HOBOKEN
STREET DESIGN GUIDE

Complete Streets Design and Implementation Plan

June 2019

NJTPA
NORTH JERSEY TRANSPORTATION PLANNING AUTHORITY

HOBOKEN

VISION ZERO
HOBOKEN NEW JERSEY

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The NJTPA is the federally authorized Metropolitan Planning Organization (MPO) for the 13-county northern New Jersey region—home to 6.7 million people. It evaluates and approves transportation improvement projects, provides a forum for cooperative transportation planning, sponsors and conducts studies, assists county and city planning agencies, and monitors compliance with air quality goals.

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EXECUTIVE SUMMARY

Purpose

The Hoboken Street Design Guide (Design Guide) provides policy and design guidance for governmental agencies, consultants, private developers, community groups, and all others involved in street design decisions. The overarching goal of this manual is to help improve the safety and accessibility of streets for all users, regardless of age, ability, income, ethnicity, or travel mode.

Overall, this Design Guide represents the City of Hoboken's intent to design its publicly-owned streets to support safe, affordable, equitable, and healthy mobility options. This initiative embraces design as a method to advance the health and safety of the community, while promoting diverse transportation options and vibrant public spaces.

What are Complete Streets?

Complete Streets are designed to enable safe use and support mobility for all users and transportation modes. By prioritizing safety and accessibility, Complete Streets make it simple and inviting to cross the street, commute to work by bicycle, or access a bus stop, while also accommodating motor vehicle travel. To achieve this, a combination of physical street design features, enforcement of regulations and traffic laws, and effective street operations is required.

Process Overview

The 10-month process to develop the Hoboken Street Design Guide began in mid-2018 and concluded with the publication of this report in 2019. While primarily a technical process, the development of the Design Guide also incorporated input from local residents and stakeholders that was gathered through online surveys and public events and established partnerships with local and regional planning partners. Additionally, the project team conducted research on national best practices, local needs, and challenges.

Who was Involved?

The Hoboken Street Design Guide was a collaborative planning process between the North Jersey Transportation Planning Authority (NJTPA) and the City of Hoboken. Together, these partner agencies ensured that the guidelines and policies contained in this document were tailored for the unique mobility needs of Hoboken while also serving as regional best practices for other communities.

Street Typology

A typology refers to a categorization of items that have similar characteristics. To apply consistent design elements across similar streets, the Hoboken Street Design Guide groups all Hoboken streets into select typologies based upon width, use, and purpose within the overall transportation network.

Often, streets are organized by community characteristics; however, this approach is less useful in Hoboken given the City's compact and consistent urban character. Since most of Hoboken's streets have reached their full width—except in places where redevelopment is planned to occur—an approach to classifying streets on the basis of physical characteristics and their purpose within the larger network was applied.

Figure 1

Street Typology Map

Hoboken's streets have been grouped into three different street typologies:

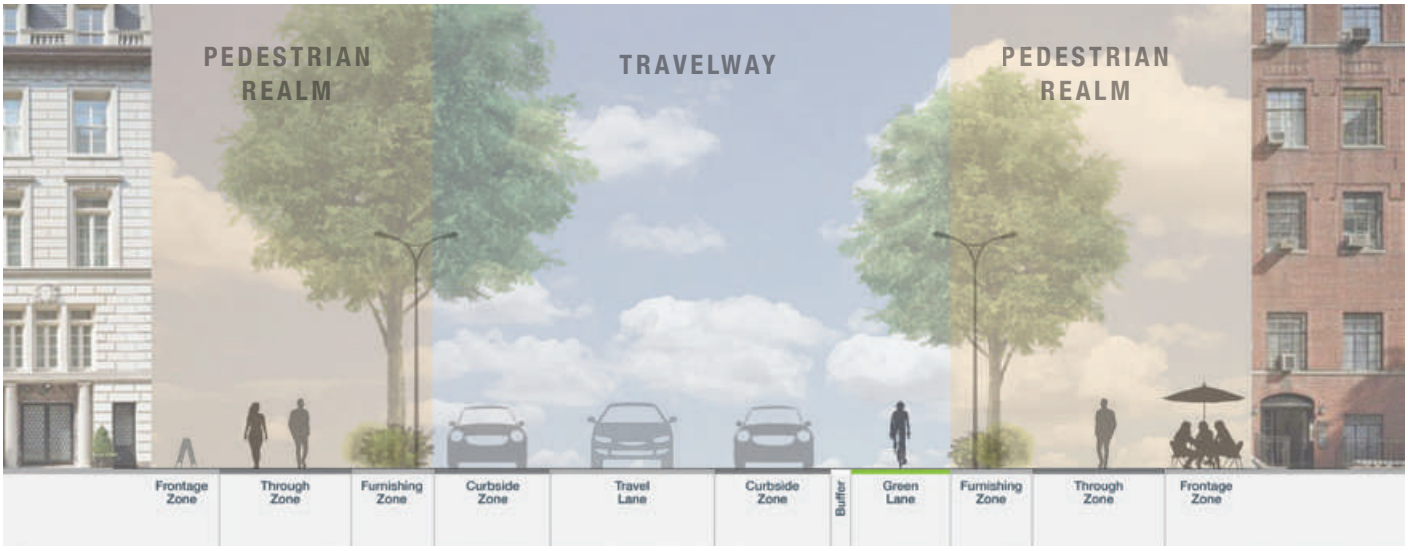
- **Neighborhood Streets:** local connectors to community destinations, typically providing slower travel speeds due to short blocks, narrow right-of-way, and frequent parking
- **Community Corridors:** primary community streets that connect neighborhoods while accommodating parking, loading zones, green lanes, and many forms of activities
- **Gateway Streets:** streets that carry high traffic volumes, including freight traffic, through Hoboken to points outside the City

Profiles of these street typologies are presented to provide guidance on the appropriate type of facilities, design treatments, and amenities that should be applied to these corridor types.

Street Design Elements

This Design Guide addresses all elements within the public right-of-way, including the travelway and the public realm. In Hoboken, this typically includes everything between the building facades on either side of the street, such as sidewalks, street trees and landscaping, parking, green lanes, and travel lanes. Each of these elements has been examined in detail and specific guidance have been provided for each street typology. Figure 2 below shows a typical street cross-section and all its elements addressed in this manual.

Figure 2
Street Design Elements



Special Focus Overlays

Every community has unique places that require special treatment, such as waterfronts, parks, historic destinations, primary streets, and premium transit hubs. There are also areas that are more likely to experience change, such as places near significant community investment centers, places adjacent to community amenities and areas that have been planned for revitalization and redevelopment. While a consistent transportation strategy is important, these special focus areas require a departure from the norm to acknowledge, protect, and elevate the characteristics that make them unique.

Early in the process, several corridors that act as Hoboken's primary streets were identified as "Special Focus Overlays" for their unique contributions to the community. These corridors connect neighborhoods to commercial services, schools, parks, and the Hudson River Waterfront. Given their opportunity to impact mobility and placemaking in a transformative manner, investments in these corridors should be a high priority for Hoboken.

Special focus overlays were applied to the following corridors:

- Observer Highway
- Washington Street
- 4th/5th Street and 8th/9th Streets
- 11th/12th Streets
- 15th Street

The Design Guide provides long-term visions for the opportunities available in these corridors to improve mobility as well as the priorities that should guide future improvements in these areas.

Green Infrastructure

Green infrastructure is an approach to water management that uses natural processes to capture, store, and filter stormwater. This is especially important in coastal areas like Hoboken, which experiences recurrent flooding. The City can incrementally improve its stormwater management capabilities by incorporating these methods into future street improvement projects. Additionally, green infrastructure can enhance aesthetics and greenery in Hoboken. Within the right-of-way, there are several opportunities to include green infrastructure as street projects are designed and implemented. The most common opportunities in Hoboken include bioswales, permeable pavement, and stormwater trees. The Design Guide offers some guidance on each of these treatments as well as references that provide more detailed information

Implementation

Implementing the guidelines in this manual is critical to improving transportation equity, safety, and mobility in Hoboken. The goals, guidelines, and design techniques presented in this Design Guide should be incorporated into all roadway design projects, roadway maintenance, major development and redevelopment projects, and streetscaping projects. An action plan is provided to act as a roadmap to ensure that the Complete Streets vision is fully implemented throughout the City and becomes foundational to all projects moving forward

Priority action items for implementing the Hoboken Street Design Guide are:

- Adopt an updated Complete Streets Policy
- Make the necessary regulatory changes
- Adopt a Complete Streets and green infrastructure checklist
- Leverage quick-build and pilot projects
- Develop a Vision Zero action plan
- Document success

Consolidated Street Design Table

The table below lists the recommended dimensions and uses for each of the street design elements contained within this Design Guide. More information is provided throughout the document.

Table 1
Consolidated Street Design Table

	Pedestrian Realm			
Street Type	**Frontage Zone**	**Through Zone**	**Furnishing Zone (Priority treatments)**	**Transit Treatment**
Neighborhood Streets	Use: Stoops, awnings, fenced-in small yards **Width: No more than the maximum width of other stoops on the same block OR 3 feet**	**Desired width: 10 feet** **Minimum width: 5 feet**	Street trees (smaller), overhead utilities, and bioswales **Desired width: 3 feet** **Minimum width: 2 feet**	Space dedicated to bus pickup/drop off at all far-side intersections with marked transit stops On streets with special focus overlay, transit only lanes or queue jump lanes may be considered
Community Corridors	Use: Stoops, awnings, fenced-in small yards, landscaping, café seating **Width: No more than the maximum width of other stoops on the same block OR 3 feet**	**Desired width: 10 feet** **Minimum width: 6 feet**	Street trees (larger, frequent), bike racks, decorative lighting, benches, bioswales, trash cans, mailboxes, bike share stations, transit stops, and shelters **Desired width: 3 feet** **Minimum width: 2 feet**	
Gateway Streets			Street trees (larger, frequent), bike racks, bioswales, trash cans, mailboxes, bike share stations, transit stops,shelters, and public art **Desired width: 3 feet** **Minimum width: 2 feet**	

Curbside Zone		Green Lane	Travel Lane
Parking	**Flex Zone**		
Parallel parking, 7 to 8 feet width on both sides of the streets, except where preempted by other uses such as curb extensions and parklets Permeable pavement should be considered	Dynamic spaces that are delineated for freight loading and unloading and rideshare/ taxi pickup and drop off **Guidance: One every other block at a minimum; located at the beginning or end of parking spaces**	Green-backed shared lane markings recommended	Travel Lane: **Recommended width: 11 feet;** **Minimum width: 10 feet** Turn Lane: Not recommended
Parallel parking, 7 to 8 feet width on both sides of the streets, except where preempted by other uses Permeable pavement should be considered On streets with mobility corridor overlays and with sufficient width, angled parking may be considered		Striped lanes, buffered lanes, or protected bike lanes where space permits Permeable pavement in protected bike lanes should be considered **Recommended lane width: 6 feet** **Minimum width: 4 feet** **Buffer or protection width: 3 feet recommended, 1.5-feet minimum**	
	Not recommended due to traffic volumes, but can be considered on an as-needed basis	Protected bike lanes recommended Permeable pavement in protected bike lanes should be considered **Recommended lane width: 5 feet** **Minimum width: 4 feet** **Buffer or protection width: 3 feet recommended, 1.5-feet minimum**	Travel Lane: **Recommended width: 11 feet;** **Minimum width: 10 feet** Turn Lane: Maximum one turn lane per intersection approach if analysis is warranted by an engineering study

INTRODUCTION

Purpose

The Hoboken Street Design Guide (Design Guide) is a roadmap that provides policy and design guidance to all parties involved in street design decisions, including governmental agencies, consultants, private developers, and community groups. The overall goal of this Design Guide is to support development of streets that are safe and accessible for all users.

