed limits, the application noted issues with speeding and the need for traffic calming measures. The borough has participated in NJTPA's Street Smart NJ pedestrian safety campaign and found that it led to better behavior among pedestrians and drivers; however, there is concern that these effects could be only temporary. The borough also works with the RideWise transportation management association (TMA) to provide Safe Routes to School walking and biking safety education programs to students.

On March 9, 2020, the project team toured the corridor with representatives from the municipality. During this meeting, the team examined the existing conditions and discussed the barriers that bicyclists face along the corridor. The team also used Google Earth and Google Street View to better understand the corridor.

Data

Traffic

Traffic count data are not available for the roadways within the study area. However, data for other Manville roadways provide some context, as traffic volumes help inform which bicycle facilities are most appropriate. NJDOT conducted weekday traffic counts in 2016, finding an annual average daily traffic (AADT) volume of 23,759 on S. Main Street, near the intersection with South Street. A 2018 study on Dukes Parkway, near N. 13th Avenue, found an AADT volume of 9,068. A 2016 count on Knopf Street, between N. 9th Avenue and N. 10th Avenue found an AADT volume of 1,180. The study team assumes that most roadways within the study area resemble the volumes found on Knopf Street, aside from Brooks Boulevard, W. Camplain Road, and Kennedy Boulevard, which carry higher volumes similar to Dukes Parkway.

Figure 15 shows Manville roads ranked by Bicycle Level of Comfort (LOC), which analyzes roadway design, posted speed limits, number of lanes, and truck volume data in order to categorize all roads and trails into one of five groups. Most borough roads are LOC 2 or 3. The categories are:

LBC 1: Little to no stress. Suitable for all cyclists, including children.

LBC 2: Little traffic stress. Suitable for most adult cyclists, but more challenging for children.

LBC 3: Moderate traffic stress. Comfortable for those who already ride bicycles.

LBC 4: High traffic stress. Only for very experienced bicyclists.

LBC 5: Unable to classify or unsuitable for bicycling.

Speed

All roadways within the study area are signed for 25 mph, but no data exists on average traffic speeds. Speed sentry data collected in 2018 for the StreetSmart NJ campaign found that 30 percent of drivers were exceeding the speed limit on Main Street.

Crash History

Manville had 1,106 traffic collisions between 2015-2019, of which 304 occurred within the study area (Figure 16). Of those, six involved a pedestrian and three involved a bicyclist. One pedestrian, a 47-year-old woman, was killed on March 1, 2017 at the intersection of Washington Avenue and S. 6th Avenue. Table 1 details the collisions involving pedestrians and bicyclists within the study area. It is important to note that six of the nine involved school-aged individuals and seven of the nine crashes occurred during daylight hours.

Table 1. Pedestrian and bicycle crashes in study area, 2015-2019.

Location	Date	Time	Crash Type	Ped. Age	Ped. Gender	Injury Severity	At Intersection	Lighting
100 feet south of S. 13th Ave. and Washington Ave.	11/13/2019	5:29 PM	Pedestrian	54	Female	Possible Injury	No	Dark - Street Lights On (Continuous)
25 feet north of S. 5th Ave. and Washington Ave.	8/16/2019	6:55 AM	Bicyclist	13	Male	Suspected Minor Injury	No	Daylight
S. 8th Ave. and W. Camplain Rd.	6/22/2019	4:09 PM	Bicyclist	11	Male	Suspected Minor Injury	Yes	Daylight
N. 11th Ave. and Brooks Blvd.	6/11/2019	7:40 AM	Pedestrian	16	Male	Possible Injury	Yes	Daylight
250 feet north of S. 13th Ave. and North St.	9/5/2017	5:14 PM	Pedestrian	16	Male	No Apparent Injury	No	Daylight
S. 6th Ave. and Washington Ave.	3/1/2017	6:55 PM	Pedestrian	47	Female	Fatal Injury	Yes	Dark - Street Lights On (Continuous)
250 feet east of Kennedy Blvd. and N. Greashemier St.	1/9/2017	3:24 PM	Pedestrian	40	Male	Possible Injury	No	Daylight
125 feet north of S. 13th Ave. and W. Camplain Rd.	3/17/2016	2:56 PM	Pedestrian	13	Male	Suspected Minor Injury	No	Daylight
S. 13th Ave. and W. Camplain Rd.	2/20/2016	3:51 PM	Bicyclist	18	Male	No Apparent Injury	Yes	Daylight

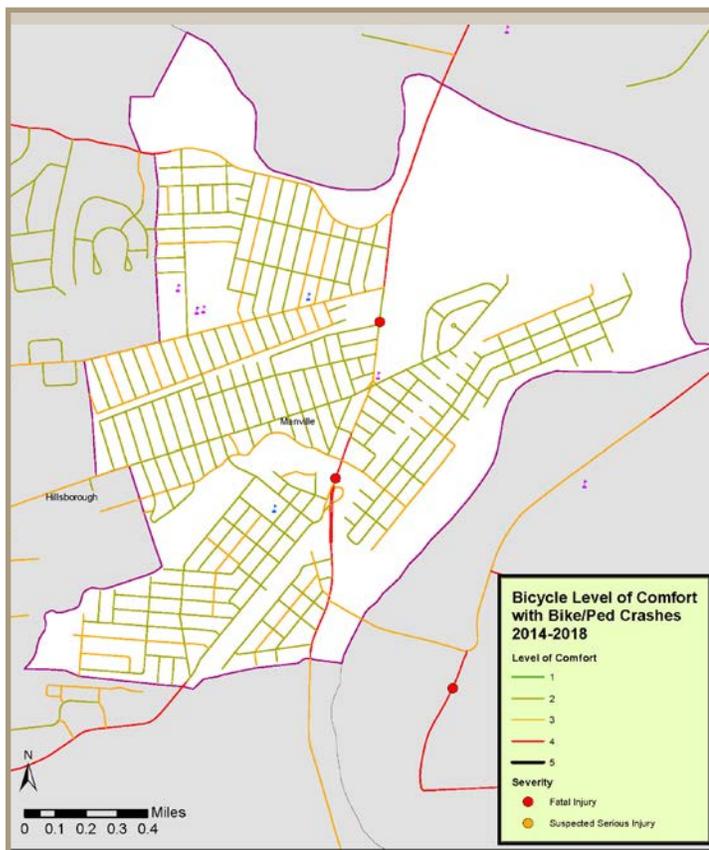


Figure 15. Map showing Manville roads by Level of Comfort.

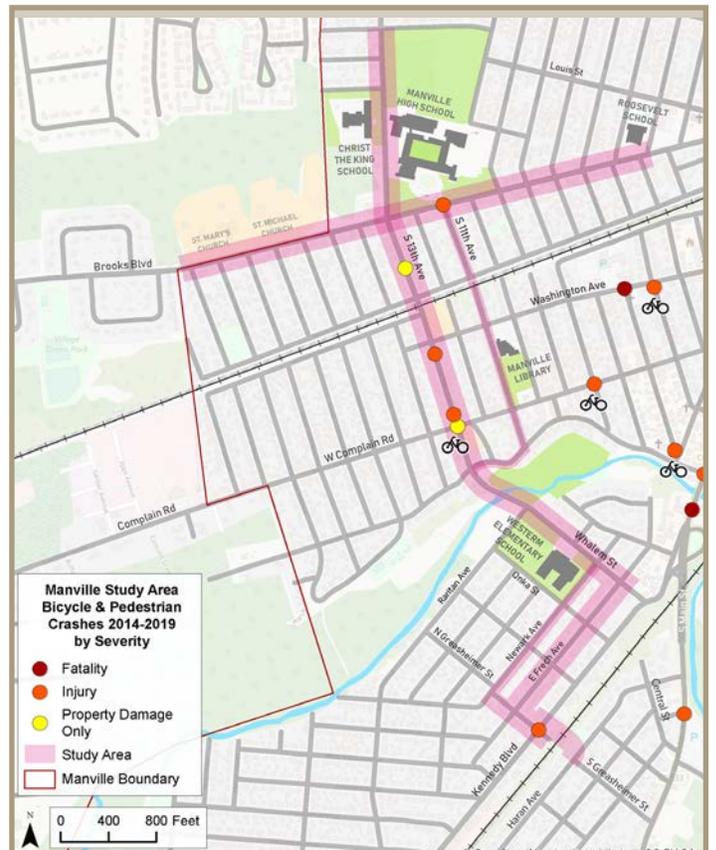


Figure 16. Map of crashes within the study area, from 2015 to 2019.

Planned Route and Recommendations

The Manville Bicycle Network Plan identifies two corridors providing connectivity between neighborhoods and schools. The first corridor runs primarily north-south, connecting the Little Weston neighborhood, Weston Elementary School, the Manville Library, and Manville High School. The second corridor runs east-west along Brooks Boulevard, providing a connection between Manville High School and Roosevelt Elementary School. While not directly addressed in this plan, many other roadways in Manville are quiet residential streets, which can feed into the main corridors and provide safe bicycle accommodations with minimal changes.

This report follows the perspective of a bicyclist riding north from Little Weston to Manville High School, and then along Brooks Boulevard from west to east.

Little Weston Neighborhood

The proposed route begins at the intersection of Haran Avenue and S. Greasheimer Street in the Little Weston neighborhood (A in Figure 17). The eastern side of this intersection is home to Haran Avenue Park (Figure 18) and a bicycle and pedestrian bridge over the CSX Transportation Trenton Subdivision railroad (Figure 19). Aside from this bridge, the only other connection out of Little Weston is via S. Main Street. While the bridge is not a Manville facility, the municipality maintains it and uses it as an alternative route for emergency vehicles if there is flooding on Main Street.

