



Bicycle Network Plan

Cranbury Township, Middlesex County, NJ
January 2021



About the Report

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

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Executive Summary

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

-State of New Jersey Complete Streets Design Guide

The Township of Cranbury, New Jersey, participated in the North Jersey Transportation Planning Authority (NJTPA) Complete Streets Technical Assistance (CSTA) Program in 2020. The CSTA Program selected eight municipalities to receive up to \$10,000 in technical assistance to advance complete streets projects. This report identifies several potential infrastructure improvements to create safe and attractive bicycle facilities along nine important corridors in Cranbury. To develop these recommendations, the study team engaged municipal stakeholders in a collaborative process to identify existing conditions that pose obstacles to safe bicycle travel and develop practical solutions that enhance safety for all roadway users.

The recommendations in this report include conceptual plans that show what a variety of completed projects could look like if installed. Municipal officials may use these plans and images to facilitate discussions with the public and Middlesex County, which would need to approve change to any county roads, to assist in moving the projects from concept to reality. Proposed improvements include multi-use trails, bicycle lanes, shared lanes, traffic calming, and village gateways. Many of the recommendations in this report can be implemented by reallocating roadway space through new striping and signage. These improvements could be implemented quickly and at a relatively low cost by the municipality or county. Other recommendations may require the creation of new trails parallel to the roadway. These projects would take more time but have the potential to make Cranbury a more accessible and attractive community for bicyclists. Aside from facilitating bicycle travel, many of the recommendations aim to improve overall traffic safety by discouraging speeding and improving the safety of pedestrian crossings. While the recommendations focus on direct bicycle routes across the township, the same principals of connectivity apply to other roadways in Cranbury.

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



Figure 1. Cranbury Township municipal building.

Background

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

The Township of Cranbury is a rural township in Middlesex County, New Jersey that has a small downtown village surrounded by over 2,500 acres of preserved open space and farmland. The rural nature of the township means there are only a few roads available to travel on within the municipality and to neighboring townships. Most of these are county roads that do not have any bicycle facilities. In their application to the CSTA Program, the township noted that various affordable housing projects have been developed near the village area, but those developments lack the non-motorized transportation infrastructure needed to connect residents with destinations around and outside the township.

Aside from local transportation needs, Cranbury officials are also concerned about the on-road safety of recreational bicyclists. The preserved open space provides an attractive background for individuals looking to bicycle for exercise or pleasure, especially on weekends, but bicyclists must share limited road space with drivers moving at high speeds. Additionally, the township must accommodate significant truck traffic traveling to and from various warehouses on the eastern edge of town.

In late 2019, the municipality applied for technical assistance under the CSTA Program to create a bicycle network plan that would help increase connectivity between the historic downtown, the school, the public library, open space, farmland vistas, neighborhoods, and nearby towns (Figure 2). The township hopes that the plan will allow for infrastructure improvements that will support the local economy and better the health and quality of life of area residents.

In March 2020, the project team held a virtual meeting with the municipal team to discuss the corridors and finalize the scope of work. Over the next month, the project team audited the corridors and developed a series of draft recommendations. These recommendations were presented to the public as part of a virtual workshop in June 2020. Feedback from that meeting, along with 29 written comment submissions from residents, helped inform the final recommendations presented in this report.



Figure 2. Map created by Cranbury Township and included in their application to the CSTAP showing the potential study corridors and areas of interest.

What is a Complete Street?

Complete streets are roads designed for all users, all modes of transportation, and all ability levels (Figure 3). They balance the needs of drivers, pedestrians, bicyclists, transit riders, emergency responders, and goods movement based on the local context. Complete streets should tailor to the specific needs of the surrounding environment. A school zone, for instance, may require reduced speed limits, narrower travel lanes, and wider sidewalks to achieve a safer setting for students. Meanwhile, streets along transit routes should incorporate the needs of bus and rail commuters by installing benches, shelters, and enhanced lighting and signs.

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

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



Figure 3. A complete street, as seen in New Brunswick, New Jersey. No two complete streets are alike, as they should always reflect the context of the street and the character of the community.

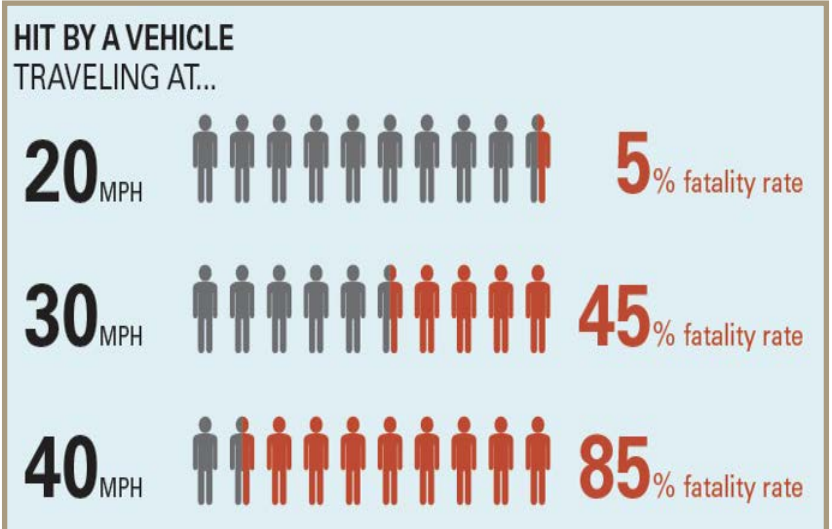


Figure 4. Graphic showing increased fatality rate as vehicle speeds increase.

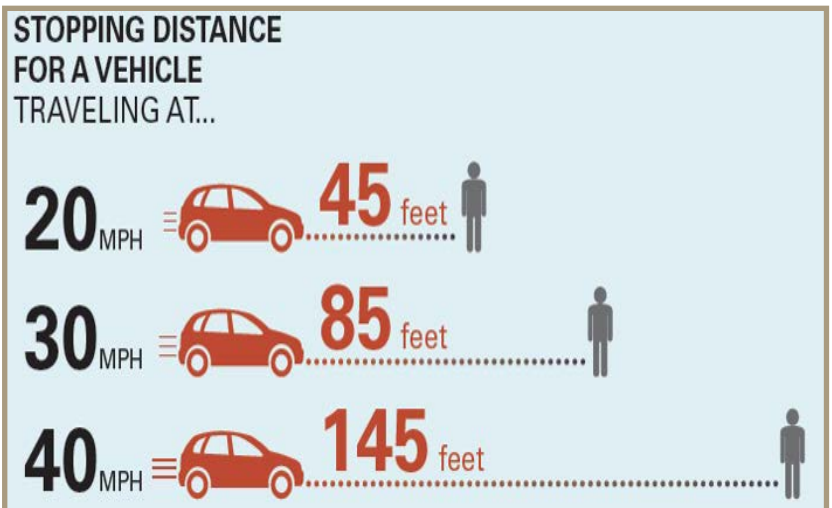


Figure 5. Graphic showing increased stopping distance as vehicle speeds increase.

Benefits of Complete Streets

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

Mobility

Creating or enhancing multi-modal transportation options expands mobility opportunities for everyone, including nondrivers, youth, and senior citizens (Figure 6). In turn, increased mobility improves access to jobs and services, which is crucial for people who cannot afford or choose not to own a car, as well as those who are unable to drive due to a disability or their age.

Equity

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

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

Health

Complete streets enhance opportunities for increased walking and bicycling which in turn leads to the numerous health benefits associated with increased physical activity. The Center for Disease Control (CDC) supports complete streets as a means to fight obesity (Figure 7).

Quality of Life

Livable, walkable communities diminish the need for automobiles. Walking or bicycling around town creates a sociable environment, fostering interactions between family, friends, or clients and increasing community involvement. These interactions, in turn, entice users to enjoy the surroundings they would otherwise ignore in a car. A reduction in vehicle use can also increase the quality of life thanks to reductions in noise and stress associated with congestion and crashes (Figure 8).



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



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



Figure 8. Complete Streets in Asbury Park help foster a lively social environment.

Economic Vitality

Improving streetscapes revitalizes business districts. Complete streets generate more foot traffic when they create great places where people want to be, which can encourage both residents and visitors to spend more money at local shops and restaurants that they may have driven past before. Such is the experience in Somerville, New Jersey, where one block of Division Street was converted to a pedestrian plaza. The area witnessed a sharp decline in vacant commercial properties; vacancy dropped from 50 percent to zero after the plaza was developed (Figure 9)¹.



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

Environmental Health

By reducing automobile use, complete streets can contribute to cleaner air. Additional sustainable design elements installed along complete streets can also bring other environmental benefits. For example, landscape improvements (green streets) can reduce impervious cover, reduce or filter stormwater runoff, and contribute to water quality improvement. (Figure 10).



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

Complete Streets in New Jersey and Cranbury

New Jersey is a national leader in the complete streets movement. In 2009, NJDOT was among the first state departments of transportation in the nation to adopt an internal complete streets policy. In 2010, the National Complete Streets Coalition ranked that policy first among 210 state, regional, county, and municipal policies nationwide. Since 2009, NJDOT has funded five “Complete Streets Summits,” and over a dozen local, regional and statewide in-person and online educational workshops intended to disseminate the latest information about complete streets to planners, engineers, elected officials, and advocates. In 2017, NJDOT released the *New Jersey Complete Streets Design Guide* to inform New Jersey communities on how to implement complete streets projects. In 2019, NJDOT released the *Complete & Green Streets for All: Model Complete Streets Policy and Guide* to serve as a new resource for local best practices in policy language. One of the positive outcomes of these efforts is that communities of all sizes throughout the state have joined NJDOT in adopting complete streets policies. Of New Jersey’s 21 counties, eight have adopted complete streets policies. Additionally, 167 municipalities have implemented complete streets policies affecting 3.8 million (44 percent) of the state’s residents (Figure 11).

Middlesex County passed a complete streets policy in 2012, but Cranbury does not yet have one.

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

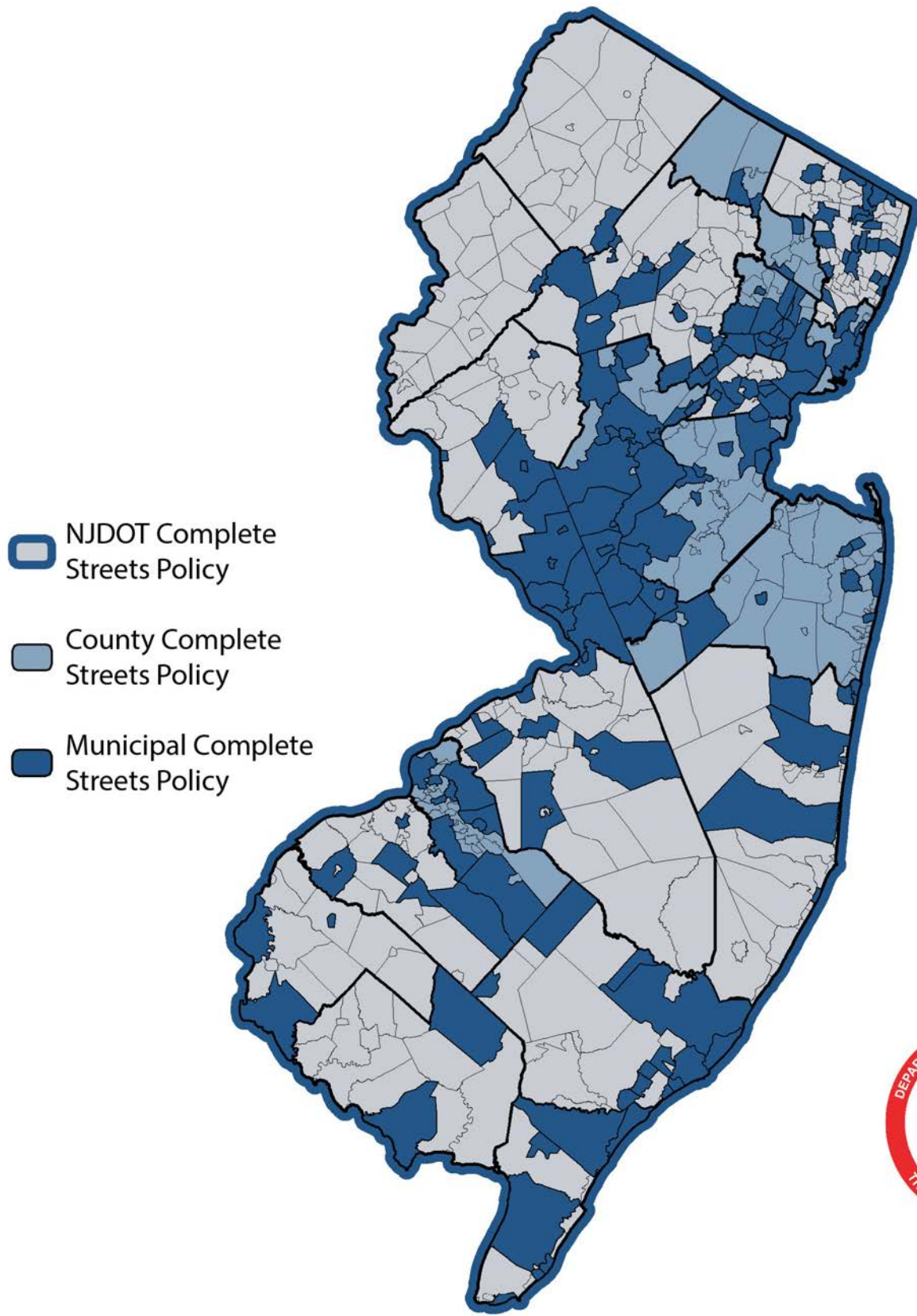


Figure 11. Complete Streets Policies in New Jersey, as of October 15, 2020. Visit <http://njbikeped.org/services/complete-streets-policy-compilation/> for a constantly updated list of policies.

Study Area

The Township of Cranbury is home to approximately 3,821 residents within 13.3 square miles, resulting in a density of 287.7 people per square mile. The median age is 48.6 and the estimated median household income is \$158,879, nearly double Middlesex County's median household income of \$88,217. The poverty rate in Cranbury is 1 percent, which is significantly lower than the county rate of 8.3 percent. Eighty percent of residents speak English at home, with 5 percent speaking Spanish, and the remainder speaking another language (US Census Bureau, 2018).

Regarding transportation, 75 percent of Cranbury residents drive alone to work, followed by 11 percent who use public transit, and 9 percent who work from home. No resident reported walking or bicycling to work, although residents reported that children do bicycle to school. Historically, Cranbury had access to a train station, but today residents rely on local bus shuttles, the Coach USA private commuter bus to New York City from South Brunswick, or the NJ TRANSIT Princeton Junction train station in West Windsor. Only 81 residents (6 percent) both live and work in Cranbury, while 1,270 residents commute to jobs outside the township, primarily to locations in Middlesex and Mercer counties. Due to the large warehouses and distribution centers located in town, over 9,000 workers commute into Cranbury, most of whom live in Middlesex and Mercer counties (US Census Bureau, OnTheMap, 2018).

Cranbury has just three roads that cross through the township in a north-south direction. Interstate 95 (NJ Turnpike) lies on the eastern edge of the township but does not have any access points within the municipal boundaries. NJ Route 130 is located about a mile to the west and carries the largest share of local traffic. Most of the warehouses and distribution centers in town are located between these two highways. The village center is located just west of Route 130 along Main Street, which is managed by Middlesex County. The Cranbury Public School, Village Park, public library, and Town Hall are all located on Main Street. There are nine roads that connect Cranbury to neighboring municipalities to the east and west. Of those nine, seven are part of this study, and were selected because they are essential to local and regional mobility.