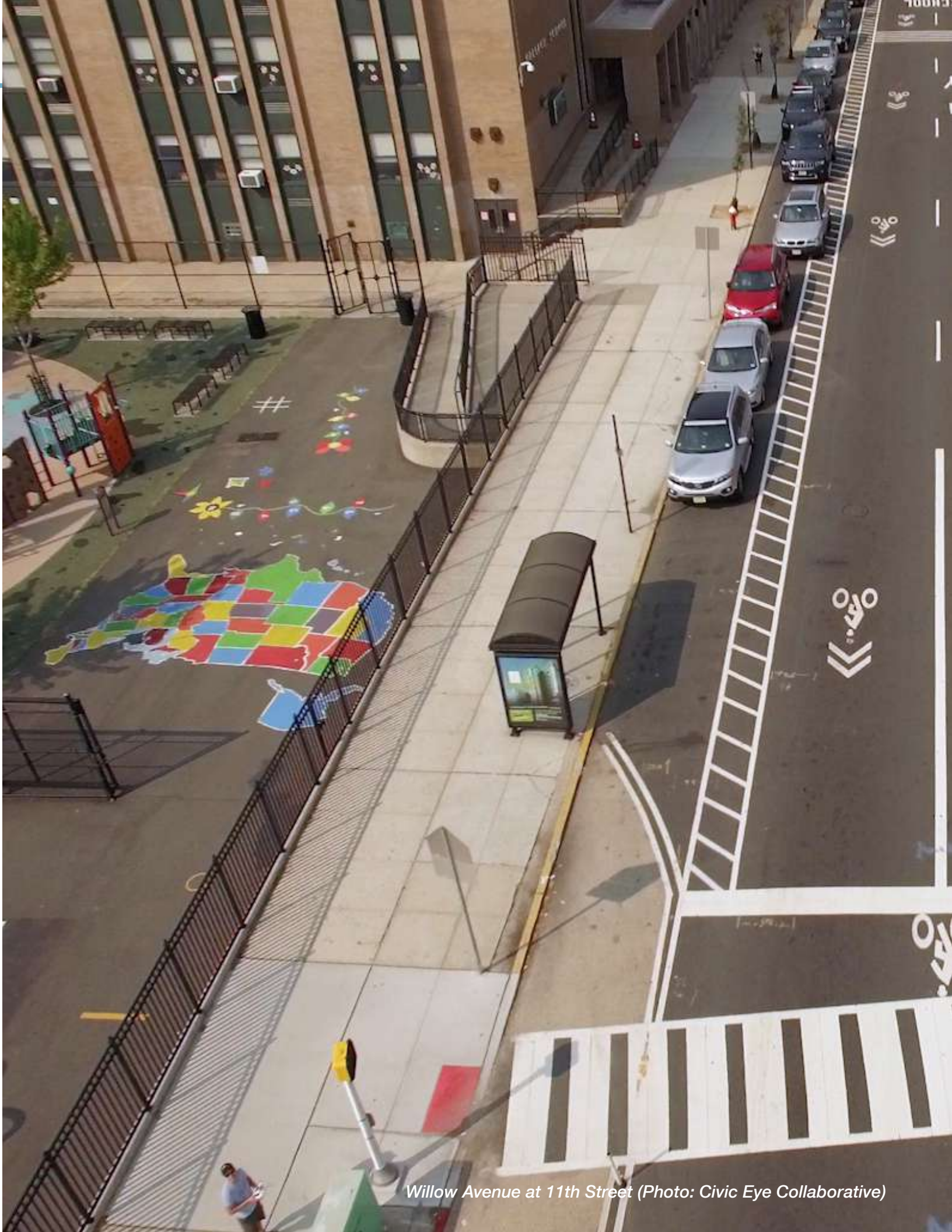
Overall, this Design Guide represents an intent by the City of Hoboken to devote its publicly-owned streets to provide affordable, equitable, and healthy mobility options. This initiative embraces design as a tool to advance the health and safety of the community, while promoting sustainable transportation options and vibrant public spaces.

This document will enable planners, engineers, and policy makers to identify context-sensitive street elements that are consistent with Complete Streets best practices and suitable for Hoboken's unique context. This Design Guide provides information on the City's adopted street typology and contains specific guidance on the appropriate bicycle, pedestrian, transit, and travelway treatments to apply within each street type. The manual's criteria and guidance is intended to support the City's implementation of the Complete Streets vision and assist in making incremental steps toward a safer, more equitable future.

Goals

By adopting and implementing this Design Guide, the City of Hoboken will:

- Improve transportation safety for all users
- Increase equity and access to high quality transportation facilities
- Promote transportation system effectiveness and efficiency through increased transit ridership, walking, and biking
- Improve system reliability
- Improve resiliency and sustainability through increased green infrastructure investments and increased access to active and shared mobility modes
- Promote innovation through quick-build projects



Willow Avenue at 11th Street (Photo: Civic Eye Collaborative)

Background

What are Complete Streets?

Complete Streets are designed to be comfortable and safe for all users, regardless of age, ability, or travel method. By prioritizing safety and accessibility, Complete Streets make it simple and inviting to cross the street, commute to work by bicycle, or access a bus stop. Achieving this includes a combination of physical street design features, enforcement of regulations and traffic laws, and effective street operations.

Thinking about streets in this way not only represents a shift in traditional design principles, but also a shift in the way one thinks about the community. As Hoboken grows, the City can no longer afford to think about streets simply as the empty space between buildings where cars are parked. Streets are community-owned spaces that can and should contribute to its vibrancy.

Complete Streets in Hoboken

The City of Hoboken adopted a Complete Streets resolution in 2010. While the resolution provided a general voice of support to Complete Streets principles, it also included many exceptions and generally lacked specific guidance on implementation. The City's Bicycle and Pedestrian Plan, also adopted in 2010, provided additional details on how and where to build out the active transportation network; however, much has changed in the decade since it was adopted. Residents now have high expectations for quality bicycle and pedestrian facilities and a changing demographic mix emphasizes the importance of ensuring the safety of vulnerable populations.

This Design Guide considers the difficult tradeoffs associated with balancing multiple travel modes within a limited amount of space and provides a roadmap to create a truly multimodal network that supports vibrant neighborhoods, efficient and sustainable travel patterns, and a healthy population.

Benefits of Complete Streets

This Design Guide is based on the principle that Complete Streets offer many economic, social, and environmental benefits as well as improve the transportation network. These include:

Health and Safety

- Complete Streets create safe environments for all users by emphasizing designs that promote slower travel speeds and positively influence travel behavior
- Complete Streets create walkable and bikeable communities, which contribute to community health and active living
- Complete Streets help reduce the number and severity of motor vehicle crashes when implemented properly

Equity

- Complete Streets provide a more accessible transportation system for all users, regardless of age, ability, ethnicity, income, or chosen travel mode
- Complete Streets enhance the safety of vulnerable populations who are more likely to rely on walking, biking, and public transit

Economy

- Complete Streets increase the number of people walking and biking to local businesses, generating benefits for the local economy
- Complete Streets improve affordability of transportation by reducing car-dependency and transportation cost burdens

Sustainability

- Complete Streets improve air quality by decreasing the community's dependence on motor vehicles
- Complete Streets integrate green infrastructure to improve the community's rainwater retention and stormwater management

Placemaking

- Complete Streets integrate opportunities for public art, landscaping, street furniture, and increased public space to enhance the look and feel of the community

Why now? Why Hoboken?

Hoboken is growing.

According to U.S. Census Bureau estimates, Hoboken's population increased by approximately 38 percent between 2000 and 2016 to 53,673 people. With a growing population comes rising expectations and increased demand on the transportation system from all travel modes.

Space is limited.

The City of Hoboken is only 1.28 square miles and is not getting any bigger. Since street right-of-way is the largest single land use in Hoboken (246 acres total), it is prudent to ensure this space is used in the most efficient manner possible.

We travel in a variety of ways.

Hoboken has the highest transit ridership in the country (over 60 percent of workers in Hoboken commute via transit) and an increasing number of people are choosing to commute by walking or biking. City streets should be designed in a way that ensures these travelers, as well as those in vehicles, have a safe and comfortable experience.

Our community has changed.

Between 2000 and 2016, Hoboken saw major growth in the number of children and young families according to the U.S. Census Bureau. This places increased importance on safe crosswalks, improved access to parks and schools, and high-quality bicycle facilities where parents are comfortable riding with their kids.

Focus on Safety

According to NJDOT crash data, two pedestrians were killed and more than 250 pedestrians and bicyclists were involved in injury-causing crashes in Hoboken between 2012 and 2016. A growing community means that, every year, more commuters, children, and families use the City's streets to walk to work, take weekend bike rides, and take family trips to the park. It is important that the City ensure those experiences remain safe and comfortable for all. In addition to improved sidewalks, bicycle facilities, and crossings, this Design Guide also includes several elements that function as traffic calming measures, which encourage slower vehicle travel speeds. These coordinated design elements combine with existing City enforcement and education efforts to create a safe place to bike and walk.

Vision Zero

Vision Zero is an international movement aimed at eliminating all traffic fatalities and improving traffic safety. The movement was first implemented in Sweden in the 1990s and is gaining momentum across the United States, with several major cities adopting Vision Zero action plans, including New York City and Jersey City.

Hoboken recently joined this network by adopting a goal of achieving zero traffic-related deaths or injuries by 2030. Complete Streets supports this achievement by focusing on ways to design improvements that protect pedestrians and bicyclists and reduce the risk of vehicle crashes. Through simple improvements that influence travel behavior, Hoboken can become a safer city for all modes of transportation.

FOUNDATIONS

Process Overview

Development of the Hoboken Street Design Guide began in mid-2018 and the 10-month process concluded with the publication of this report in 2019. During that period, the project team consulted Hoboken residents through online platforms and public events, conducted research into national best practices, and spoke with local and regional planning partners to develop a strategy that fits Hoboken's unique context.

Who was Involved

The Hoboken Street Design Guide was a collaborative planning process between the NJTPA and the City of Hoboken. Together, these partner agencies ensured that the guidelines and policies contained in this document were tailored to the unique mobility needs of Hoboken, but can also serve as regional best practices for other communities.

Existing Plans

Street Design Criteria and Guidelines

Engineers and planners follow established standards and guidelines to prepare designs for roadway projects. The following standards and guides (shown below in Table 2) currently form the basis of Complete Streets best practices and policy guidelines. Each of these resources provide guidance for a particular area of street design:

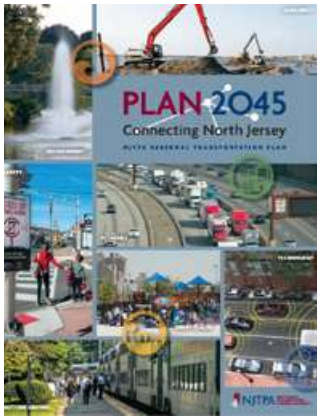
Table 2
Existing Street Design Resources

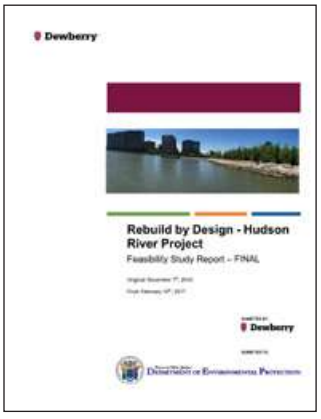
Organization/Legislation	Guidance
National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide (2nd Edition)	Bicycle facilities and intersection design
NACTO Transit Street Design Guide	Transit facility design
NACTO Urban Street Stormwater Guide	Green infrastructure integration
A Policy on Geometric Design of Highways and Streets (American Association of State High and Transportation Officials [AASHTO] Green Book)	Roadway design, including multimodal facilities
Manual on Uniform Traffic Control Devices (MUTCD)	Street striping, markings, signage
USDOT Achieving Multimodal Networks: Applying Design Flexibility & Reducing Conflicts	Multimodal network design
Americans with Disabilities Act (ADA) Standards for Accessible Design	Accessible street design
Institue of Transportation Engineers (ITE) Designing Walkable Urban Thoroughfares: A Context Sensitive Approach	Walkable street design

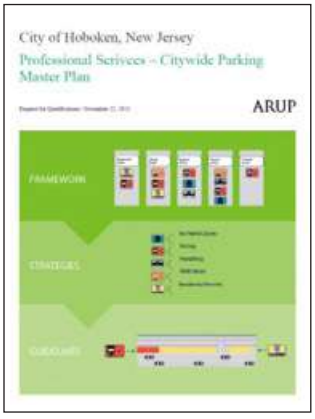
Previous Plans

Existing policies, guidelines, and plans were reviewed to fully understand the forces and trends that influence transportation policymaking and planning in Hoboken. This review included a selection of local policies and plans, New Jersey examples, and national case studies to provide an overview of best practices. Documents reviewed include:

- City of Hoboken Master Plan: Green Building and Sustainability Element (2018)
- Hoboken Master Plan Re-examination (2018)
- City of Hoboken Master Plan Land Use Element (2018)
- Plan 2045 Connecting North Jersey (2017)
- Rebuild by Design – Hudson River Project (2017)
- Hoboken Citywide Parking Master Plan (2014)
- Hoboken Green Infrastructure Strategy Plan (2013)
- City of Hoboken Bicycle and Pedestrian Plan (2010)
- City of Hoboken Complete Streets Policy (2010)
- New Jersey DOT (NJDOT) Complete Streets Policy (2009)







Supporting Community Goals

Complete Streets aligns with many of the City's long-term goals and objectives, as stated in the 2018 Master Plan Reexamination Report. Shown below is a selection of the City's stated objectives that the Design Guide helps advance:

Hoboken is...

