



# North Avenue Walkable Community Workshop

Town of Westfield, Union County, NJ

2019



# RUTGERS

Edward J. Bloustein School  
of Planning and Public Policy



## 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 document 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 staff at 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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The Alan M. Voorhees Transportation Center 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.

### Alan M. Voorhees Transportation Center

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## Sustainable Jersey (SJ)

Sustainable Jersey 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.

### Sustainable Jersey

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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.

### North Jersey Transportation Planning Authority

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# Table of Contents

<b>Executive Summary</b> .....	<b>1</b>
<b>Background</b> .....	<b>2</b>
What is a Complete Street? .....	3
Benefits of Complete Streets .....	3
Walking Audit Location .....	6
Assessment of Need .....	7
Data.....	7
<b>Workshop Methodology</b> .....	<b>9</b>
<b>Workshop Findings and Potential Considerations</b> .....	<b>10</b>
Corridor Summary .....	10
Detailed Conditions .....	14
<b>Recommendations</b> .....	<b>20</b>
1. Implement the Westfield Complete Streets Policy .....	20
2. Enhance the Safety and Visual Appeal of the Corridor .....	22
3. Investigate a Road Diet.....	22
4. Expand St. Paul Street Traffic Island into a Full Park .....	24
5. Involve the Community and Provide Educational Opportunities.....	25
Detailed Recommendations .....	26
<b>Conclusion</b> .....	<b>29</b>
<b>Appendix</b> .....	<b>29</b>

# 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**

This report identifies a number of recommendations to promote walking as a means of travel and to improve walkability along North Avenue in the Town of Westfield, New Jersey. This report calls for striping high visibility crosswalks at all intersections, shortening crossing distances along the periphery of North Avenue through a variety of means, including curb extensions and pedestrian crossing islands to shorten crossing distances and improve pedestrian visibility for turning vehicles. Long-term recommendations include working with the Downtown Westfield Corporation to update and implement streetscaping plans. Additionally, the municipality is encouraged to work with New Jersey Department of Transportation and Union County to explore opportunities for crosswalks, bicycle infrastructure, and road diet measures that may decrease turning conflicts, thereby increasing safety for all road users.

The recommendations in this report were developed based on findings from a half-day Walkable Community Workshop (WCW) with municipal employees and town stakeholders that was held on March 25, 2019. The workshop was conducted under the Complete Streets Technical Assistance Program (CSTA) that is funded by the North Jersey Transportation Planning Authority (NJTPA).

North Avenue is a state highway which bisects Westfield's downtown shopping and restaurant district. Much of the vehicular traffic on the corridor passes through Westfield, providing an important connection between the northeastern residential neighborhoods of Westfield and the Westfield Train Station as well as the downtown shopping and restaurant district.

The lessons learned by all participants during the half-day workshop can be applied to other municipal-owned roadways in Westfield. The field audit form, information about the NJTPA's StreetSmartNJ pedestrian safety campaign, and a list of potential funding resources can be found in this report's appendices. It is important to note that each one can also be repurposed or sourced for other walk audits and projects within the town.



Figure 1. North Avenue during the walk audit, looking eastward.

# 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, which was a need identified through the Together North Jersey consortium. Sustainable Jersey (SJ) and the Alan M. Voorhees Transportation Center (VTC) at Rutgers University were retained to provide technical assistance for this program. This program was designed to support nine municipal governments seeking to implement complete streets in their communities. Municipalities were selected for the program based on the following criteria: the need for technical assistance, commitment to implementation, stakeholder support, and the strength of the municipal team.

Through the CSTA Program, municipal employees and borough stakeholders participated in a half-day Walkable Community Workshop (WCW) to learn the benefits of 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 at the offices of REDCOM Design and Construction on North Avenue and an on-site walking audit along North Avenue between Hillcrest Avenue and Prospect Street. The walk audit was led by staff from the Alan M. Voorhees Transportation Center (VTC) at Rutgers, The State University of New Jersey; and supported by staff from Sustainable Jersey (SJ) and the North Jersey Transportation Planning Authority (NJTPA). Participants learned the benefits of complete streets and proven strategies for making the streets safer for the most vulnerable users – pedestrians and bicyclists.

Westfield has a thriving downtown with destinations such as the Westfield Train Station and numerous popular restaurants and shops. It is surrounded by suburban neighborhoods, providing excellent opportunities for residents to walk or bicycle to the various destinations in the downtown area.

However, it has been noted through direct observations and feedback from local residents that walking and bicycling on North Avenue is challenging due to an overall lack of pedestrian crossings, bicycle infrastructure, and narrow sidewalks along the roadway.

In their application to the CSTA Program, Westfield officials expressed interest in improving walkability along North Avenue with better connections to downtown, the train station, and the surrounding areas. Westfield officials also expressed interest in providing special consideration for accommodating both existing and future residential and commercial developments. For example, older commercial properties outside of the downtown core are being considered for redevelopment into commercial, multi-family, and mixed-use properties, including affordable housing units, all of which may generate additional pedestrian activity.

Various policy, planning, and programmatic efforts have been made to improve pedestrian safety and mobility throughout Westfield. These efforts include the adoption of a complete streets policy in 2013, development of the Downtown Westfield Improvement Plan, the Mayor's Downtown Task Force Report in 2017, and a Bicycle and Pedestrian Needs Assessment in partnership with New Jersey Department of Transportation (NJDOT) in 2000. Westfield has also created committees (e.g., Westfield Green Team) that engage and involve the public around transportation improvements.

Elected officials, municipal staff, and community members participated in a half-day workshop with the CSTA Program Project Team on March 25 to identify problems and potential improvements in the study corridor, which includes the segment of North Avenue from Hillcrest Avenue to Prospect Street. The workshop included a presentation on complete streets, a walkability audit, and a debrief where community recommendations were compiled for inclusion in this report.

## What is a Complete Street?

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 the local context. Complete streets should be tailored 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 induce 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 be used to 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 2 and Figure 3)<sup>1</sup>. Complete streets recognize that users of all transportation modes, whether it be car, bus, train, or taxi, at some point during their journey become a pedestrian. 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.

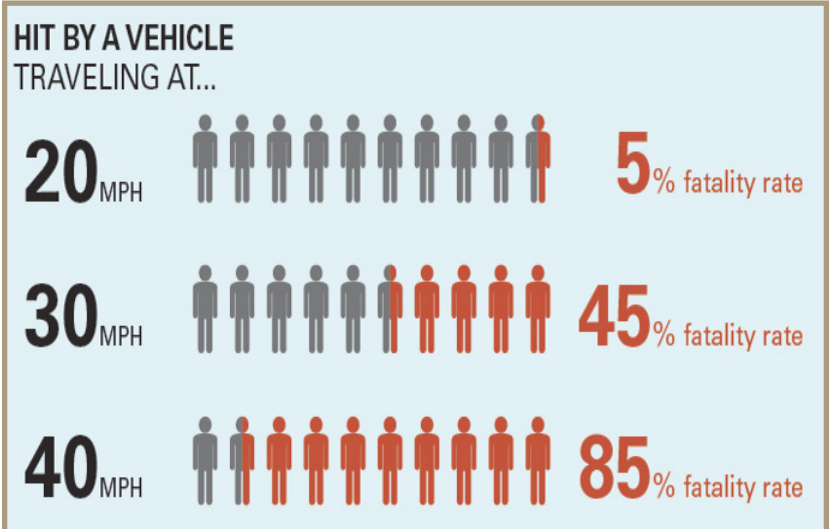


Figure 3. Graphic showing increased fatality rate as vehicle speeds increase.

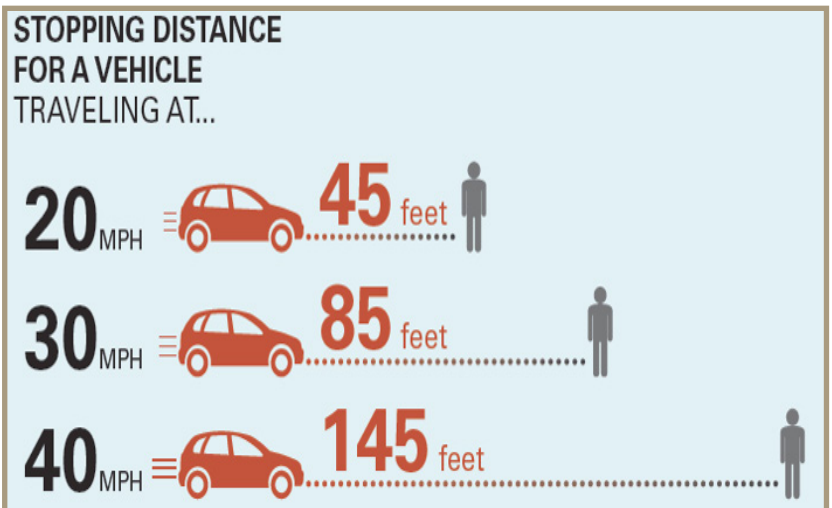


Figure 4. Graphic showing increased stopping distance as vehicle speeds increase.

1. Leaf, William A., and David F. Preusser. 1999. Literature review on vehicle travel speeds and pedestrian injuries. DOT HS 809 021. Washington, DC: U.S. Department of Transportation. <http://www.nhtsa.dot.gov/people/injury/research/pub/HS809012.html>.

## 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 creates mobility opportunities for everyone, including non-drivers, 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.



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

### Equity

Complete streets decrease the necessity of the automobile regarding 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.



Figure 6. Division Street in Somerville was converted into a pedestrian plaza that has become a popular gathering space.

### 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 as a means to prevent obesity.

### 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.

### 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 6)<sup>2</sup>.

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

## 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.

## Complete Streets in New Jersey and Westfield

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. 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, 153 municipalities have implemented complete streets policies affecting 3.8 million (44 percent) of the state's residents.<sup>3</sup>

Westfield adopted a Complete Streets policy in 2013, where the township council resolved that "new construction and reconstruction, undertaken by Westfield shall continue to be planned, designed and constructed in accordance with the 'Complete Streets' philosophy whenever feasible to do so in order to safely accommodate pedestrians, bicyclists, public transit users, and motorized vehicle operators and their passengers, of all ages and abilities." NJDOT awarded the township funding to develop a bicycle and pedestrian plan through its NJDOT Technical Assistance Program. NJDOT assigned the project to WSP, which is one of three of its on-call planning and engineering consultants. WSP is in the beginning stages of the project, which will provide more detailed information on improvements that can be made throughout Westfield.