Figure 12. Ancil Davidson Road in Cranbury Township lacks sidewalks, bicycle lanes, and shoulders.

Assessment of Need

Cranbury has only a few roads that provide connectivity within the township and even fewer that connect with neighboring municipalities. None of these roads have bicycle facilities, and most of them were designed to accommodate high motor vehicle speeds as they cross preserved open space with few driveways or intersections (Figure 12). This design is typical of county roadways that were created to serve farms in rural parts of New Jersey. Sidewalks and shoulders are nearly nonexistent, further limiting options for bicyclists. As more housing is built in neighboring communities, vehicle volumes are likely to increase. The downtown village area is compact, which keeps recreational cyclists safe and could allow for residents, including children, to make trips on bicycle if the infrastructure supported it.

Figure 14 on Page 9 shows Cranbury roads ranked by Bicycle Level of Comfort (LOC), which analyzes roadway design, posted speed limits, number of lanes, and truck volume data in order to categorize all roads and trails into one of five groups. Most roadways in Cranbury are LOC 3 or 4. The categories are:

- LBC 1: Little to no stress. Suitable for all cyclists, including children.
- LBC 2: Little traffic stress. Suitable for most adult cyclists, but more challenging for children.
- LBC 3: Moderate traffic stress. Comfortable for those who already ride bicycles.
- LBC 4: High traffic stress. Only for very experienced bicyclists.
- LBC 5: Unable to classify or unsuitable for bicycling.

The corridors included in this study are:

- **Ancil Davidson Road**, from Cranbury Neck Road (CR615) to Old Trenton Road (CR535).
- **Cranbury Neck Road (CR615)**, from John White Road (township boundary) to South Main Street (CR539), where the roadway terminates.
- **Dey Road (CR614)**, from Petty Road (township boundary) to South River Road (CR535) where the roadway terminates.
- **Half Acre Road**, from Route 130, where the roadway begins, to Public Road (township boundary).
- **Main Street (CR539 and CR535)**, from Route 130, where the roadway begins, to the Millstone River (township boundary).
- **Old Trenton Road (CR535)**, from Ancil Davidson Road (township boundary) to South Main Street (CR539)
- **Plainsboro Road**, from Raven’s Crest Park (township boundary) to Maplewood Avenue, where the roadway terminates.
- **South River Road (CR535)**, from Route 130 to Pleasant Hill Road (township boundary).
- **Station Road (CR615)**, from South Main Street (CR535), where the roadway begins, to Hightstown-Cranbury Station Road (township boundary).

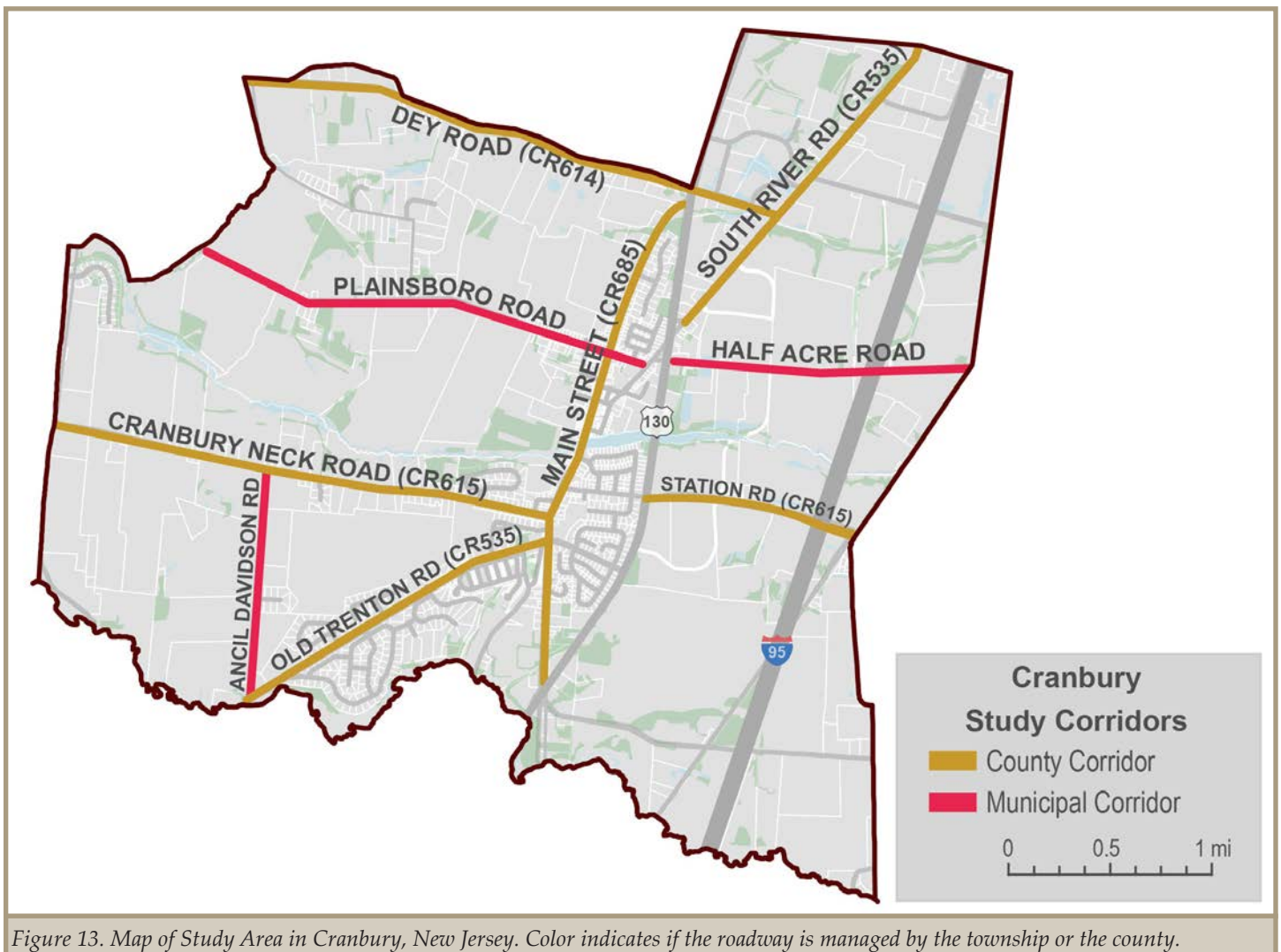


Figure 13. Map of Study Area in Cranbury, New Jersey. Color indicates if the roadway is managed by the township or the county.

Data

Traffic

The NJDOT maintains a database of traffic counts for major roadways in New Jersey. For the study corridors, the annual average daily traffic (AADT) volume is as follows:

- Ancil Davidson Road: 2,997 in 2016 and 2,475 in 2013.
- Cranbury Neck Road: 3,194 in 2018 and 3,316 in 2015.
- Dey Road: 11,206 in December 2018, 10,666 in November 2018, 11,308 in 2017, and 10,801 in 2014.
- Half Acre Road: 8,028 in 2018.
- Main Street between Route-130 and Plainsboro Road: 1,879 in 2018 and 1,787 in 2015.
- Main Street between Danser Drive and Route 130: 2,611 in 2017 and 2,727 in 2014.
- Old Trenton Road by Parkview Road: 6,859 in 2016 and 7,496 in 2013.
- Old Trenton Road between Liedtke Drive and Main Street: 6,712 in 2017 and 6,879 in 2014.
- Plainsboro Road by Prospect Street: 5,531 in 2018.
- South River Road between Prospect Plains Road and Dey Road: 22,591 in 2018.
- Station Road between Pine Hill Drive and Evans Drive: 2,216 in 2015.
- Station Road east of Route 130: 5,870 in 2016. (*Traffic study provided for Cranbury Logistics Center*)
- Station Road in Monroe Township: 9,775 in 2017.

Speed

Posted speed limits within the study area vary widely, from 25 mph on Main Street to 50 mph on some portions of Cranbury Neck Road and Ancil Davidson Road. As speed limits and traffic volumes help to determine what type of bicycle infrastructure is suitable, they are discussed in detail for each roadway section.

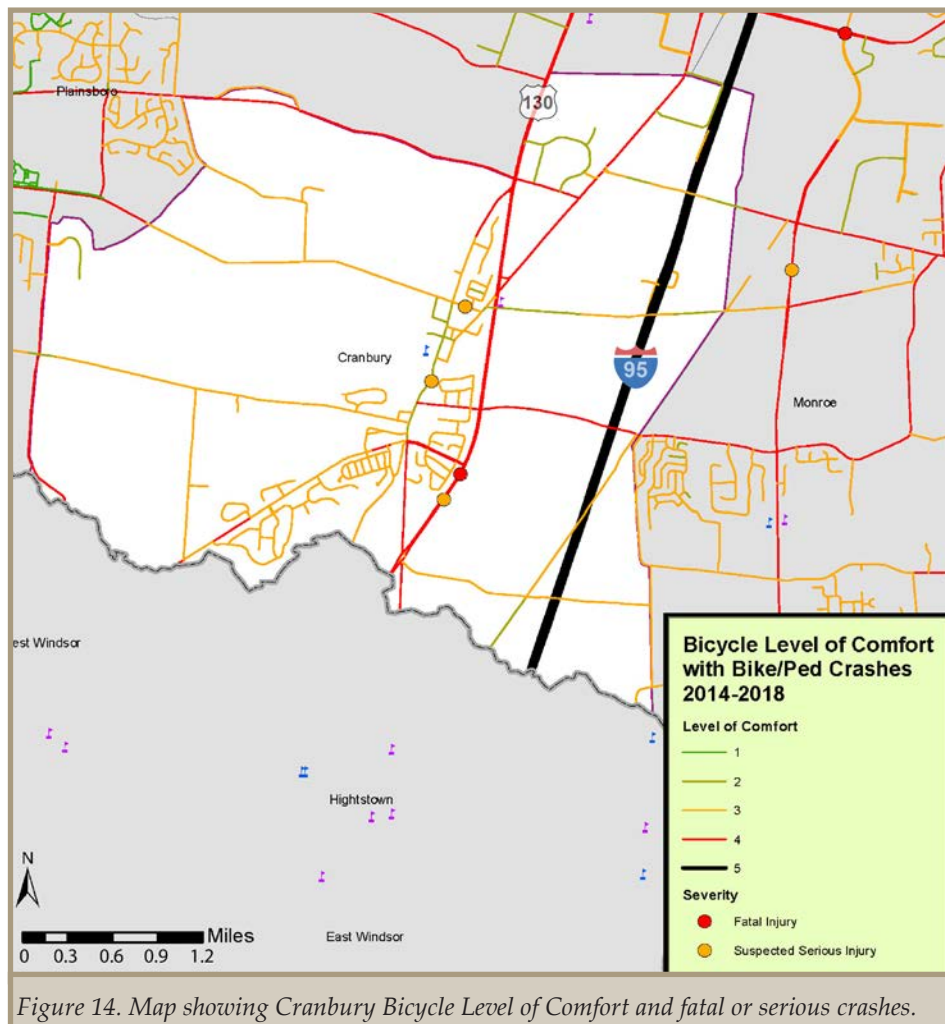


Figure 14. Map showing Cranbury Bicycle Level of Comfort and fatal or serious crashes.

Crash History

In the period from 2015-2019, there were 1,662 traffic collisions in Cranbury, of which 534 occurred on I-95. Of the remaining 1,128 collisions, 11 involved a pedestrian and three involved a bicyclist (Table 1). Two of the pedestrian collisions occurred in a parking lot and are excluded from the data as they did not take place on a public right-of-way. One pedestrian, a 75-year old woman, was killed in May 2015 while in a crosswalk. Six of the crashes occurred on Main Street, and four took place along US-130. All three bicycle collisions involved an inattentive driver away from an intersection.

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

Location	Date	Time	Crash Type	Ped. Age	Ped. Gender	Injury Severity	At Intersection	Lighting
440 feet north of Main St. (535) and Plainsboro Rd.	12/21/2017	2:10 PM	Pedestrian	26	Female	Suspected Serious Injury	No	Daylight
200 feet north of US-130 and Old Trenton Rd.	10/4/2017	6:46 AM	Pedestrian	27	Unknown	No Apparent Injury	No	Daylight
200 feet north of US-130 and Dey Rd.	7/17/2017	9:13 PM	Pedestrian	28	Male	Suspected Minor Injury	No	Dark - Street Lights On (Continuous)
S. Main Street (535) and Evans Dr.	5/10/2017	6:16 PM	Pedestrian	13	Female	Suspected Serious Injury	Yes	Daylight
50 feet north of S. Main St. (535) and Scott Ave.	9/22/2016	3:47 AM	Pedestrian	41	Female	Suspected Minor Injury	No	Daylight
500 feet west of Half Acre Rd. and Gavett Dr.	9/17/2016	7:25 PM	Bicyclist	63	Male	Suspected Minor Injury	No	Dark - Street Lights On (Continuous)
North Main St.	11/19/2015	8:17 PM	Pedestrian	76	Unknown	Possible Injury		Dark - Street Lights On (Continuous)
2112 feet east of Cranbury Neck Rd. (Rt. 615) and George Davison Rd. / John White Rd.	11/12/2015	4:54 PM	Bicyclist	67	Male	Suspected Minor Injury	No	Dusk
N. Main Street (535) and Park Pl.	9/5/2015	7:40 PM	Pedestrian	102 and 106	Male and Male	Suspected Minor Injury		Dark - Street Lights On (Continuous)
1584 feet north of US-130 and Station Rd.	8/25/2015	12:43 AM	Bicyclist	20	Male	No Apparent Injury	No	Dark - Street Lights Not Present
N. Main St. and Plainsboro Rd.	7/24/2015	7:26 PM	Pedestrian	38 and 47	Female and Male	Suspected Minor Injury	No	Daylight
US-130 and Old Trenton Rd.	5/29/2015	9:51 PM	Pedestrian	75	Female	Fatal Injury	Yes	Dark - Street Lights Off

Recommendations

The Cranbury Bicycle Network Plan is made up of nine corridors that connect the downtown village area to surrounding sections of town and neighboring townships. The roadways in this report are organized in alphabetical order, not in order of importance or difficulty of implementation. Prioritization is a question that township officials and residents must address as they decide to move forward with implementation. While most of the recommendations are in line with the *New Jersey Complete Street Design Guide* (developed by the NJDOT²), this report derives additional guidance from the *Small Town and Rural Multimodal Networks Design Guide*, which was developed in 2016 for the Federal Highway Administration³. Most of the roadways are owned by Middlesex County (see Figure 13), and any proposed changes will need county approval in consultation with Cranbury Township.