A COMPLETE NEIGHBORHOOD:

- Maintain the scale and experience of the City's shared streetscapes and built environment, particularly within Hoboken's interior residential neighborhoods
- Build, upgrade, and connect parks and open space amenities

A CITY OF CONNECTED PLACES:

- Make Hoboken a better place for pedestrians, bicyclists, and transit riders, while improving conditions for those who drive
- Improve the efficiency of the roadway network, particularly at gateways to the City and through the Central Business District
- Use all available tools to efficiently manage and improve parking conditions
- Improve the convenience of public transportation and other green alternatives to make these modes the first choice for user

BECOMING A SUSTAINABLE AND RESILIENT CITY:

- Upgrade and innovate infrastructure systems
- Adapt to climate change impacts and improve response capacity for emergencies and natural disasters

Public Engagement

Engagement Results

A public workshop and online survey, both held in Fall 2018, allowed Hoboken residents to voice their opinions and concerns regarding the current state of travel within the City. Both opportunities iallowed attendees to vote for their top transportation priority, voice their concerns, and remark on what they believed should change in the future. The results from this public outreach was combined to create a cohesive set of data. Together, these results tell a story about residents' transportation priorities and preferences, as shown below in Figures 3 and 4.

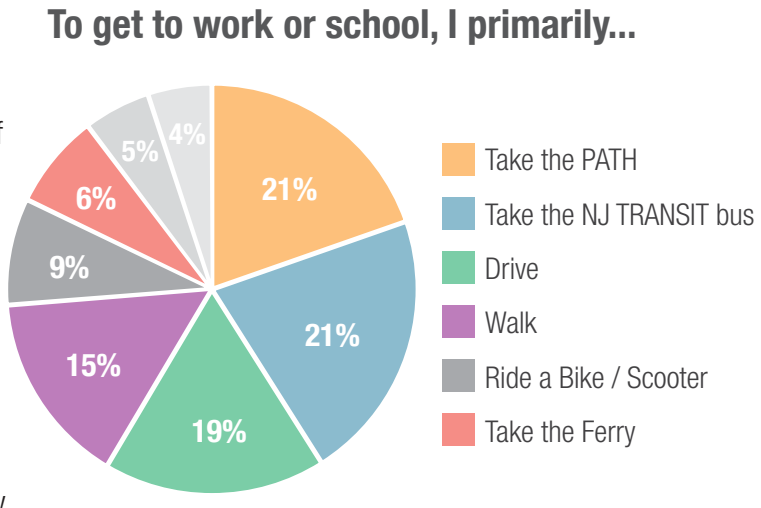
A second survey in Spring 2019 gathered public opinion regarded the completed Street Design Guide. The final results of that survey are included in the document's appendix.

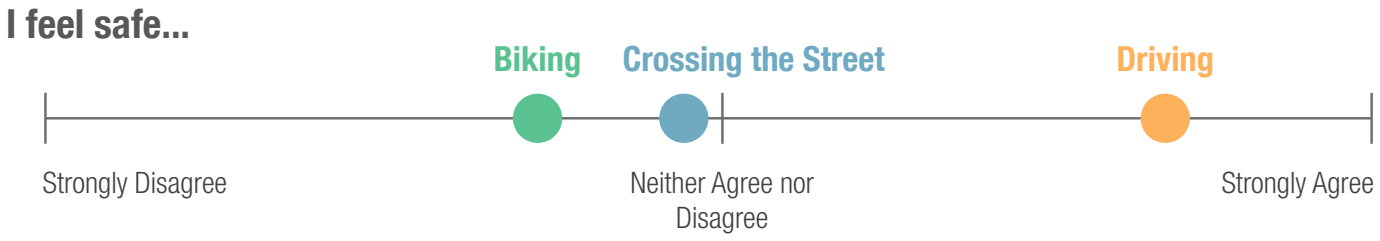
Key takeaways from the engagement results include:

- **Hoboken residents travel in a variety of ways.** More than half of respondents commute to work via the City's various forms of transit, with another quarter choosing to walk or bike. Over 70 percent of respondents say they primarily walk to complete errands within the City, showcasing the importance of a robust pedestrian network.

- **Vehicles not stopping for pedestrians at crosswalks was the top safety concern.** This is an example of behavior that can be strongly influenced by design.

- **Bikers feel the least safe on Hoboken streets.** When asked if they feel safe in certain situations, only 15 percent of participants agreed that they felt safe biking (walking across the street landed in the middle) in comparison to 56 percent who said they felt safe driving.





Figures 3a, 3b
Public Engagement Results

Top 3 Priorities:

Figure 4
Citizen Transportation Priorities

- **Safety was the top transportation priority.** When asked what they hope can be improved about Hoboken's streets, safety was the top answer among survey takers and workshop participants.

- **Most respondents want protected bicycle lanes, but also don't want to give up parking.** Both protected bike lanes and parking were among the top three most popular design elements when respondents were allowed to design their "dream street." Street trees and green infrastructure was also included in the top three. Many of Hoboken's streets do not have enough width to accommodate all features, so it is likely that some tradeoffs will be made.

STREET DESIGN GUIDE

Street Typology

A typology is a categorization of items that have similar characteristics. The Hoboken Street Design Guide relies on grouping streets into select typologies based on width, use, and purpose within the overall transportation network. These groupings are used to apply consistent design elements across similar streets.

Hoboken's streets have been grouped into three different street type categories: neighborhood streets, community corridors, and gateway streets. While most streets fit neatly into one of these categories, there were select streets that, given their unique features or propensity to change, were recognized as special focus overlays. The location of each street type category is shown on Figure 5.

How to use this guide:

Find the Street Type

All streets within the City have been categorized into three typologies based on their current and desired function within the transportation network. Before beginning any street improvement project or major development project along a street, the map should be referenced to determine the street type and characteristics.

Reference the Street Design Guide

The following pages provide specific guidance for the standard design of bicycle and multimodal, pedestrian, curbside, and vehicular travel facilities for each street type. These standards provide a starting point and decision-making guide for the majority of streets within the City.

Finalize the preferred design

Each street within the City is likely to have special circumstances, which will require exceptions and a departure from the standards laid out in this guide. Proximity to schools, high density of commercial activities, non-standard right-of-way, or stormwater challenges all merit customized solutions that work within the plan's Complete Streets principles to provide enhanced accessibility to travelers of all ages and abilities.

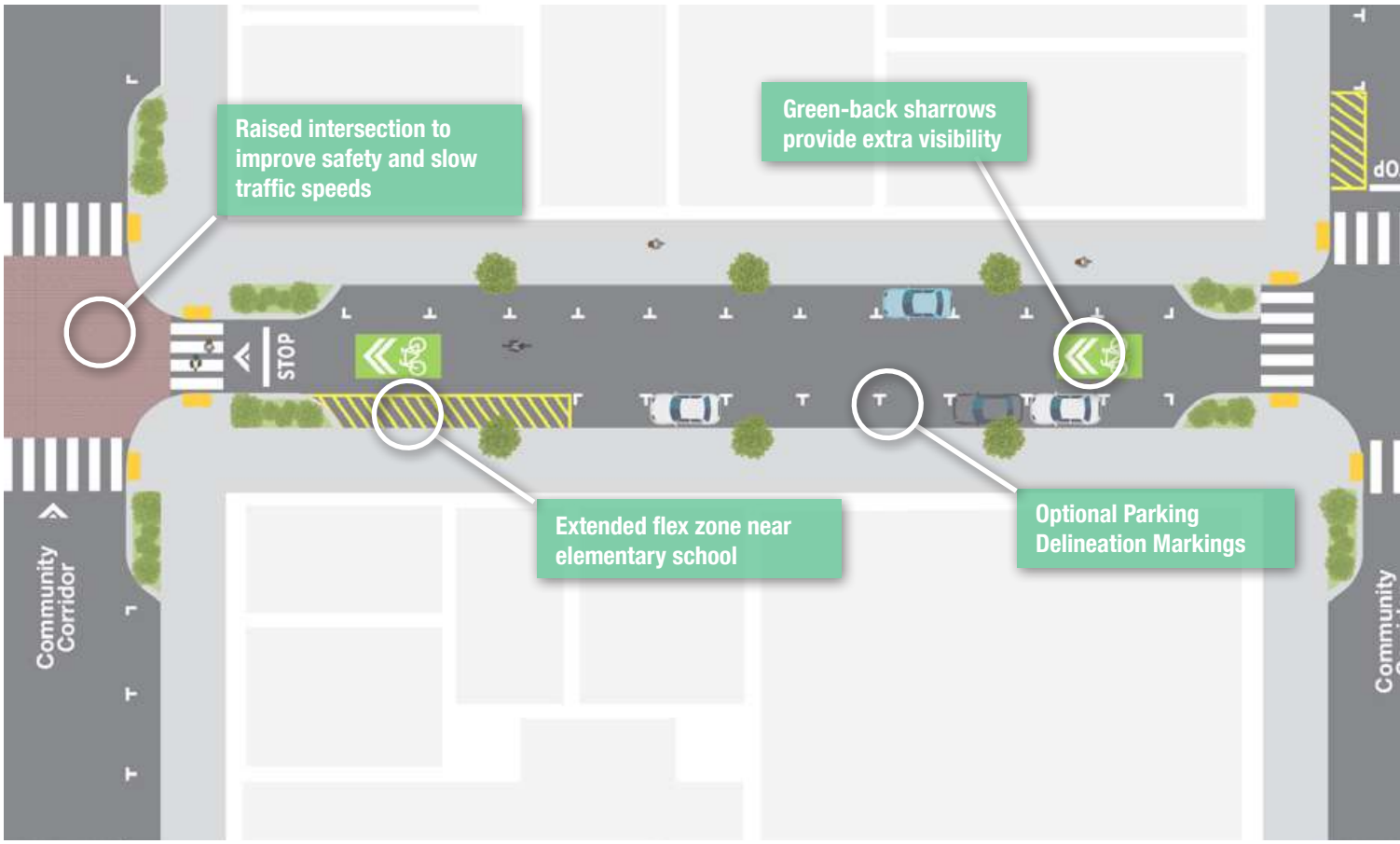
Green Infrastructure Opportunities

The Street Design Guide offers many opportunities to incorporate green infrastructure elements into the public right-of-way to improve drainage and stormwater management capabilities, while improving street aesthetics. Throughout the document, this symbol highlights green infrastructure opportunities.