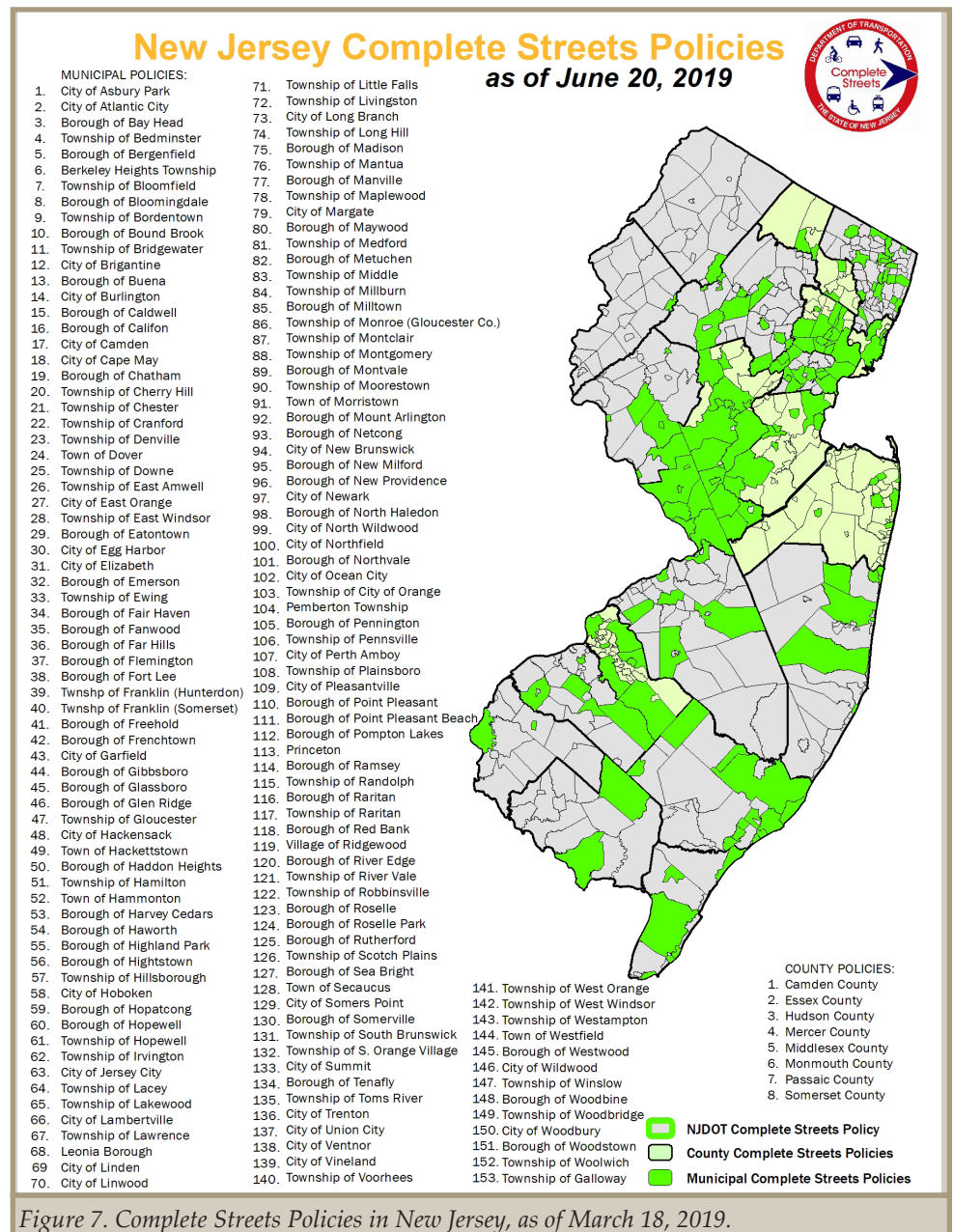
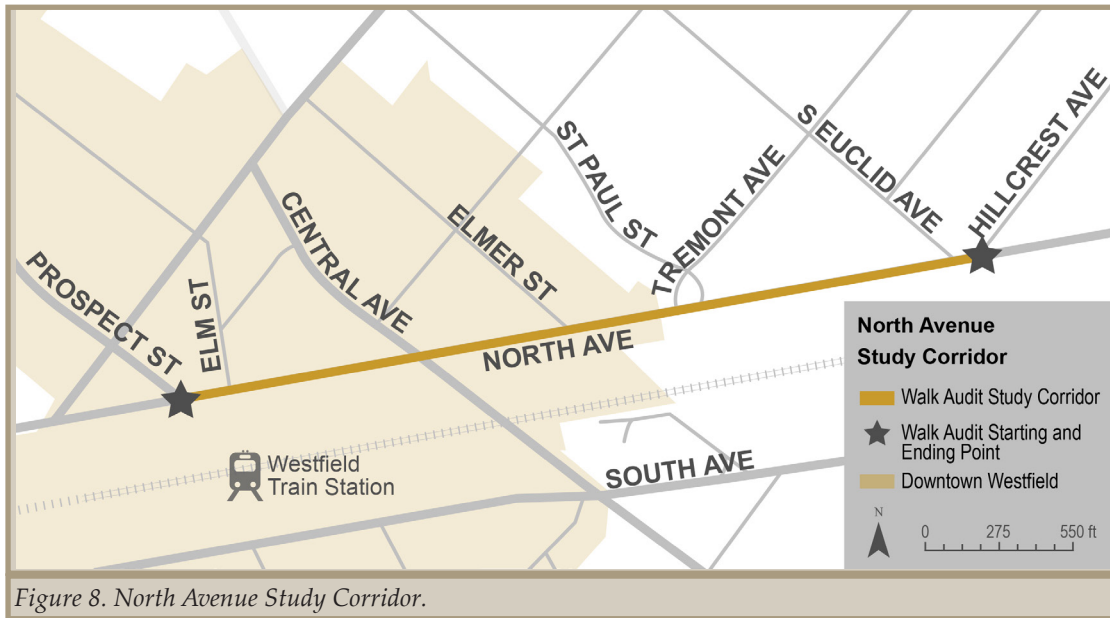


Figure 7. Complete Streets Policies in New Jersey, as of March 18, 2019.



## Walking Audit Location



Westfield is home to approximately 30,600 residents and comprises an area of 6.7 square miles (US Census Bureau, 2017). The median age is 41.8 and the estimated median household income is \$159,923. Westfield witnesses a high rate of public transit use with more than one in five (22 percent) residents commuting via public transit. Sixty-five percent of residents drive alone to work, while 2 percent walk to work.

North Avenue is an east-west corridor that bisects Westfield's centrally located downtown area. Through the study area, North Avenue is State Route 28. The southern side of the study area features commercial uses along the route. Meanwhile, the northern side slowly transitions from residential development near Hillcrest to downtown commercial at Central Avenue. North Avenue provides an important to the Garden State Parkway.

NJDOT observed an annual average daily traffic (AADT) volume of 16,824 on North Avenue at the intersection of Central Avenue in December 2016. NJDOT noted an average daily traffic volume of 14,505 in 2012 on South Avenue, which runs parallel to North Avenue on the other side of the Raritan Valley Line train tracks. These figures can be used to help determine appropriate improvements for the corridor.

For example, the New Jersey Complete Streets Design Guide suggests that uncontrolled intersections with a traffic volume greater than 12,000 should not use striped crosswalks alone. Instead, additional improvements such as flashing lights and/or raised crosswalks should be used to improve the visibility of the crosswalk.

The Westfield Train Station is located at the western end of the corridor and provides commuters with direct service to Newark Penn Station and connections to New York City. The station is also a popular bicycle destination, and bicycle racks are often full. Additionally, EZ Ride (the area's Transportation Management Association) oversees approximately 16 bicycle lockers at the station. An EZ Ride official said the bicycle racks do not meet the area's great demand.

Several public schools are located within walking distance of North Avenue, and busing is provided to students who live more than two miles from their elementary school or are located along routes deemed hazardous by the municipal transportation department. McKinley Elementary School and Westfield High School are both located just over one half mile southwest of the North Avenue and Prospect Street intersection. Roosevelt Intermediate School, the Westfield middle school, is situated half a mile northwest of the same intersection. During the walk audit, the CSTA Program Project Team witnessed students crossing outside of crosswalks in both directions throughout much of the corridor.

## Assessment of Need

North Avenue from Hillcrest Avenue to Prospect Street was selected due to Westfield's interest in addressing congestion around the train station and creating pedestrian connections to completed and planned commercial developments along the corridor. Addressing congestion and improving the pedestrian realm will also generate foot traffic for local businesses and may also encourage pass-through vehicular traffic to stop and patronize downtown businesses.

The corridor is fairly unwelcoming to pedestrians, with limited pedestrian crossings and inconsistent sidewalk availability. Additionally, the high volume of vehicular traffic can make it feel unsafe at times, especially in areas where four travel lanes leave little space between large trucks and pedestrians on the sidewalk.

Workshop participants commonly witnessed pedestrians throughout the corridor and pedestrian activity is expected to increase with several new development projects likely to be constructed along the North Avenue corridor. Additionally, the Westfield Train Station is a major destination for pedestrian, bicycle, and vehicular traffic. The train station attracts out-of-town commuters as well as Westfield residents and has a long waiting list for both vehicular permits and bicycle locker access.

## Data

### Traffic

The segment of North Avenue between Central Avenue and Elmer Street had an annual average daily traffic (AADT) volume of 16,824 in 2016, which is an increase of 12 percent since the volume was 15,020 in 2013. This is significantly greater than vehicular traffic volumes in segments of North Avenue in other parts of Westfield.

### Speed

The eastern portion of the corridor is 35 mph, but it drops to 25 mph where the roadway expands to two travel lanes of traffic in each direction. According to the municipality, it is likely that much of the traffic on the corridor is from vehicles passing through Westfield. Both on-street and off-street parking is available along much of the study corridor. Traffic speed data was not available for the corridor.

### Crash History

There were approximately 180 reported crashes in the study corridor between 2014 and 2018. Five of the recorded crashes involved pedestrians (Figure 9). None of the crashes resulted in fatalities. Two of the pedestrian crashes occurred in 2016 within the intersection of North Avenue and Elm Street, where the two entrances to the train station parking area are located. A pedestrian was injured in a 2017 crash while crossing in the marked crosswalk at the intersection of North Avenue and St. Paul Street (Table 1). In 2014, an eight-year-old boy was struck in the crosswalk by a vehicle making a left-hand turn. The crash happened during the day and fault was not determined. There were no reported or recorded bicycle crashes in the study corridor.

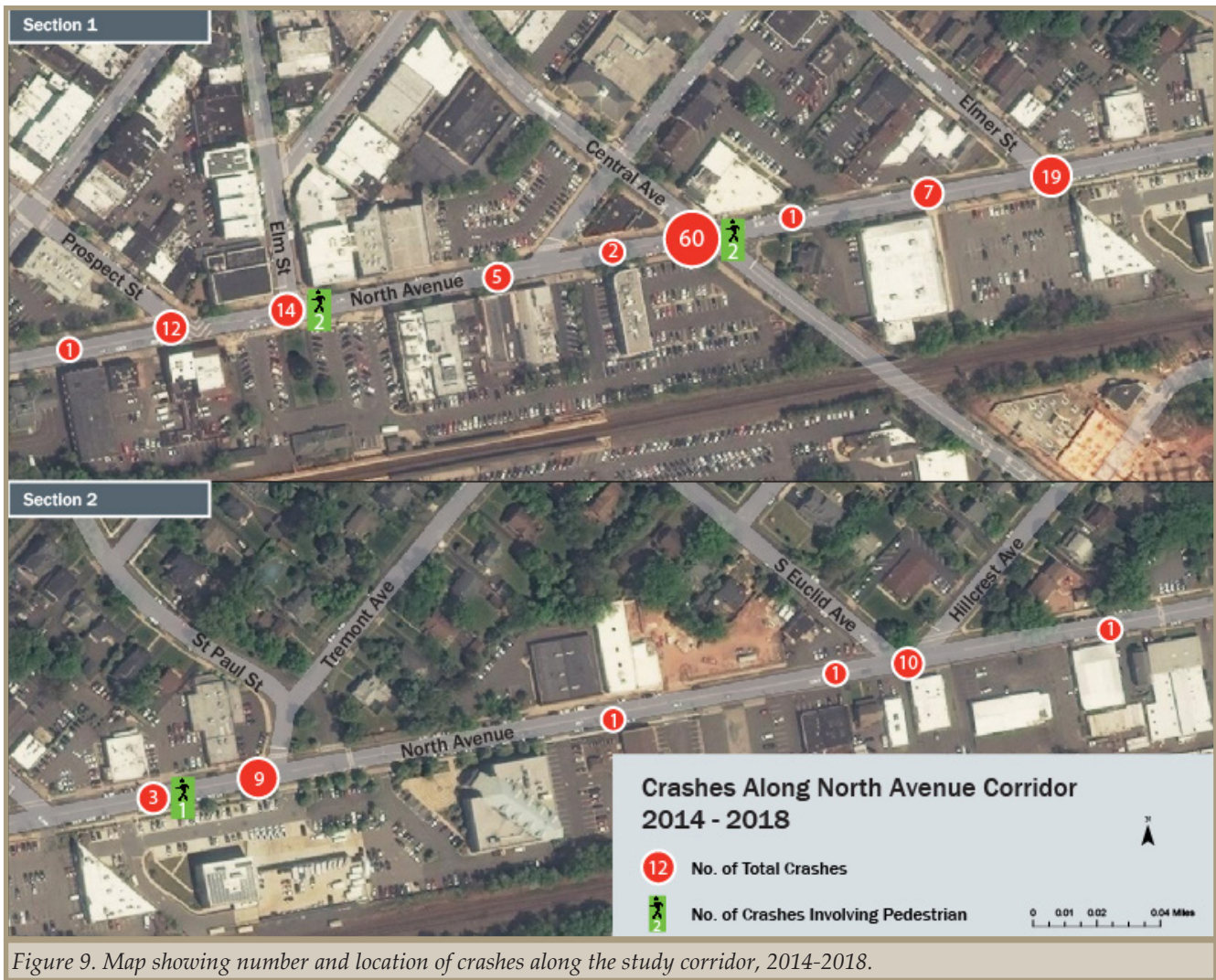


Figure 9. Map showing number and location of crashes along the study corridor, 2014-2018.