Ancil Davidson Road

Between...	Cranbury Neck Road & Old Trenton Road
Speed Limit (mph)	50 (High)
Daily Vehicles (AADT)	2,900 (Low)
Width (feet)	24 (Narrow)
Land Use	Farm and Open Space
Owner	Cranbury Township

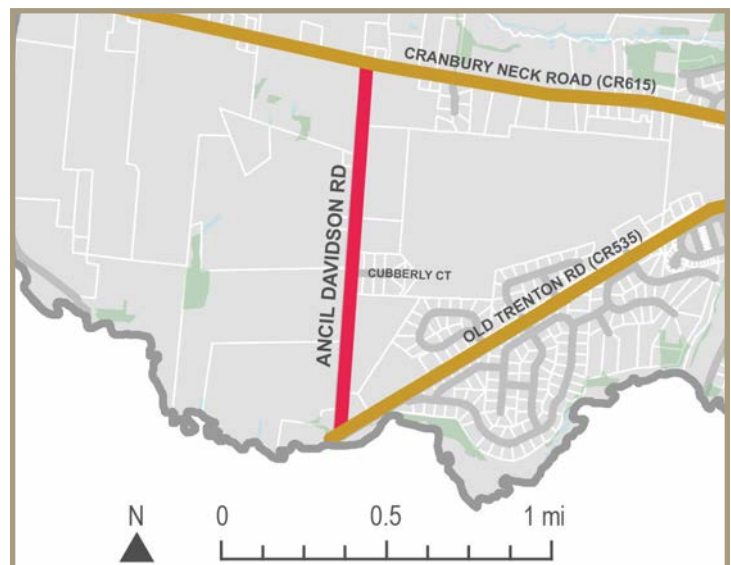


Figure 15. Map of Ancil Davidson Road.

Ancil Davidson Road is a two-lane roadway that connects Cranbury Neck Road to Old Trenton Road (Figure 15). The roadway is lined with farms and open space, including a nursery (Figure 16). Roughly halfway between the two roads, there is a small residential cluster built around Cubberly Court. The 50 mph speed limit is not posted, and residents reported vehicles frequently exceeding that speed. The roadway crests just north of Cubberly Court, which can make it dangerous to pass vehicles due to limited visibility at that point.



Figure 16. Ancil Davidson Road.

The high vehicle speeds and narrow width limit the kinds of bicycle improvements that can be added here. Because the roadway is only 24 feet wide, bicycle lanes do not fit within the existing roadbed (Figure 17). Widening the roadway is costly, may infringe on neighboring parcels, and could encourage even faster driving speeds.

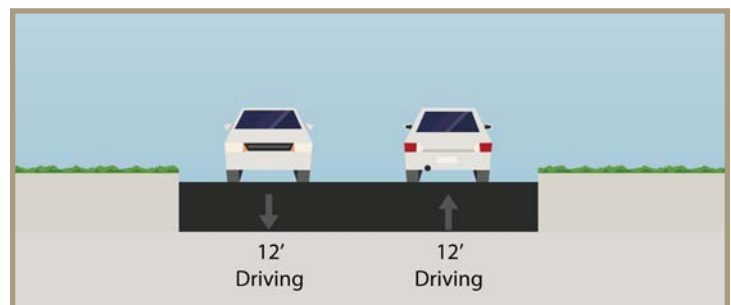


Figure 17. Ancil Davidson Road.

2. NJDOT Complete Streets Resources: <https://www.state.nj.us/transportation/eng/completestreets/resources.shtm>

3. Small Town and Rural Multimodal Networks: https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/small_towns/

During a presentation on June 23, 2020, the project team asked residents about the creation of an “advisory bicycle lane,” but many felt the concept would not work well on this roadway due to the aforementioned characteristics (see page 15 for a description of advisory bicycle lanes). Traditional shared lanes are also not advised under current NJDOT guidelines due to the high speed limit. A parallel shared-used path would be a safe alternative, and is suggested for other roadways in Cranbury; however, Ancil Davidson Road is of limited use as a transportation corridor, as it does not provide a direct link to important destinations, and should not be prioritized for such a costly intervention.

The crest in the roadway and Cubberly Court are roughly at the halfway point, that could result in a dangerous situation as drivers turn left to enter or exit the housing development.

Recommendation: Investigate lowering the speed limit to 40 mph and adding traffic calming interventions that will improve safety for all roadway users in accordance with traffic engineering standards and best practices for rural roads. Add “Bicycle May Use Full Lane” (R4-11) or “Bicycles in Roadway” signage to remind drivers that bicyclists are allowed to use the full roadway (Figure 18).

While speed bumps are effective, they are likely to produce loud noise due to the larger vehicles using the roadway. Lateral deflection, such as a small median, may be preferred. The installation of a small median is also an opportunity to reinforce the speed limit with added signage (Figure 19). Figure 20 shows a low-cost way to quickly add a small median using plastic bollards, which was part of a FHWA-funded trial in Iowa⁴. As funding becomes available, the median island can be expanded into something more aesthetically pleasing (Figure 21)⁵.

These changes are recommended to improve the safety for all users of Ancil Davidson Road but are unlikely to encourage new bicyclists to feel comfortable along this roadway.

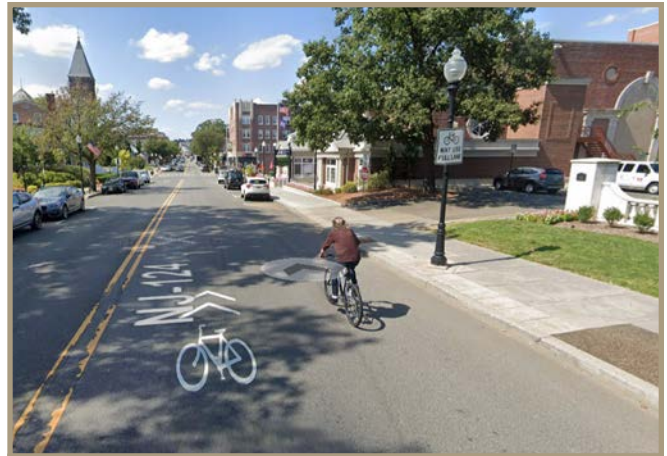


Figure 18. Signage reminding drivers that bicyclists are allowed the full use of a travel lane in Morristown, NJ. (Source: Google Streetview)



Figure 19. Speed limits may be reinforced with pavement markings, as seen in Slater, Iowa.. (Source: FHWA)

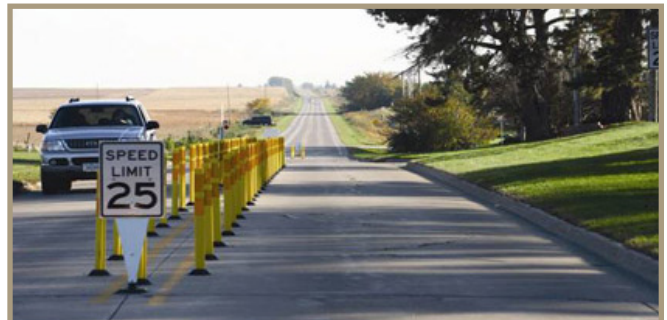


Figure 20. Temporary median installation in Slater, Iowa. (Source: FHWA)



Figure 21. A median island used for traffic calming. (Source: NACTO)

4. <https://intrans.iastate.edu/app/uploads/2018/03/tc-slater.pdf>

5. NJDOT Roadway Design Manual, Figure 15-H: Speed Control Devices - Horizontal Midblock Median Island

Cranbury Neck Road (CR 615)

Between...	John White Road & Ancil Davidson Road	Ancil Davidson Road & Main Street
Speed Limit (mph)	50 (High)	35 and 25 (Medium and Low)
Daily Vehicles (AADT)	3,195 (Low)	3,195 (Low)
Width (feet)	24 (Narrow)	24 (Narrow)
Land Use	Farm and Open Space	Residential
Owner	Middlesex County	Middlesex County

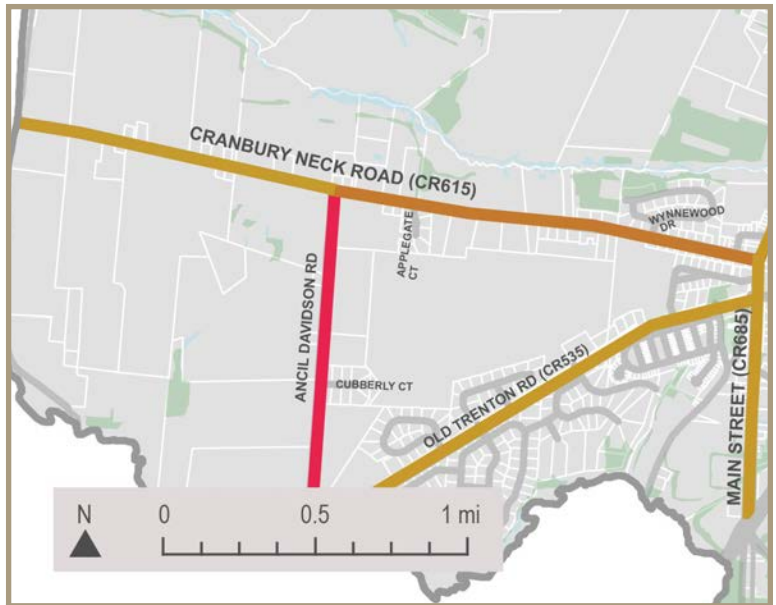


Figure 22. Map of Cranbury Neck Road.

Cranbury Neck Road is a 24-foot wide two-lane county roadway that enters Cranbury from the west, where it then connects with West Windsor and the Princeton Junction neighborhood. It terminates on Main Street in the Cranbury village center (Figure 22). Princeton Junction is home to an NJ TRANSIT train station that provides connections to New York City and Trenton and large professional office complexes along US Route 1. Traveling east on Cranbury Neck Road, the land use transitions from rural to developed residential (Figure 23 and Figure 26). As part of this transition, the speed limit drops from 50 mph to 35 mph, and eventually to 25 mph. The roadway itself remains the same width, and no traffic calming features exist to enforce the lower speed limit in the developed area.



Figure 23. Looking east along Cranbury Neck Road, adjacent to preserved open space.

West of Ancil Davidson Road, the speed limit is too high and the roadway too narrow to support bicycle lanes or shared-lanes. Widening the roadway may encourage faster speeds and would have a detrimental impact on the preserved open space. The open space does provide an excellent opportunity to create a completely separated bicycle facility.

Recommendation: Create a multi-use trail parallel to the roadway to provide a safe and attractive route for bicyclists and pedestrians (Figure 24 and Figure 25). The trail could also be used by farm vehicles if necessary. Trails can be

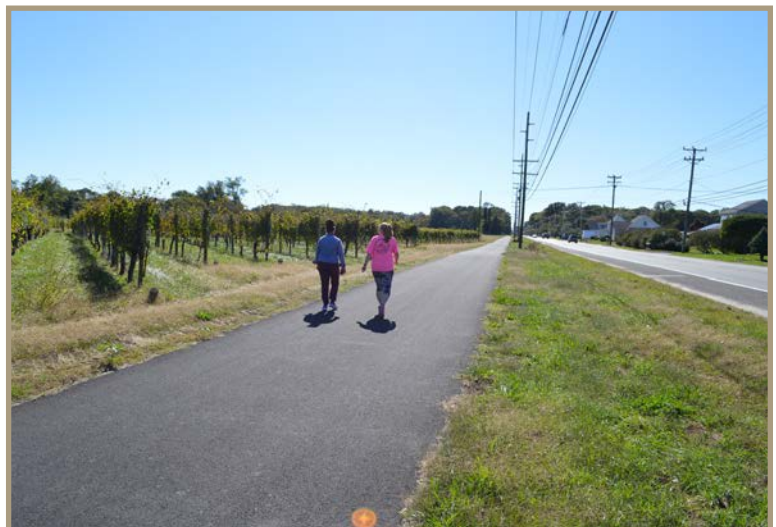


Figure 24. Cape May County has developed a series of popular trails using funding dedicated to the improvement and preservation of open space.

built in an ecologically sensitive manner, either by using permeable pavement or compacted gravel; however, gravel is less accessible to those with disabilities and is undesirable to some bicyclists. Because there are very few driveways along the roadway, a trail would be safe and comfortable for users. Trail construction is a long-term process, but a worthwhile investment as trails are popular among users of all ages and abilities. Cape May County has used trails as a way to encourage tourism and support area businesses.

Also consider: In the short term, add “Bicycles May Use Full Lane” or “Bicycles in Roadway” signage to remind motorists to look for bicyclists.

As Cranbury Neck Road transitions into the village center, the speed limit drops to 35 mph at Applegate Court and then to 25 mph at Wynnewood Drive. There is a sidewalk on the north side of the street from Wynnewood Drive to Main Street (Figure 26).

The large trees along this section of roadway help to calm traffic by providing a speed reference to drivers, but additional traffic calming could be added to reinforce the change from a high-speed rural highway to a residential street.

Recommendation: Build a gateway to welcome visitors into historic Cranbury while reminding them to slow down and yield to bicyclists and pedestrians. A gateway treatment provides an opportunity to brand the township, enhance community cohesiveness, and provide information on the new speed limit. On county roads, the gateway should be limited to signage and landscaping outside the right-off-way.

East of Wynnewood Drive, where the speed limit drops to 25 mph, the roadway can accommodate bicyclists by using shared-lane markings (sharrows) or an advisory bicycle lane. Sharrows remind motorists that bicyclists have the right to use the full lane and should be expected to do so (Figure 27 and Figure 28). For bicyclists, the sharrows provide instruction on the most visible place to be positioned. As sharrows are not very common in New Jersey, they should be accompanied by “Bicycles May Use Full Lane” signage.

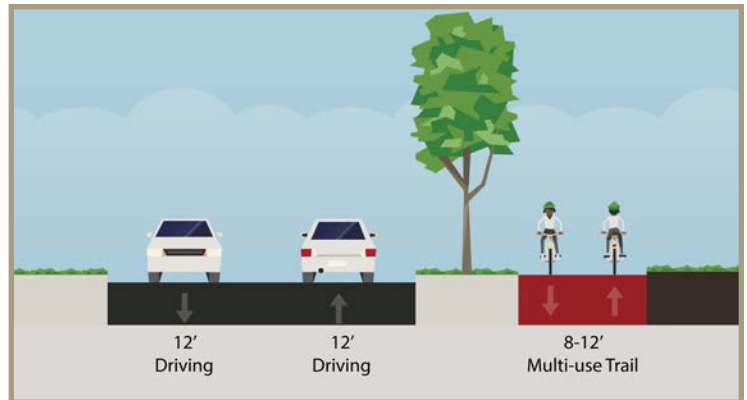


Figure 25. A cross-section showing how Cranbury Neck Road could look with a parallel trail.



Figure 26. The residential portion of Cranbury Neck Road.



Figure 27. Sharrows in Newark, NJ.

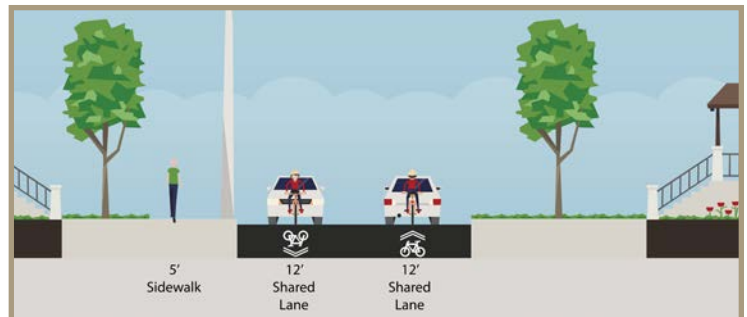


Figure 28. The residential section of Cranbury Neck Road, with added sharrows.

An advisory bicycle lane is an experimental treatment that is being tested at over 20 locations throughout the United States, including in Princeton, NJ. Cranbury Neck Road has a double yellow line dividing traffic, meaning a driver wishing to pass a bicyclist is not permitted to do so. An advisory bicycle lane functions like a residential roadway without striping, in that vehicles traditionally position themselves towards the center of the roadway and move right when opposing traffic approaches (Figure 29 to Figure 31). The dashed striping provides a delineated space for bicycling on a roadway that is otherwise too narrow for bicycle lanes. According to FHWA's *Small Town and Rural Multimodal Networks Design Guide*, an advisory bicycle lane increases predictability and clarifies desired lateral positioning between people bicycling or walking and people driving in a narrow roadway. This treatment is new to most drivers, so it must be accompanied with signage and educational outreach.