Haran Avenue is 30 feet wide with a speed limit of 25mph (Figure 20). As the roadway is straight and has priority over intersecting streets, its design may encourage speeding. Improvements to the intersection could lower vehicle speeds, provide a gateway to the bridge, and enhance access to the park. Additional signage and striping such as sharrows (shared-lane markings) and on-road sidewalks could help direct residents to the bridge and park.

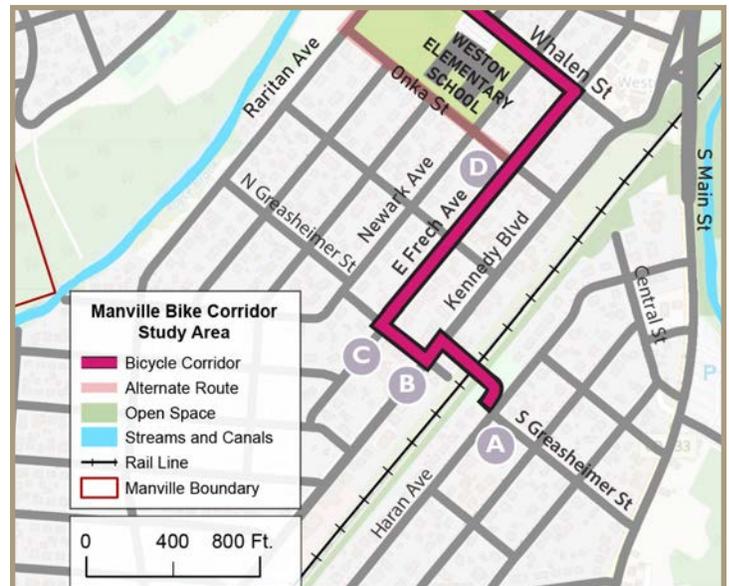


Figure 17. Southern portion of bicycle corridor.



Figure 18. Haran Avenue Park, as seen from the pedestrian bridge.



Figure 19. The bicycle and pedestrian bridge over the railroad.



Figure 20. Haran Avenue, looking west.

Recommendation: Narrow the roadway crossing distance to a width of 20 feet at the intersection by building a curb extension on each side (Figure 21). In the short term, low-cost curb extensions can be installed using paint and signage (Figure 23). This approach, referred to as a demonstration project or Tactical Urbanism, uses short-term, low-cost, scalable interventions to affect long-term change related to street safety and public space. This method can draw attention to perceived shortcomings, widen civic engagement, test interventions, and inspire action. Demonstration projects champion flexibility because improvements can be temporary. This allows residents and policymakers to witness the improvement and weigh in on its effects. This also allows for data collection, and modifications for the final permanent design based on findings from the temporary installation. As funding allows, the borough can advance or upgrade the project to permanent installation.

The intersection should include high visibility crosswalk installations to inform motorists that bicyclists and pedestrians may cross at this location. Additionally, the borough should consider installing a raised crosswalk, which also serves as a speed bump, to decrease vehicle speeds (Figure 23). The existing sidewalk does not connect to the bridge pavement and this gap should be filled to provide a seamless connection for pedestrians.

Painting sharrows (shared-lane markings) on both Haran Avenue and S. Greasheimer Street would help direct bicyclists and remind motorists that bicyclists may use the roadway.

These improvements should retain accommodations for municipal vehicles to access the bridge in certain situations.



Figure 21. Proposed changes to Haran Avenue and S. Greasheimer Street.



Figure 22. An example of a painted curb extension in Seattle, WA.



Figure 23. Example of a raised crosswalk in Union, NJ.

Kennedy Boulevard and N. Greasheimer Street

On the opposite side of the tracks, the pedestrian bridge terminates 80 feet northeast of the intersection of Kennedy Boulevard and N. Greasheimer Street (Figure 24). At this location, pedestrians may continue on the sidewalk but bicyclists have no defined travel path. While a curb cut does exist onto Kennedy Boulevard, it is primarily for municipal maintenance vehicles.

Kennedy Boulevard is 34 feet wide with one lane of travel in each direction and parking on the eastbound side (Figure 25). The speed limit is 25 mph and residents report that the road is well trafficked and used by trucks. There are narrow sidewalks on each side of the road and no bicycle facilities. Kennedy Boulevard was initially identified as a potential route but the study team chose Frech Avenue as an alternative to avoid the traffic. The proposed bicycle route turns left from the bridge to reach the intersection of N. Greasheimer Street (B in Figure 17). Bicyclists would then ride one block northwest to reach E. Frech Avenue or continue deeper into the residential neighborhood.

Recommendation: Create a two-way, on-road bicycle path between the foot of the pedestrian bridge and N. Greasheimer Street. The preferred width of the bicycle path is 12 feet, but 10 feet is permitted. The minimum width permitted for the buffer is 1.5 feet but 3 feet is preferred. The bicycle path would occupy the space currently used by just one parking spot. The two travel lanes would decrease in width from 13 feet to 10.5 feet, which still allows for the existing traffic but encourages lower travel speeds. Figure 26 shows the existing allocation of space and Figure 27 shows the proposed design.

Figures 28 and 29 show the proposed trail directing bicyclists from the pedestrian bridge onto N. Greasheimer Street. Improvements at the intersection would create a safer crossing for both bicyclists and pedestrians. These improvements include high-visibility crosswalks, a rectangular rapid flashing beacon (RRFB), and striping to clarify that parking is prohibited near the intersection. RRFBs look like standard crosswalk signs but produce a flashing light pattern when activated. 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's 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. Overhead lighting is also important to ensure that pedestrians and bicyclists are visible to oncoming traffic. All the curb ramps comply with the Americans with Disabilities Act (ADA) and do not need additional changes.



Figure 24. Looking to Kennedy Blvd. from the end of the pedestrian bridge.



Figure 25. Looking south on Kennedy Blvd. from the bridge.

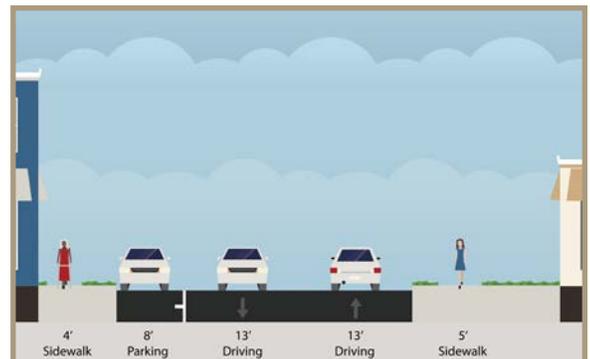


Figure 26. Kennedy Boulevard, existing conditions.

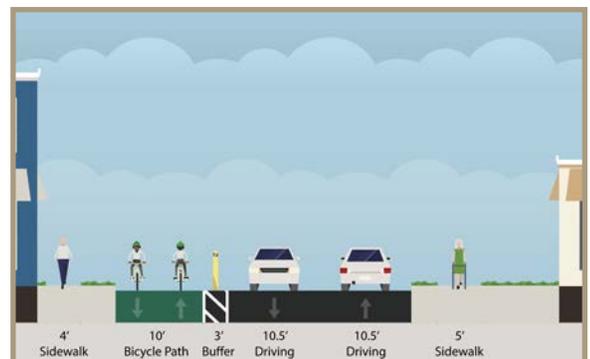


Figure 27. Kennedy Boulevard, proposed conditions.

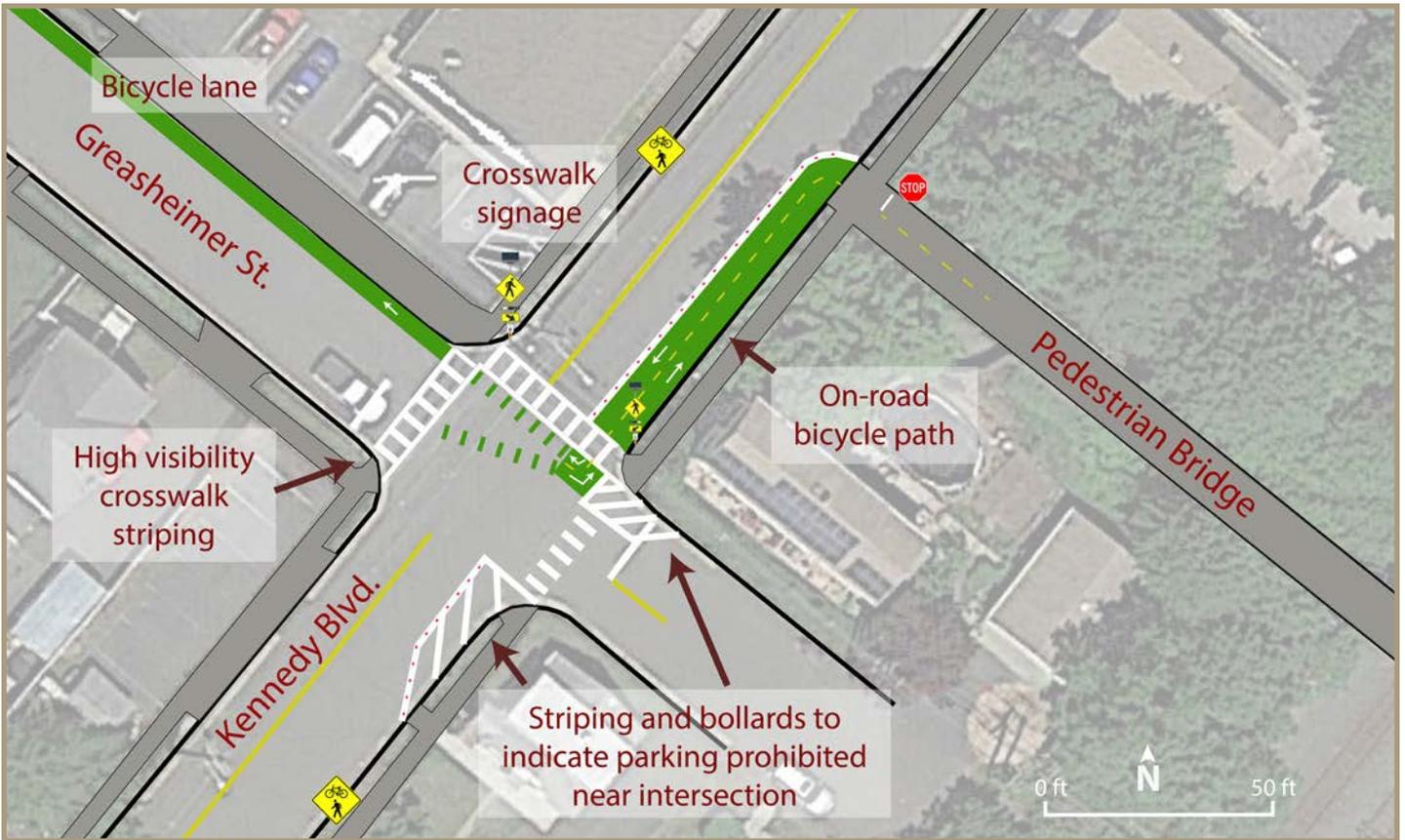


Figure 28. Proposed improvements to the intersection of Kennedy Boulevard and N. Greasheimer Street.