Table 1. Pedestrian and bicycle crashes along North Avenue, 2014-2018.

Location	Date	Time	Crash Type	Pedestrian Age	Pedestrian Gender	Severity	Intersection	Lighting
North Ave. and St. Paul Street	12/21/2017	17:26	Pedestrian	44	Male	Injury	Yes	Dark – Street Lights On (Continuous)
North Ave. and Elm Street	11/5/2016	15:56	Pedestrian	42	Male	Minor Injury	Yes	Daylight
North Ave. and Elm Street	11/26/2016	17:55	Pedestrian	52	Male	Injury	Yes	Dark – Street Lights On (Spot)
North Ave. and Central Ave.	11/30/2014	15:35	Pedestrian	8	Male	Injury	Yes	Daylight
North Ave. and Central Ave.	06/15/2016	8:18	Pedestrian	51	Female	Injury	Yes	Daylight

# Workshop Methodology

Prior to conducting the workshop, the CSTA Program Project Team visited Westfield and observed the study corridor to gain a better understanding of the road, their location, use, and appropriateness for a walk audit. The municipal team was responsible for selecting a group of stakeholders to attend the workshop. Workshop participants included local residents, members of the Westfield Green Team, elected officials, the town planner and engineer, Union County planners, and representatives of the EZ Ride Transportation Management Association, and the NJTPA.

The 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 explained various traffic engineering techniques to accommodate bicyclists and pedestrians, and proven measures to reduce speeding.



Figure 10. Complete Streets presentation given at the REDCOM offices.

Following the indoor presentation, participants were outfitted with safety vests, clipboards, and audit forms. Two groups audited both sides of the study corridor, beginning at the intersection of Hillcrest Avenue and North Avenue and continuing west along North Avenue to Prospect Street. The audit consisted of discussing issues, writing observations and taking photographs related to the existing conditions witnessed by participants (Figure 11). A post-audit debrief was conducted for the two teams to discuss the most important findings and potential recommendations for improvements.



Figure 11. Participants gathered at the start of the walk audit, on North Avenue.

In addition to the project team, this report has been reviewed by officials from the Town of Westfield and Union County. NJDOT declined to comment.

# Workshop Findings and Potential Considerations

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

Sidewalk availability along the corridor varies greatly, from wide and accommodating near the train station (Figure 12) to non-existent (Figure 13) moving further east along the route away from the downtown area. In various locations along the corridor, sidewalk maintenance issues were identified including raised, cracked or crumbling slate (Figure 14), pavers (Figure 15), or concrete (Figure 16). Some areas with sidewalks are not accessible due to poor maintenance, and standing water was observed as well. Even in areas where sidewalks are available, there is little to no buffer between passing vehicular traffic and pedestrians walking on the sidewalk. While the speed limit ranges from 25 to 35 mph along the corridor, it often feels like cars are going much faster due to this lack of protection. Sidewalk widths vary throughout the corridor as well. The New Jersey Complete Streets Design Guide states that a 5-foot minimum width is required to meet accessibility standards, but sidewalks should be constructed as wide as possible to accommodate pedestrian demand. Additionally, the guide states a planted buffer or furnishing zone should be a minimum of 2.5 feet wide (Figure 17).



Figure 12. Wide sidewalks near the train station, looking westward on North Avenue.



Figure 13. A sidewalk disappears in front of a parking lot along North Avenue, looking eastward on North Avenue. (Photo courtesy Lisa Lee, EZ Ride)



Figure 14. Cracked and raised slate sidewalks, looking westward at the intersection of St. Paul Street and North Avenue.



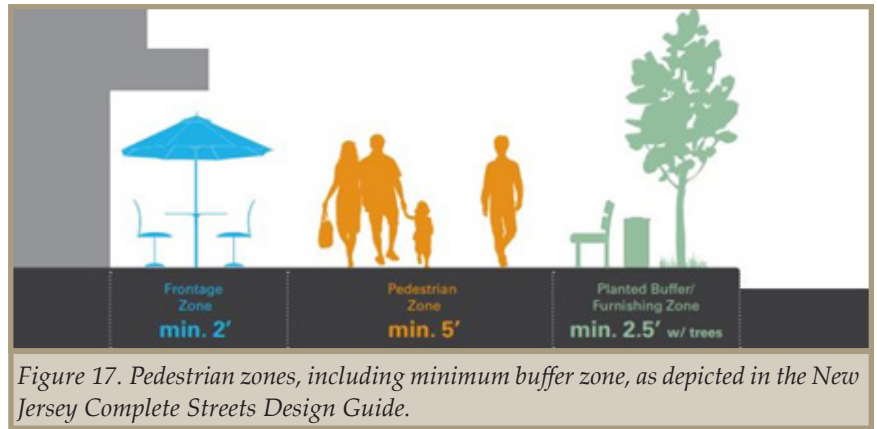
Figure 15. Cracked and uneven sidewalks and pavers, looking eastward on North Avenue near Central Avenue.



Figure 16. Crumbling sidewalk looking eastward on North Avenue near South Euclid Avenue.

## Intersections and Crosswalks

As with the sidewalks, the quality of crosswalks along the corridor varies. At the intersection of Prospect Street and North Avenue, highly visible ladder crosswalks are installed (Figure 18). Fading parallel crosswalks are installed at several locations along the corridor. In some locations, crosswalks are missing, such as the western side of the intersection of Tremont Avenue and North Avenue (Figure 19).



A number of crosswalks along the periphery of North Avenue are quite long, due to the angle of the intersecting roadways. At the intersection of Tremont Avenue, St. Paul Street, and North Avenue, a pedestrian island helps to alleviate this crossing and similar pedestrian islands could be used on municipal roads at nearby intersections.

Many of the accessibility ramps located at intersections along the route are likely non-compliant as participants noted drainage problems and misaligned ramps (Figure 20).

The traffic signals along the corridor do not have updated pedestrian signal heads, making it difficult for pedestrians to know when they can safely cross the street (Figure 21).



Figure 18. Ladder crosswalk looking westward at the intersection of Prospect Street and North Avenue.



Figure 19. To the right of the intersection, a crosswalk is missing over North Avenue.



Figure 20. Misaligned accessibility ramp with drainage issues, looking westward at the train station entrance (photo taken during initial site visit).



Figure 21. Pedestrian signal heads are missing at the intersection of Elm Street and North Avenue.

Throughout the entirety of the route, opportunities to safely cross North Avenue are limited (Figure 22). A midblock crossing is located just east of Hillcrest Avenue, beyond the study corridor, but the next opportunity for a pedestrian to cross North Avenue in a marked crosswalk is more than 1,300 feet to the west. From there, it is another 1,000 feet before the next crosswalk, despite several high volume pedestrian destinations.

## Safety

When the corridor was audited at 2:00 p.m. on a weekday, both vehicular and pedestrian traffic was fairly consistent. Although the study corridor was not observed at night, overhead cobra lighting exists along the corridor but the distance between lighting fixtures appears to be spread out too far to provide uniform lighting. Pedestrian-oriented lighting is only provided in the area directly in front of the Westfield Train Station. A nighttime observation would be needed to ascertain whether there is a pedestrian visibility problem along the entirety of the route.

A speed study was not conducted on the corridor; however, during the audit, participants used radar to estimate the speed of passing cars. Thirty-three of the forty cars counted were traveling over the posted speed limit. Several cars were traveling over forty miles per hour. Additionally, when North Avenue changes from two lanes to four lanes, it feels particularly uncomfortable for the pedestrians walking on the section of the sidewalk closest to the street. In this area there is no shoulder and no on-street parking, placing the pedestrian immediately adjacent to the travel lane, creating a sense of discomfort and concern for personal safety. The large volume of traffic, including trucks and buses, exacerbates this issue. This unease was felt even when the radar showed passing traffic was not speeding.

## Comfort and Appeal

The area was free of litter, graffiti and other quality of life concerns that could discourage walking or bicycling along the corridor. There are some vacant storefronts along the route, but overall, an attempt is made to achieve visual appeal with some tree plantings and shrubs, unique storefront signage, and lighting. (Figure 23) The area could benefit from pedestrian-oriented lighting and streetscaping efforts, especially those that create a buffer between pedestrians and moving vehicles (Figure 24).



Figure 22. Crossing outside crosswalks was commonly witnessed along all sections of the corridor, looking eastward on North Avenue.



Figure 23. Street furniture in downtown area, looking eastward on North Avenue.



Figure 24. Cars and trucks passing nearby without a buffer can create an uncomfortable situation for pedestrians, looking westward at the intersection of Central Avenue and North Avenue.



Figure 25. Detailed conditions of the study corridor.



# Detailed Conditions

## North Avenue: Hillcrest Avenue to Tremont/St. Paul Street

The east end of the study corridor is at the intersection of North Avenue and Hillcrest Avenue (Figure 25, location A). There is a striped mid-block crosswalk about 300 feet east of the study corridor. Hillcrest Avenue intersects North Avenue at a 45-degree angle creating an 85-foot crosswalk (Figure 26). Just a few feet to the west of the Hillcrest Avenue intersection, South Euclid Avenue intersects with North Avenue at an equally awkward angle (Figure 25, Location B). At this intersection, cars must pull into the crosswalk in order to check for oncoming traffic (Figure 27). Neither street has a marked crossing over North Avenue. Sidewalk continuity in this section of the corridor is inconsistent, with sections of sidewalk often interrupted by asphalt driveways and areas with parked vehicles (Figure 28 and Figure 29). Sidewalks are constructed with a variety of materials, including slate in some sections (Figure 30), and drastically vary in width and condition.

The roadway in this section of the corridor is approximately 42 feet wide with one travel lane in either direction and a speed limit of 35 mph. On-street parking is permitted, but during the walk audit an abundance of off-street surface parking was available. On-street parking was more greatly used beginning in front of the Union County Colleen Fraser Building and heading westward. To the west of the county parking lot entrance is the first marked crosswalk over North Avenue that is included in the study corridor. A highly visible ladder crosswalk is provided at the eastern end of St. Paul Street while the western end of the intersection lacks a painted crosswalk (Figure 25, Location C). Long crosswalks are common throughout this section of the corridor.



Figure 26. 85-foot crosswalk at the intersection of Hillcrest Avenue and North Avenue, looking eastward on North Avenue.



Figure 27. A long crossing at South Euclid where cars must stop in the crosswalk to check for traffic, looking westward on North Avenue.