Figure 29. Advisory bicycle lanes with educational signage in New Hampshire.

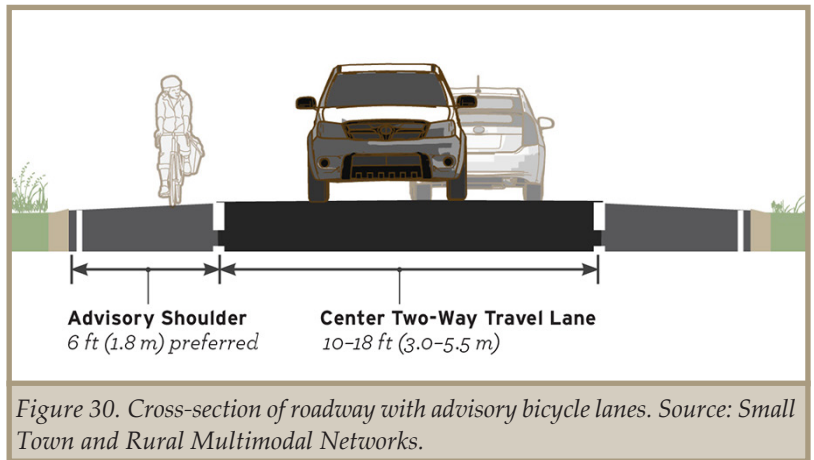


Figure 30. Cross-section of roadway with advisory bicycle lanes. Source: *Small Town and Rural Multimodal Networks*.

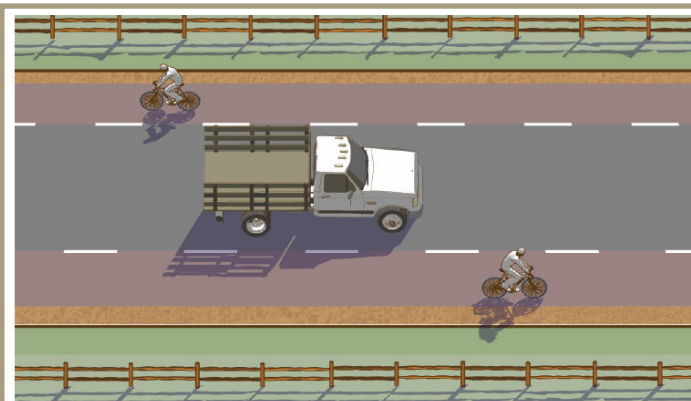


Figure 2-10. Motorists travel in the center two-way travel lane. When passing a bicyclist, no lane change is necessary.

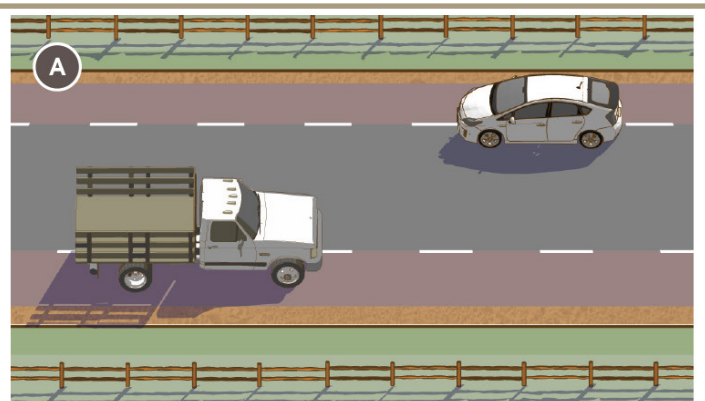


Figure 2-11. When two motor vehicles meet, motorists may need to encroach into the advisory shoulder space.

Figure 31. Explanation of how advisory bicycle lanes work. Source: FHWA's *Small Town and Rural Multimodal Networks Design Guide*.

Dey Road (CR 614)

Between...	Petty Road & Orchardside Drive	Orchardside Drive & Orchardside Drive	Orchardside Drive & Route 130	Route 130 & South River Road
Speed Limit (mph)	50 (High)	50 (High)	50 (High)	50 (High)
Daily Vehicles (AADT)	11,304 (High)	11,304 (High)	11,304 (High)	7,470 (Medium)
Width (feet)	24 (Narrow)	48 (Medium)	24 (Narrow)	60 (Wide)
Land Use	Farm and Open Space	Forest	Farm and Open Space	Commercial and Office
Owner	Middlesex County	Middlesex County	Middlesex County	Middlesex County

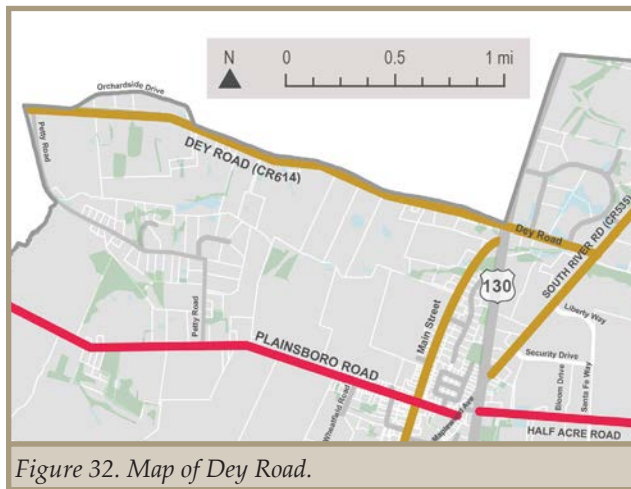


Figure 32. Map of Dey Road.



Figure 33. A farm store along Dey Road.



Figure 34. A multi-use trail in Metuchen, New Jersey.

Within Cranbury, Dey Road is mostly a two-lane county roadway. From the Plainsboro Township border, the road travels east, crosses Route 130 at grade, and terminates at South River Road. The roadway forms the border with South Brunswick for most of its length, so any changes must be coordinated with them and the county (Figure 32).

The width of the roadway varies, but the speed limit remains 50 mph for the entire length. In Plainsboro, the roadway is 50 feet wide, and immediately reduces to 24 feet as it enters Cranbury. As the roadway passes Orchardside Drive, it widens to 48 feet, and then narrows again to 24 feet. It remains at this width until reaching Route 130, where it grows to 60 feet wide.

There are a number of farm stands along the roadway, which may be attractive destinations for cyclists (Figure 33). The roadway is also popular with drivers, as it sees an average daily traffic volume in excess of 11,000 vehicles. Counterintuitively, traffic volumes decrease under 8,000 between Route 130 and South River Road where the roadway has four lanes. In that section there is a driveway to a large pharmaceutical business park. A senior housing project is under development at the west end of the roadway, adjacent to Petty Road.

Unfortunately, the high traffic volumes and speed limit makes it difficult to accommodate bicyclists within this roadway. As was the case with Cranbury Neck Road, a separate multi-use trail parallel to the roadway may be the best long-term upgrade (Figure 34). While Middlesex County does not plan on widening the roadway to 48 feet throughout its entire length, bicycle lanes could be implemented instead of a shoulder if such plans were developed. Unlike a shoulder, bicycle lane pavement must be maintained at a higher standard so that they can safely be used. In the short-term, the 10-foot shoulders between the two intersections with Orchardside Drive

can be upgraded to bicycle lanes. Along with adding appropriate signage and striping, the pavement must also be inspected to conform to travel standards. The new 167-unit age-restricted housing development adjacent to Petty Road may present an additional opportunity to add bicycle lanes if the roadway is widened. Petty Road also provides a connection to Plainsboro Road, and should be investigated as a potential bicycle corridor.

Between Route 130 and South River Road, Dey Road widens to 60 feet, consisting of two lanes in each direction and a center turn lane or median (Figure 35). Traffic volumes are lower than in the two-lane sections, so Dey Road can likely accommodate bicycle lanes with the removal of one traffic lane while still maintaining dedicated turn lanes where needed (Figure 36). A traffic study is needed to determine whether a traffic lane can be removed without increasing congestion. While this section of bicycle lanes is short, it can provide connectivity for bicyclists traveling between Main Street and South River Road. Any changes made adjacent to Route 130 must be done in consultation with the NJDOT.

Half Acre Road

Between...	Route 130 & Bloom Drive	Bloom Drive & New Jersey Turnpike Bridge	NJ Turnpike Bridge	NJ Turnpike Bridge & Township Boundary
Speed Limit (mph)	45 (High)	45 (High)	45 (High)	45 (High)
Daily Vehicles (AADT)	8,028 (Medium)	8,028 (Medium)	N/A	N/A
Width (feet)	50 (Medium)	62 (Medium)	36 (Narrow)	36-60 (Varies)
Land Use	Industrial	Industrial	Industrial	Industrial
Owner	Cranbury Township	Cranbury Township	Turnpike Authority	Cranbury Township

Half Acre Road is a municipal-owned roadway that runs east-west between Cranbury and neighboring Monroe Township (Figure 37). At its western end, it begins with a short spur between Maplewood Avenue and Route 130. After the intersection with Route 130, the roadway widens from two lanes to four, before narrowing to two again as it crosses over the NJ Turnpike via an overpass. Past the bridge, the roadway widens until reaching railroad tracks at the town boundary, where it shrinks back down to two lanes. The section between Santa Fe Way and the NJ Turnpike was recently widened in conjunction with the development of an industrial parcel. The speed limit is presumed to be 45 mph, but the team did not see any signage.

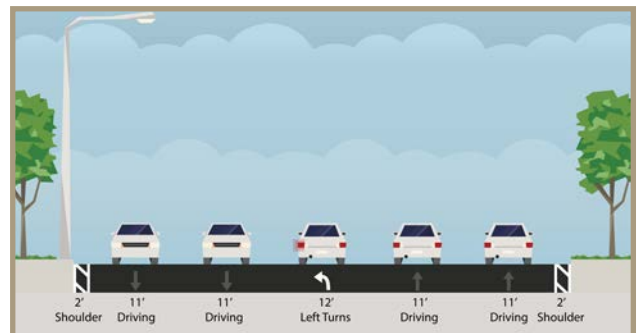


Figure 35. Dey Road, current conditions.

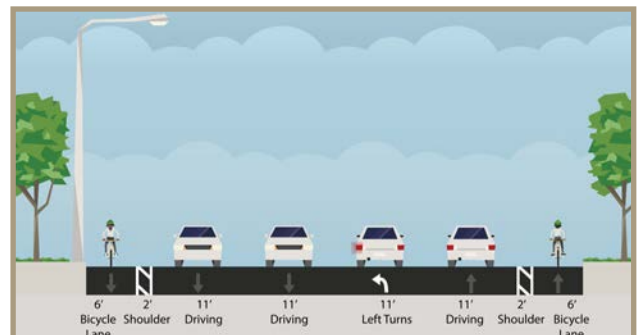


Figure 36. Dey Road, proposed conditions.

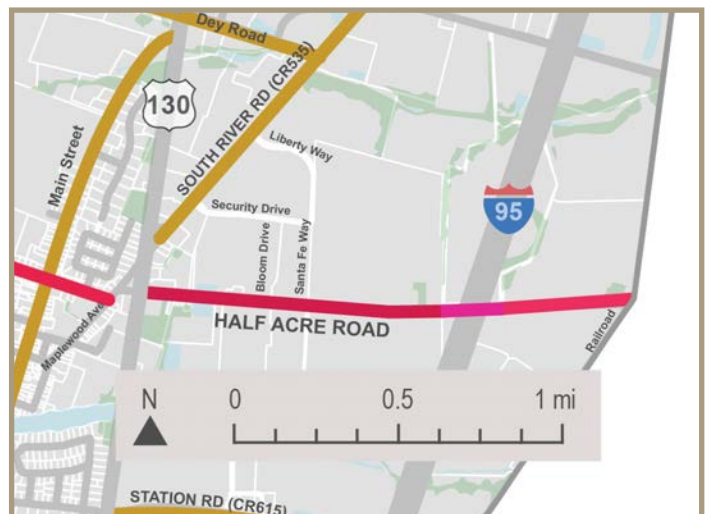


Figure 37. Map of Cranbury Half Acre Road.

Unlike previous roadways in this report that primarily cross rural landscapes, Half Acre Road is fronted by large distribution centers and carries significant truck traffic (Figure 38). Although the distribution centers border the NJ Turnpike, the nearest on-ramps are 2.5 miles north. Recreational cyclists may not seek out Half Acre Road, but the distribution centers host many jobs and may be a destination for Cranbury and Monroe residents who commute by bicycle. These distribution centers operate 24-hours a day and together employ thousands of workers.



Figure 38. Looking west along Half Acre Road.

The township provided the study team with a 2018 traffic impact study that was completed as part of the process to develop the new warehouse complex adjacent to Half Acre Road and Liberty Way (Figure 39). The study found that even with the new development, Half Acre Road would maintain an “A” Level of Service for vehicles, which means minimal delays are expected. The same report also recommended a signal be installed to facilitate movement in and out of Liberty Way. During the 4 p.m. peak hour, the study observed under 450 vehicles per direction along Half Acre Road. According to the Highway Capacity Manual, similar arterial roadways can accommodate up to 1,100 vehicles per hour, per lane⁶.



Figure 39. Looking east along the newly widened section of Half Acre Road. The new warehouse complex is on the left.

Recommendation: Add bicycle lanes along Half Acre Road by reallocating roadway space. Post speed limit signs and consider studying the feasibility of decreasing the speed limit to 35 mph or 40 mph. Along with improving pedestrian and bicyclist safety, the high volume of trucks making slow left turns may also justify a lower speed limit. Add crosswalk signage to the existing crosswalks and consider additional overhead lighting at crosswalk locations.

East of Route 130, Half Acre Road is 50 feet wide with one lane of traffic in each direction. Some street parking is allowed, but there is no striping (Figure 40). As shown in Figure 41, bicycle lanes can be added while maintaining parking on one side of the street. Approaching Capital Drive, the space used for parking can instead be used for a left turn lane. Changes to striping adjacent to the Route 130 intersection must be done with approval from the NJDOT.

6. Highway Capacity Manual, Sixth Edition: A Guide for Multimodal Mobility Analysis

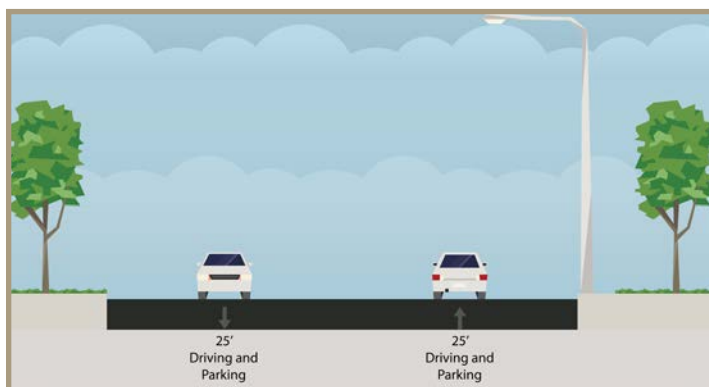


Figure 40. West end of Half Acre Road, current conditions.