Figure 29. Photo simulation of proposed on-road bicycle path on Kennedy Boulevard, looking south. The flexible plastic bollards may be substituted for a solid barrier for improved safety to bicyclists. However, access to an existing fire hydrant must be maintained.

Greasheimer Street is a 30-foot wide roadway that feeds into a residential neighborhood (C in Figure 17 and Figure 30). Parking is allowed on both sides of the roadway, although only one car can park legally on the east side as most of the curb provides access to a commercial parking lot.

Recommendation: Stripe a 5-foot bicycle lane on the northbound side, adjacent to the curb (Figure 31). The minimum bicycle lane width with no on-street parking is 5 feet adjacent to a curb, 4 feet with no curb. Since vehicles accessing the commercial parking lot need to back into the roadway, a two-way bicycle path is not recommended. Instead, southbound bicyclists should share the road in the southbound lane. Bicyclists and drivers will position themselves depending on whether a car is parked; as such, a sharrow is not recommended.

Also consider: Instead of a northbound bicycle lane, extra-large sharrows could be installed near the center of the roadway, in the style of a bicycle boulevard. A bicycle boulevard is described in the next section.

E. Frech Avenue Bicycle Boulevard

E. Frech Avenue is a 29-foot wide roadway lined with single-family homes (D in Figure 17 and Figure 32). Parking is allowed on both sides of the street, which can create a tight fit for vehicles traveling in opposite directions. Sidewalks exist in front of most, but not all properties, creating a disconnected network. Residents said that some drivers use E. Frech Avenue as cut through to bypass Kennedy Boulevard.

E. Frech Avenue is an ideal candidate to be transformed into a low-speed multi-modal transportation corridor. This concept has many different names, including neighborhood greenway, quiet streets, or bicycle boulevard. According to NJDOT, bicycle boulevards are, “linear corridors of interconnected, traffic-calmed streets where bicyclists are afforded an enhanced level of safety and comfort.” The benefits extend beyond bicyclists, as implementation increases the safety and comfort for pedestrians and drivers as well. The 2017 New Jersey Complete Streets Design Guide states that bicycle boulevards are appropriate for roads with a traffic volume under 2,500 vehicles per day, which is likely the case for E. Frech Avenue. Adopting this model can effectively encourage bicycling and walking by reducing vehicular speeds and discouraging cut-through traffic.

Bicycle boulevard treatments include signs, pavement markings, and other traffic-calming measures to discourage through-trips by motor vehicles, while accommodating local access (Figure 33).



Figure 30. Looking north on Greasheimer Street.

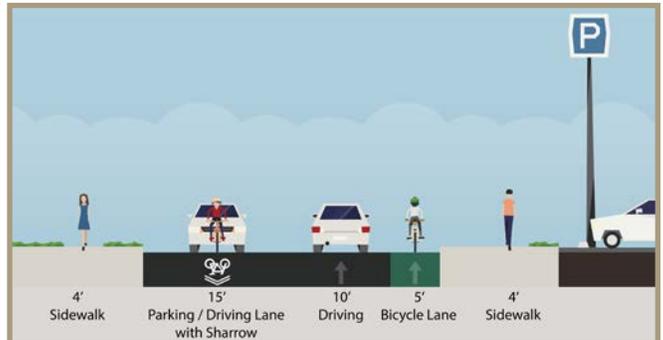


Figure 31. Greasheimer Street, proposed layout.



Figure 32. Looking east on E. Frech Avenue.



Figure 33. Pavement markings for a bicycle boulevard in Ocean City, New Jersey.

A bicycle boulevard communicates that pedestrians and bicyclists have priority along the corridor and that motorists need to be especially mindful or select an alternative route. Because E. Frech Avenue already sees low motor vehicle traffic volumes, outside of school drop-off and dismissal hours, it is a natural corridor for pedestrians and bicyclists heading to the schools, library, or other homes. The bicycle boulevard treatments would fit the character of the residential neighborhood.

Bicycle boulevards are a new concept to most New Jersey residents. As such, it is important to communicate the purpose of the project to residents and visitors. On the corridor itself, there are two forms of signage that need to be deployed: regulatory and educational/informational. Regulatory markings include speed limit signs, marked crosswalks, and instructions to drivers, bicyclists, and pedestrians where appropriate (Figure 34 and Figure 35). This can include the “Bicycles May Use Full Lane” (R4-11) signs. Informational signage may include branding, wayfinding, and explanations of the project purpose. It is important that community input informs the branding for these corridors.

Pavement markings reinforce the message of the corresponding signage. Large shared-lane pavement markings advise bicyclists on where to position themselves and remind drivers that bicyclists may use the center of the lane (Figure 36). A low speed limit (15 or 20 mph) is key to a successful bicycle boulevard, but signage is not enough. Additional tools exist to help reduce vehicle speeds so that they are closer to the speed of a bicycle. Reducing speeds helps to prevent collisions, and makes bicyclists and pedestrians feel more comfortable when sharing the road with motor vehicle traffic.

Traffic calming measures can include vertical deflection (e.g. speed humps or tables at intersections) or horizontal deflection (e.g. chicanes and mini-roundabouts). Figure 37 shows how a mini-roundabout can be installed with low-cost materials to test the concept in Manville. Figure 38 shows what a permanent mini-roundabout can look like, which can help add greenery to the neighborhood.



Figure 34. Bicycle Boulevard signage in McKinley, Texas.



Figure 35. Signs for a bicycle boulevard in Portland, OR.



Figure 36. Extra large bicycle boulevard stencils.

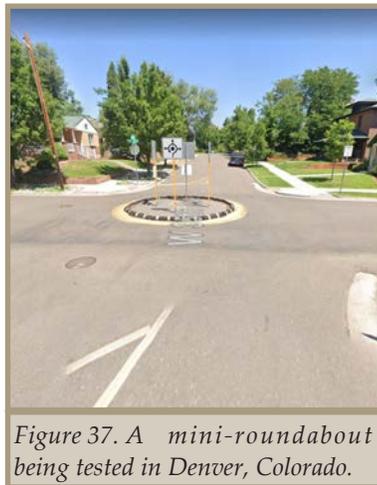


Figure 37. A mini-roundabout being tested in Denver, Colorado.



Figure 38. A permanent mini-roundabout in Seattle, Washington



Figure 39. Traffic calming chicanes and green infrastructure in Shoreline, WA.

Traffic calming solutions combine with other measures to address other potential community goals, such as the addition of green infrastructure to a chicane (Figure 39). Green infrastructure refers to projects that reduce flooding, add greenery, and address health concerns through the addition of vegetation. For example, a curb extension can serve as a rain garden to collect stormwater and add native plants.

Figure 40 shows an example of how bicycle boulevard treatments such as a mini-roundabout and new pavement striping can apply to E. Frech Avenue. As many roadways in Manville are very similar to E. Frech Avenue, the municipality can likely identify additional corridors where bicycle boulevard treatments may be appropriate.



Figure 40. The intersection of E. Frech Avenue and Czaplicki Street with proposed Bicycle Boulevard improvements.

Recommendation: Create a bicycle boulevard along E. Frech Avenue or Newark Avenue.

Also consider: Complete the sidewalk network by building sidewalks where they are missing. Look at other roadways in Manville where a bicycle boulevard could be an effective way to promote bicycle riding and safer vehicular travel.

Whalen Street Bicycle Path

Whalen Street is a 39-foot wide roadway with a 25 mph speed limit (Figure 42 and Figure 43). At the southern end, it terminates at Kennedy Boulevard. To the north, Whalen Street becomes S. 13th Avenue at W. Camplain Road. Between Kennedy Boulevard and E. Frech Avenue, Whalen Street is one-way northbound. Elsewhere, the roadway has two lanes of travel and street parking on both sides, except in front of the school where parking is prohibited. Aside from Main Street, Whalen Street is the only roadway to cross Royce Brook, so most bicyclists, pedestrians, and motor vehicles accessing this area must use this street. Due to an absence of street trees, the road feels wider than it is, promoting higher speeds. This is especially true when no vehicles are parked.



Figure 41. Whalen Street section of bicycle corridor.



Figure 42. Looking north on Whalen Street, next to Weston Elementary School on the left.



Figure 43. Looking south on Whalen Street, from Royce Brook. The elementary school is visible in the distance on the right side.

The elementary school occupies a large amount of frontage along the west side of Whalen Street and is intended to be a common destination for the bicyclists once improvements are in place.