Figure 28. Discontinuous sidewalks near Hillcrest Avenue, looking eastward on North Avenue.



Figure 29. Sidewalk interruption along North Avenue near Hillcrest Avenue looking eastward on North Avenue.



Figure 30. Cracked slate sidewalks near St. Paul Street, looking westward on North Avenue.

The intersection of St. Paul Street and North Avenue is configured to address the long crosswalk. Currently, a large pedestrian island with trees significantly shortens the pedestrian crossing distance, while separating incoming and outgoing traffic on St. Paul Street. While the pedestrian island is beneficial, each crossing is still over 40 feet long. Additionally, the angle at which St. Paul Street traffic approaches North Avenue makes it difficult for cars to check for oncoming traffic. During the WCW cars were witnessed stopping in the crosswalk (Figure 31).



Figure 31. WCW participants walking around a stopped car blocking the crosswalk, looking westward from St. Paul Street.

Lighting is provided by overhead cobra fixtures. The fixtures were not observed at night, but their size and placement suggest that the roadway is probably unevenly lit at night.

### North Avenue: St. Paul Street to Central Avenue

Just beyond Tremont Avenue, on the westbound side of the street, a small sign welcomes passersby into the Westfield downtown (Figure 32). No other visual cues exist to demarcate the area as a downtown, such as banners, stamped crosswalks that mimic brick, and other design cues that slow traffic and improve safety in busier downtown areas.

North Avenue to the east of Elmer Road comprises one travel and one parking lane in each direction. From the west side of the intersection with Elmer Street, the road becomes four lanes, with two travel lanes in each direction (Figure 25, Location D). For cars traveling east on North Avenue, the change from two lanes of travel to one, with the travel lane becoming a parking lane, is abrupt and without warning. There is no signage or striping to inform drivers of the merge. From Elmer Street west, the pedestrian experience changes. Without the protection of parked cars as a barrier between pedestrians and large volumes of traffic, the experience becomes more uncomfortable even along the wider sidewalks (Figure 33 and Figure 34). This is counter to best practices, as the designated downtown area should provide an even more welcoming experience for pedestrians.



Figure 32. A small sign welcomes passersby into downtown Westfield, looking westward on North Avenue.



Figure 33. No barrier between pedestrians and large volumes of traffic, looking eastward on North Avenue near Central Avenue.



Figure 34. The lack of buffer between pedestrians and four lanes of traffic makes much of the sidewalk uncomfortable, looking westward on North Avenue.

The Central Avenue traffic signal presents the only painted crosswalk on North Avenue in this section of the corridor. During the walk audit numerous pedestrians, including high school students, were seen dangerously crossing four lanes of oncoming traffic outside of a crosswalk (Figure 35). Similarly, drivers exiting the shopping center that is located across from Elmer Street struggled to make a left and cross onto North Avenue, even in relatively low levels of mid-day traffic (Figure 36).

The intersection of Central Avenue and North Avenue (Figure 25, location E) has significant traffic volume throughout the day and is the site of numerous crashes involving motorists and pedestrians. Drivers making a right-hand turn from North Avenue onto Central Avenue are able to do so at high speeds, given the wide turning radius at the intersection and the availability of two travel lanes for vehicles to turn into (Figure 37). Vehicles are allowed to make left turns in all directions, but there are no left turn lanes or left turn signals. Due to the skewed angle of the intersection, this causes dangerous driving maneuvers, and creates additional danger for pedestrians. For example, during the WCW drivers were witnessed turning off of North Avenue onto Central Avenue at high speeds to miss oncoming traffic and without checking for pedestrians. Additionally, all four crosswalks are quite long, each exceeding more than 75 feet. There are no pedestrian crossing signals at this intersection.



*Figure 35. A student runs across North Avenue between traffic as a van drives uncomfortably close to pedestrians on the sidewalk, looking eastward on North Avenue.*



*Figure 36. Even drivers leaving the shopping center across from Elm Street in the middle of the day find it challenging to safely cross North Avenue, looking westward on North Avenue.*



*Figure 37. A long crosswalk and wide turning radius at the intersection of North Avenue and Central Avenue, looking south on Central Avenue.*

## North Avenue: Central Avenue to Prospect Street

This western section of the corridor feels more like a downtown business district than the eastern sections. Here, many of the storefronts have similar light fixtures, updated signage, and consistent setbacks which in turn make the area look a bit more unified (Figure 38). North Avenue has four lanes of traffic throughout this section of the corridor with no on-street parking, shoulder, or buffer for pedestrians on the sidewalk.

A newly expanded municipal parking lot is available along the north side of the street. This expansion was facilitated by closing Lenox Avenue between North Avenue and Central Avenue to traffic (Figure 25, Location F). Eliminating the Lenox Avenue intersection with North Avenue means there is no longer an unmarked crosswalk there. However, this site remains a popular crossing (Figure 39), which suggests a possible need for a mid-block crosswalk. Although the old striped crosswalk across Lenox Avenue remained in place at the time of the walk audit, the town engineer stated that it is scheduled to be replaced with a sidewalk and curb in the near future (Figure 40).

Heading west, the next two intersections on the North Avenue corridor, Elm Street and Prospect Street are combined into one signalized intersection which is further complicated by the presence of a fire station driveway at Prospect Street. Workshop participants observed driver confusion at this intersection, with eastbound cars illegally stopping in the middle of the intersection between Prospect and Elm Streets (Figure 25, Location G; and Figure 41), despite the stop bar at Elm Street (Figure 25, Location H). The cars pictured in Figure 41, though it looks like they are waiting at a normal intersection, are actually illegally stopped in the middle of the intersection, more than 180 feet from the stop bar at Prospect Street (Figure 25, Location G marks the location of the cars pictured and Location H is the location where traffic is supposed to stop). If cars pull forward past the stop bar at Prospect Street there is no visible traffic light, so these drivers would be unable to see the light dictating their turn to proceed through the intersection. A small light situated at the northeast corner of the intersection is visible to traffic, but this light is an outdated pedestrian signal and is not meant to direct vehicular traffic.



Figure 38. North Avenue, looking westward from near the Central Avenue intersection.



Figure 39. Man crossing street at the municipal parking lot, looking eastward on North Avenue.

One vehicular entrance into and two exits out of the train station parking lot are located near the Elm Street and Prospect Street intersections of North Avenue. The first exit is located just east of the Elm Street intersection. This configuration confuses drivers, generates turn conflicts on North Avenue—which contributes to congestion—and increases pedestrian exposure to traffic. Westfield has developed plans to consolidate the two entrances into a single entrance and install pedestrian paths and an open lawn within the station parking lot. The Westfield response to the municipal survey for the 2016 Union County Transportation Plan identified the realignment of the North Avenue and Elm Street intersection and installation of a new traffic signal. These changes should improve safety and traffic flow in the area (Figure 25, Location I).



Figure 40. The old crosswalk at the Lenox Avenue intersection, where the roadway was closed and the municipal parking lot expanded, looking westward on North Avenue.



Figure 41. Cars caught in the middle of the Elm Street intersection, looking eastward on North Avenue.



Figure 42. West entrance to the train station, looking westward on North Avenue.



Figure 43. Both entrances to the train station, looking eastward on North Avenue.

# Recommendations

During the workshop, participants expressed the desire to encourage and support walking and bicycling by residents from the residential areas in the east to the downtown area in the west, and to improve safety for those already walking and biking.

## 1. Implement the Westfield Complete Streets Policy

Adopting a complete streets policy, as Westfield did in 2013, 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. Forming a Complete Streets Advisory Committee could also prove beneficial in promoting implementation. Additionally, points are available to municipalities who are seeking Sustainable Jersey certification for adopting and instituting a complete streets policy. 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/>. NJDOT's newly released "[Complete and Green Streets for All: Model Complete Streets Policy and Guide](#)" can also be used as a template for a new municipal policy. Additionally, the findings from the WCW can be used to help inform the Bicycle and Pedestrian Master Plan which Westfield is developing. Through the plan, Westfield may identify specific pedestrian and bicycle upgrades to implement along the corridor, including identifying a safe bicycle route to the train station.

## 2. Enhance the Safety and Visual Appeal of the Corridor

North Avenue is both an important travel corridor and a destination for visitors, residents, and workers. The Westfield Train Station and nearby office buildings draw commuters who arrive by car, foot, and bicycle. Additionally, the area's shops and restaurants attract residents and visitors. While the greater downtown area offers many of the amenities of a traditional downtown, the North Avenue corridor lacks some of the pedestrian amenities and visual cues that are characteristic of an inviting downtown. Creating a sense of place along North Avenue would make the corridor more inviting for motorists, pedestrians and bicyclists. A number of tools are available to help create a sense of place. The existing "Welcome to Downtown Westfield" signage is faded and easy to miss (Figure 44). Creating more visible signage and pedestrian-oriented lighting would help the area's sense of place. Banners on light posts could combine the two, such as with the light posts shown in Figure 45 along Stuyvesant Avenue in Union Township, New Jersey, where pedestrian-oriented lighting is combined with planters and a place for hanging banners. The Union Township image also

make the corridor more inviting for motorists, pedestrians and bicyclists. A number of tools are available to help create a sense of place. The existing "Welcome to Downtown Westfield" signage is faded and easy to miss (Figure 44). Creating more visible signage and pedestrian-oriented lighting would help the area's sense of place. Banners on light posts could combine the two, such as with the light posts shown in Figure 45 along Stuyvesant Avenue in Union Township, New Jersey, where pedestrian-oriented lighting is combined with planters and a place for hanging banners. The Union Township image also



Figure 44. Current downtown signage, looking westward on North Avenue.



Figure 45. Downtown lighting with banners and planters in Union, New Jersey. (Photo and design courtesy of Arterial LLC)



Figure 46. A well-lit midblock crossing along a sidewalk with green infrastructure providing visual appeal and acting as a buffer on Stuyvesant Avenue in Union Township, New Jersey. (Photo and design courtesy of Arterial LLC)



Figure 47. Bicyclist riding east along North Avenue near Elm Street.



Figure 48. Bicyclist riding west along North Avenue near Elm Street.

highlights several additional key aspects of an attractive and safe downtown: wide sidewalks, short highly visible crosswalks, trees, and other plantings, and seating.

Walk audit participants noted the inconsistency of sidewalks along the corridor. While some sections offered smooth wide concrete, others were narrow, in disrepair, or missing altogether. Additionally, pedestrians crossing mid-block was a fairly common occurrence throughout the North Avenue corridor suggesting that additional and/or shorter crosswalks are needed. An example of both high visibility midblock crossings and green infrastructure as a buffer between pedestrians and traffic can be seen in Union Township (Figure 46).

### 3. Investigate a Road Diet

In addition to pedestrian and streetscaping improvements, the corridor may benefit from bicycle infrastructure. Multiple bicyclists rode down North Avenue during the walk audit and the highly popular bicycle parking racks and lockers at the train station suggests North Avenue may be a key bicycle route in the area (Figure 47 and Figure 48). Given the width of the roadway, the current lack of left-turn lanes, and the fact that North Avenue is two-lanes in either direction for only about four blocks, the township could work with the state to determine if a road diet is feasible. Eliminating two lanes west of Elmer Street and creating dedicated left-turn lanes at intersections throughout the corridor may help to rationalize some of the turning conflicts and calm traffic (Figure 49). Workshop participants from the town expressed the opinion that on-street parking could be eliminated from North Avenue east of Elmer Street because alternative on-street parking is available on the intersecting side streets on the north side of the street. The additional space could be reallocated for a number of different uses including a separated bicycle lane, green infrastructure (Figure 50), a center median, and/or improved bus stop accommodations. The intended effect would be to improve safety and the walking



Figure 49. Road diet before and after as depicted in the New Jersey Complete Streets Design Guide.