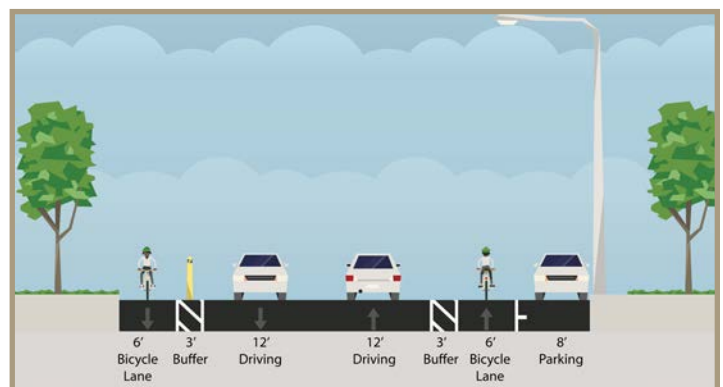


Figure 41. West end of Half Acre Road, proposed conditions.

East of Bloom Drive, Half Acre Road widens to 62 feet and has two travel lanes in each direction along with a center turn lane or painted median (Figure 42). As previously mentioned, current traffic volumes can be accommodated with just one lane in each direction and a center turn lane. Figure 43 shows one possible configuration that includes wide bicycle lanes, buffers between the bicycle lanes and traffic, and an attractive center median. If in the future traffic volumes increase and warrant a second travel lane, a separate multi-use trail parallel to the roadway may be the safest and most comfortable option for bicyclists.

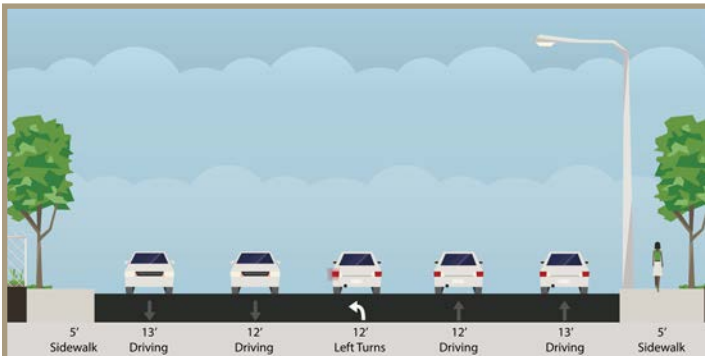


Figure 42. Half Acre Road between Bloom Drive and the NJ Turnpike, current conditions.

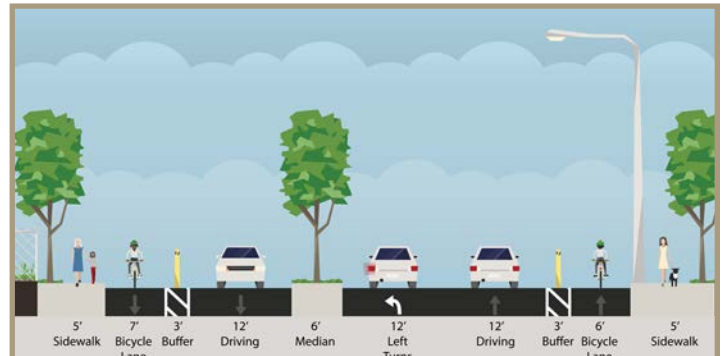


Figure 43. Half Acre Road between Bloom Drive and the NJ Turnpike, proposed conditions.

The aforementioned configuration continues until the approach to a bridge crossing the NJ Turnpike. Here the roadway narrows to 36 feet, with one lane in each direction and shoulders (Figure 44 and Figure 46). Converting the shoulders to bicycle lanes would allow for safe bicycle travel at this location (Figure 45). If the bridge is rebuilt or widened, bicycle accommodations and sidewalks should be included in the design.

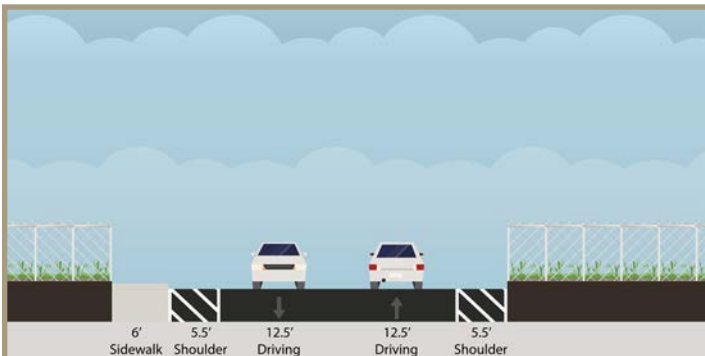


Figure 44. Half Acre Road over the NJ Turnpike, current conditions.

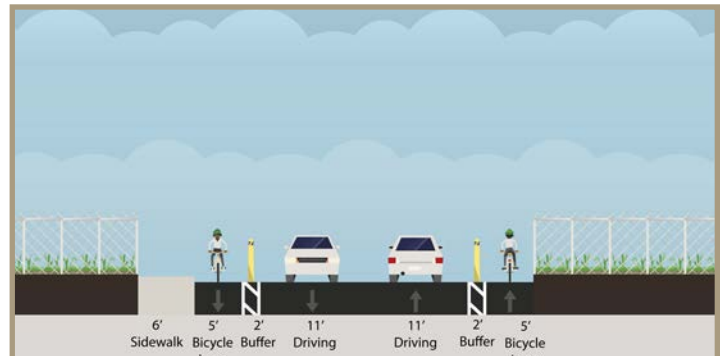


Figure 45. Half Acre Road over the NJ Turnpike, proposed conditions.

After crossing the NJ Turnpike, Half Acre road widens first to 45 feet, then 58 feet and finally 60 feet. In each case, bicycle lanes can be added by modifying the existing shoulders or median. Adding bicycle lanes only becomes challenging before Public Road, where Half Acre road crosses railroad tracks. At this point, the roadway narrows to 22 feet briefly, and signage is needed to inform motorists that bicyclists will temporarily be sharing the lane (Figure 47).



Figure 46. Half Acre Road over the NJ Turnpike.



Figure 47. Half Acre Road, approaching the railroad tracks.

Main Street

Between...	Tributary Bridge & St. David's Church	St. David's Church & Old Trenton Road	Old Trenton Road & Bunker Hill Street	Bunker Hill Street & Plainsboro Road	Plainsboro Road & Goodwin Road	Goodwin Road & Route 130
Speed Limit (mph)	40 (High)	40 (High)	25 (Low)	25 (Low)	25 (Low)	40 (high)
Daily Vehicles (AADT)	2,611 (Low)	2,611 (Low)	N/A	N/A	1,879 (Low)	1,879 (Low)
Width (feet)	26 (Narrow)	38 (Medium)	30-50 (Medium to Wide)	40 (Medium)	34 (Medium)	25 (Narrow)
Land Use	Residential	Residential	Commercial	Residential	Residential	Open Space
Owner	Middlesex	Middlesex	Middlesex	Middlesex	Middlesex	Middlesex

Main Street is the central roadway for Cranbury's village center. It is home to the commercial core of town and civic institutions such as Cranbury Public School and Town Hall. Main Street is a north-south roadway that parallels Route 130 and feeds into it at both ends (Figure 48). As such, only traffic going into Cranbury uses this roadway, as there is little benefit for cut-through traffic to go through town. Main Street is maintained by the county and sections of it comprise portions of County Routes 535, 539, and 615.

The High Point to Cape May Bicycle Route, a tourist cycling route created by NJDOT, recommends the Cranbury village center as a good stopping point. The route enters town from the north through Cranbury Neck Road and then exits south along Main Street.

Although there is only one lane traveling in each direction for the entire length of Main Street, the width of the roadway changes frequently. Therefore, this report looks at five representative areas, beginning from the southern end.

Main Street was recently widened just north of the intersection with Route 130 as part of the 2019 replacement of the bridge over the Millstone River tributary. This project added shoulders on both sides of the roadway, and a sidewalk on the bridge itself (Figure 49). These shoulders could easily be converted to bicycle lanes by adding signage and ensuring they are maintained to travel standards.

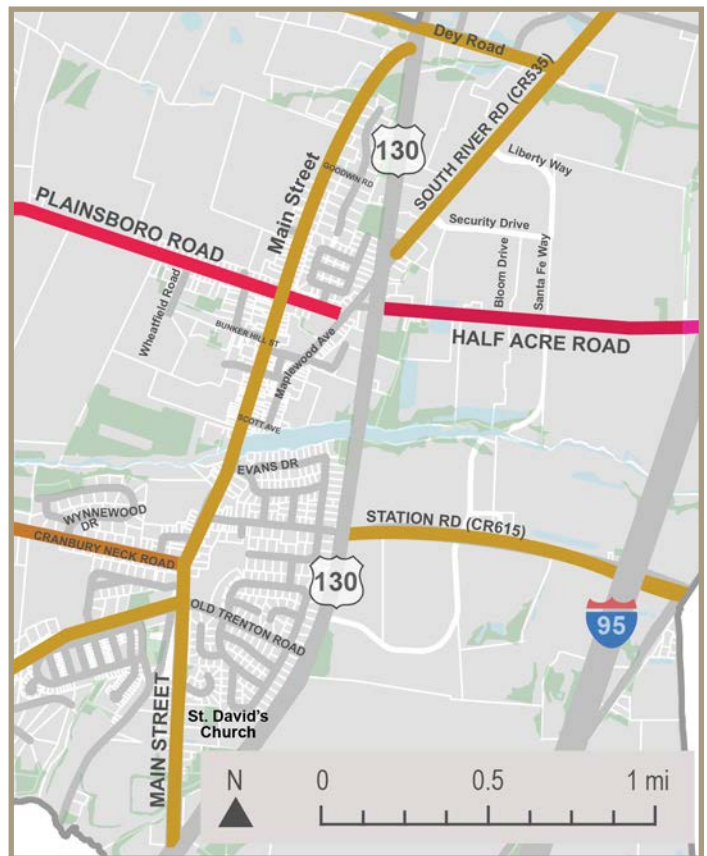


Figure 48. Map of Main Street in Cranbury.



Figure 49. Looking north on Main Street to the newly widened bridge.

After passing the bridge, Main Street narrows to 26 feet, which is divided into two 11-foot lanes, with shoulders that vary in width (Figure 50). We recommend working with Middlesex County to investigate whether a speed limit reduction to 30 mph is warranted in this section, which would permit the addition of sharrows, which are not recommended for roads above 35 mph.

North of St. David's Church, Main Street widens to 38 feet, allowing for a shoulder/parking lane on the northbound side, and a slightly wider shoulder on the southbound side (Figure 51 and Figure 52).

This section can only accommodate bicycle lanes if lanes widths were reduced to 10 feet, which the county does not allow. Alternatives to bicycle lanes include continuing the sharrow treatment or creating a bicycle lane in one direction with a shared lane in the other direction. Approaching the intersection with Old Trenton Road, the roadway widens again slightly to 43 feet, and is comprised of one southbound lane, one northbound left turn lane, and one northbound travel lane. Standard 5-foot bicycle lanes can be added in both directions by modifying the striping. Upgrading the crosswalks to high-visibility striping should also be considered.

About 400 feet north of the intersection with Old Trenton Road, Main Street widens again, first to 44 feet and then to 48 feet. The speed limit also decreases to 25 mph but there is no traffic calming feature to reinforce this change. In front of Cranbury Heritage Park, a sign welcomes visitors to the village and national historic district; the addition of a median or chicane at this location can be used to highlight this sign and create a true gateway into the village (Figure 53).

As Main Street continues into the downtown area, the width of the roadway varies considerably. At the narrowest point, passing next to Brainerd Lake, the roadway is 30 feet wide with one lane of traffic in each direction. At that location, standard bicycle lanes can be accommodated, however, just south of the lake, the roadway is 32 feet wide and has parking on one side of the street. There, bicycle lanes can only fit if the parking is removed. If the parking is maintained, shared lanes could be used.

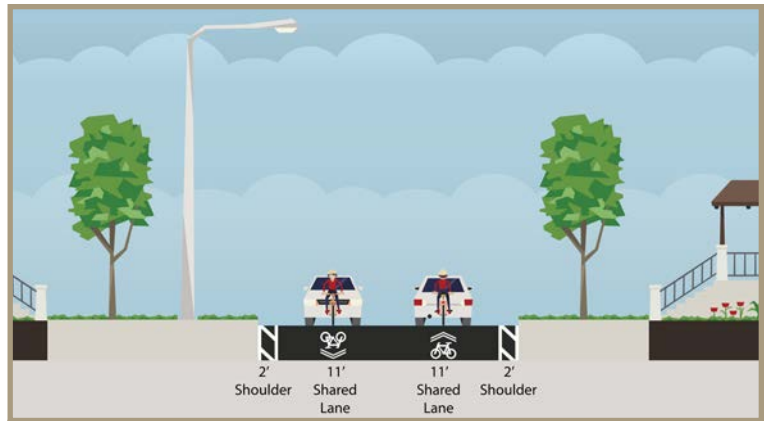


Figure 50. Southern portion of Main Street, with potential sharrow treatment.



Figure 51. Main Street with a parking area on the right side.

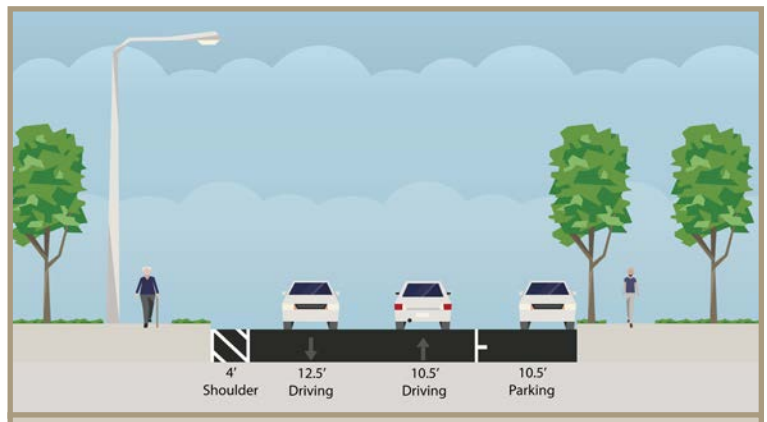


Figure 52. Main Street, north of St. David's Church, existing.



Figure 53. Potential location for traffic-calming gateway feature.

North of Brainerd Lake, Main Street widens significantly to 50 feet, except at intersections where sidewalk curb extensions were installed as part of a recent streetscape improvement project funded by NJDOT. That project, between School House Lane and Bunker Road, upgraded sidewalks, made curb ramps ADA accessible, and reduced lane widths at intersections to calm traffic. At most locations, bicycle lanes can be easily added by simply adding new striping (Figure 55 and Figure 56). Bicycle lanes will also have the added effect of visually narrowing the roadway, helping to reduce vehicle speeds. An education campaign, for both bicyclists and drivers, should be considered to highlight safe use of the bicycle lanes.

Bicycling can also be encouraged in the downtown area by adding secure bicycle parking near key destinations, such as the post office, school, village park, and area businesses. As many downtown sidewalks are narrow, bicycle corrals could be placed in the street near intersections where parking is prohibited (Figure 57). Encouraging residents to bicycle to local businesses has the added benefit of reducing the need for the limited parking spaces, making them more available to out-of-town visitors.

As Main Street exits the commercial core, another gateway treatment should be considered for southbound traffic. Although the speed limit change from 40 mph to 25 mph happens around Goodwin Road, a gateway south of Plainsboro Road could be more effective. Approaching Plainsboro Road, Main Street is 40 feet wide, with one travel lane in each direction and street parking allowed, but not striped. Bicycle lanes in both directions can be accommodated by removing five parking spaces from one side of the street. The intersection with



Figure 54. Looking north on Main Street, in downtown Cranbury.