Recommendation: Eliminate parking on the west side of Whalen Street and create a bi-directional bicycle path in its place (Figure 44). The few homes that front Whalen Street also have frontage on the side streets, so the loss of parking should be a minimal concern.

The new path can be a quick, short-term installation using paint, plastic soft-hit bollards, signage, and temporary landscaping (Figure 45). If the temporary on-street bicycle lanes are deemed a success, Manville can develop a permanent solution.

A permanent trail is best suited at sidewalk level, allowing for the allocation of 15 feet of width between pedestrians and bicyclists. Typical shared-use paths range from 10 to 14 feet wide. Additional permanent improvements could include improved lighting, trees, green infrastructure, and amenities such as benches and water fountains (Figure 46). For both the temporary and permanent designs, it is critical to consider how the trail interacts with driveway entrances. Consistent signage and high-visibility paint treatments should notify drivers of the trails presence. Improvements for pedestrians should include the addition of high visibility crosswalks throughout the corridor.

An additional consideration is how drop-off traffic interacts with the new bicycle path. While the intention of the bicycle plan is to increase the number of people bicycling to school and other destinations within Manville, some parents will continue to drive their children. It is important to coordinate with the school to ensure that drop-off and pick-up locations do not conflict with the bicycle corridor. One example could be directing vehicles coming from Kennedy Drive to use Onka Street (parallel to the west) instead of Whalen Street. Additionally, designating drop-off locations further from the front of the school can help make walking and bicycling a more attractive option.

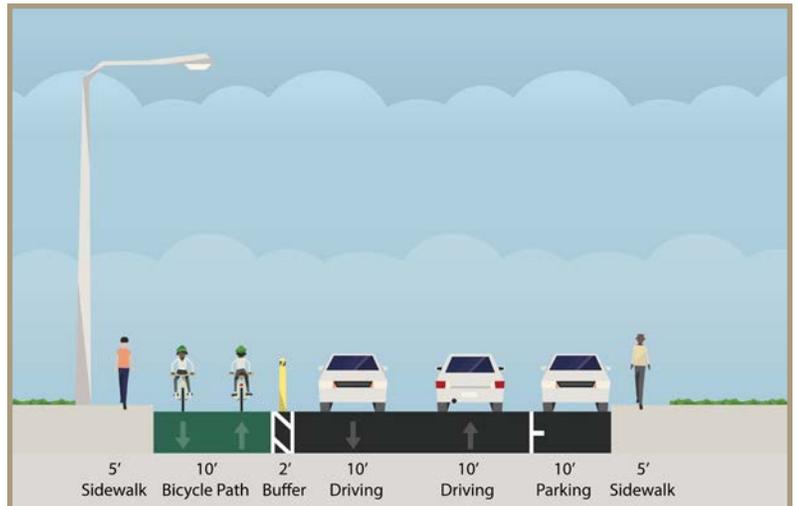


Figure 44. Whalen Street with an on-street bicycle path replacing a parking lane, looking north.



Figure 45. Two-way bicycle lane in New Brunswick, NJ.



Figure 46. Sidewalk and bicycle trail with landscaping and amenities in Clovis, California.

Figure 47 shows how the improvements can make Whalen Street safe for bicyclists of all ages and abilities—including elementary school children. Although not shown, bicycle parking at the school is also very important and should be added at convenient locations.



Figure 47. Plan view of proposed bicycle path along Whalen Street.

Roosevelt Avenue, Manville Library, and the Lost Valley

After crossing Royce Brook, Whalen Street meets Roosevelt Avenue at a four-way stop (Figure 48 and Figure 49). At this location, a bicycle box is recommended to help transition the bicycle corridor from a two-way bicycle path to a bicycle lane (E in Figure 41). While Roosevelt Avenue is not part of the scope of this project, several residents expressed a desire to connect to the Lost Valley section of Manville. The Lost Valley neighborhood is on the eastern edge of the borough and is only accessible by Kyle Street or Bridge Street. Since Roosevelt Avenue becomes Kyle Street, it is the natural route to connect that neighborhood to the bicycle corridor. Additionally, the Manville Public Library is located between S. 11th Avenue and S. 10th Avenue, and could be reached via Roosevelt Avenue, which has less traffic than W. Camplain Road.

Recommendation: Identify improvements to make Roosevelt Avenue a safe addition to the Manville Bicycle Network. Due to the curved roadway and the limited sightlines, traffic calming interventions should be used to ensure low vehicle speeds.



Figure 48. Looking east on Roosevelt Avenue.



Figure 49. Royce Brook and the open space that might support a multi-use trail.

Also consider: Royce Brook crosses Manville in an east-west direction and is bordered by open space, including Memorial Park and Fucillo Street Park. An ecologically sensitive multi-use trail could provide connectivity to the Lost Valley and other residential areas while avoiding Roosevelt Avenue. A study is required to determine if a trail is feasible.

As noted in the next section, the narrow width of S. 13th Avenue creates many trade-offs for improving bicycle access. Unfortunately, 13th Avenue is the only roadway in the area to cross the railroad tracks (Figure 50). Aside from forcing all vehicles, bicyclists and pedestrians to share the same route, this limitation could create a safety hazard if a train is blocking the only route for emergency vehicles. The tracks are also at grade, so it is likely that pedestrians are already crossing at other locations without the benefit of a warning signal.

Recommendation: Study the installation of a new railroad crossing between 11th Avenue and 8th Avenue for bicyclists, pedestrians, and emergency vehicles (Figure 51).



Figure 50. The railroad is at grade level, facilitating the installation of a second grade crossing.

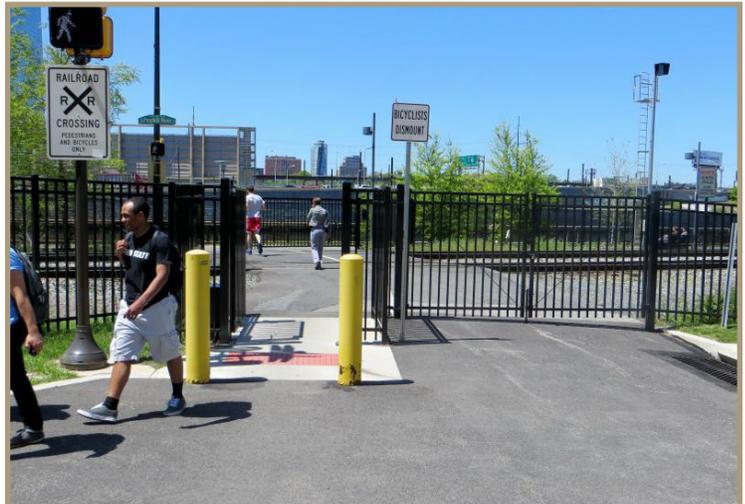


Figure 51. Railroad crossing exclusively for bicycles, pedestrians, and emergency vehicles in Philadelphia, PA. Photo by the Bicycle Coalition of Greater Philadelphia.



Figure 52. Looking north on S. 13th Avenue.

13th Avenue, from Roosevelt Avenue to Brooks Boulevard

North of Roosevelt Avenue, Whalen Avenue becomes S. 13th Avenue. While the roadway continues with one travel lane in each direction, it narrows to just 33 feet, with parking on one side (Figures 52, 53 and 54). Although continuing the two-way bicycle path is an option, numerous driveways make this less desirable. Instead, two alternatives are proposed.

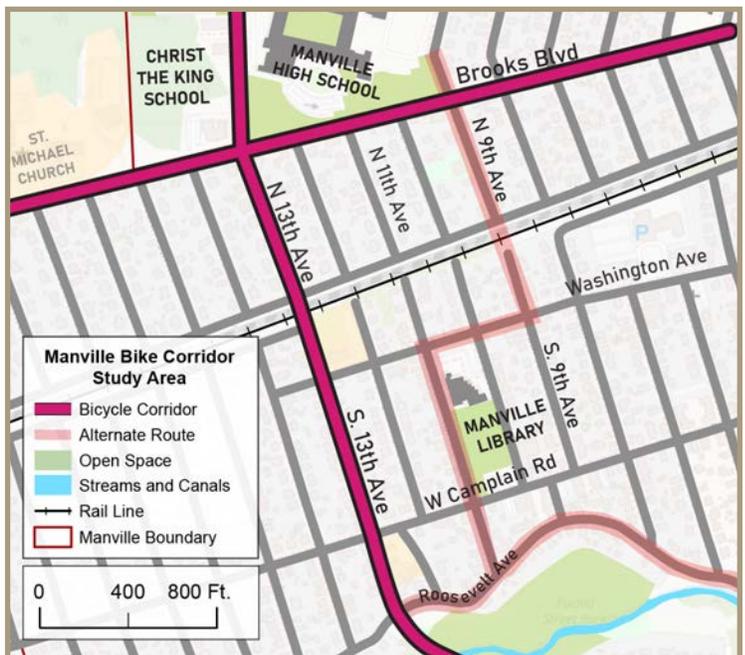


Figure 53. 13th Avenue section of bicycle corridor.

Recommendation: The first alternative maximizes safe bicycle riding space by placing a bicycle lane in each direction (Figure 56). This requires the removal of parking, aside from the block between Washington Avenue and North Street, where parking is already prohibited. The municipality should conduct outreach with the affected residents to educate them on the benefit of the bicycle lane, determine the impact of the parking removal, and advise residents of alternatives. All houses on these blocks have driveways. Although it is not a preferred option, the municipality can choose to allow overnight vehicle parking in the bicycle lane.

The second alternative provides a bicycle lane in one direction, and a shared lane in the other (Figure 57). This option preserves the existing parking but will be a significant barrier to bicycling for many people, especially children who lack the confidence and experience to share a travel lane with motor vehicles.