Figure 50. Green infrastructure used to narrow the roadway and provide a shorter crossing distance for pedestrians. (Photo credit: NACTO)

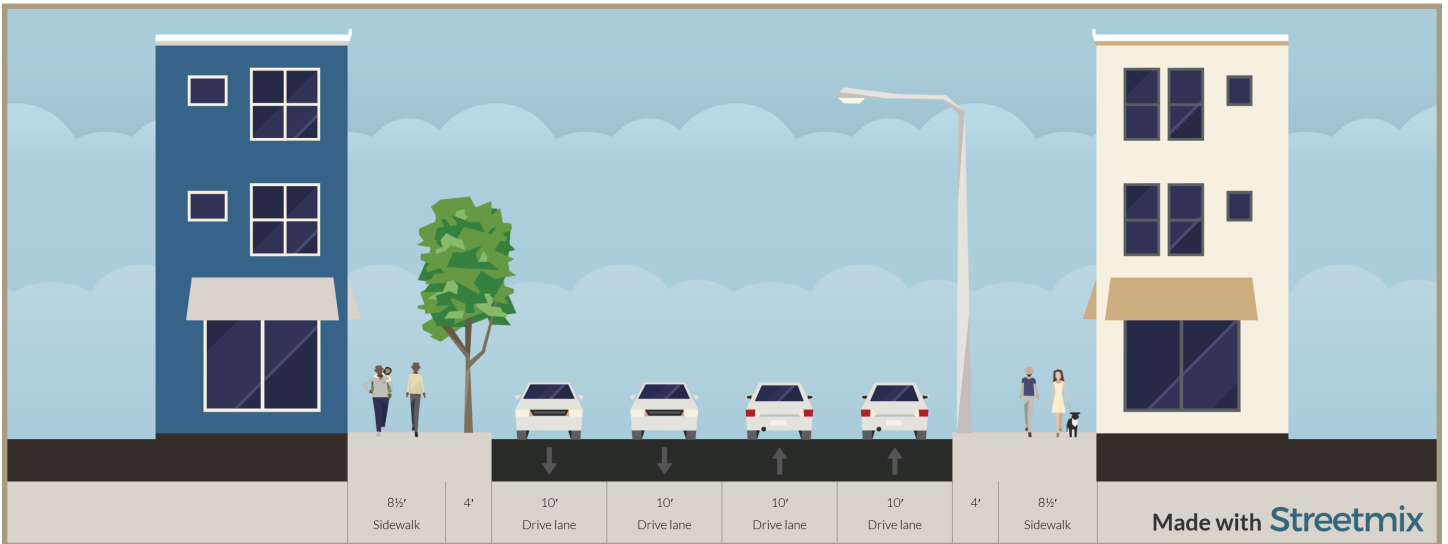


Figure 51. North Avenue: Existing conditions near the train station.

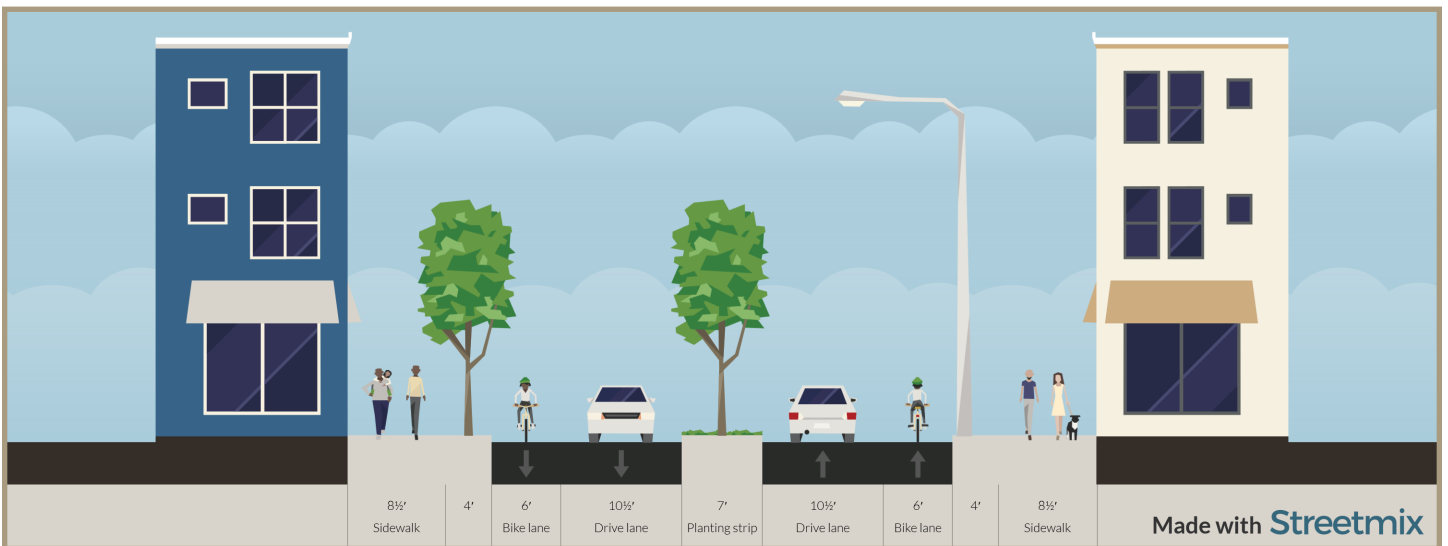


Figure 52. North Avenue with a road diet to add bicycle lanes and a center median.

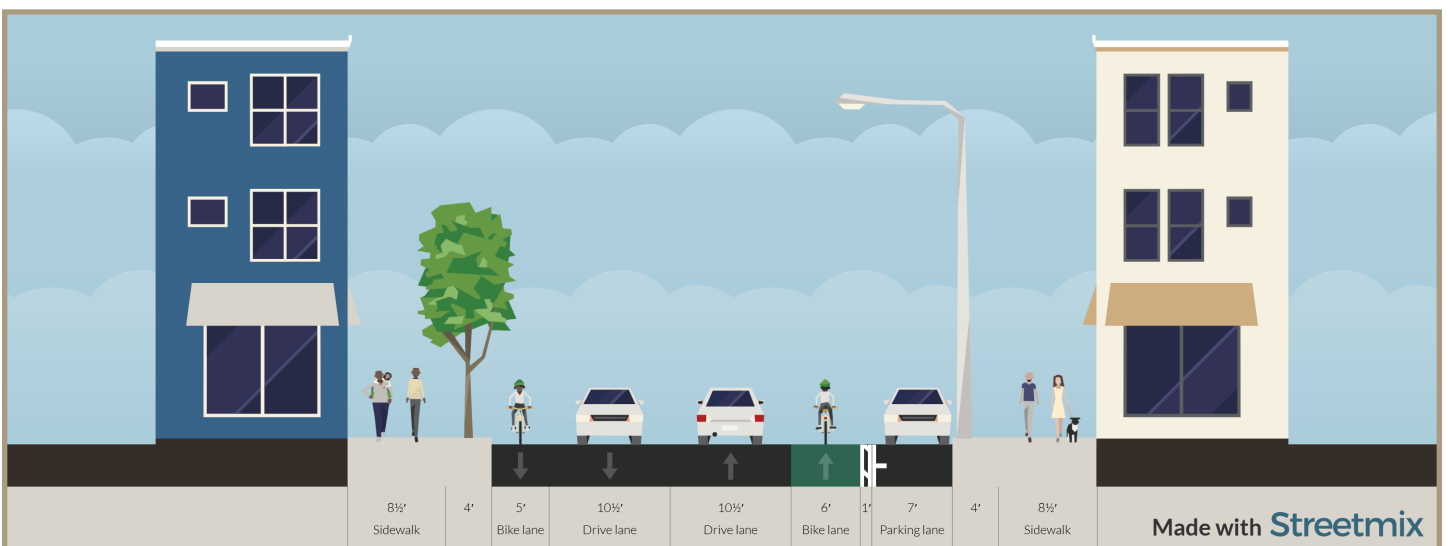


Figure 53. North Avenue with a road diet to add bicycle lanes and parking.



and biking experience, which would in turn support local businesses as well as active transportation.

Figure 51 illustrates the existing allocation of space on North Avenue in the downtown area and is juxtaposed by two alternatives for reallocating space through a road diet (Figure 52 and Figure 53). The addition of a center median can facilitate the installation of a midblock crosswalks by providing a safe haven for pedestrians (Figure 52). It could also accommodate new plantings, such as trees or shrubbery. Another potential configuration creates new on-street parking (Figure 53).

The area would also benefit from additional bicycle parking in the downtown. This is especially important near the train station where the current bicycle lockers are in such high demand that a long waiting list exists. Parking options should also consider the latest modes of transportation, such as dockless bicycle share programs and e-scooter rentals. These programs allow residents to rent a bicycle or a scooter to complete a short ride. Since the bicycle and scooters are dockless, it is important to clarify the appropriate location where the vehicles should be parked (Figure 54). Additionally, for safety reasons, bicycles and e-scooters should not be ridden on sidewalks with high volumes of pedestrian traffic, as in busy downtown areas.

The North Avenue corridor could also benefit from green infrastructure, which creates visual appeal while helping to manage stormwater. Curb extensions at corners, combined with green infrastructure, can help prevent illegal parking near intersections while also improving the visibility of crosswalks (Figure 55). Green infrastructure could also create an effective buffer between the sidewalk or bicycle lane and roadway traffic.



Figure 54. Paint designates an area for dockless vehicle parking in Seattle. (Photo credit: Seattle Department of Transportation)



Figure 55. Curb extension with green infrastructure to manage stormwater in Philadelphia, PA. (Photo credit: Philadelphia Water Department)

North Avenue is a state road which intersects Central Avenue, a county roadway. Any improvements on either of these roadways will require permission from both the state and the county. However, the light at the North Avenue and Central Avenue intersection is controlled by the state and any improvements only require concurrence from the county. Improvements along North Avenue that encompass only the intersecting municipal roads, such as curb extensions on St. Paul Street, are fully within the township's jurisdiction. However, it would be beneficial for all parties to work together to ensure that any improvements made along the corridor are complementary and provide a cohesive and safe experience for all users. In addition, the downtown area is managed by the Downtown Westfield Corporation (DWC), the managing entity of the Special Improvement District, which could be an invaluable asset in developing and promoting many of the placemaking improvements described above. Working in conjunction with local stakeholders, DWC could develop streetscaping plans that tie into the downtown's already established identity.

#### 4. Expand St. Paul Street Traffic Island into a Full Park

A wide traffic island separates the two directions of St. Paul Street at the intersection of North Avenue (Figure 56). The crosswalks on each of the two one-way legs of St. Paul Street are both over thirty feet long. Additionally, although signage is posted to direct one-way traffic, workshop participants said that eastbound drivers sometimes turn left into the section of the roadway designated for one-way outgoing traffic. During

the audit, eastbound drivers on North Avenue were observed illegally driving on the shoulder to pass vehicles waiting to turn left onto St. Paul Street (Figure 57). As these sections of roadway are already separated by a traffic island filled with greenery, an opportunity exists to close one of the legs of St. Paul’s Street to simplify traffic movements while also creating over 5,000 square feet of new park space.

Creating a full park can take time, but opportunities are available to test out the idea before making a permanent change. Demonstration projects, also known as tactical urbanism or the “quicker, cheaper, faster” approach, allow municipalities to test out design ideas on a temporary basis. These projects can be as simple as using chalk to mark a temporary bicycle lane or potted plants to test out green infrastructure or a curb extension. Demonstration projects also provide an excellent opportunity to bring community members on board, incorporate their ideas, and garner local support and ensure that the final installation best meets the needs of the community.