Figure 5
Street Typology Map

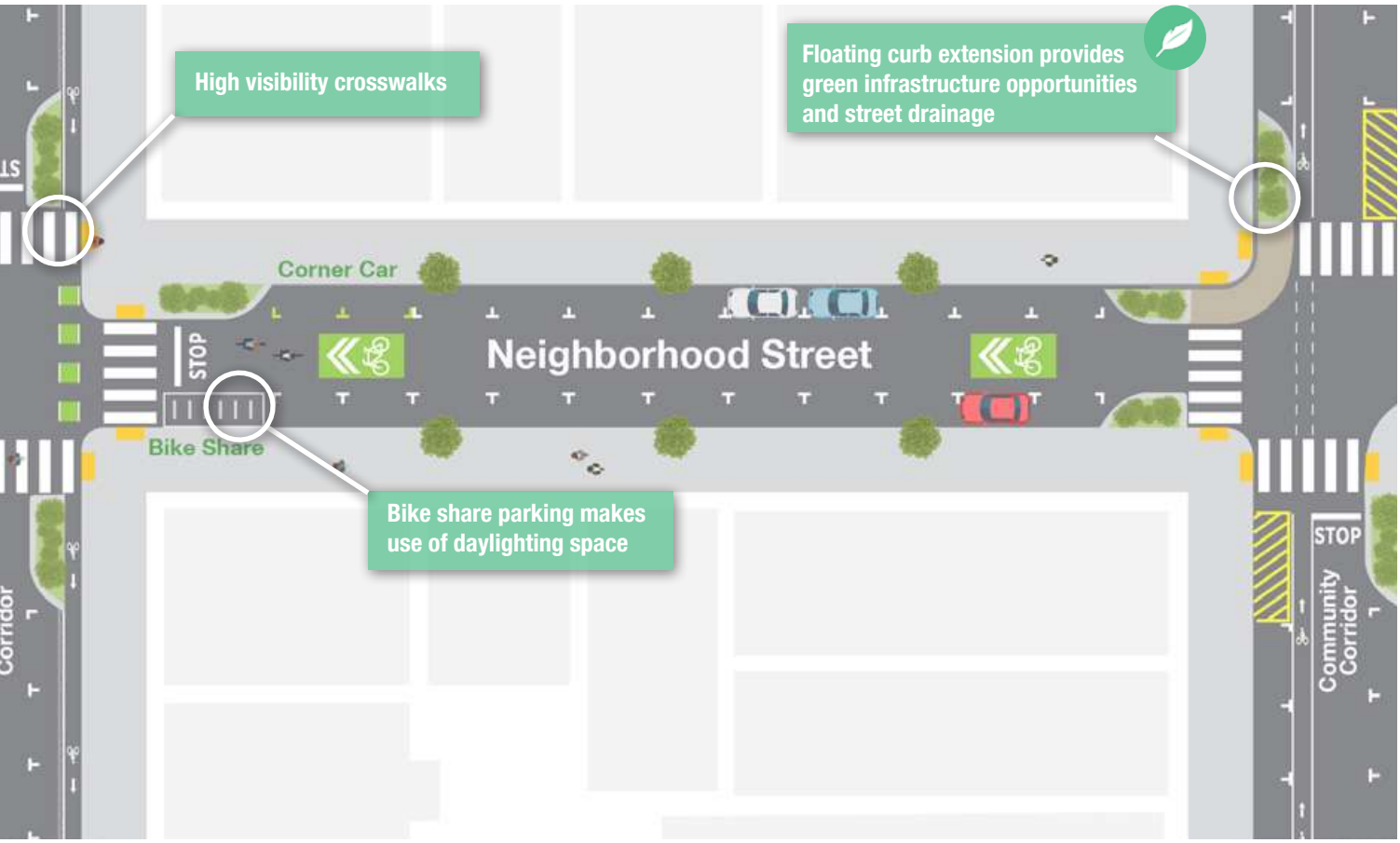
NEIGHBORHOOD STREETS

Figure 6
Neighborhood Streets Future Vision



Characteristics

- Neighborhood streets serve as local neighborhood connections to community destinations. They provide enhanced connectivity and slower travel speeds due to short blocks, narrow right-of-way, and frequent parking. With very limited space available, providing multimodal facilities would require tradeoffs.
- **Typical ROW:** 50 feet (25 to 26 feet curb-to-curb)
- **Local Example:** Most east-west streets
- **Typical Section:** 1 travel lane, sharrows, parking on both sides



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Design Guidelines

Practically, the dimensions of most of these streets are not going to change. With a typical curb-to-curb width of 25 feet, options for dedicated multimodal facilities are limited, as shown above in Figure 6. Changes to accommodate alternative transportation modes include:

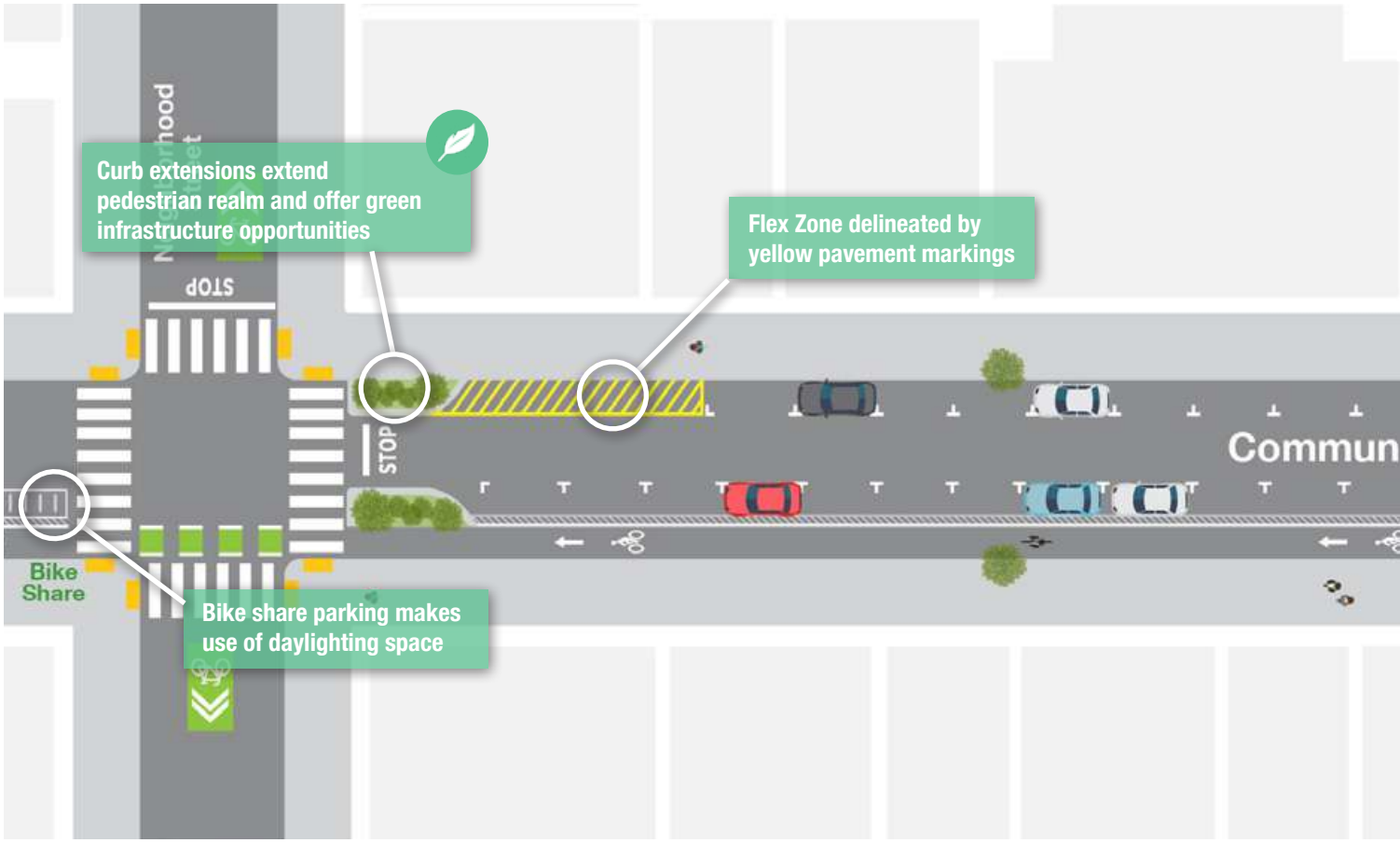
- Intersection daylighting (increase visibililty at intersection by removing obstructions, see page 42)
- Pedestrian signal phasing
- Reduction of double parking
- Repurposed parking areas for dedicated facilities that accommodate bicycling and micro mobility options (i.e., electric scooter and similar devices)

Design Speed

15 mph

COMMUNITY CORRIDORS

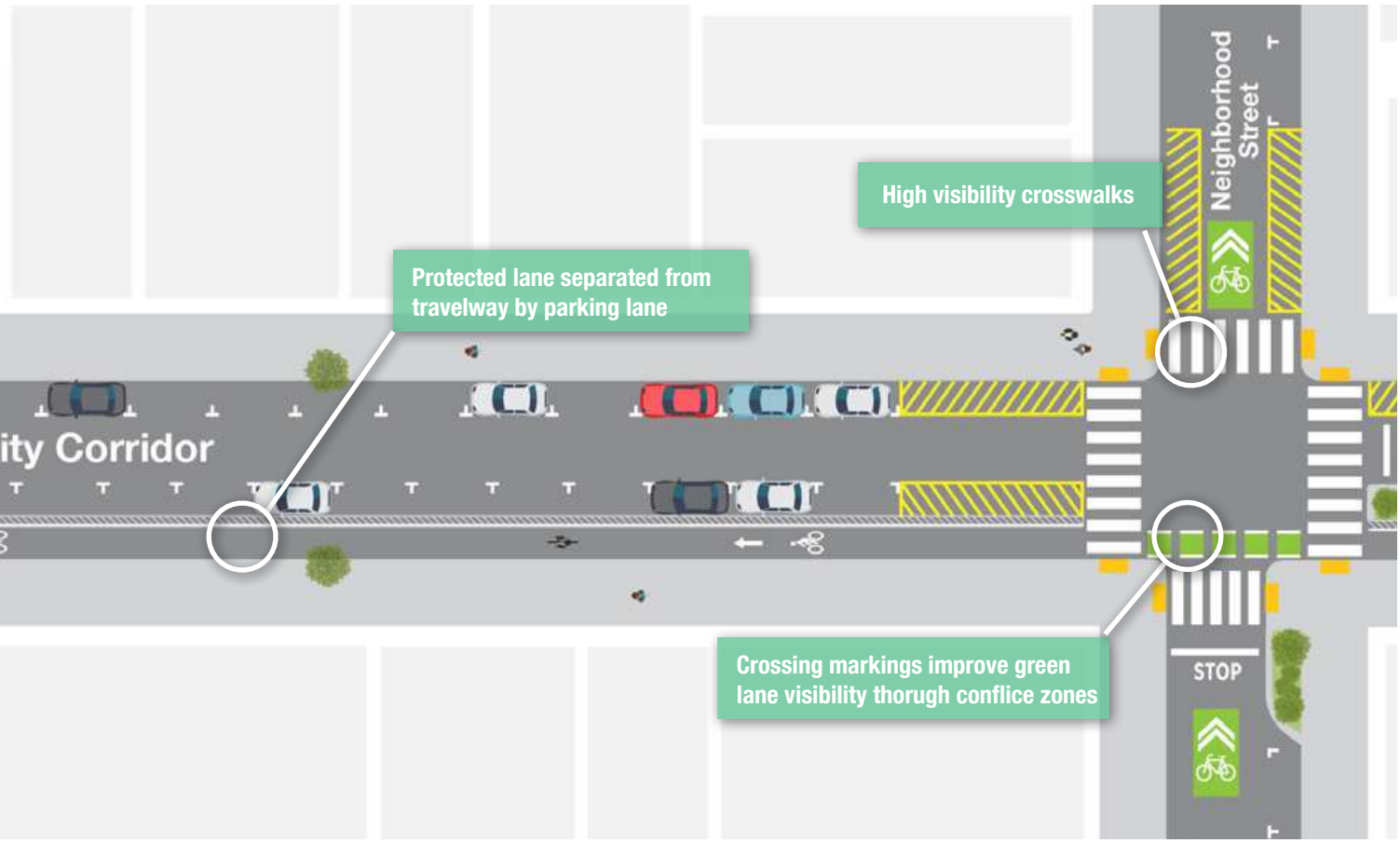
Figure 7
Community Corridors Future Vision



Characteristics

Community corridors connect neighborhoods and serve as primary community streets. Slightly wider right-of-ways allow more flexibility in design. These streets tend to accommodate parking, loading zones, bicycle lanes, and many forms of activities.