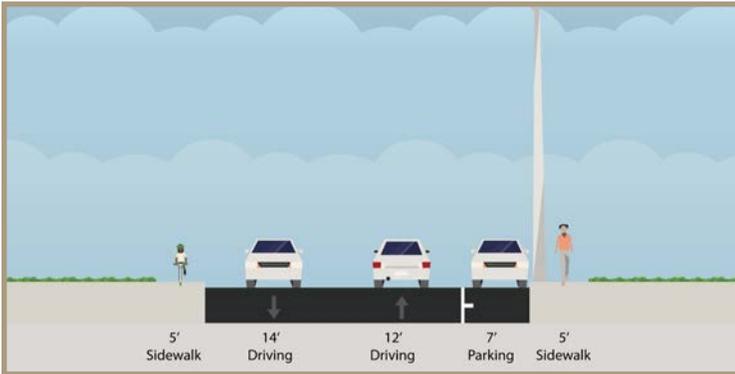


Figure 54. S. 13th Avenue, current conditions.



Figure 55. Looking south along S. 13th Avenue.

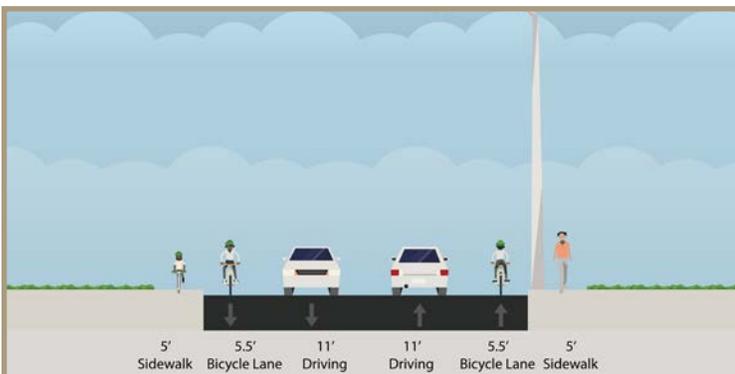


Figure 56. S. 13th Avenue, Alternative 1.

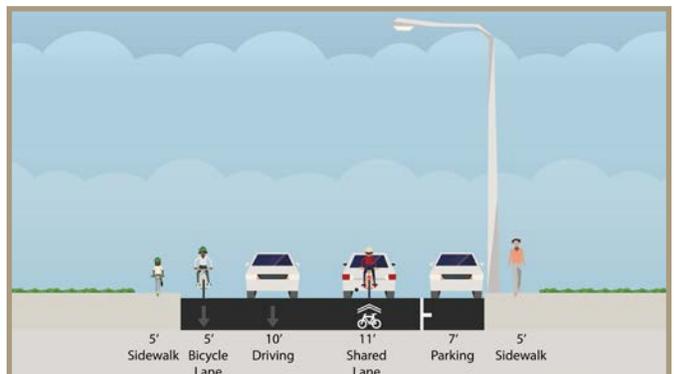


Figure 57. S. 13th Avenue, Alternative 2.

One way to improve the second alternative would be to ban parking during school commute hours, allowing bicyclists to cycle in the parking lane. However, this option is only feasible with enforcement. If some cars remain parked, bicycle riders would have to weave in and out of the parking lane, which is not safe.

Between North Street and Brooks Boulevard, parking is allowed on the west side instead of the east side (Figure 58). Only one side of the street has a sidewalk. The width of the roadway remains the same, so the two alternative options apply on this block as well. Completing the sidewalk network is also recommended.



Figure 58. Looking north on S. 13th Avenue.

N. 13th Avenue, north of Brooks Boulevard

N. 13th Avenue meets Brooks Boulevard at a signalized intersection. Brooks Boulevard is a significant roadway that provides a connection between Route 206 in Hillsborough Township and Main Street in Manville. It is also a proposed corridor in this plan (see next section). The Manville High School and Intermediate School campus occupies the northwest corner of the intersection. North of Brooks Boulevard, N. 13th Avenue widens to 40 feet, which allows for the installation of bicycle lanes without the trade-offs shown in the previous section.

Figure 60 and Figure 62 show the current lane configuration just north of the intersection. There are three lanes, including one for left turns. Figure 61 shows that bicycle lanes can be added by simply narrowing excess lane widths to standard 10-foot wide lanes.

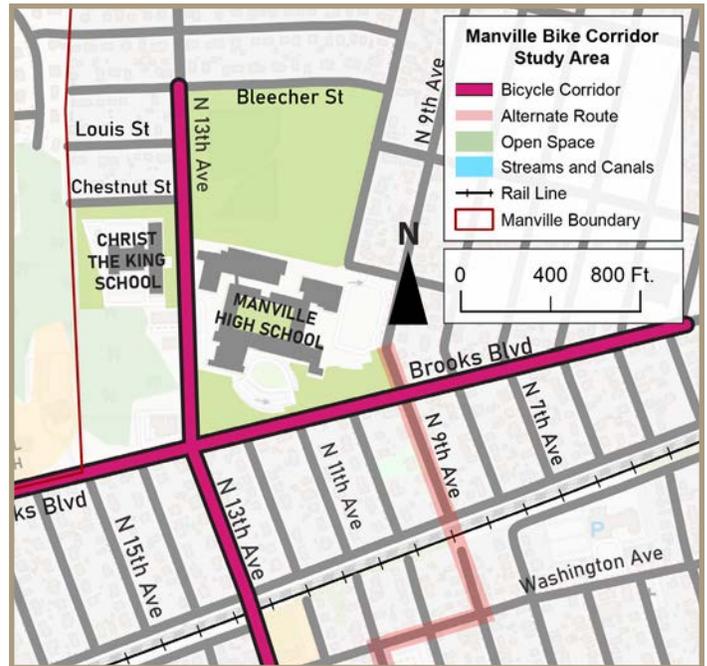


Figure 59. Manville High School section of bicycle corridor.

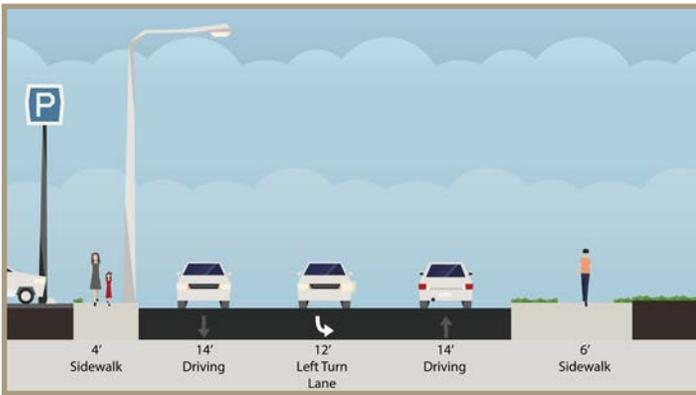


Figure 60. N. 13th Avenue, existing conditions.

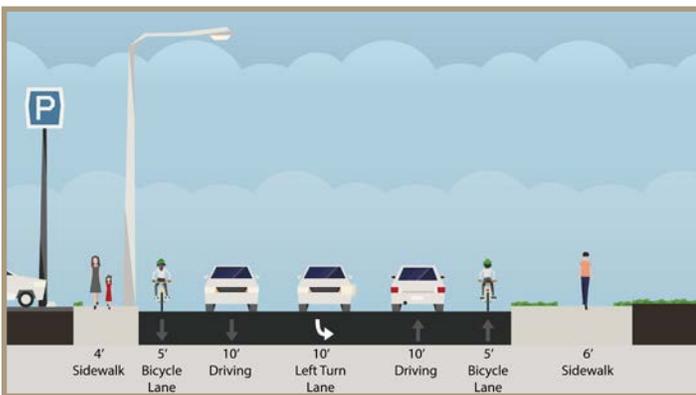


Figure 61. N. 13th Avenue, proposed conditions.



Figure 62. Looking north on N. 13th Avenue.

Further north, the left turn lane ends and street parking is available along the west side of the roadway. While there is space for parking along the east side, it is only allowed north of Chestnut Street. This creates a very wide northbound traffic lane south of Chestnut Street (Figure 63). Bicycle lanes can be added in both directions by using this excess width, as shown in Figure 64. In order to continue the bicycle lane, parking on the east side of the roadway must be removed between Chestnut Street and Bleacher Street.

As of March 2020, there was a gap in the sidewalk along the west side of the street between Louis Street and Bleacher Street. A temporary on-road sidewalk could be created there until a permanent one is built. This requires the removal of street parking to accommodate the added space for pedestrians (Figure 65).

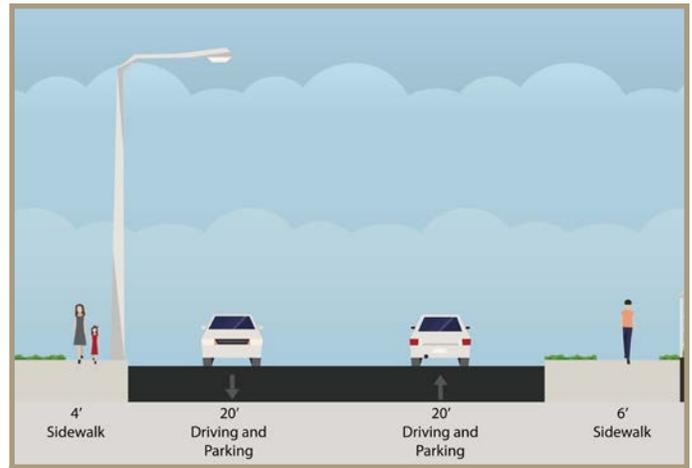


Figure 63. Existing conditions along N. 13th Avenue, adjacent to the high school. There is no striping in locations where parking is allowed, creating the appearance of a very wide lane.