Examples of demonstration projects abound. Glen Rock, New Jersey used standard public works materials to close off a section of roadway to prevent drivers from making dangerous turns in a congested area. Short term plans include adding temporary amenities such as planters and benches (Figure 58). In Boston, Massachusetts, a temporary plaza was created using excess roadway space while a permanent park was being designed and funded (Figure 59).

There are a number of potential options for park creation at St. Paul Street. Renderings can help facilitate discussion of potential configurations. Figure 61 provides an example of potential modifications. This figure is only for visualization purposes. The western leg of St. Paul Street is wide enough to accommodate two-directional traffic. There is also enough space to consider adjusting the intersection such that St. Paul Street meets North Avenue at a right angle.



Figure 56. The pedestrian island and wide St. Paul Street one-way exit onto North Avenue, with “Do Not Enter” sign (looking northward from North Avenue).



Figure 57. Car making a left onto St. Paul Street is passed by several cars that drive through the no-parking zone (looking west on North Avenue).



Figure 58. Road closure used to improve traffic safety and create a new public space in Glen Rock, New Jersey.



Figure 59. Tontine Crescent Tactical Plaza in Boston, MA. (Photo credit: Ground Inc)



Figure 60. In 2015, Jersey City created a new pedestrian plaza using planters, paint, tables and chairs. The plaza was successful and extended in 2018. Now the city is designing a permanent plaza with stone pavers, larger planters, benches, pedestrian safety bollards, and other public space features.

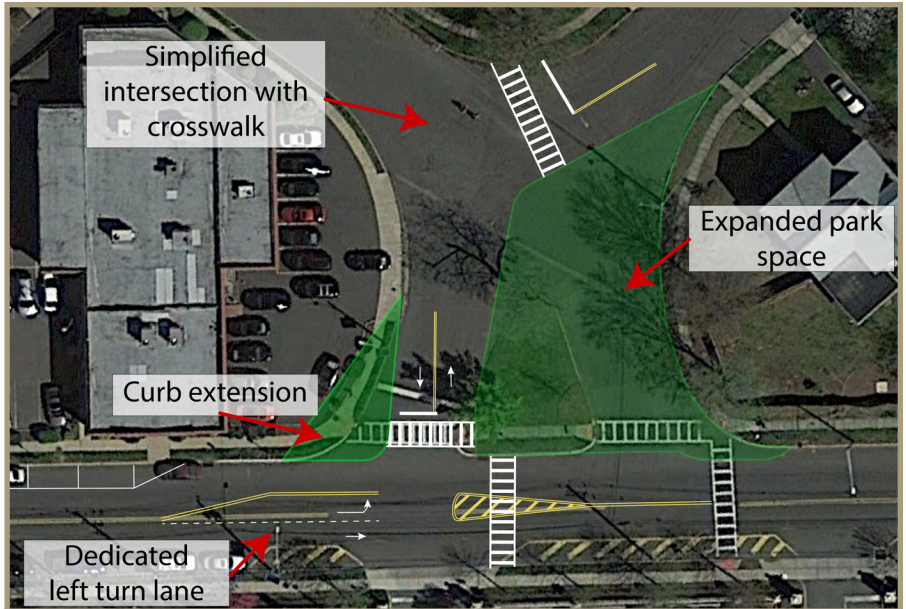


Figure 61. Potential modifications to add a park and simplify traffic at North Avenue, St. Paul Street, and Tremont Avenue.

## 5. Involve the Community and Provide Educational Opportunities

Education is an essential element in creating safer streets for all users. Enforcement of pedestrian crosswalk laws provides one tool for encouraging vehicles to watch for pedestrians. There are additional opportunities to provide positive encouragement as well. The Street Smart NJ campaign is one public education tool that municipalities can use to promote safe driving, walking, and bicycling (see Figure 62 and Appendix for additional details). Safe Routes to School programs provide various educational opportunities for youth and parents. Community events provide an excellent opportunity to spread awareness about complete streets goals. One such example can be found in New Brunswick’s Ciclovía, which temporarily closes a street to cars and opens it up to bicyclists, pedestrians, and various activities. These educational opportunities can also be used to spread awareness on safe ways to ride a bicycle or scooter in the downtown area.

### Detailed Recommendations

#### North Avenue: Hillcrest Avenue to Tremont Avenue

- Ensure consistent sidewalks are available, even across driveways, and explore implementing a wider sidewalk width for the entire corridor, such as through adoption of an ordinance designating municipal design standards
- Stripe high visibility crosswalks at all intersections along North Avenue, including crossings over North Avenue and along North Avenue on side streets (Figure 62)
- Investigate opportunities to move on-street parking to side streets and better utilize the surface parking lots in the area



Figure 62. One example of the Street Smart NJ educational campaign materials.

- Investigate opportunities to install a bicycle lane along North Avenue that would connect Westfield’s residential areas with the Westfield Train Station, a popular destination for bicyclists in the area
- Investigate opportunities to install green infrastructure, especially near St. Paul Street where flooding was apparent during the walk audit (Figure 63)
- Consider traffic calming treatments such as curb extensions, which can serve the additional purposes of providing space for green infrastructure or shortening pedestrian crossings on North Avenue



Figure 63. New York City has made extensive use of paint and plastic bollards to decrease turn radii at intersections throughout the city.

- Upgrade all curb ramps to be compliant with the Americans with Disabilities Act (ADA) and angle them such that they direct pedestrians into the crosswalks rather than into the center of the intersection
- Investigate opportunities to use curb extensions to create a 90-degree angle at the intersection of Hillcrest Avenue and North Avenue, which could serve several purposes (Figure 25, Location A):



Figure 64. Flooding along the sidewalk, looking eastward near the intersection of St. Paul Street and North Avenue.

- Allow drivers to see oncoming traffic without blocking the crosswalk
- Shorten the Hillcrest Avenue crosswalk
- Create additional space between the South Euclid Avenue intersection and the Hillcrest Avenue intersection to alleviate some vehicular turning confusion

- Investigate installing a mid-block crossing on North Avenue between South Euclid Avenue and St. Paul Street (Figure 25, between Location B and C; Figure 64)
- Explore expanding the St. Paul Street median into a park, including (Figure 25, Location C, Figure 61):
  - Closing the eastern leg of St. Paul Street between North Avenue and Tremont Avenue and transforming the space into a park or plaza
  - Converting the western leg of St. Paul Street between North Avenue and Tremont Avenue into a two-directional roadway
  - Adding high visibility crosswalks

### *North Avenue: St. Paul Street to Central Avenue*

- Investigate a road diet along North Avenue to alleviate some of the chaos with left-hand turns, especially at the intersection of Elmer Street and the shopping center on the opposite side of North Avenue
- 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
- Upgrade the streetscape and signage that welcomes passersby to downtown Westfield along North Avenue, such improvements could include:
  - Downtown-specific pedestrian lighting and banners
  - Tree plantings
  - Stamped crosswalks
  - Other visual cues that promote North Avenue’s identity as an enjoyable art of Westfield’s downtown to visit and walk, as explored by DWC
- Clearly mark the ending of the second lane on the eastbound side of North Avenue at Elmer Street (Figure 25, Location D; Figure 65)
- Install crosswalks across North Avenue at Elmer Street (Figure 25, Location D)



Figure 65. A sidewalk-level midblock crossing on Stuyvesant Avenue in Union Township, New Jersey. (Photo and design courtesy of Arterial LLC)

## North Avenue: Central Avenue to Prospect Street

- Investigate similar road diet, bicycle infrastructure, and streetscaping improvements suggested earlier
- 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
- Upgrade pedestrian crosswalk signals
- Consider installing a midblock crossing at the former location of the Lenox Avenue intersection (Figure 25, Location F)
- Simplify the Elm Street intersection by creating a single entrance into the Westfield Train Station parking lot (Figure 25, Location I)
- Upgrades to the Elm Street intersection should also consider reducing confusion for traffic traveling eastbound on North Avenue, specifically striping a stop bar closer to the intersection and making the traffic light visible from that location (Figure 25, Locations G and H)



Figure 66. Location along North Avenue where second travel lane abruptly ends (looking west on North Avenue).

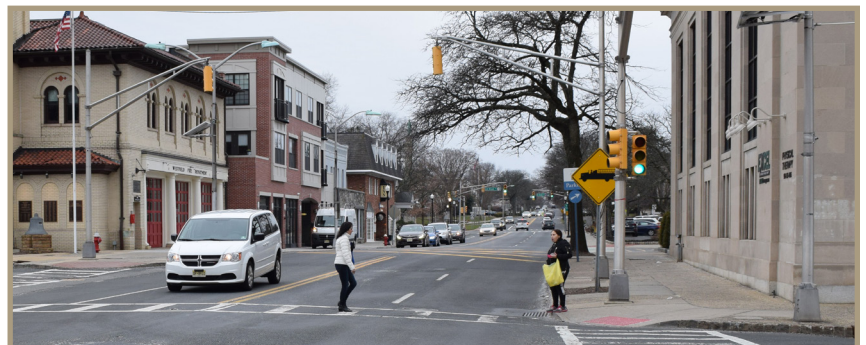


Figure 67. Currently installed pedestrian signals at the Elmer Street intersection (looking west on North Avenue).



Figure 68. Pedestrian signal head in Collingswood, New Jersey displays a countdown to assist pedestrians.

# Conclusion

North Avenue provides an important connection between Westfield’s nearby residential areas and the walkable downtown and train station. With a few improvements, North Avenue’s role as a major east-west access roadway across Union County could be harnessed to help increase pedestrian traffic in the downtown section of North Avenue. North Avenue could be transformed into a gateway to the downtown area for motorists, pedestrians, and bicyclists by better balancing the needs of each travel mode. Local officials aware of the challenge sought out the help of the CSTA Program to audit current conditions and recommend potential improvements. As part of this assistance, local stakeholders received a course on complete streets and were instructed on how to audit a corridor.

Updating the North Avenue streetscape, ensuring continuous sidewalks, and exploring various roadway enhancements could greatly improve the walkability and bikeability of the area while encouraging pass-through traffic to stop in the downtown. These changes—namely the crosswalks, potential road diet, and intersection upgrades along North Avenue—will require coordination with county and state officials, such as representatives from NJDOT’s Office of Bicycle and Pedestrian Programs. Additionally, demonstration projects can be deployed to test out the acceptability of various recommendations for suggested changes on municipal roadways along the corridor. Findings from the WCW should be used to help inform Westfield’s complete streets plans, including the development of the Westfield Bicycle and Pedestrian Plan.



Figure 69. WCW participants cross North Avenue at St. Paul Street.



Figure 70. Looking west on North Avenue near South Euclid Avenue.

# Appendix

**A. Workshop Flyer**

**B. Workshop Attendees**

**C. Workshop Agenda and Field Audit Form**

**D. Street Smart NJ Campaign Resources**

**E. Potential Funding Resources**

**F. Design Resources**



## A. Workshop Flyer



# WALKABLE COMMUNITY WORKSHOP

Monday, March 25, 2019  
1 pm to 5 pm

JOIN US TO ADDRESS  
WALKABILITY ON  
NORTH AVENUE!