- **Typical ROW:** 65 feet (28 to 34 feet curb-to-curb)
- **Local Example:** most north-south streets
- **Typical Section:** 1 travel lane, bike lane, parking on both sides



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Design Guidelines

The slightly wider dimensions (compared to neighborhood streets) provide more flexibility for dedicated multimodal facilities, with most being able to accommodate painted green lanes, as shown above in Figure 7. Changes to accommodate alternative transportation modes include:

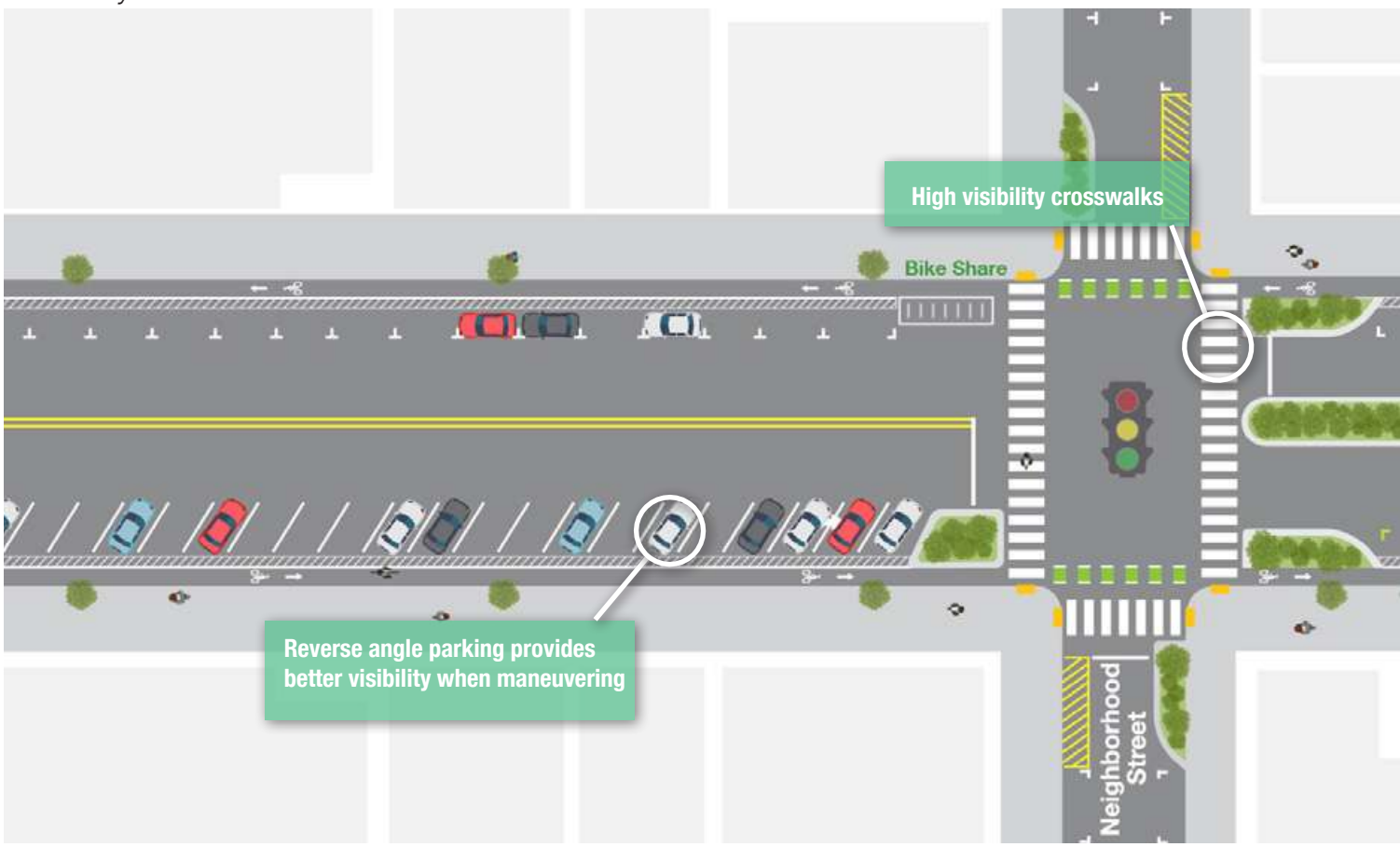
- Formalized parking spaces and pedestrian zone management
- Intersection improvements that accommodate safe turning movements and shortened pedestrian crossing distances

Target Speed

15 to 20 mph

GATEWAY STREETS

Figure 8
Gateway Streets Future Vision



Characteristics

Gateway streets connect Hoboken to points outside the City. Most are under the jurisdiction of Hudson County, so making improvements requires county cooperation. These streets tend to carry higher traffic volumes, accommodate freight traffic, and include one travel lane in each direction.

- **Typical ROW:** 65 to 100 feet (curb-to-curb measure varies)
- **Local Example:** Willow Avenue, Observer Highway
- **Typical Section:** varies, typically 2 to 4 travel lanes

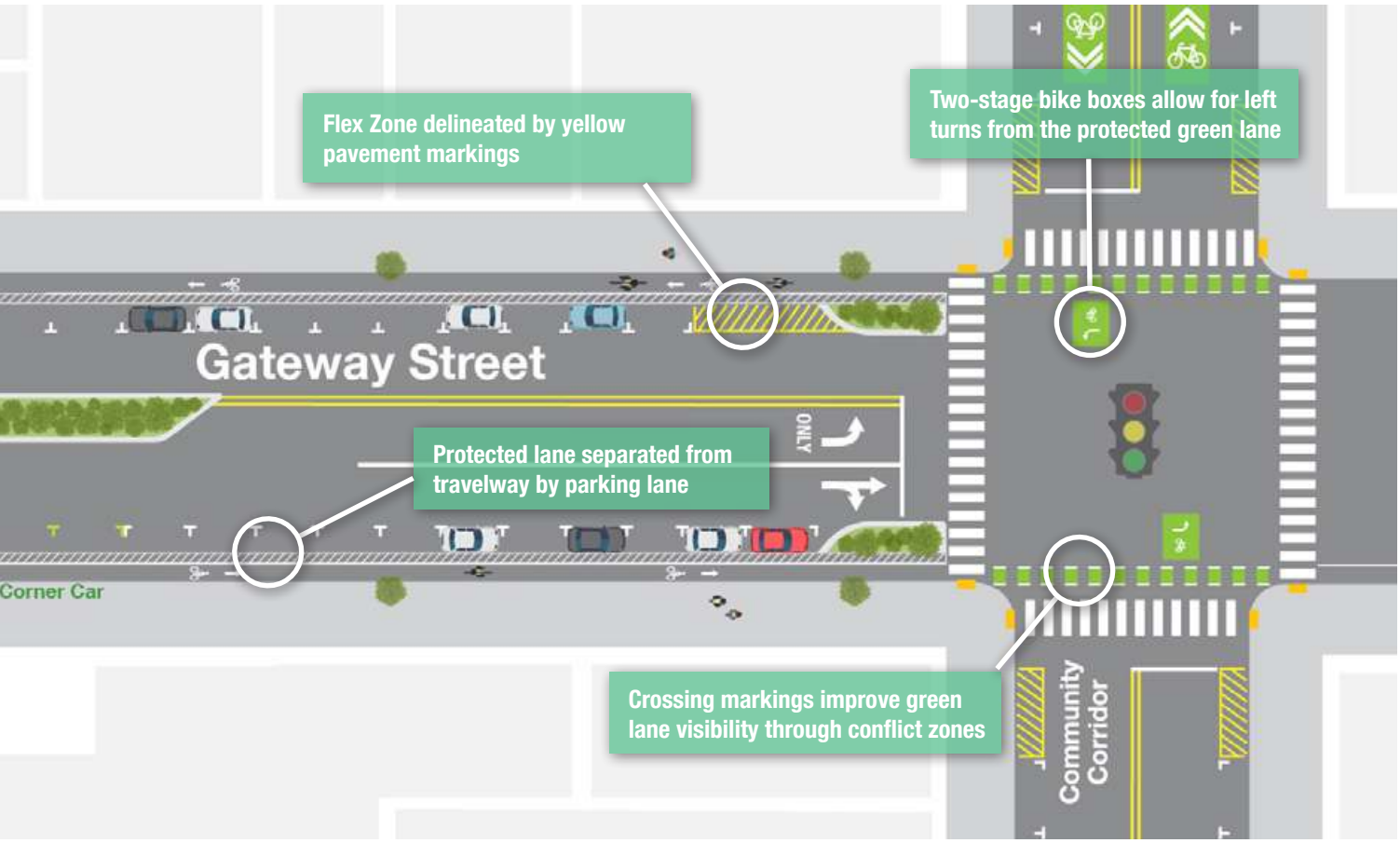


Image for illustration purposes only, not to scale

Design Guidelines

The width of many of the City's gateway streets provides a rare opportunity to accommodate protected multimodal facilities in addition to on-street parking and vehicle lanes, as shown above in Figure 8. Changes to accommodate alternative transportation modes include:

- Provision of high quality green multimodal facilities
- Intersection improvements, such as curb extensions, high visibility crossings, and protected intersections