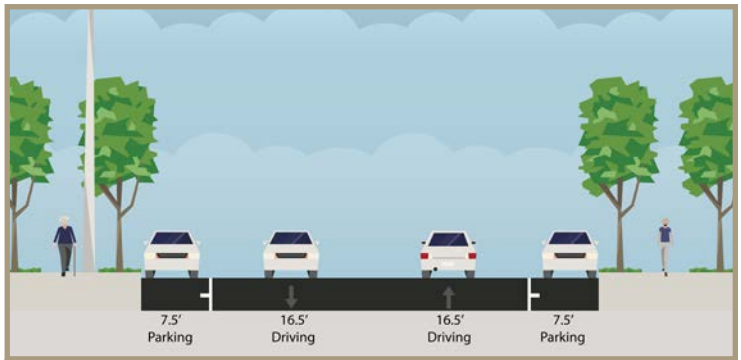


Figure 55. Main Street in the downtown area, existing layout.

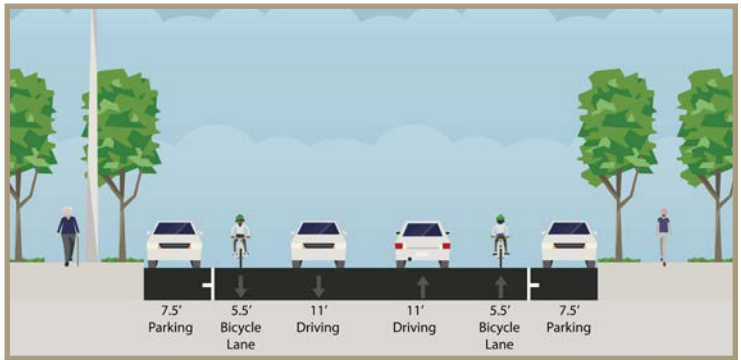


Figure 56. Main Street in the downtown area, proposed layout.



Figure 57. Bicycle parking in Collingswood, NJ.



Figure 58. Downtown Cranbury, New Jersey.

Plainsboro Road is signalized and has high visibility crosswalks. The addition of a bicycle box to facilitate left turns could further improve this intersection.

North of Plainsboro Road, Main Street narrows from 40 feet to 34 feet, and then again to 25 feet as it nears Route 130 (Figure 59). North of Goodwin Road, the speed limit increases to 40 mph. Bicycle lanes can be added along most of this section where shoulders exist (Figure 60). Where the roadway narrows to 25 feet, the roadway is not wide enough to do so but lowering the speed limit to 30 or 35 mph may make bicyclists feel safer along that section of roadway. As Main Street terminates at Route 130, Cranbury should work with the NJDOT to facilitate bicycle movement between Main Street and Dey Road, especially if the intersection is signalized in the future.

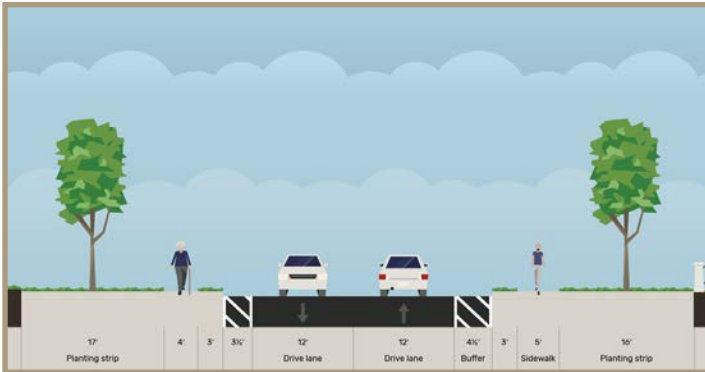


Figure 59. Main Street north of Plainsboro Road, existing conditions.

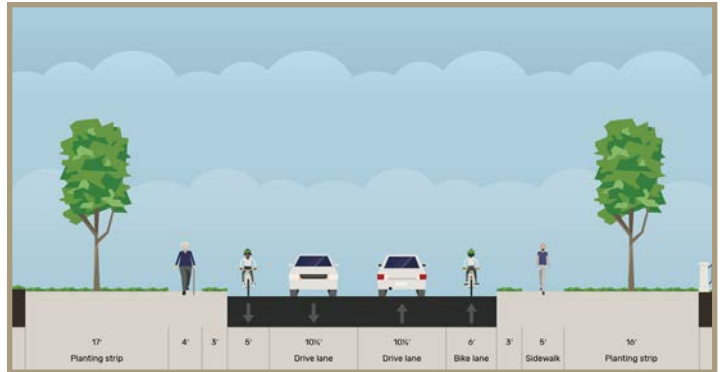


Figure 60. Main Street north of Plainsboro Road, proposed conditions.

Old Trenton Road

Between...	Ancil Davidson Road & Main Street
Speed Limit (mph)	35 (Medium)
Daily Vehicles (AADT)	6,859 (Medium)
Width (feet)	52 (Wide)
Land Use	Residential
Owner	Middlesex County

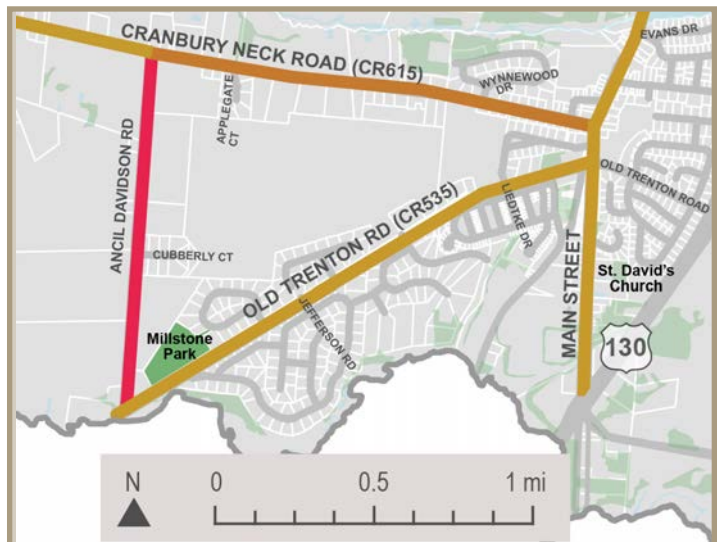


Figure 61. Map of Old Trenton Road.

Old Trenton Road is a county roadway that runs east to west, connecting Cranbury to East Windsor Township, West Windsor Township, and Trenton in Mercer County (Figure 61). Within Mercer County, the roadway is 25 feet wide and then widens to 54 feet east of Ancil Davidson Road as it enters Cranbury. Between there and Main Street, the roadway has one lane in each direction, wide shoulders, and left turn lanes near intersections (Figure 62).



Figure 62. Looking east along Old Trenton Road.

Millstone Park sits at the western end of the corridor and is a popular destination for area families. The park features a playground, baseball field, and soccer pitch. According to residents, many locals travel to the park on foot or on bicycle along Old Trenton Road. While the speed limit is posted at 35 mph, residents noted that vehicles travel faster along the corridor and it can be difficult to cross the roadway safely. Figure 63 shows the existing distribution of space along most of Old Trenton Road. Near intersections, the shoulders narrow to allow for a left turn lane.



Recommendation: Separated bicycle lanes can quickly be added by applying bicycle lane stencils while still maintaining a shoulder (Figure 64). This treatment has been proven to make bicycling safer and more comfortable for families and may help reduce vehicles speeds. Unlike the other study corridors, the width of Old Trenton Road does not vary, allowing for a continuous bicycle facility within Cranbury.



Old Trenton Road is bordered by homes but very few of them have driveways along the roadway. This creates an opportunity to build a two-way protected bicycle path along the north side of the roadway, which is presented as alternative 2 (Figure 65). This alternative is the most comfortable for bicyclists, and parents are more likely to allow children to ride to the park on this type of facility (Figure 66). There is enough room to add a planted median between the bicycle path and the roadway while still maintaining enough width for left turn lanes where needed.



Regardless of which treatment is chosen, steps should be taken to improve the safety of bicyclists and pedestrians crossing at Washington Drive, Jefferson Road, and Liedtke Drive. These improvements include high-visibility crosswalks and Rectangular Rapid Flashing Beacons (RRFB). RRFB's look like standard crosswalk signs but produce a flashing light pattern when pedestrians activate them. They can be activated passively with a sensor that detects pedestrians, or directly via a button that pedestrians push when they are ready to cross. This flashing light is highly visible to motorists, and more drivers comply with the requirement to stop for pedestrians when it's used. The lights are only activated on demand, and last for just a few seconds, so they are not disruptive to nearby residents. These installations can be powered by solar panels or connected to the electrical grid. Overhead lighting at crosswalks is also important to ensure that pedestrians and bicyclists are visible to oncoming traffic. A gateway treatment should also be considered to manage traffic speeds.



Plainsboro Road

Between...	Town line & Petty Road	Petty Road & Wheatfield Road	Wheatfield Road & Maplewood Avenue
Speed Limit (mph)	45 (High)	40 (Medium)	25 (Low)
Daily Vehicles (AADT)	5,531 (Medium)	5,531 (Medium)	5,531 (Medium)
Width (feet)	24 (Narrow)	24 (Narrow)	24 (Narrow)
Land Use	Open Space	Open Space	Residential
Owner	Cranbury Township	Cranbury Township	Cranbury Township

Plainsboro Road is a municipal roadway that runs east-west, connecting Cranbury to Plainsboro Township, providing a parallel route to Dey Road (Figure 67). To the west, it directly connects to Route 1. As was the case with Cranbury Neck Road, Plainsboro Road is just 24-feet wide and passes alongside farmlands and preserved open space for most of its length (Figure 68). Due to the same roadway characteristics present on Cranbury Neck Road, which include a high speed limit and narrow roadway width, the recommendations are the same.

Recommendation: Create a multi-use trail parallel to the roadway to provide a safe and attractive route for bicyclists and pedestrians.

As the roadway enters the village, farms are replaced by homes and the speed limit decreases to 25 mph just west of Wheatfield Road, but there is no physical change to reinforce the lower speed limit. A gateway treatment, as proposed along the other corridors, may be used here to welcome visitors into Cranbury and to remind motorists that bicyclists and pedestrians will be using the roadway.

Between Wheatfield Road and Maplewood Avenue, shared-lane markings and “Bicycle May Use Full Lane” signage can be introduced to reinforce the shared nature of the roadway. A bicycle box at the intersection with Main Street can also help bicyclists making left turns. A painted curb extension should be considered on the northwest corner of the intersection with Plainsboro Road and Maplewood Avenue, to shorten the long crosswalk and improve visibility that is limited by a hedge. This should help slow drivers, create a safer crossing for pedestrians, and make bicycle travel more comfortable. Both treatments can be piloted to test effectiveness (Figure 69).

Petty Road provides a connection between Plainsboro Road and Dey Road and could serve as a convenient connection for bicyclists. Further study of that roadway is recommended.

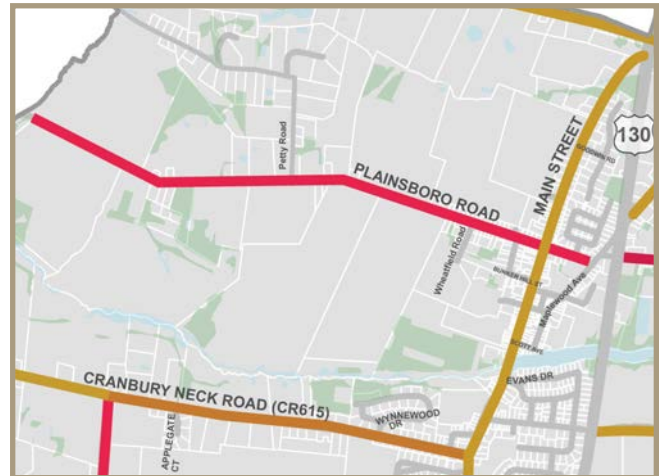


Figure 67. Map of Plainsboro Road.



Figure 68. Looking east along Plainsboro Road.



Figure 69. A painted curb extension and bicycle box in Jersey City, NJ.

South River Road

Between...	Route 130 & Liberty Way	Liberty Way & 1246 South River Road	1246 South River Road & Corporate Drive
Speed Limit (mph)	50 (High)	50 (High)	50 (High)
Daily Vehicles (AADT)	22,591 (High)	22,591 (High)	22,591 (High)
Width (feet)	60 (Wide)	75 (Very Wide)	56 (Wide)
Land Use	Industrial	Industrial	Industrial
Owner	Middlesex County	Middlesex County	Middlesex County

South River Road is a county roadway that generally runs north to south, connecting Cranbury to Monroe Township (Figure 70). The roadway acts as a primary connector between Route 130 and the NJ Turnpike. In addition to providing access to large distribution centers along the roadway, it is also the most direct route between the distribution centers on Half Acre Road and Station Road to the NJ Turnpike. As a result, the road experiences heavy truck volumes.

South River Road changes widths a few times along its length. Closest to Route 130, it begins at 35 feet wide with one lane in each direction. Moving north, it quickly widens to 60 feet, with two northbound lanes, one southbound lane, a center turn lane, and shoulders (Figure 71). North of Liberty Way, it widens again to 75 feet to accommodate an additional southbound travel lane (Figure 72). The roadway continues in this manner until reaching 1246 South River Road, where it narrows to 56 feet. From here, the roadway consists of one travel lane in each direction, a center turn lane, and shoulders (Figure 73).

There are intermittent sidewalks. A marked but unsignalized crosswalk exists at Security Drive. There are also crosswalks at the signalized intersections with Dey Road and Prospect Plains Road. Middlesex County Area Transit Route 1 provides bus service along the roadway, but bus stops are not marked.



Figure 70. Map of South River Road.



Figure 71. Looking north on South River Rd., prior to Security Dr.

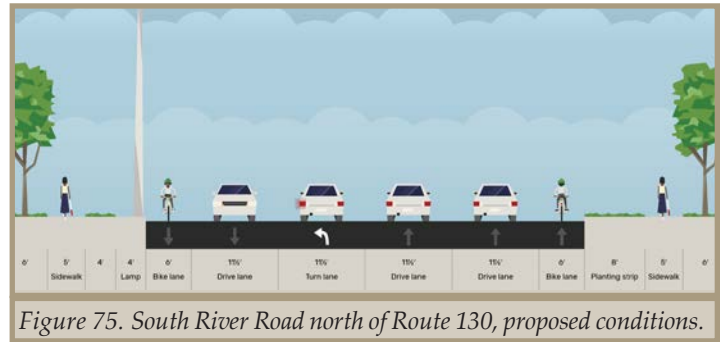
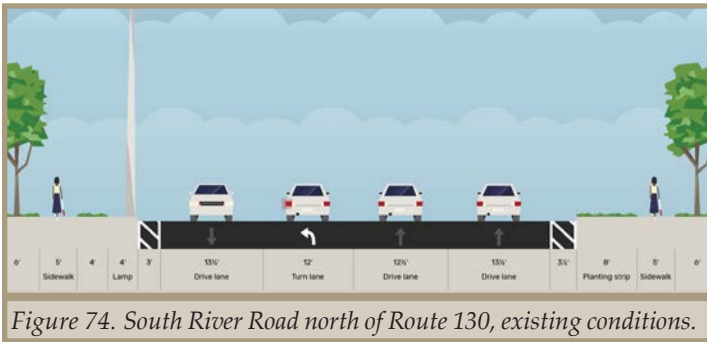


Figure 72. Looking north on South River Road, past Liberty Dr.