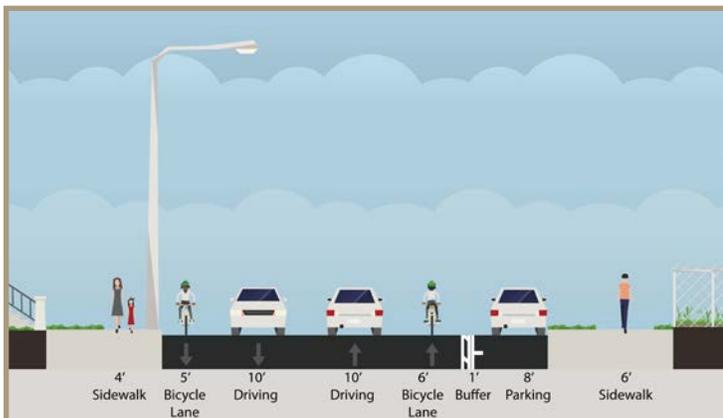


Figure 64. Proposed conditions on N. 13th Avenue south of Louis Street.

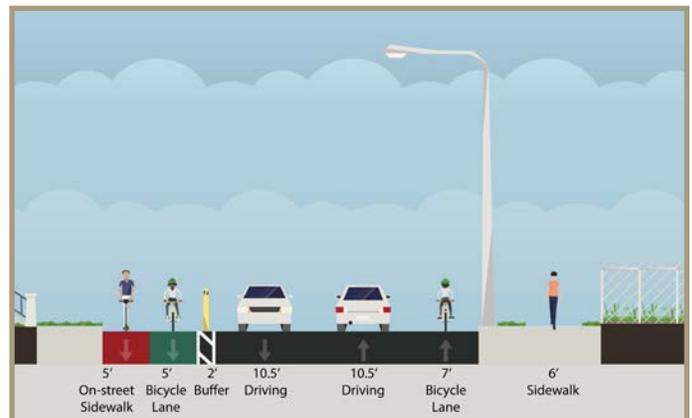


Figure 65. Proposed conditions on N. 13th Avenue between Louis Street and Bleacher Street.

Brooks Boulevard

As mentioned in the previous section, Brooks Boulevard is an important east-west roadway that connects downtown Manville to Hillsborough Township, Route 206, and Duke Farms (Figure 66). Between N. 15th Avenue and N. 20th Avenue, the centerline of the roadway is the border between Manville and Hillsborough, so any changes to the roadway must be done in partnership with that municipality.

West of 13th Avenue, Brooks Boulevard is 39 feet wide, with one 35 mph travel lane in each direction and parking allowed on both sides. There are large civic properties with private parking lots on the north side of the roadway. The south side has single-family homes with driveways (Figure 67).

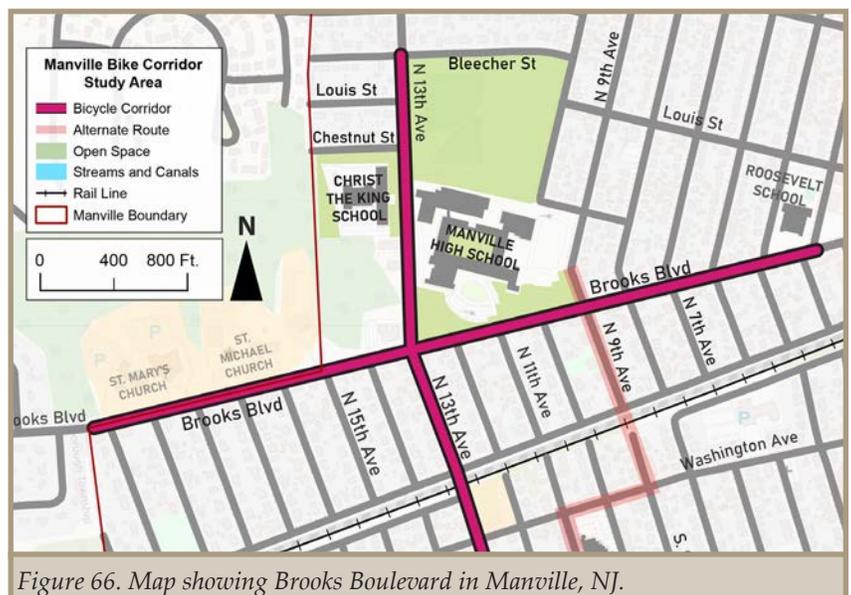


Figure 66. Map showing Brooks Boulevard in Manville, NJ.

Recommendation: Add bicycle lanes in both directions by removing parking on the north side of the street. Work with Hillsborough Township to extend the bicycle lanes to Route 206 (Figure 68).



Figure 67. Looking west on Brooks Boulevard, from 13th Avenue.

East of N. 13th Avenue, Brooks Boulevard is only 29 feet wide (Figure 69). There is currently one travel lane in each direction, and no parking, except between N. 3rd Avenue and N. 1st Avenue. Sidewalks exist on both sides of the street, but they are generally narrow and unsuitable for bicycling. There is no perfect solution, so two alternatives are proposed.

Recommendation: The first alternative creates 4.5-foot bicycle lanes in each direction (Figure 70). These bicycle lanes are narrower than the preferred width of 5 feet but are above the minimum requirement of 4 feet. However, since travel lanes will need to be 10 feet wide, bicyclists may not be as comfortable due to the constrained width.

The second alternative creates a standard bicycle lane in the eastbound direction and provides a shared lane in the westbound direction (Figure 71). This design gives all road users a little more space, but many bicyclists are not comfortable sharing a lane with motor vehicles.

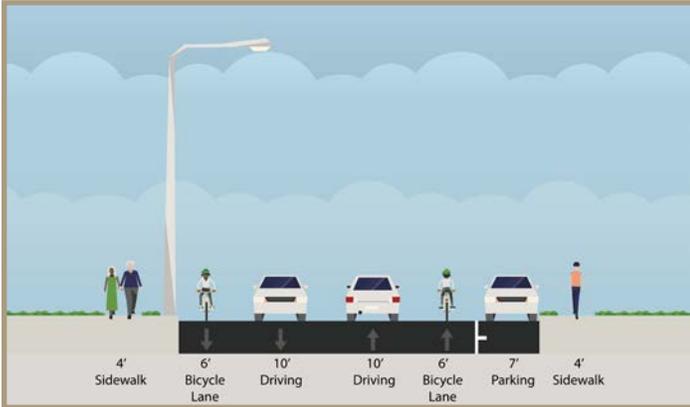


Figure 68. Looking west on Brooks Boulevard, from 13th Avenue.



Figure 69. Looking east on Brooks Boulevard, from 13th Avenue.

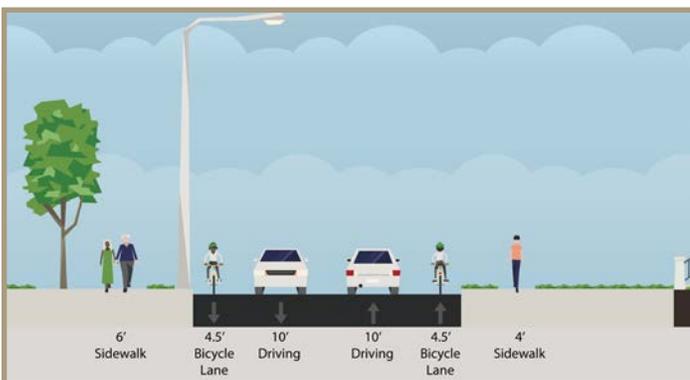


Figure 70. Brooks Boulevard east of N. 13th Avenue, Alternative 1.



Figure 71. Brooks Boulevard east of N. 13th Avenue, Alternative 2.

For both alternatives, the parking must be removed between N. 1st Avenue and N. 3rd Avenue.

Also consider: Although not part of the study area, making improvements to N. 5th Avenue, Louis Street, and Knopft Street can increase bicycle access to Roosevelt Elementary School. Bicycle boulevard treatments, like those proposed for E. Frech Avenue, are likely to be the best option for these roadways. Bicycle parking should also be added at Manville High School and Roosevelt Elementary School.

Additional Recommendations

1. Update the Complete Streets Policy

Adopting a complete streets policy, as Manville did in 2014, is an important first step toward implementing complete streets, as it defines their meaning, establishes goals, and lays out the ways in which the municipality will accomplish its goals.

A next step is to establish an implementation plan or checklist, which can help to ensure that the municipality remains on the right path year after year. In 2019, NJDOT released an updated guide on how to create an implementation plan and a new template for a complete streets resolution. Manville is encouraged to review NJDOT's *Complete and Green Streets for All: Model Complete Streets Policy and Guide* to update the municipal policy to the latest standard and add an implementation plan². Forming a Complete Streets Advisory Committee could also prove beneficial in promoting implementation in Manville.

2. Work Closely with Ridewise

TMA's, like RideWise, are non-profit, public/private partnerships that work with businesses and local government to provide commuter and community transportation information and services that promote driving alternatives. Manville can continue working with RideWise to provide Safe Routes to School programming like bicycle rodeos (Figure 72), walking school buses, educational school safety assemblies, and other events to encourage more children and their parents to walk and bicycle to school.

Additionally, RideWise recently purchased a speed sentry sign that collects traffic speed data and informs drivers of their speed. Manville can work with RideWise to collect data that can be used to decide where traffic calming interventions are needed.

2. <https://www.state.nj.us/transportation/eng/completestreets/resources.shtml>



Figure 72. A bicycle rodeo in Bound Brook, July 2019.

Conclusion

The Borough of Manville is a compact community where getting to schools, parks, and residential areas by bicycle can be safe and convenient. However, few residents travel by bicycle today, partially due to the lack of infrastructure dedicated to making bicycle rides safe and attractive. This report identified several improvements that could create two primary bicycle corridors connecting Little Weston, Weston Elementary School, Manville High School, and Roosevelt Elementary School.