REDCOM Office  
433 North Avenue E,  
Westfield, New Jersey

For more information email:  
[heasleya@tcnj.edu](mailto:heasleya@tcnj.edu)

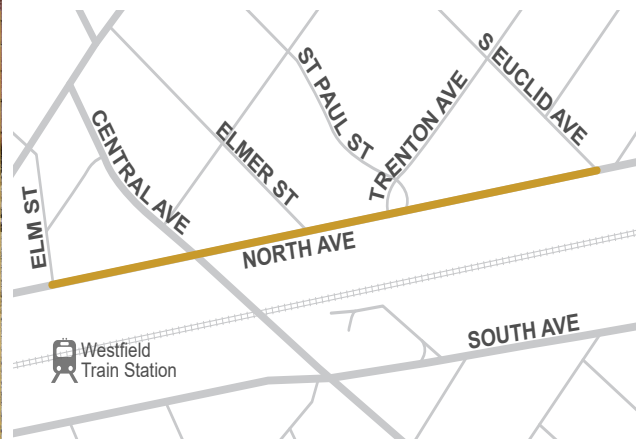
### WORKSHOP AGENDA

1:00 pm  
Welcome and Walkable Community Presentation

2:00 pm  
Walking Audit

4:00 pm  
Debrief and Next Steps

5:00 pm  
Adjourn



A Walkability Workshop engages town employees, residents, business owners and workers on issues regarding walking and biking in a community. After training on what to look for, workshop participants will walk a half-mile corridor assessing their existing streets and sidewalks and identifying issues to overcome to ensure safer conditions for pedestrians and bicyclists. After the workshop, a report will be prepared with recommendations on improvements to address key locations and issues identified in the workshop.

This effort is part of the Complete Streets Technical Assistance Program, which is a collaborative venture 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 implement complete streets.



RUTGERS

## **B. Workshop Attendees**

Doug Greenfeld, North Jersey Transportation Planning Authority

Anne Heasley, Sustainable Jersey

Lisa Cintron, Alan M. Voorhees Transportation Center

James Sinclair, Alan M. Voorhees Transportation Center

Qingyang Xie, Alan M. Voorhees Transportation Center

Michael Dardin, Westfield

Jay Goldring, Westfield

Karrie Hanson, Westfield

Kelly Kessler, Westfield

Kris McAloon, Westfield

Robert Newell, Westfield

Phil Round, Westfield

Donald Sammet, Westfield

Eric Angeles, EZ Ride

Liza Betz, Union County

John Witsch, Union County

Himadri Kundu, WSP

## C. Workshop Agenda and Field Audit Form

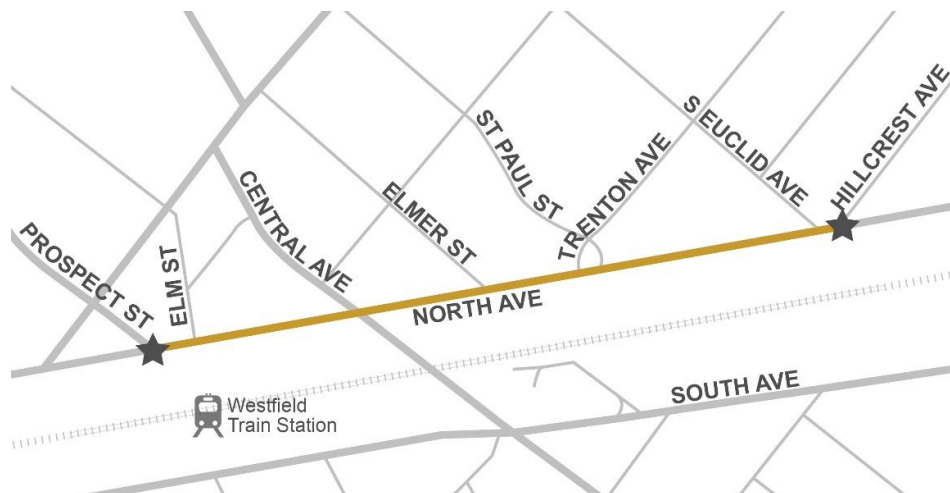
# NORTH AVENUE

## WALKABLE COMMUNITY WORKSHOP

Monday, March 25, 2019 | 1 pm to 5 pm  
REDCOM Office, 433 North Ave E, Westfield, NJ

### WORKSHOP AGENDA

- 1:00 pm**      **Welcome and Walkable Community Presentation**  
Complete Streets Technical Assistance (CSTA) project team will lead a presentation to train town employees, residents, business owners and workers on what to look for when auditing walking and biking infrastructure.
- 2:15 pm**      **Walking Audit**  
Participants will walk a half-mile corridor assessing their existing streets and sidewalks and identifying issues to overcome to ensure safer conditions for pedestrians and bicyclists.
- 4:00 pm**      **Debrief and Next Steps**  
Participants will generate planning level recommendations to improve the safety, convenience, and comfort of the walking environment of what they observed on the walking audit to be incorporated as recommendations into the final report.
- 5:00 pm**      **Adjourn**



This effort is part of the Complete Streets Technical Assistance Program, which is a collaborative venture 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 implement complete streets.

## WALK AUDIT

Monday, March 25, 2019 | 1 pm to 5 pm

<b>Contact</b>	Person Completing:	
	Email:	
	Phone:	

<b>North Avenue from Hillcrest to Tremont Avenue / St. Paul Street</b>		
<b>Design</b>	How many lanes are there?	Are there crosswalks?
	What is the speed limit?	Is there a median?
<b>Driver Behavior</b>	<b>Circle all that apply:</b>	
	<ul style="list-style-type: none"> <li>a. Speeding</li> <li>b. Blocking crosswalk</li> <li>c. Not stopping for pedestrians</li> <li>d. Double parking</li> </ul>	<ul style="list-style-type: none"> <li>e. Loud music</li> <li>f. Loud engine</li> <li>g. Not stopping for traffic control</li> </ul>
<b>Sidewalk Condition</b>	<b>Are sidewalks present?</b>	
	No      One Side (Which?)      Both Sides	
	<b>Any problems you observed:</b>	
	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?		



## WALK AUDIT

Monday, March 25, 2019 | 1 pm to 5 pm

<b>Curb Cuts/Ramps</b>	<p><b>Circle all that apply:</b></p> <p>a. Missing</p> <p>b. Non ADA compliant curb cuts/ramps (too steep, not passable, etc.)</p> <p>c. Aligned with crosswalk: yes or no</p> <p>d. Truncated domes present: yes or no</p> <p>e. Truncated domes placed correctly: yes or no</p> <p>f. Curb extensions: yes or no</p> <p>g. Other concerns:</p>			
<b>Signage</b>	<p><b>Streets are labeled:</b>    Excellent    Average    Poor    None</p> <p><b>Pedestrian oriented directions:</b>    Excellent    Average    Poor    None</p> <p><b>Car oriented directions:</b>    Excellent    Average    Poor    None</p>			
<b>Parking</b>	<p>Side 1</p> <p><input type="checkbox"/> Yes: Parallel or Angled</p> <p><input type="checkbox"/> No</p>		<p>Side 2</p> <p><input type="checkbox"/> Yes: Parallel or Angled</p> <p><input type="checkbox"/> No</p>	
<b>Amenities</b>	<p><b>Check all that apply:</b></p> <p><input type="checkbox"/> Bench</p> <p><input type="checkbox"/> Trash Can</p> <p style="padding-left: 20px;"><input type="checkbox"/> Overflowing? Yes or No</p> <p><input type="checkbox"/> Bus shelter</p> <p><input type="checkbox"/> Bicycle Racks</p>			
<b>Lighting</b>	<p><input type="checkbox"/> Overhead cobra</p> <p><input type="checkbox"/> Historic</p> <p><input type="checkbox"/> Pedestrian oriented</p>		<p>Is there lighting over the crosswalk?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p>	

# WALK AUDIT

Monday, March 25, 2019 | 1 pm to 5 pm

## Trees

- Frequent, good shape
- Frequent, poor shape
- Mostly empty tree wells
- Infrequent, good shape
- Infrequent, poor shape
- No tree wells

Additional Notes:

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**WALK AUDIT**

Monday, March 25, 2019 | 1 pm to 5 pm

<b>Tremont Avenue / St. Paul Street to Central Avenue</b>									
<b>Design</b>	<p>How many lanes are there? <span style="float: right;">Are there crosswalks?</span></p> <p>What is the speed limit? <span style="float: right;">Is there a median?</span></p>								
<b>Driver Behavior</b>	<p><b>Circle all that apply:</b></p> <table style="width: 100%;"> <tr> <td>a. Speeding</td> <td>e. Loud music</td> </tr> <tr> <td>b. Blocking crosswalk</td> <td>f. Loud engine</td> </tr> <tr> <td>c. Not stopping for pedestrians</td> <td>g. Not stopping for traffic control</td> </tr> <tr> <td>d. Double parking</td> <td></td> </tr> </table>	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	
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									
<b>Sidewalk Condition</b>	<p>Are sidewalks present?</p> <p><b>No      One Side (Which?)      Both Sides</b></p> <p><b>Any problems you observed:</b></p> <ol style="list-style-type: none"> <li>a. Sidewalks or paths started and stopped, where?</li> <li>b. Sidewalks were broken or cracked, where?</li> <li>c. Sidewalk slope problems, where?</li> <li>d. Sidewalks were blocked with parked cars, signs, shrubs, etc, where?</li> <li>e. Sidewalks not wide enough, where?</li> <li>f. Sight obstructions, where?</li> </ol>								
<b>Curb Cuts/Ramps</b>	<p><b>Circle all that apply:</b></p> <ol style="list-style-type: none"> <li>a. Missing</li> <li>b. Non ADA compliant curb cuts/ramps (too steep, not passable, etc.)</li> <li>c. Aligned with crosswalk: yes or no</li> <li>d. Truncated domes present: yes or no</li> </ol>								



## WALK AUDIT

Monday, March 25, 2019 | 1 pm to 5 pm

	e. Truncated domes placed correctly:   yes   or   no				
	f. Curb extensions:   yes   or   no				
	g. Other concerns:				
<b>Signage</b>	<b>Streets are labeled:</b>	Excellent	Average	Poor	None
	<b>Pedestrian oriented directions:</b>	Excellent	Average	Poor	None
	<b>Car oriented directions:</b>	Excellent	Average	Poor	None
<b>Parking</b>	Side 1				Side 2
	<input type="checkbox"/> Yes:   Parallel   or   Angled <input type="checkbox"/> No				<input type="checkbox"/> Yes:   Parallel   or   Angled <input type="checkbox"/> No
<b>Amenities</b>	<b>Check all that apply:</b>				
	<input type="checkbox"/> Bench  <input type="checkbox"/> Trash Can ▪   Overflowing?   Yes   or   No	<input type="checkbox"/> Bus shelter  <input type="checkbox"/> Bicycle Racks			
<b>Lighting</b>	<input type="checkbox"/> Overhead cobra  <input type="checkbox"/> Historic  <input type="checkbox"/> Pedestrian oriented	Is there lighting over the crosswalk?  <input type="checkbox"/> Yes  <input type="checkbox"/> No			
	<input type="checkbox"/> Frequent, good shape  <input type="checkbox"/> Frequent, poor shape  <input type="checkbox"/> Mostly empty tree wells	<input type="checkbox"/> Infrequent, good shape  <input type="checkbox"/> Infrequent, poor shape  <input type="checkbox"/> No tree wells			
Additional Notes:					
<hr/> <hr/>					



## WALK AUDIT

Monday, March 25, 2019 | 1 pm to 5 pm

Central Avenue to Prospect Street									
Design	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; padding: 5px;">How many lanes are there?</td> <td style="width: 50%; padding: 5px;">Are there crosswalks?</td> </tr> <tr> <td style="padding: 5px;">What is the speed limit?</td> <td style="padding: 5px;">Is there a median?</td> </tr> </table>	How many lanes are there?	Are there crosswalks?	What is the speed limit?	Is there a median?				
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What is the speed limit?	Is there a median?								
Driver Behavior	<p><b>Circle all that apply:</b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; padding: 5px;">a. Speeding</td> <td style="width: 50%; padding: 5px;">e. Loud music</td> </tr> <tr> <td style="padding: 5px;">b. Blocking crosswalk</td> <td style="padding: 5px;">f. Loud engine</td> </tr> <tr> <td style="padding: 5px;">c. Not stopping for pedestrians</td> <td style="padding: 5px;">g. Not stopping for traffic control</td> </tr> <tr> <td style="padding: 5px;">d. Double parking</td> <td></td> </tr> </table>	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	
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Sidewalk Condition	<p><b>Are sidewalks present?</b></p> <p>No      One Side (Which?)      Both Sides</p> <p><b>Any problems you observed:</b></p> <p>a. Sidewalks or paths started and stopped, where?</p> <p>b. Sidewalks were broken or cracked, where?</p> <p>c. Sidewalk slope problems, where?</p> <p>d. Sidewalks were blocked with parked cars, signs, shrubs, etc, where?</p> <p>e. Sidewalks not wide enough, where?</p> <p>f. Sight obstructions, where?</p>								
Curb Cuts/Ramps	<p><b>Circle all that apply:</b></p> <p>a. Missing</p> <p>b. Non ADA compliant curb cuts/ramps (too steep, not passable, etc.)</p> <p>c. Aligned with crosswalk:    yes    or    no</p> <p>d. Truncated domes present:    yes    or    no</p>								