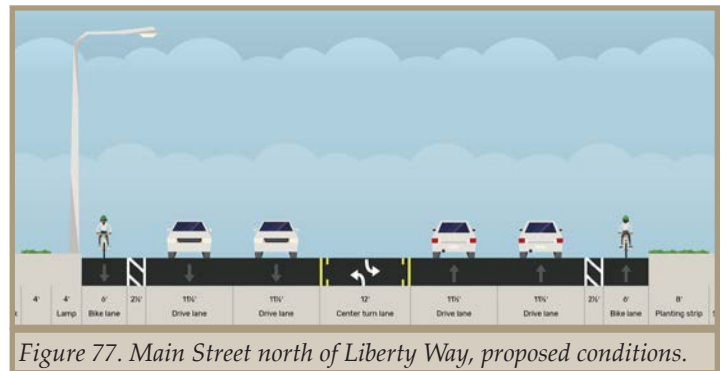
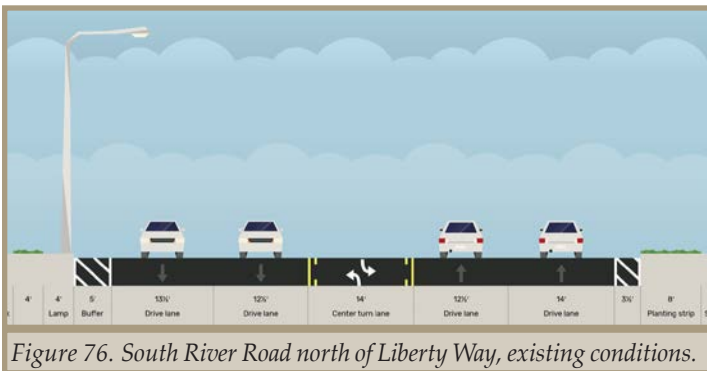


Figure 73. Looking north after 1246 South River Road.

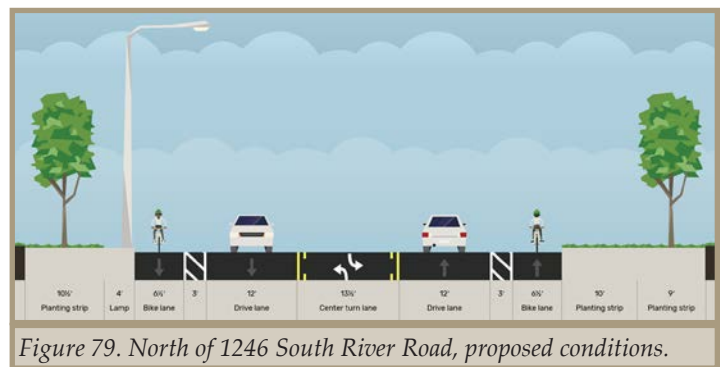
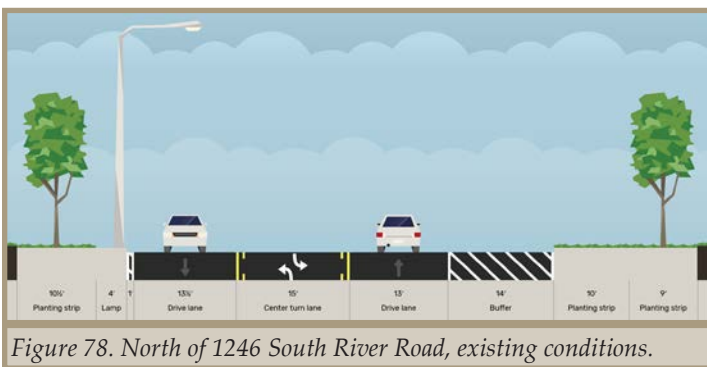
Recommendation: Bicycle lanes can be added by modifying striped lane widths and replacing shoulders with usable space. The ample width of the roadway allows for the creation of bicycle lanes while still maintaining lanes wide enough to support the frequent truck traffic. Figure 74 shows the first section between Route 130 and Liberty Way, where the roadway is 60-feet wide. By standardizing all lanes to a width of 11.5 feet, a six-foot bicycle lane can be added in each direction (Figure 75). Cranbury should work with Middlesex County to investigate whether a speed limit reduction is warranted, in accordance with traffic engineering standards, while keeping in mind that reducing speeds usually requires changes to the lanes, not just signage and enforcement.



This treatment can be continued and expanded where the roadway widens to 75 feet. Along the section, between Liberty Way and 1246 South River Road, lane widths vary between 12.5 and 14 feet wide (Figure 76). Reducing the lane widths to 11.5 feet allows for the introduction of bicycle lanes with a buffer. (Figure 77).



This buffered bicycle lane treatment can continue north of 1246 South River Road, where the roadway narrows to 56 feet but there is a very wide shoulder on the northbound side (Figure 78 and Figure 79).



Also Consider: All the buildings along the South River Road are set back from the roadway with a large amount of green space. Additionally, there are very few driveways and intersections along the roadway. Building a separate multi-use path would provide a more comfortable bicycling environment than on-road bicycle lanes in the long term. Currently, crossing Route 130 on a bicycle can be challenging. Cranbury and Middlesex County should work with the NJDOT to identify ways to connect the proposed bicycle facilities on South River Road to other roadways and the village center.

Station Road

Between...	Route 130 & Liberty Way	Liberty Way & 66 Station Road	66 Station Road & Hightstown-Cranbury Station Road
Speed Limit (mph)	50 (High)	50 (High)	50 (High)
Daily Vehicles (AADT)	5,870 (Medium)	5,870 (Medium)	5,870 (Medium)
Width (feet)	55 (Wide)	52-60 (Wide)	42-60 (Wide)
Land Use	Industrial	Industrial	Industrial
Owner	Middlesex County	Middlesex County	Middlesex County

Station Road is a county roadway (Route 615) that runs east to west, connecting Cranbury to Monroe Township (Figure 80). Between Route 130 and the NJ Turnpike, the roadway provides access to various large distribution centers, including Wayfair and Home Depot (Figure 81). West of Route 130 and east of the NJ Turnpike, the roadway is fronted by residential properties. While Station Road crosses over the Turnpike, there is no access to the highway. Recent NJDOT traffic count data is not available, but a 2016 traffic study conducted in support of the development of a new distribution center found 5,870 daily vehicles using the roadway. There are sidewalks on both sides of the roadway, but no crosswalks across Station Road.

The width of Station Road varies from 42 to 60 feet within the study area, but it always maintains one eastbound and one westbound lane. A left turn lane or painted median is provided west of 66 Station Road (Figure 83). East of that address, the roadway narrows to 42 feet, which is the width of the bridge that passes over the NJ Turnpike. The roadway widens again as it arrives at the Hightstown-Cranbury Station Road intersection due to the presence of recently constructed turn lanes.



Figure 80. Map of Station Road.



Figure 81. The Wayfair distribution center on Station Road.

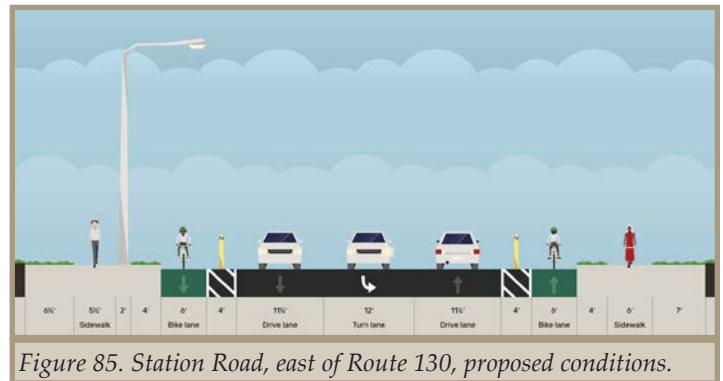
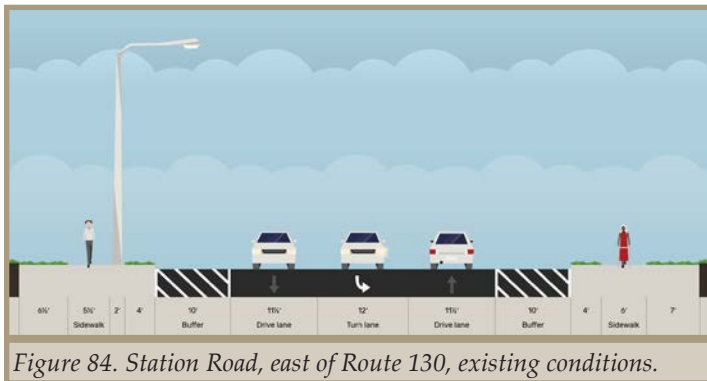


Figure 82. Bicyclists using Station Road.

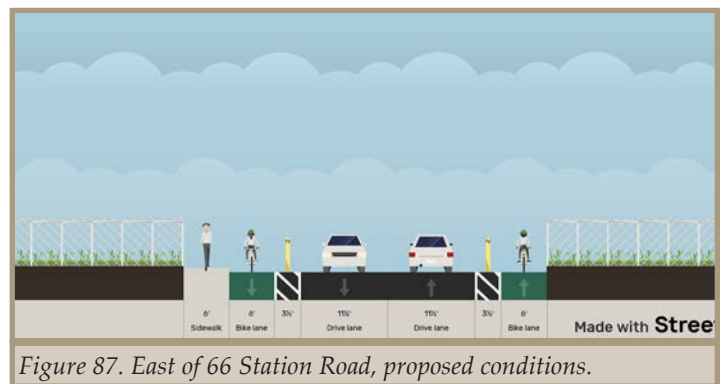
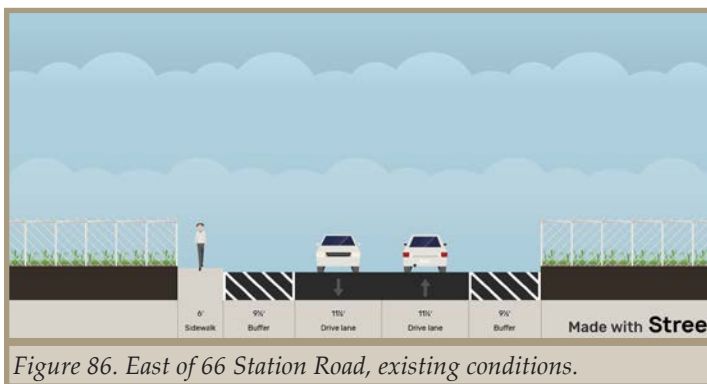


Figure 83. Looking east toward Station Road and Liberty Way.

Recommendation: Bicycle lanes can be added by modifying the existing shoulder. This requires the addition of signage, bicycle stencils, and an agreement to maintain the shoulder to travel standards. The bicycle lane can further be upgraded by providing a protected buffer between the bicycle lane and the travel lanes. Figure 84 shows the existing distribution of space between Route 130 and Liberty Way, with one lane in each direction, a center turn lane, and generous shoulders. Figure 85 shows how the shoulder can be modified to create a bicycle lane, while maintaining the existing travel lanes.



Moving east, the roadway widens to 60 feet. No additional lanes are added, so the width is consumed by wider travel lanes, wider shoulders, and a wider median/turn lane. As such, the buffered bicycle lane can be accommodated in the same manner as the previous section. Shortly after, the roadway narrows to 42 feet, which is the width of the bridge over the NJ Turnpike (Figure 86). Fortunately, as shown in Figure 87, the buffered bicycle lanes can be continued by converting the existing shoulders. A lower speed limit should be investigated for the length of the roadway.



Also Consider: Liberty Way is a discontinuous roadway that has the potential to provide a north-south link connecting Station Road, Half Acre Road, and South River Road. Cranbury should investigate the feasibility of connecting the roadway and providing bicycle facilities along its length.

Network Map

The map below shows what a complete network could look like with the initial suggested improvements (Figure 88). Eventually, the entire network could be upgraded to consist almost entirely of multi-use trails along Cranbury's major corridors.

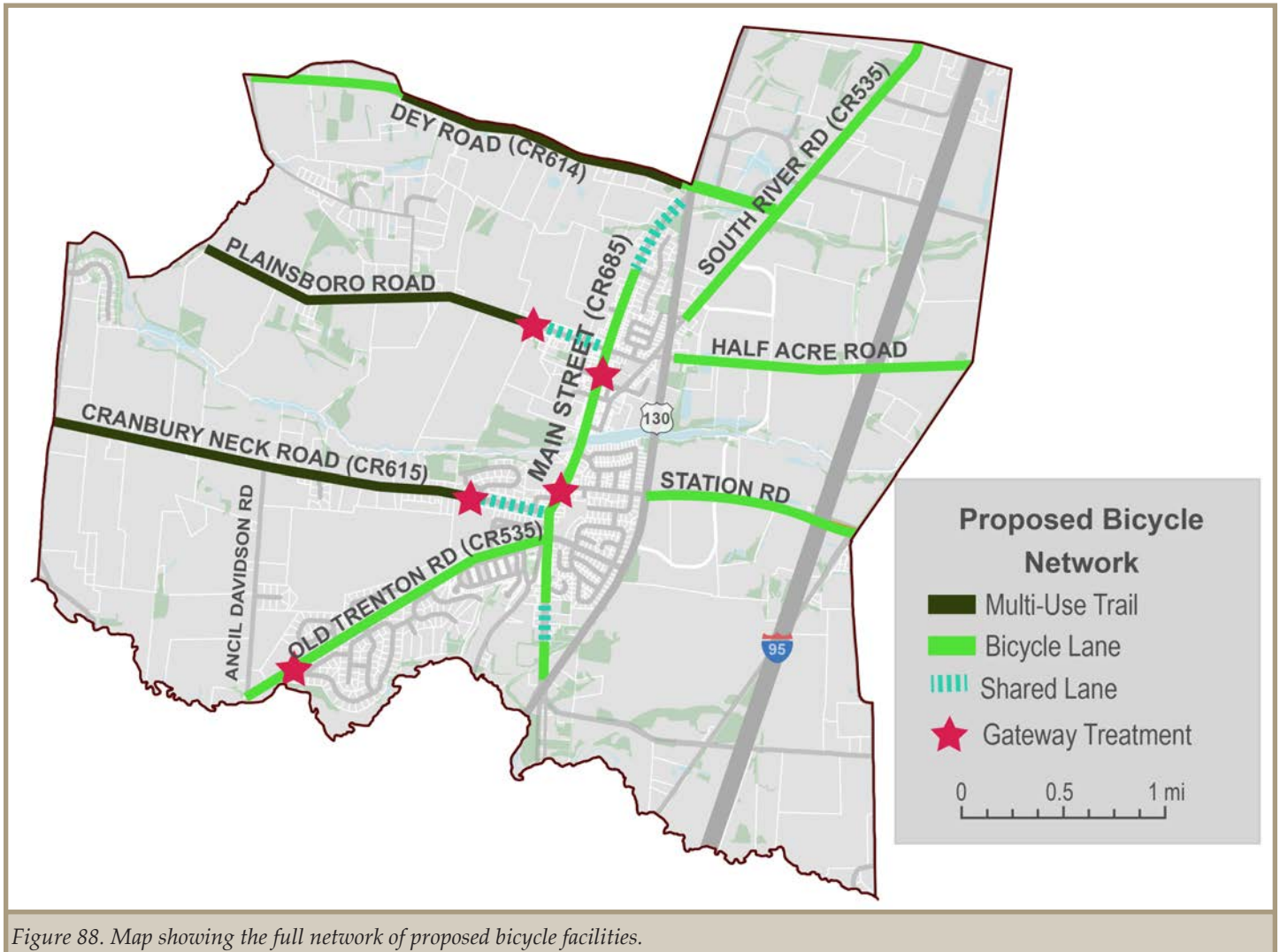


Figure 88. Map showing the full network of proposed bicycle facilities.