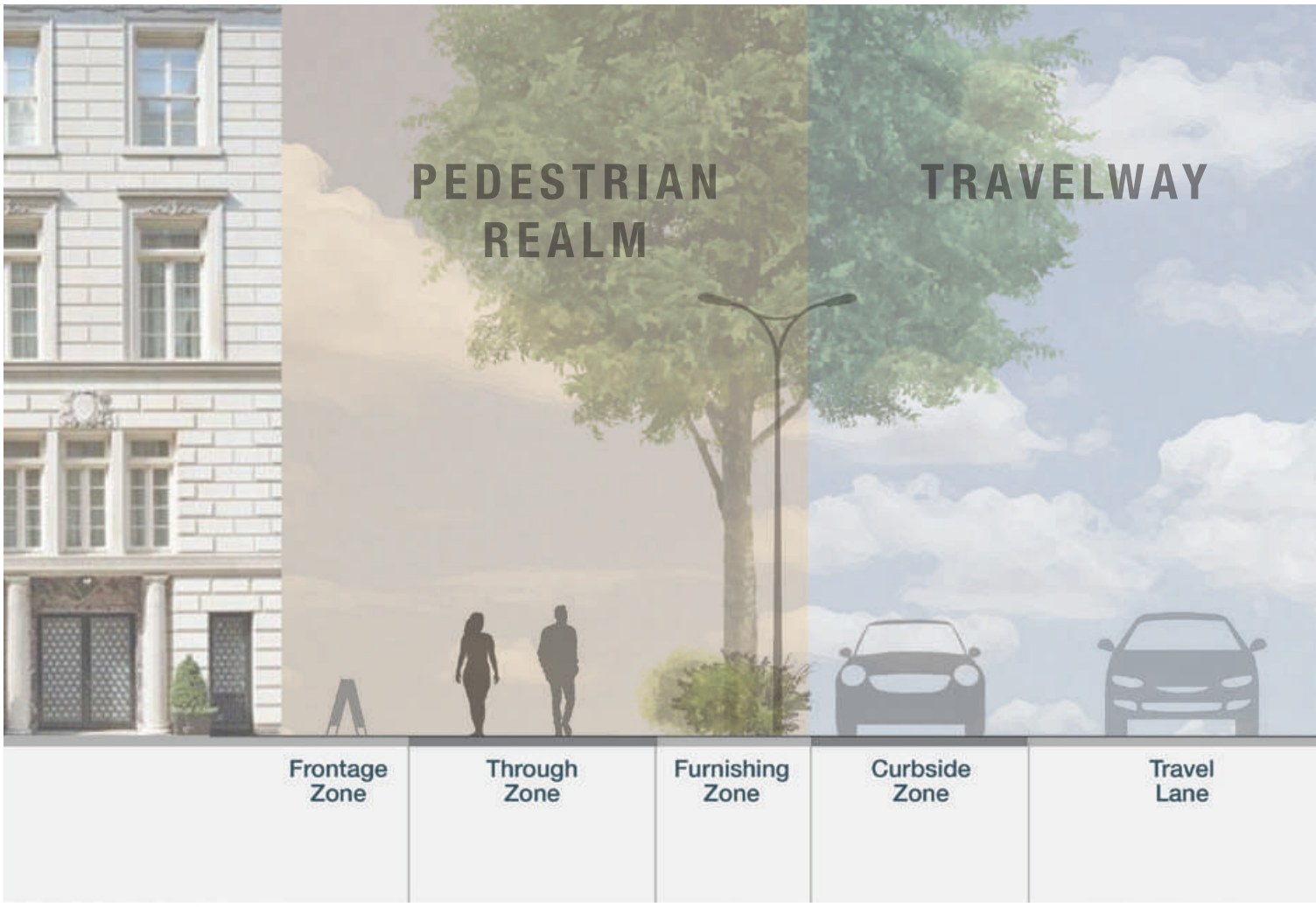
Target Speed

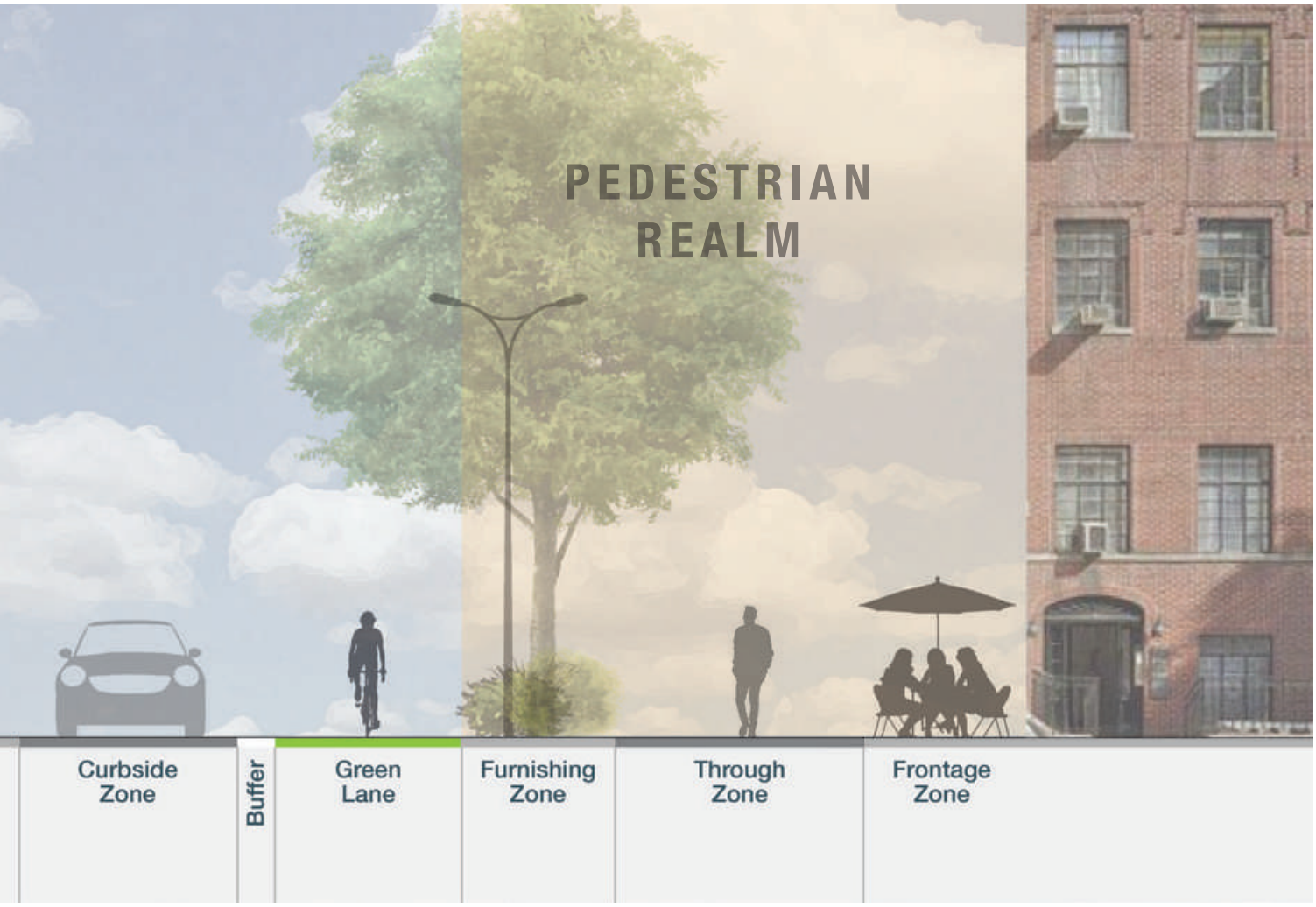
20 mph

Street Design Elements

This Design Guide addresses all elements within the public right-of-way. In Hoboken, this typically includes everything between the building faces on either side of the street, such as sidewalks, street trees and landscaping, parking, green lanes, and travel lanes. In this chapter, each of these elements are examined in detail and specific guidance is provided for each street type. Figure 9 below shows the typical cross-section elements addressed in this plan, with detailed design guidance provided on the following pages.

Figure 9
Street Design Elements

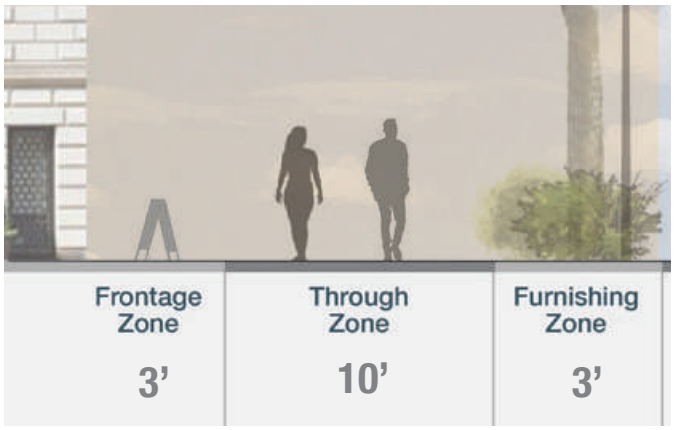



PEDESTRIAN
REALM
Curbside Zone
Buffer
Green Lane
Furnishing Zone
Through Zone
Frontage Zone

Pedestrian Realm

In urban places like Hoboken, sidewalks are often constrained and overcrowded, serving as pedestrian walkways and active public space. Lighting, street trees, benches, trash cans, front stoops, and other public amenities compete for limited space, leaving walkers with whatever space remains. To ensure that adequate pedestrian space remains, guidelines regarding the dimensions of specific pedestrian realm zones should be followed to allow room for amenities and travel, as shown in Figure 10.

Figure 10
Street Design Elements



Pedestrian Realm Desired Width

Frontage Zone

The frontage zone is the area between the building face and the through zone. In Hoboken, the frontage zone often consists of stoops and small fenced-in areas, landscaping, and window wells. For buildings that abut the sidewalk, this zone provides a buffer between residential and commercial building activities (e.g., doors opening, window shoppers, socializing) and through movement along the sidewalk.

Through Zone

The through zone serves as the area dedicated to walking which should be kept clear of obstructions. This area should remain level throughout the block to maintain minimum ADA accessibility standards. As per the ADA, a 5-by-5 feet passing area must be provided every 200 feet to allow wheelchairs to pass on all sidewalks less than 5 feet wide. Driveways and other connecting sidewalks may be used to provide the passing area, if the cross-slope meets ADA standards. The through zone has a minimum dimension organized by street type. Additions to the pedestrian zone should be considered as an incremental addition to this dimension.

Furnishing Zone

The furnishing zone provides a separation between the travelway and through zone, which increases pedestrian safety and creates an inviting walking environment. The furnishing zone may be used for a variety of amenities, including, but not limited to:

- Street trees or green infrastructure features
- Lighting
- Utilities
- Benches
- Bike racks
- Bike share stations or scooter parking
- Public trash cans and USPS mail boxes
- Transit stops and shelters
- Public art

Other Considerations

Curb cuts and driveway openings should be minimized whenever possible to avoid intrusions into the pedestrian realm and maximize pedestrian safety. Where curb cuts are necessary, street furnishings should be minimized to maximize pedestrian visibility on both sides of the opening on two-way streets and before the opening on one-way streets.

Table 3
Pedestrian Realm Design Table

Street Type	Frontage Zone	Through Zone	Furnishing Zone (Priority treatments)
Neighborhood Streets	Use: Stoops, awnings, fenced-in small yards **Width: No more than the maximum width of other stoops on the same block OR 3 feet**	**Desired width: 10 feet** **Minimum width: 5 feet**	**Desired width: 3 feet** **Minimum width: 2 feet** Street trees (mimum 15 square feet tree pit, not wider than the furnishing zone), overhead utilities, bioswales
Community Corridors	Use: Stoops, awnings, fenced-in small yards, landscaping, café seating **Width: No more than the maximum width of other stoops on the same block OR 3 feet**	**Desired width: 10 feet** **Minimum width: 6 feet**	**Desired width: 3 feet** **Minimum width: 2 feet** Street trees (minimum 15 square feet tree pit, not wider than the furnishing zone) Bike racks, decorative lighting, benches, bioswales, trash cans, mailboxes, bike share stations, transit stops, and shelters
Gateway Streets			**Desired width: 3 feet** **Minimum width: 2 feet** Street trees (recommended 30 square feet tree pit, not wider than furnishing zone) Bike racks, bioswales, trash cans, mailboxes, bike share stations, transit stops, shelters, and public art

**Redevelopment may present opportunities to incorporate additional elements to the pedestrian realm in the furnishing zone and frontage zone. These opportunities are encouraged with the understanding that the pedestrian through zone width must be maintained.*

***The dimensions shown in this Design Guide are compliant with the NJDOT Complete Streets Design Guide.*

Pedestrian Amenity Design Guidance

Numerous design elements provide an enhanced user experience within the pedestrian realm. Overviews of elements for consideration are included below. Additional detailed design guidance can be obtained through the resources noted on page 8 and, most notably, in the NACTO guides.

Seating

Seating can be provided via benches or landscape planters with extended edges. Seating should be oriented towards the pedestrian zone, allowing for easy access and focusing views towards passersby. Seats should be placed in either the frontage or furnishing zones to leave the pedestrian through zone clear. Clear space must also be provided to allow for ADA access and for maintenance of both the seating and surrounding items, such as utilities.

Street bench on Washington Street in Hoboken

Lighting

Street lighting is a critical component of a comfortable and safe pedestrian realm. At night, lighting provides a sense of safety to people walking and can illuminate up to an entire block. Light fixtures can also be designed to unify a corridor or district, creating a sense of place. Human-scaled lighting for sidewalks and crosswalks ensures that pedestrians are more visible to motorists and illuminates potential tripping hazards. Human-scaled lighting at bus stops is particularly important.

Historic street light on Washington Street

Street Trees/Landscaping

Trees and landscaping elements provide a buffer between the travelway and the pedestrian realm. Trees that provide a canopy over the travelway can even help to calm traffic by visually narrowing the roadway. Even if right-of-way space is constrained, strategies can be employed to provide functional sidewalk design. Street trees can be placed at regular intervals within the sidewalk as long as adequate clear through zone width is maintained (6 feet preferred, 5 feet minimum) adjacent to the tree well. Green elements are also an important component of stormwater filtration and management. Runoff from the sidewalk and street can be directed into tree trenches and planters, where it will be filtered before trickling into the groundwater or making its way into drainage pipes (see Green Infrastructure for more details).

Photo: Hoboken Street Tree Standards

Pedestrian Wayfinding

Pedestrian wayfinding helps people orient themselves in physical space and navigate from place to place. Wayfinding should include key destinations and attractions with distance and approximate time needed to walk there. Best practice wayfinding systems include 5-, 10-, and/or 15-minute walksheds and "heads-up" orientation from the perspective of the person viewing the sign (i.e., orientation in which the compass directions are rotated to correspond with the direction the person is facing). Signage should be placed at each intersection or at each decision point to guide pedestrians in the right direction.