## WALK AUDIT

Monday, March 25, 2019 | 1 pm to 5 pm

	<p>e. Truncated domes placed correctly:   yes   or   no</p> <p>f. Curb extensions:   yes   or   no</p> <p>g. Other concerns:</p>			
<b>Signage</b>	<b>Streets are labeled:</b>	Excellent	Average	Poor   None
	<b>Pedestrian oriented directions:</b>	Excellent	Average	Poor   None
	<b>Car oriented directions:</b>	Excellent	Average	Poor   None
<b>Parking</b>	<p>Side 1</p> <p><input type="checkbox"/> Yes:   Parallel   or   Angled</p> <p><input type="checkbox"/> No</p>	<p>Side 2</p> <p><input type="checkbox"/> Yes:   Parallel   or   Angled</p> <p><input type="checkbox"/> No</p>		
<b>Amenities</b>	<p><b>Check all that apply:</b></p> <p><input type="checkbox"/> Bench</p> <p><input type="checkbox"/> Trash Can</p> <p style="padding-left: 20px;"><input type="checkbox"/> Overflowing?   Yes   or   No</p> <p><input type="checkbox"/> Bus shelter</p> <p><input type="checkbox"/> Bicycle Racks</p>			
<b>Lighting</b>	<p><input type="checkbox"/> Overhead cobra</p> <p><input type="checkbox"/> Historic</p> <p><input type="checkbox"/> Pedestrian oriented</p>		<p>Is there lighting over the crosswalk?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p>	
<b>Trees</b>	<p><input type="checkbox"/> Frequent, good shape</p> <p><input type="checkbox"/> Frequent, poor shape</p> <p><input type="checkbox"/> Mostly empty tree wells</p>		<p><input type="checkbox"/> Infrequent, good shape</p> <p><input type="checkbox"/> Infrequent, poor shape</p> <p><input type="checkbox"/> No tree wells</p>	
<p>Additional Notes:</p> <hr/> <hr/>				

## WALK AUDIT

Monday, March 25, 2019 | 1 pm to 5 pm

### 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 <i>daytime</i> ?	0	1	2	3	4	5	6	7	8	9	10
How afraid would you be to walk ALONE in the area during <i>night</i> ?	0	1	2	3	4	5	6	7	8	9	10
How well care for did this area feel?	0	1	2	3	4	5	6	7	8	9	10

Additional Notes:



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## D. Street Smart NJ Campaign Resources



### STREET SMART NJ FACT SHEET

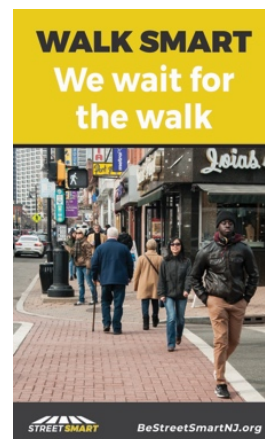
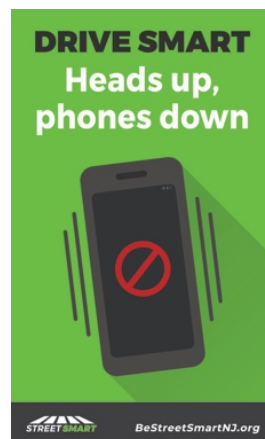
#### What is Street Smart NJ?

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 80 communities have participated in Street Smart in some way since the program's inception in 2013. NJTPA's goal is to increase that number to 100 campaign partners. Communities everywhere are invited to use the strategies and materials on the Street Smart website, [bestreetsmartnj.org](http://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.



## 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 2018, 175 pedestrians died as a result of pedestrian-vehicle crashes in New Jersey. From 2014 to 2018, 870 pedestrians were killed and thousands were injured on New Jersey’s roadways. That translates to one death every two days and 11 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.



## Results

Evaluations of previous Street Smart NJ campaigns have shown positive results. There was a 28 percent reduction in pedestrians jaywalking or crossing against the signal and a 40 percent reduction in drivers failing to yield to crossing pedestrians or cyclists following campaigns the NJTPA managed in March 2016.

## E. 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](mailto: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://www.state.nj.us/transportation/business/localaid/srts.shtm>

**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://www.state.nj.us/transportation/business/localaid/alternatives.shtm>

**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/index.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.sustainablejersseyschools.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:** <http://www.sustainablejersey.com/grants-resources/grants-portal/>

**Together North Jersey Funding and Resources Database:** [https://togethernorthjersey.com/?page\\_id=25162](https://togethernorthjersey.com/?page_id=25162)

## **Federal Funding**

### **1. US Department of Transportation (USDOT)**

Better Utilizing Investments to Leverage Development (BUILD, replaced TIGER)

### **2. Federal Highway Administration (FHWA) Programs**

Congestion Mitigation and Air Quality Improvement (CMAQ)

Surface Transportation Program (STP)

Highway Safety Improvement Program (HSIP)

National Highway Performance Program (NHPP)

Transportation Alternatives Program (TAP)

Safe Routes to School (SRTS)

Local Safety / High Risk Rural Roads Program (HRRR)

National Highway System (NHS)

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.

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.

Emergency Relief - Repair or reconstruction after national disaster, can include bicycle and pedestrian facilities

### **3. National Highway Traffic Safety Association**

NHTSA Section 402 State Highway Safety Program

NHTSA Section 405 Non-Motorized Safety Grants

### **4. Federal Transit Administration Programs**

Urbanized Area Formula Program (UZA) - Public transit and bike routes to transit

Fixed Guideway Capital Investment Grants - Transit systems and bike parking

Bus and Bus Facilities Formula Grants - Includes bike parking facilities

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**



# F. Design Resources

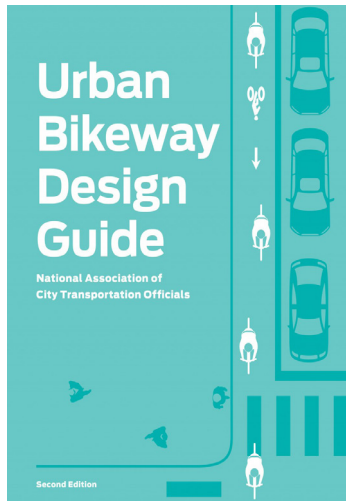
## NACTO Guides



[Urban Street Design Guide](#)



[Global Street Design Guide](#)



[Urban Bikeway Design Guide](#)



[Transit Street Design Guide](#)



[Blueprint for Autonomous Urbanism](#)



[Urban Street Stormwater Guide](#)

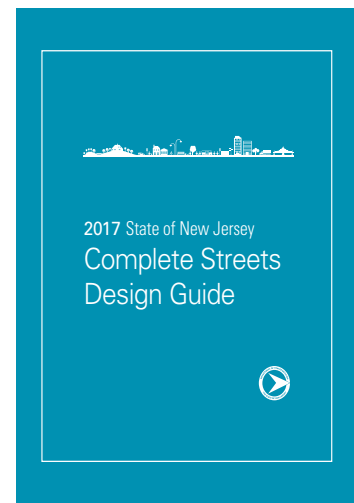


[Bike Share Station Siting Guide](#)

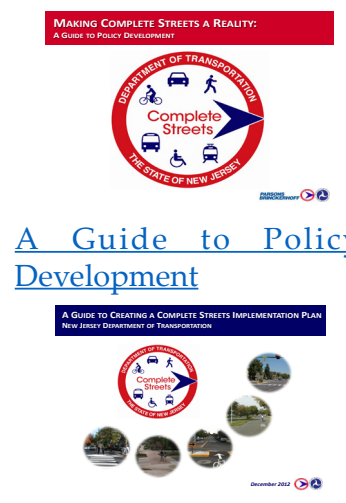
## NJDOT Guides



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

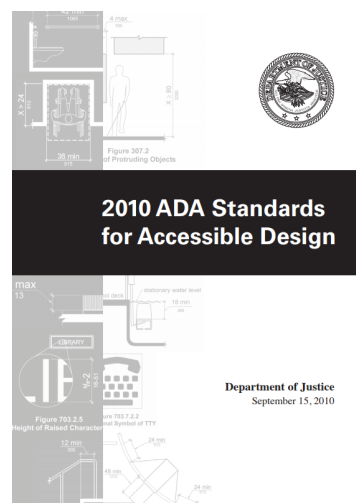


[2017 State of New Jersey Complete Streets Design Guide](#)



[A Guide to Creating a Complete Streets Implementation Plan](#)

## ADA Guidelines



[ADA Standards for Accessible Design](#)

# Tactical Urbanism Guides



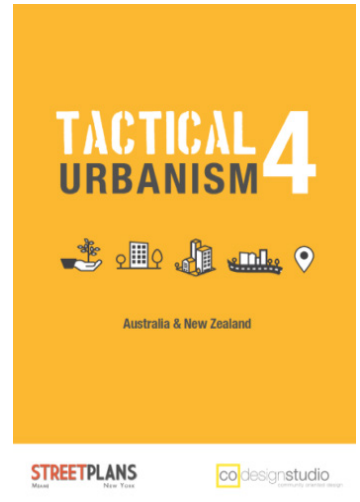
[Tactical Urbanism 1](#)



[Tactical Urbanism 2](#)



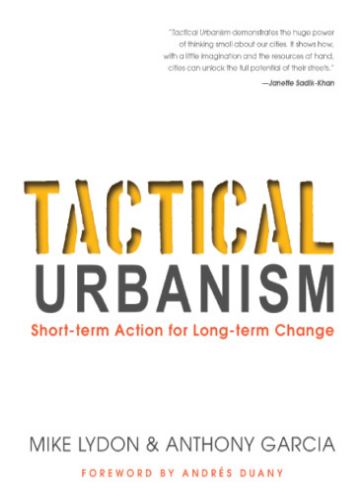
[Tactical Urbanism 3](#)



[Tactical Urbanism 4](#)



[Tactical Urbanism 5](#)



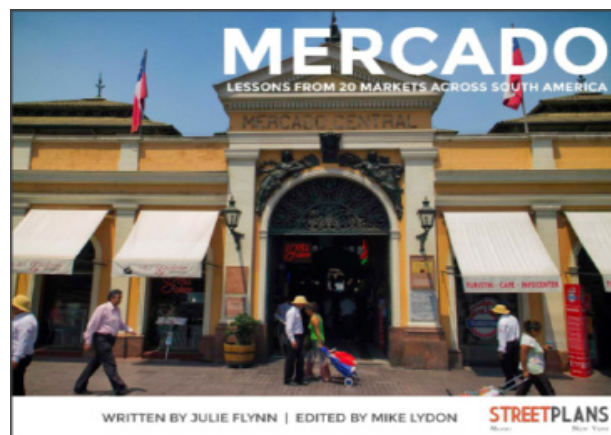
[Tactical Urbanism](#)



[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](#)