Additional Recommendations

I. Adopt a Complete Streets Policy

Adopting a complete streets policy is an important first step toward implementing complete streets, as it defines the meaning of complete streets, establishes goals, and lays out the ways in which the municipality will accomplish the goals. The most successful policies state that complete street practices and principles should be a standard part of regular roadway maintenance, planning, and design. An implementation plan and checklist can also be developed to ensure that the municipality remains on the right path year after year. Additionally, points are available to municipalities who are seeking SJ certification for adopting and instituting a complete streets policy. The NJDOT offers a guide to policy development and a separate guide on how to create an implementation plan. These resources are among those available at <http://njbikeped.org/complete-streets-resources/>. In 2019, the state released a new model policy guide, which should be used as a template for a new municipal policy (https://www.state.nj.us/transportation/eng/completestreets/pdf/CS_Model_Policy_2019.pdf).

II. Review Speed Limits

The majority of the corridors in this report have posted speed limits of 45 or 50 mph. These high speed limits do not allow bicyclists to safely share lanes with motor vehicles, and also make it difficult for pedestrians to cross many of these roadways. With the growth in distribution centers in Cranbury and surrounding towns, the number of trucks driving into the municipality has also increased. Trucks making slow left turns in and out of the distribution centers can also create dangerous situations for drivers moving at 50 mph (Figure 83). Cranbury and Middlesex County are encouraged to review the existing speed limits to confirm that they are appropriate for the current traffic mix and development level, taking into account crash data, changes in land use, and pedestrian volumes. Additionally, many roadways lack clearly posted limits. Additional speed limit signage can help to ensure that all traffic is moving at the same speed.

III. Investigate Safe Ways to Cross Route 130

Route 130 cuts across Cranbury and creates a barrier for bicyclists. Although bicyclists are allowed to use Route 130, it is not a safe or comfortable roadway to bicycle on, and motorists do not expect to see bicyclists on the highway. Cranbury and Middlesex County should work with the NJDOT to investigate ways to facilitate bicycle travel at locations where Route 130 is the only option, such as to connect between Dey Road and Main Street, or between South River Road and Half Acre Road.

IV. Provide Supporting Bicycle Facilities

In addition to roadway infrastructure, some of the common barriers bicyclists face are access to safe and secure parking, quality shower facilities, changing rooms, and bicycle repair/maintenance equipment. Incorporating these facilities near trip destinations (such as the distribution centers, school, library, and businesses) is important to encourage bicycling as a travel mode.

Providing safe and secure bicycle parking is critical to prevent theft and protect bicycles from vandalism and inclement weather. The *New Jersey Complete Streets Design Guide* and *New Jersey School Zone Design Guide* recommend a variety of bicycle parking rack designs from the Association of Pedestrian and Bicycle Professionals that allow bicycles to be attached to the rack at two points.

Cranbury should also encourage or require employers and new developments to provide secure bicycle parking, lockers, and shower facilities for employees. This can encourage commuters to switch to bicycles. Encouraging bicycling among employees can help to offset some of the emissions caused by the truck traffic that the facilities generate. Additionally, Cranbury could also work with the zoning department to implement minimum requirements or incentivize inclusion of bicycle amenities and facilities for new housing developments (for instance, through density bonuses).

Conclusion

The Township of Cranbury is a popular destination for recreational bicyclists, and has a compact structure that can support residents looking to use cycling for trips to local shops, work, or social events (Figure 89). However, the township currently does not have any bicycle facilities, and many of the roadways are not welcoming to bicyclists due to their high speed limits and narrow widths. This report identified a number of improvements that could be made to nine corridors within Cranbury to improve safety for existing bicyclists and encourage new riders to hit the road.

Many of these improvements can be built as demonstration projects or as part of the regular municipal maintenance regimen for the corridor. For example, shoulders can be modified to create bicycle lanes. By making the changes quickly and with low-cost materials, the municipality can receive meaningful feedback from residents based on their real-world experience. If the improvements are found to be ineffective, or have unintended consequences, they can be removed just as quickly. However, some recommendations will require more significant investments to make bicycling safe along narrow, high-speed roadways. These include separate multi-use paths that provide comfortable bicycle riding environments for people of all ages and abilities. While these investments may take longer to develop, they can make Cranbury an even more desirable destination.

In order to implement these recommendations, Cranbury would need to work with Middlesex County to create a complete network of safe bicycle corridors. In addition, Cranbury and Middlesex County should work with NJDOT to explore ways to improve the safety of crossing Route 130.



Figure 89. Cranbury village center.



Appendix

A. Street Smart NJ Campaign Resources

B. Potential Funding Resources

C. Design Resources

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

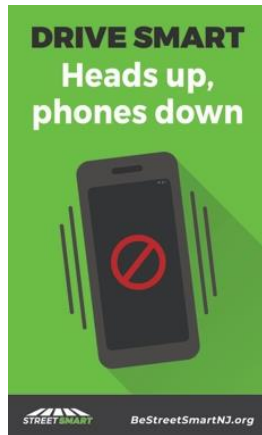
NJTPA staff are available to sit down with interested towns to discuss how to bring Street Smart NJ to their community.



BeStreetSmartNJ.org

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

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



Why do we need Street Smart?

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

Campaign Messages

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

Police Enforcement

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

Results

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



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

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

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

B. Potential Funding Resources

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

New Jersey Department of Transportation

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

State Aid Infrastructure Grant Programs

Municipal Aid: This program assists municipalities in funding local transportation projects, and all municipalities in New Jersey are eligible to apply. NJDOT encourages applications for pedestrian safety improvements, bikeways, and streetscapes. Additionally, a common strategy to implement on-street bike lanes is to include bike lane striping within repaving projects that are funded through this program. Learn more here: <https://www.state.nj.us/transportation/business/localaid/municipalaid.shtm>

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

Bikeways: This program funds bicycle projects that create new bike path mileage, working towards NJDOT's goal of 1,000 miles of dedicated bikeways in New Jersey. Special consideration will be given to bikeways physically separated from vehicle traffic, but on-road bike lanes or other bike routes are also eligible for funding. Learn more here: <https://www.state.nj.us/transportation/business/localaid/bikewaysf.shtm>

Safe Streets to Transit: This program encourages counties and municipalities to construct safe and accessible pedestrian linkages to all types of transit facilities and stations, in order to promote increased usage of transit by all segments of the population and decrease private vehicle use. Learn more here: <https://www.state.nj.us/transportation/business/localaid/safe.shtm>

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

Other NJDOT Assistance

Bicycle and Pedestrian Planning Assistance: NJDOT offers Local Technical Assistance (LTA) funding through the Office of Bicycle and Pedestrian Programs. Under this program, on-call consultants are paired with communities to complete a variety of projects including bicycle and pedestrian circulation and master plan studies, safety assessments, trail feasibility studies, bikeway plans, and improvement plans for traffic calming projects. For more information, please contact the state bicycle and pedestrian program coordinator at bikeped@dot.nj.gov

Federal Aid Infrastructure Grant Programs

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

Transportation Alternatives Program: The Transportation Alternatives Program provides federal funds for community based “non-traditional” transportation projects designed to strengthen the cultural, aesthetic and environmental aspects of the nation’s intermodal system. Municipalities can receive bonus points on the grant if they have an adopted Complete Street Policy and are a designated Transit Village. Learn more here: <https://njdotlocalaidrc.com/federally-funded-programs/transportation-alternatives>

New Jersey Department of Environmental Protection: The Recreational Trails Program administered by the NJDEP Green Acres Program provides federal funds for developing new trails and maintaining and restoring existing trails and trail facilities including trails for non-motorized, multi-use (including land and water) and motorized purposes. Learn more here: <https://www.nj.gov/dep/greenacres/trails/grants.html>

Health and Environment Funding

Sustainable Jersey: The Sustainable Jersey Small Grants program provides capacity building awards to municipalities to support local green teams and their programs, and is not project specific. Learn more here: <http://www.sustainablejersey.com/>

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

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

Funding from Other Sources

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

Sustainable Jersey Grants Portal: <https://www.sustainablejersey.com/grants/>

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

Federal Funding

1. US Department of Transportation (USDOT)

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

2. Federal Highway Administration (FHWA) Programs

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

3. National Highway Traffic Safety Association

- a. NHTSA Section 402 State Highway Safety Program
- b. NHTSA Section 405 Non-Motorized Safety Grants

4. Federal Transit Administration Programs

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

State Funding

5. Municipal Aid (\$140m)

6. County Aid (\$150m)

7. Local Bridges (\$44m)

8. Safe Streets to Transit (\$1m)

9. Transit Village (\$1m)

10. Bikeways (\$1m)

11. Local Aid Infrastructure Fund (\$7.5m)

12. Safe Corridors Highway Safety Funds

13. Urban Aid (\$10m)

14. New Jersey Trails Program (Department of Environmental Protection)

15. Other Funding Sources

16. Regional/Local CMAQ Initiatives Program (NJTPA)

17. NJ Division of Highway Traffic Safety

18. Open Space & Farmland Preservation

19. Homeland Security Transit Security Grant Program (TSGP)

Other Sources

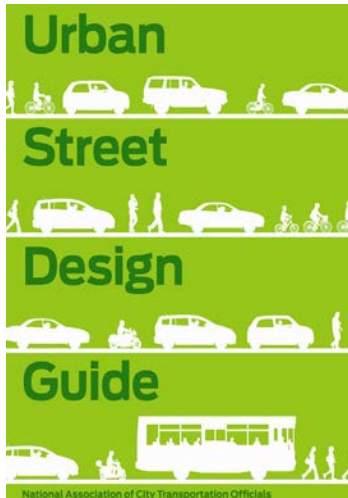
20. County Capital Program

21. Municipal Capital Programs

22. Foundations

C. Design Resources

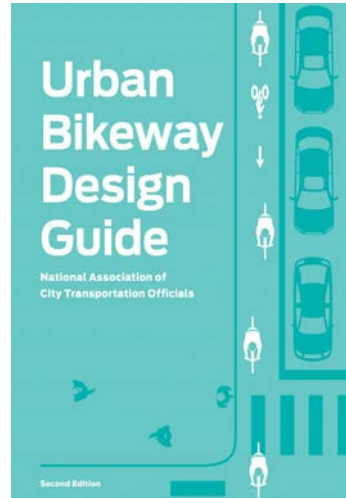
NACTO Guides



[Urban Street Design Guide](#)



[Global Street Design Guide](#)



[Urban Bikeway Design Guide](#)



[Transit Street Design Guide](#)



[Blueprint for Autonomous Urbanism](#)

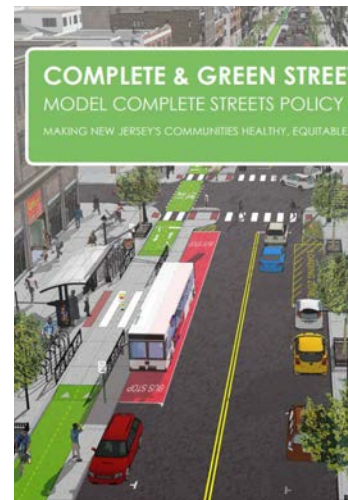


[Urban Street Stormwater Guide](#)

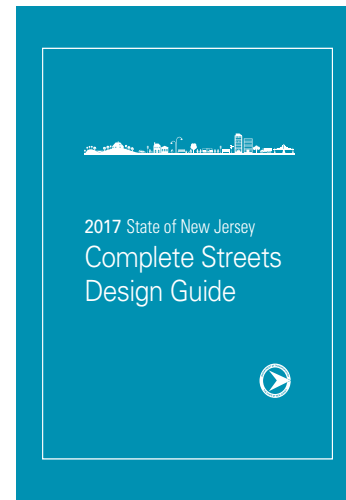


[Bike Share Station Siting Guide](#)

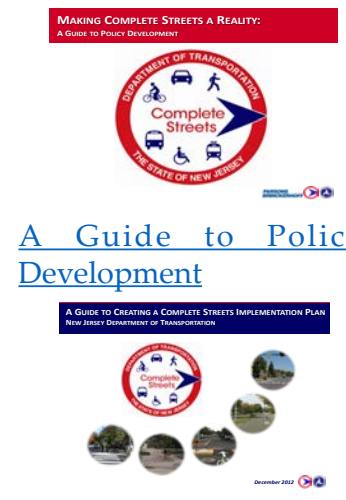
NJDOT Guides



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

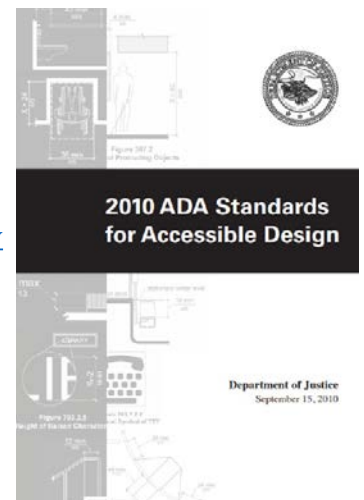


[2017 State of New Jersey Complete Streets Design Guide](#)



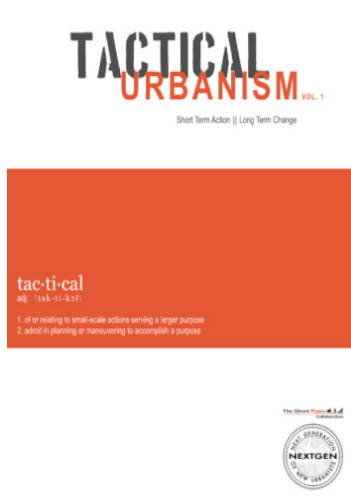
[A Guide to Policy Development](#)

ADA Guidelines

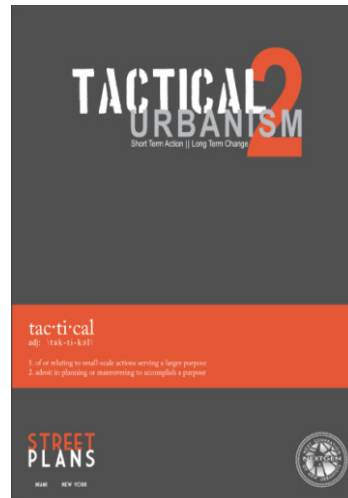


[ADA Standards for Accessible Design](#)

Tactical Urbanism Guides



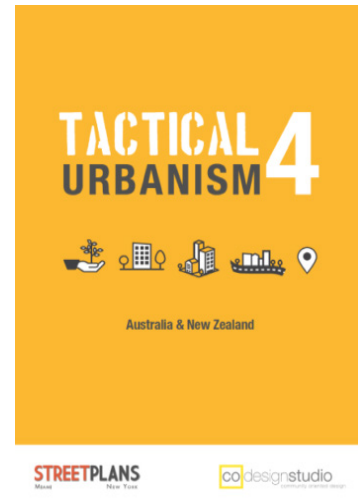
[Tactical Urbanism 1](#)



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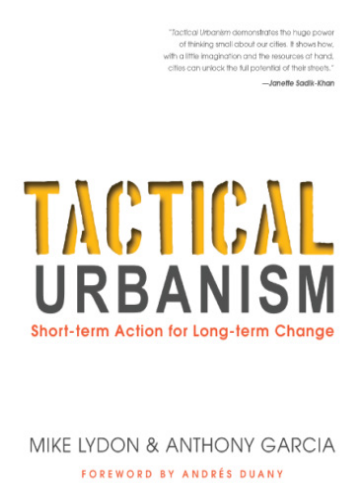
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