Wayfinding in Hoboken (Photo: City of Hoboken)

Driveways

From the perspective of the sidewalk user, driveways can significantly impact the pedestrian realm experience. Ideally, the pedestrian through zone area of the sidewalk should remain straight across the driveway with no change in cross-slope. Driveways should not be excessively wide. Curb radii should remain small to slow entering and exiting vehicles. To prevent sidewalk interruptions and to reinforce the priority of pedestrians over vehicles on the sidewalk, a driveway should ramp up to sidewalk level and sidewalk surface materials should continue across the driveway.

Driveway in Hoboken with Through Zone at same elevation as sidewalk

Bicycle and Scooter Parking

Providing ample and secure bicycle and scooter parking is an important component of supporting active mobility. Bicycle and scooter parking racks should be provided in the furnishing zone to avoid conflicts between bicycles and people walking. Where there is sufficient room, bicycle parking can be placed in the frontage zone so that overhangs can provide shelter during inclement weather. The Association of Pedestrian and Bicycle Professionals (APBP) published a Bicycle Parking Guide, which provides detailed design guidance.

Bicycle and scooter parking can also be provided in the curbside zone, specifically in the space on 25 feet on either side of a crosswalk where parking is prohibited. For more information on this, see Curbside Zone Management.

U-bend bike racks in downtown Hoboken

Transit Stops and Shelters

Transit stops are typically found in the pedestrian realm/streetside. Transit stops should include amenities to provide a safe and comfortable environment for waiting riders where space allows, including:

- Benches
- Shelter(s)
- Trash/recycling receptacle
- Bicycle racks
- System/route map
- Real-time information display (bus arrival times), if available
- Lighting
- Local wayfinding displays (for both boarding and alighting passengers, as well as passersby)

A transit shelter and marked bus stop on Washington Street

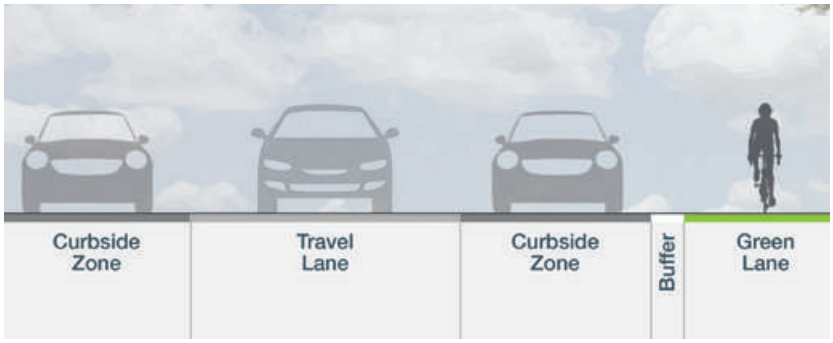
Far-side bus stops are typically preferred to facilitate intersection operations. Crosswalks should be provided close to bus stops. The NACTO Transit Street Design Guide provides guidance on stop lengths, position, and recommended clear distances around stop amenities to remain ADA-compliant. Where there is insufficient space for a shelter, a bus bulb or transit curb extension can be used to increase the sidewalk space available for a bus stop, or to provide ample space for walking in locations where the shelter must be placed in the pedestrian through zone.

Washington Street in Hoboken

Travelway

The travelway consists of everything between a street's curbs, as shown in Figure 11. This space has traditionally been reserved for vehicle travel and parking but Complete Streets recognizes the importance of accommodating multiple travel modes within this space.

Figure 11
Travelway Elements



Curbside Zone

The curbside zone, an area traditionally reserved for parking, is being increasingly reimagined throughout the country. As travelers turn toward shared mobility and away from private vehicle ownership, it is important that this space remains flexible to serve the changing needs of urban residents. In Hoboken, the curbside zone provides space for:

- Parking
- Transit vehicles
- Freight loading and unloading
- Rideshare drop-off and pick-up
- Public space, such as parklets and curb extensions
- Shared mobility, such as bikeshare and corner cars
- Bicycle parking
- Food trucks

In-depth guidance on curbside management and ways to organize these various uses is provided on page 39.

Green Lanes

Multimodal treatments serve to accommodate bicycles, scooters, skateboards, and other forms of active transportation on Hoboken streets. Some separated facilities like painted lanes provide dedicated space, while shared lane markings indicate a shared lane environment that mixes vehicle traffic with non-motorized traffic. Some form of accommodation should be provided on most Hoboken streets, space permitting.

In-depth guidance on Green Lane treatments is provided on pages 35-38.

Travel Lane

In Hoboken, most streets are one-way and consist of a single travel lane; however, there are some exceptions, especially for gateway streets. These exceptions typically have higher vehicle volumes and are major connective corridors. Lanes should be narrow enough to encourage appropriate travel speed but wide enough to preserve emergency vehicle access.

Table 4
Travelway Design Table

Street Type	Curbside Zone			Green Lane	Travel Lane
	Transit Treatment	Parking	Flex Zone/ Shared Mobility		
Neighborhood Streets	Space dedicated to bus pickup/ drop off at all far-side intersections with marked transit stops On streets with Special Focus Overlay, transit only lanes or queue jump lanes may be considered	Parallel parking, 7 to 8 feet width on both sides of the streets, except where preempted by other uses Permeable pavement should be considered	Dynamic spaces that are delineated for freight loading and unloading and rideshare/ taxi pickup and drop off **Guidance: One every other block; located at the beginning or end of parking spaces**	Green-backed shared lane markings recommended	Travel Lane: **Recommended width: 11 feet** **Minimum width: 10 feet** Turn Lane: Not recommended
Community Corridors		Parallel parking, 7 to 8 feet width on both sides of the streets, except where preempted by other uses Permeable pavement should be considered On streets with Mobility Corridor Overlays and with sufficient width, angled parking may be considered		Striped lanes, buffered lanes, or protected green lanes where space permits Permeable pavement in protected bike lanes should be considered **Recommended Lane width: 6 feet** **Minimum: 4 feet** **Buffer or protection width: 3 feet recommended, 1.5 feet minimum**	
Gateway Streets			Not recommended due to traffic volumes, but can be considered on an as-needed basis	Protected bike lanes recommended Permeable pavement in protected bike lanes should be considered **Recommended Lane width: 5 feet** **Minimum: 4 feet** **Buffer or protection width: 3 feet recommended, 1.5 feet minimum**	Travel Lane: **Recommended width: 11 feet** **Minimum width: 10 feet** Turn Lane: Maximum one turn lane per intersection approach if warranted by an engineering study

Travel Lane Considerations

Historically, transportation engineers have mainly considered the needs and safety of vehicle users when designing streets. Today, Complete Streets recognizes that prioritizing the needs of pedestrians, cyclists, and other users when considering roadway design leads to safer, more enjoyable streets for all.

Target Speed

Traditionally, speeds have been designed to carry vehicle traffic as quickly and efficiently as possible. In Hoboken, that model is changing. As streets become more multimodal, protecting non-vehicular travelers is a priority. As vehicle speed increases, a driver's field of vision narrows, stopping distance increases, and the likelihood of injury or death to pedestrians and cyclists involved in a crash increases. Therefore, Hoboken's streets should be designed with target speeds that ensure safe travel for all who use the street.

Table 5

Street Type Target Speed

Street Type	Target Speed
Neighborhood Streets	15 mph
Community Corridors	15-20 mph
Gateway Streets	20 mph

Lane Width

In constrained urban settings, every foot counts. Wide travel lanes encourage speeding, which increases the severity of crashes. Narrower lane widths help improve safety, make streets more welcoming and comfortable to travel for all modes, and reallocate roadway space to ensure all modes receive a share of public space. When existing lanes are wide, the City should consider restriping to allow dedicated space for green lanes or increase pedestrian space when the opportunity presents.

Table 6

Recommended Lane Width

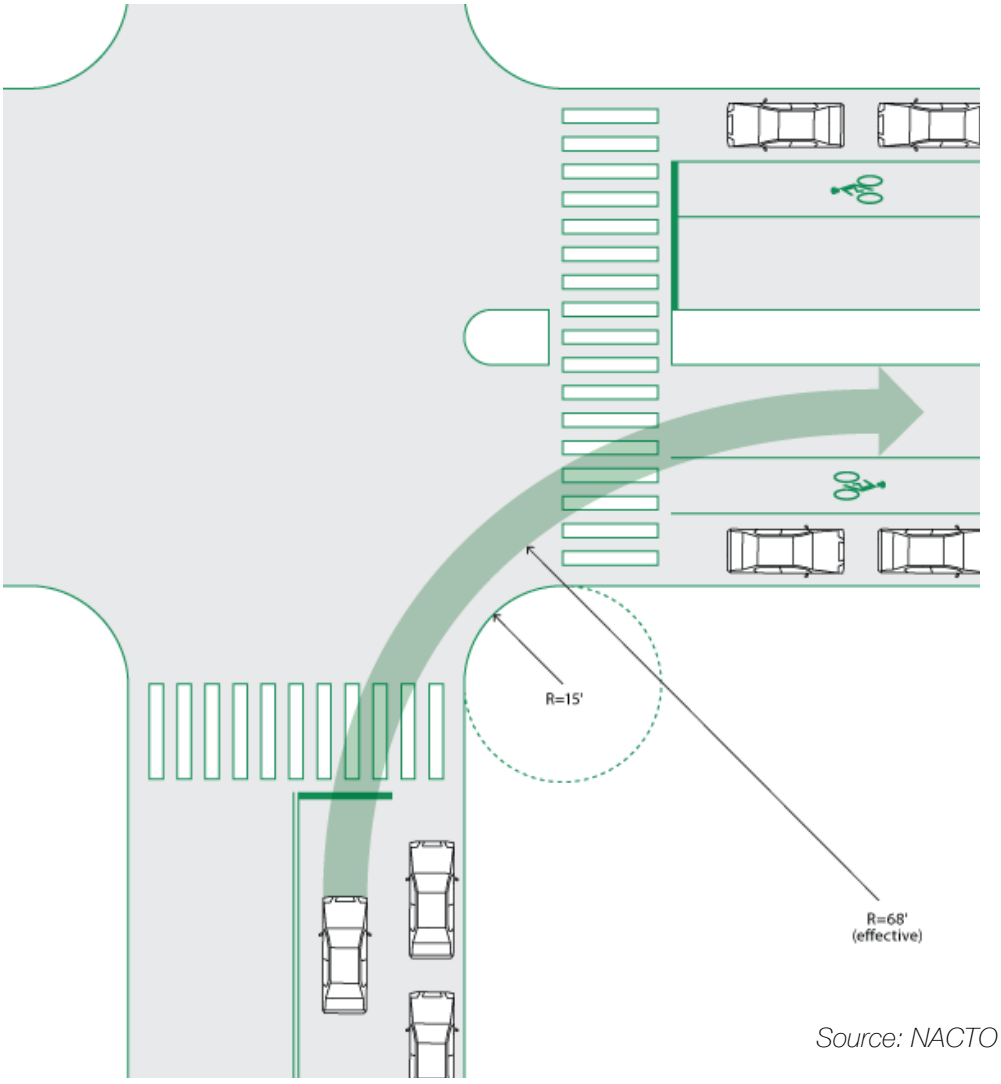
Lane Type	Recommended lane width
Travel Lane	10 to 11 feet
Parking Lane	7 to 8 feet
Green Lane	4 to 6 feet

Curb Radii

The corner radius of a curb directly impacts the turning speed of vehicles and pedestrian crossing distances. Minimizing corner radii creates more compact intersections with increased pedestrian space and ensures that vehicles travel at an appropriate speed to make a deliberate turn, improving safety. In urban settings, a radius of 15 feet is generally preferred and suitable for corridors without high truck volumes. Radii may be increased on freight corridors or frequent bus routes to allow for larger vehicles to safely and comfortably make right turns.

Many of Hoboken's streets may require slightly larger curb radii due to the narrow roadway width and the presence of curb extensions that restrict some turning movements.