Many of these improvements can begin as demonstration projects or as part of the regular municipal maintenance regimen for the corridor. By making the changes quickly and with low-cost materials, the municipality can receive meaningful feedback from residents based on their real-world experience. If the improvements are ineffective, or have unintended consequences, they can be fully reversible.

While the focus of this report is on infrastructure, successful implementation will also require education and community support. The study team encourages Manville to work with RideWise and the New Jersey Safe Routes to School Resource Center to develop programs that can help make bicycle riding an easy choice for residents. Programs can include bicycle rodeos, which teach children safe riding techniques, and bicycle school buses, which make riding to school a social event. While Main Street is not covered in this report, residents may be more likely to shop locally if they can safely do so on a bicycle. As such, the borough should engage the business community to encourage locals to arrive that way.

Manville should also identify other roadways in the municipality that could better accommodate bicyclists. These changes could help feed riders into the core roadways that link key parts of the borough; a primary example is providing bicycle connectivity to the residents who live east of Main Street. The borough has a strong transportation network and expanding it to be more bicyclist- and pedestrian-friendly will be a great benefit to community accessibility and the local economy.

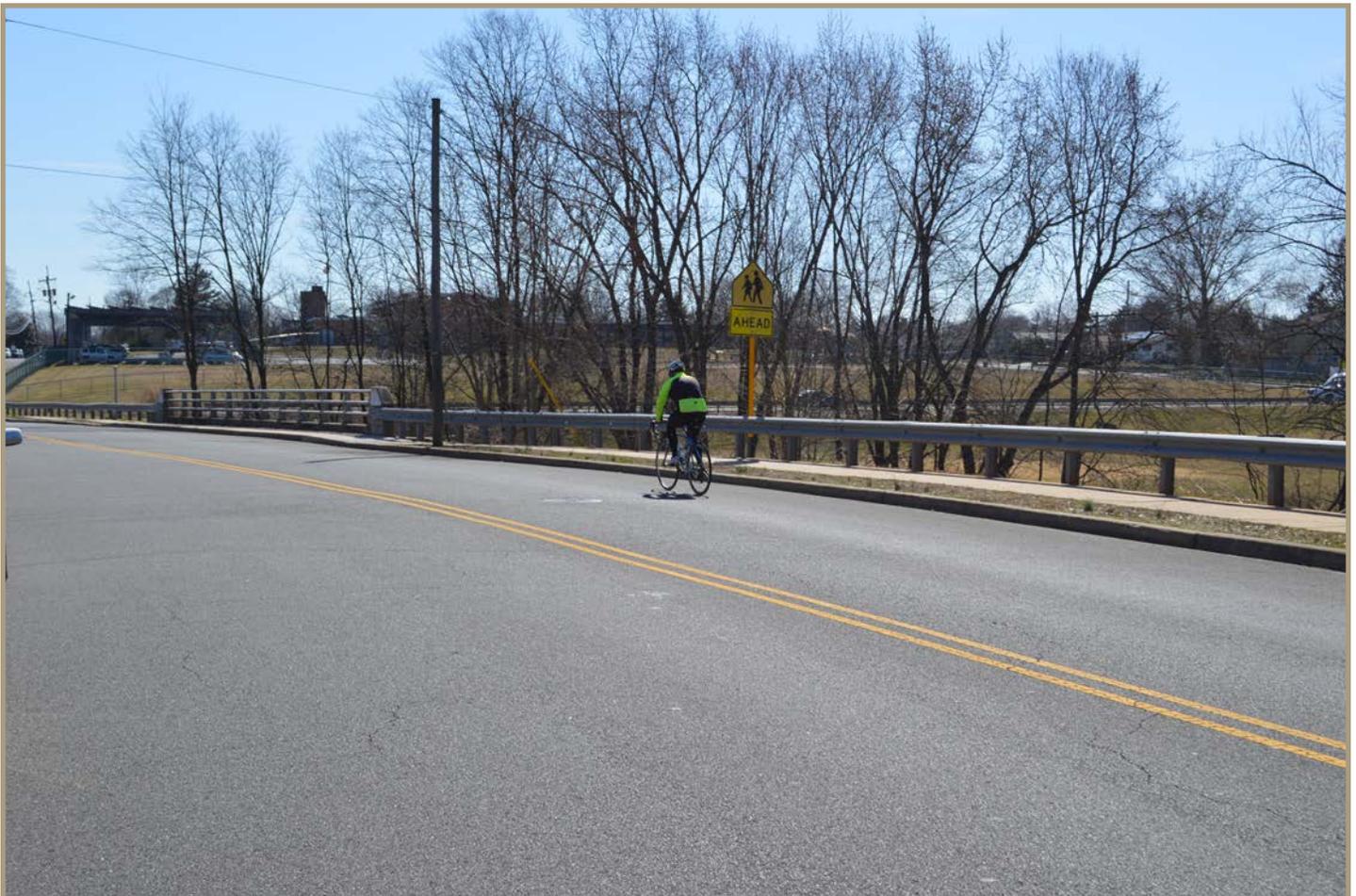


Figure 73. A bicyclist on Whalen Street, in Manville.



Appendix

A. Workshop Flyer

B. StreetSmart NJ Campaign Resources

C. Potential Funding Resources

D. Design Resources

A. Workshop Flyer

Manville Bicycle Network Plan Public Input Meeting

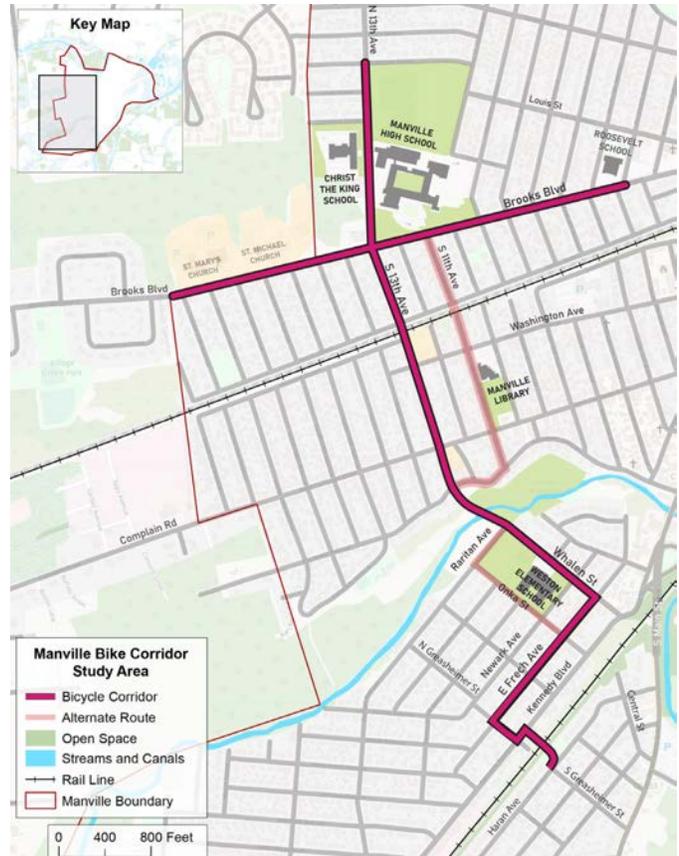
Online Meeting Monday, June 9, 2020 3:30pm to 5:30pm

Manville is interested in improving bicycle connections between Little Weston, Weston Elementary School, Manville High School, and Roosevelt Elementary. The final product, a **Bicycle Network Plan**, will recommend a variety of changes to make bicycling a safer and more attractive option for residents of all ages and abilities.

Please join us in a virtual meeting to learn about the plan, 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/manville>

For more information, email: heaslya@tcnj.edu



The Complete Streets Technical Assistance (CSTA) Program is a collaboration between Sustainable Jersey (SJ), the Voorhees Transportation Center at Rutgers University (VTC), 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.



B. StreetSmart Campaign Resources



STREET SMART NJ FACT SHEET

What is Street Smart NJ?

Street Smart NJ is a public education, awareness and behavioral change pedestrian 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 displaying 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

 [StreetSmartNJ](https://www.facebook.com/StreetSmartNJ)

 [NJStreetSmart](https://twitter.com/NJStreetSmart)



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

[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](https://www.beStreetSmartNJ.org).



[BeStreetSmartNJ.org](https://www.beStreetSmartNJ.org)

f [StreetSmartNJ](#)

t [NJStreetSmart](#)

C. 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/municipalaid.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 NJDOT's 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>

Other NJDOT Assistance

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

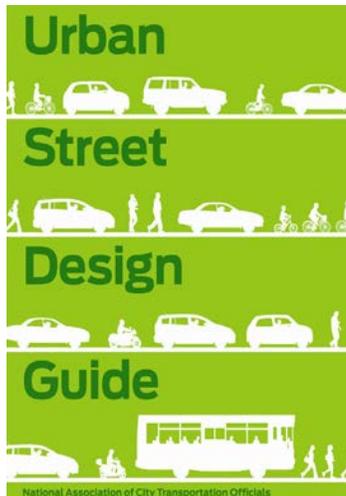
20. County Capital Program

21. Municipal Capital Programs

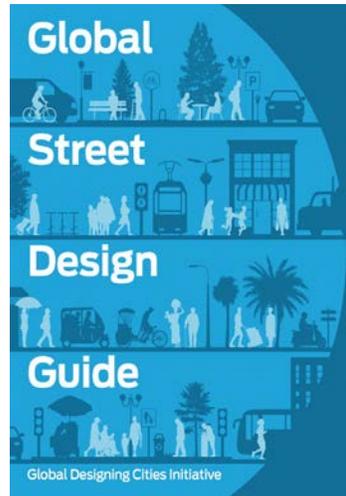
22. Foundations

C. Design Resources

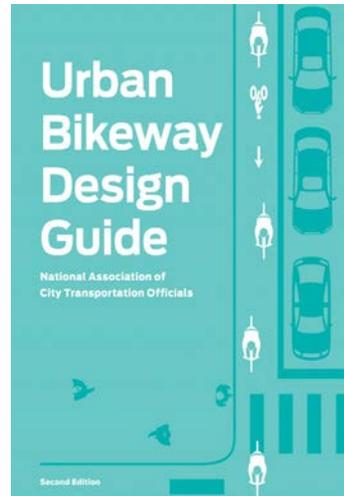
NACTO Guides



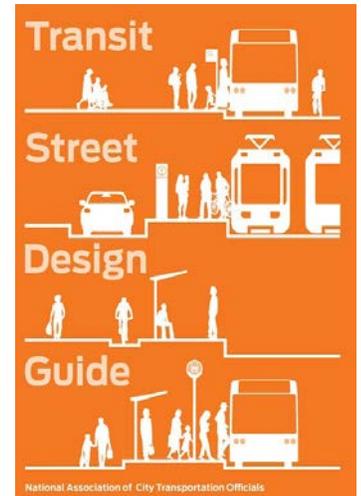
[Urban Street Design Guide](#)



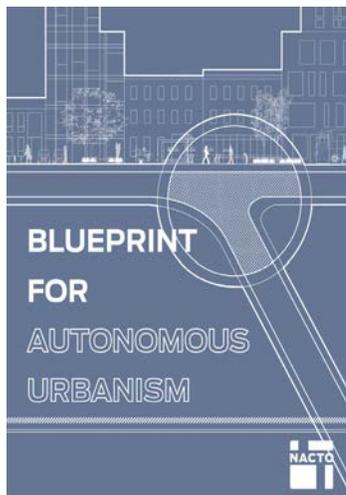
[Global Street Design Guide](#)



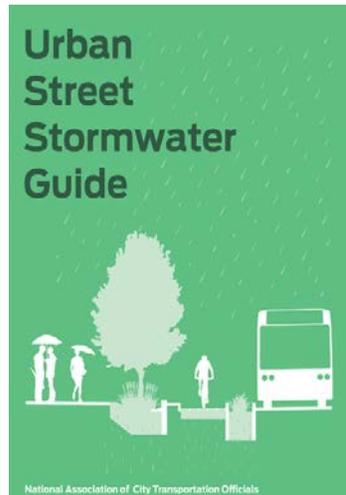
[Urban Bikeway Design Guide](#)



[Transit Street Design Guide](#)



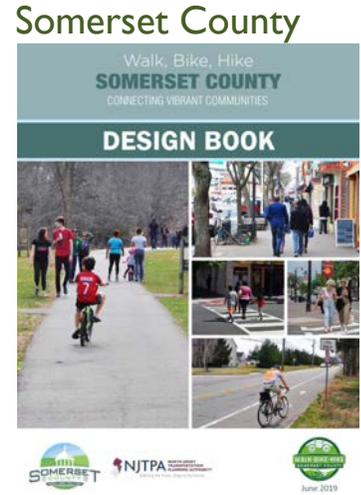
[Blueprint for Autonomous Urbanism](#)



[Urban Street Stormwater Guide](#)

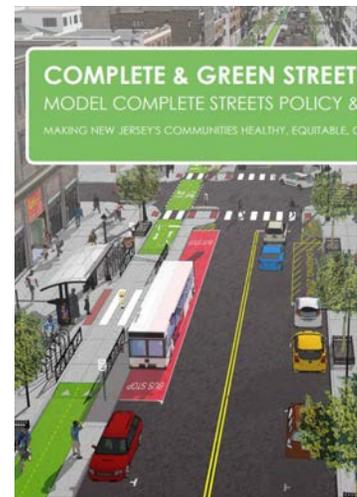


[Bike Share Station Siting Guide](#)

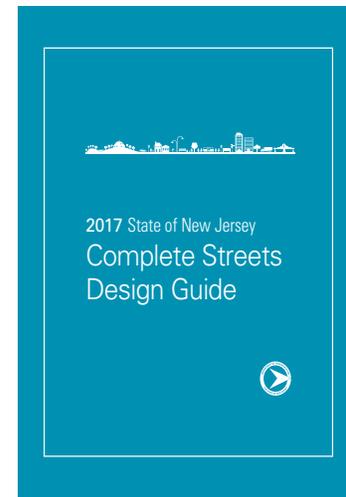


[Walk, Bike, Hike, Somerset County Design Book](#)

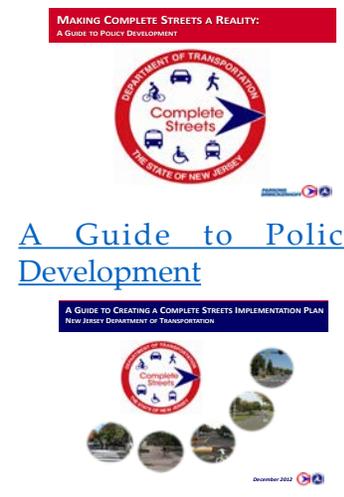
NJDOT Guides



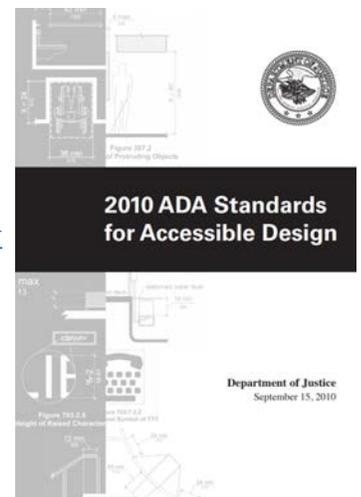
[Complete & Green Streets for All: Model Policy and Guide](#)



[2017 State of New Jersey Complete Streets Design Guide](#)

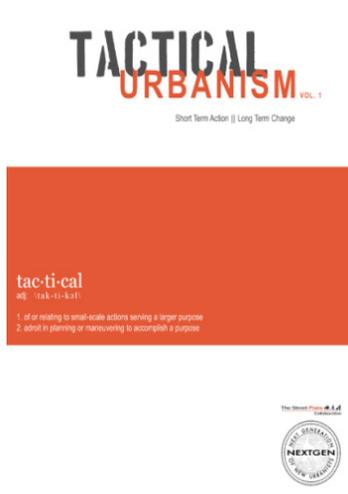


[A Guide to Policy Development](#)

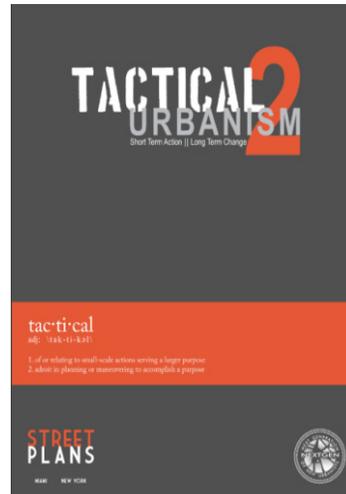


[ADA Standards for Accessible Design](#)

Tactical Urbanism Guides



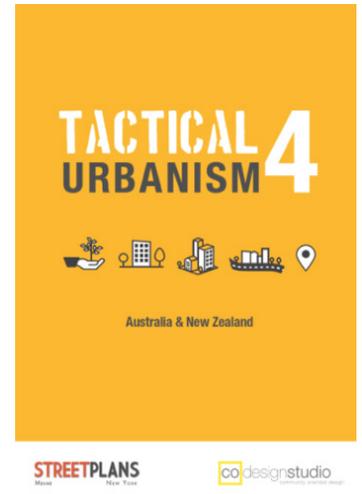
[Tactical Urbanism 1](#)



[Tactical Urbanism 2](#)



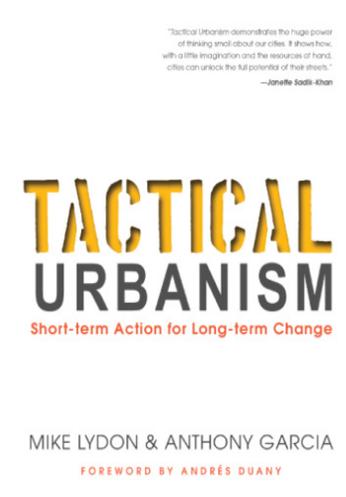
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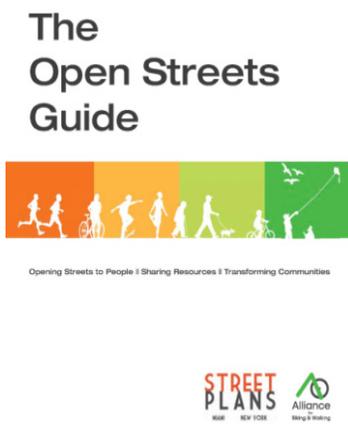
[Tactical Urbanism 5](#)



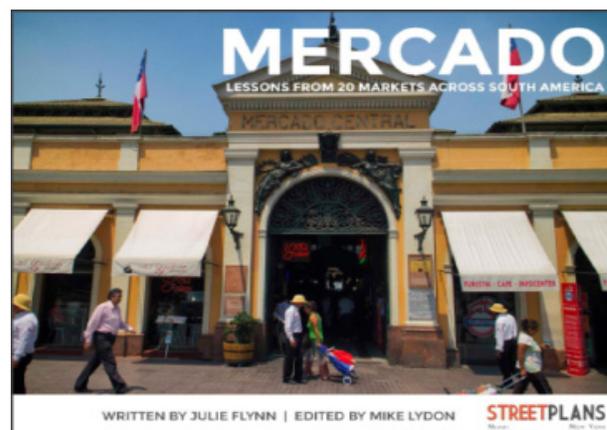
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[Tactical Urbanist's Guide to Materials and Design Version 1.0](#)



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