Figure 12
Effective Curb Radii



Source: NACTO

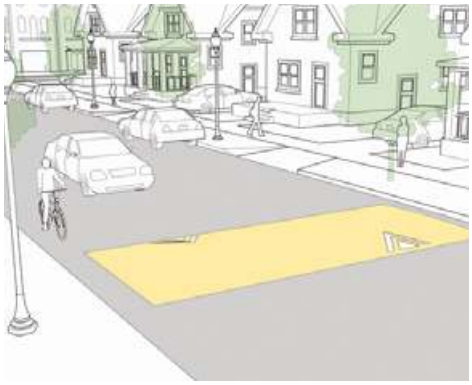
Traffic Calming Toolbox

Traffic calming, sometimes called speed management, is a set of design strategies used to encourage slower speeds and to improve compliance of motorists stopping for pedestrians in crosswalks. Many different design elements can help bring vehicle speeds closer to those of bicyclists to limit conflict between the two modes. Traditionally, treatments have included horizontal (i.e., elements that narrow the travel way) and vertical (i.e., changes to the roadway elevation) deflection to promote slower speeds. A combination of physical design features, signage, and enforcement should be used to ensure that appropriate speeds are observed in priority corridors to maintain the safety and comfort for all users.

The strategies below represent a toolbox of options, with much of the information coming from the NACTO Street Design Guide. Not every treatment is appropriate for every application, but these options show alternatives that may be applied to limit travel speeds in Hoboken.

Speed Humps

Speed humps are raised traffic calming devices intended to slow traffic speeds. They are typically 3 inches to 4 inches high and as wide as the travel lane. On streets with dedicated green lanes, they should not extend into those facilities to allow cyclists to pass unimpeded. **Recommended on neighborhood streets and community corridors when warranted by an engineering study.**



Speed hump (NACTO)

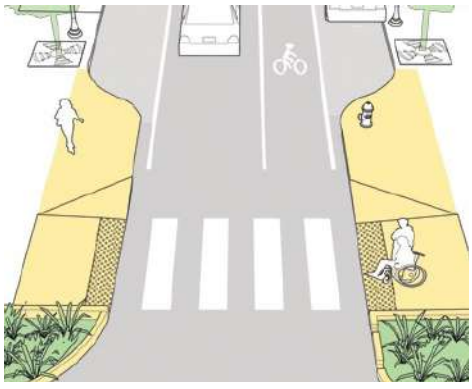
Raised Crosswalks/Intersections

Raised crosswalks or raised intersections require vehicles to slow down while crossing and provide a level pedestrian crossing experience. They may be used to improve safety at crossings where pedestrian crashes have previously been observed. Alternative pavement surfaces, such as stamped concrete, may be used to call additional attention to these locations and aid in traffic calming. Permeable pavement may also be considered to provide green infrastructure opportunities. **Recommended on neighborhood streets and community corridors near schools, parks, or other areas where lower travel speeds are desired.**

Raised Intersection (NACTO)

Curb Extensions

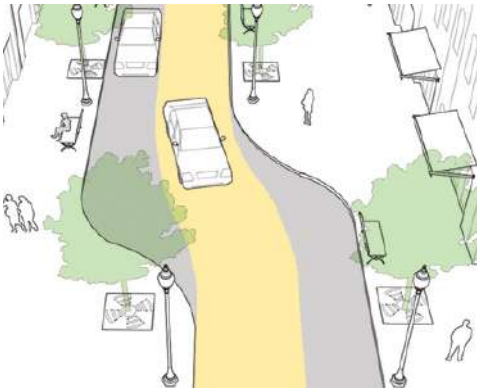
Curb extensions, which may be installed at intersections or in conjunction with a mid-block crossing, narrow the travel way and reduce pedestrian crossing distance. They may also provide opportunities for green infrastructure investments. **Recommended on all streets where intersection geometry allows.**



Curb Extensions (NACTO)

Chicanes

Chicanes use curb extensions to alternate parking from one side of the street to another, creating an s-shaped travelway. The curve of the road requires motorists to slow down, while the curb extensions create additional pedestrian space and allow the installation of green infrastructure. **Recommended on all streets where parking may be removed on one side of the street.**



Chicanes (NACTO)

Pinchpoints

Pinchpoints use curb extensions and mid-block crossings to visually narrow the roadway mid-block. **Recommended on streets with mid-block crossings.**

Pinchpoints (NACTO)

Neighborhood Traffic Circles

Neighborhood traffic circles are smaller than modern roundabouts and are installed at minor street crossings and require vehicles to slowly navigate the traffic circle. They should be installed using mountable curbs to allow larger vehicles and emergency responders to navigate the tight turning radius. **Recommended at neighborhood street crossings and community corridors where intersection geometry allows.**

Street Trees

Street tree installation creates a strong vertical edge to the roadway, reducing observed roadway speed by visually narrowing the roadway. Increasing the number of trees and other vertical streetscaping elements along Hoboken roadways may aid traffic calming efforts, which supports the primary goal of making corridors more livable, visually pleasing, and more sustainable. **Recommended on all streets with sufficient sidewalk width.**

Neighborhood Traffic Circle (NACTO)

Other Considerations

Before traffic calming measures are implementeed, engineering studies need to be completed to determine the best solution for each road. Any improvements should be finalized in coordination with the City's police and fire departments. While traffic calming works toward the overall goal of increased safety, it is critical to maintain emergency vehicle access on all corridors.

Green Lanes: Travelway Treatments

While these facilities were thought of solely as bicycle lanes in the past, they have been reimagined as broad purpose "green lanes" to be used by mid-speed travel modes that should be kept separate from pedestrians and motor vehicles. These modes include bicycles, skateboards, scooters, and e-mobility devices. The various street types offer the opportunity to identify specialized facility types based on the street's width and appropriate use.

Shared Lane Markings

These markings indicate a shared lane situation between motorists and other travelers. They should be used on streets where right-of-way does not allow a dedicated facility and low vehicle volumes do not present significant safety challenges for mixed traffic.

- **Design Guidance: Preferred placement in center of travel lane, every 50 feet along busy streets or every 250 feet for lower traffic routes. Markings may be painted with a green backing to improve visibility.**
- Recommended on neighborhood streets and streets with less than 28 feet from curb to curb.

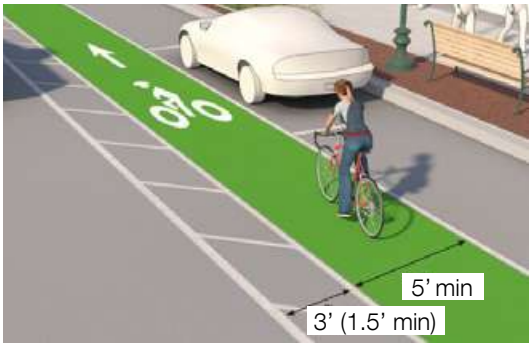
Green-backed shared lane markings

Striped and Buffered Lanes

These lanes designate an exclusive space with pavement markings and signage.

- **Design Guidance: On one-way streets, the lane should be located on the left side of the travel line, to the right of parking to minimize potential door conflicts with parked vehicles.**
- A desired minimum is 14.5 feet from the face of the curb to the inside edge of the bike lane when placed adjacent to parking. Lanes next to parking shall be a minimum of 5 feet wide. Green lanes should be delineated with 8-inch white solid lines on the inside and 4-inch white solid lines on the outside of the bike lane and bike symbol markings.
- Solid colored pavement markings (typically green) may be used in high traffic areas or within conflict areas to maximize visibility and draw attention to the lane's purpose.
- Where space is available, painted buffers should be added to improve protection and increase space between lane users and motorists. Buffers should be a minimum of 1.5 feet and shall be striped with diagonal cross hatching in the direction of traffic at distances of 10 to 40 feet. Refer to NACTO guidance for details.
- Recommended on community corridors and streets with at least 30 feet of curb-to-curb space.

A striped lane along Washington Street

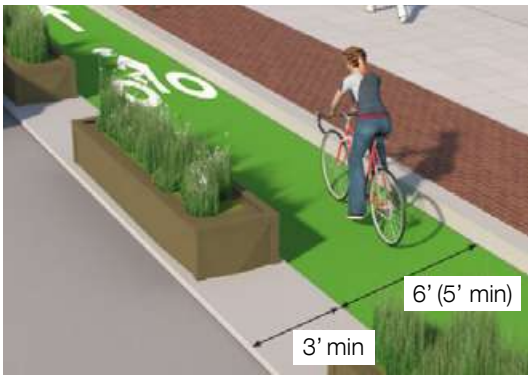


Buffered lanes with diagonal cross hatching (Source: NJDOT)

Protected Lanes

These are conventional green lanes paired with a physical barrier separating the lane from the adjacent motor vehicle travel lane and/or parking lane. These are highly desirable when roadway width allows, on high-speed or high-traffic roadways and in locations without many curb cuts to allow for uninterrupted travel.

- **Design guidance: Minimum width for a one-way protected lane is 5 feet, with 1.5 feet to 3 feet of buffer space. In parking protected lanes, the combined width of the green lane and buffer lane should be 11 feet and a minimum of 7 feet.**
- The desired width for two-way protected cycle tracks is 12 feet, with a minimum width of 8 feet in constrained locations.
- Forms of protection may include movable bollards, concrete medians that are at least 15 inches thick, or temporary planters. Lanes may also be placed against the curb protected from moving traffic by parked cars. When this occurs, a painted buffer of 3 feet is recommended to protect active travelers from car doors.
- Recommended on gateway streets, mobility corridors, and community corridors with at least 33 feet of roadway space.



Protected bike lane dimensions (Source: NJDOT)

A two-way protected cycle track on Observer Highway

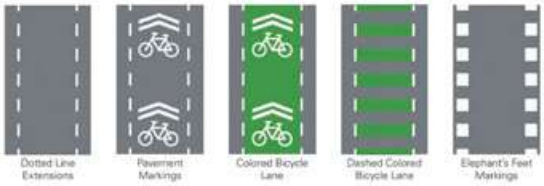
Green Lanes: Intersection Treatments

Intersection Crossing Markings

Green pavement markings through intersections indicate the intended path through an intersection or across a driveway or ramp.

- **Design guidance: Dotted lines should bind the crossing space, with striping width being a minimum of 6 feet adjacent to motor vehicle travel lanes and matching the width and positioning of leading bike lane striping. Markings should be 2-foot lines with 2 to 6 feet of spacing between. Crossing width should match the width and positioning of the bike lane.**
- Markings should be white, skid resistant, and retro-reflective.
- As a preference and added safety measure, colored pavement (typically green) may be used in high-traffic situations and uncontrolled intersections to further delineate the green lane and maximize visibility.
- Chevron markings may also be used for increased visibility across an entire intersection. See graphic at right for marking options.
- Recommended at all intersections where a green lane is present on the approaching and receiving leg.

Above: Crossing markings guide bicyclists through a Washington Street intersection. Below: Options for crossing markings (NJDOT)

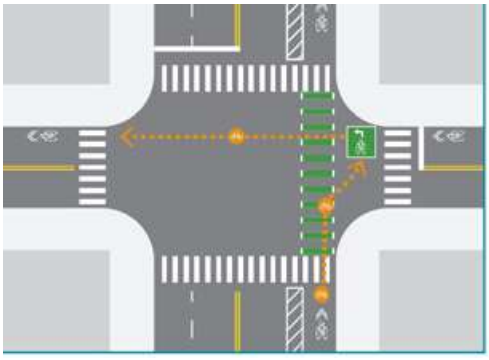


Bike Box

A bike box designates an area at the head of a traffic lane at a signalized intersection that provides non-vehicular travelers safety and visibility when getting ahead of queuing vehicle traffic during the red signal phase.

- **Design guidance: A box formed by transverse lines should be used to hold queuing cyclists and other travelers, typically 10 feet to 16 feet deep. Stop lines should be used to indicate the point behind which motor vehicles are required to stop in compliance with a traffic control signal.**
- Colored pavement markings (typically green) may be used to further delineate the box and maximize visibility and safety.
- Two-stage turn queue boxes may be used with protected bike lanes at signalized intersections. See NACTO Urban Bikeway Design Guide or NJDOT Complete Streets Design Guide for specific design guidance.
- Recommended at signalized intersections where there are high turning movement volumes.

A bike box allows cyclists to turn left in front of vehicles. Photo: NJDOT



A two-stage turn queue bike box allows for left turns from protected bicycle lanes. Photo: NJDOT

Combined Green Lane/Turn Lane

A combined green lane/turn lane creates a mixing zone within a dedicated motor vehicle turn lane to preserve the turn lane and multimodal facility where space is constrained.

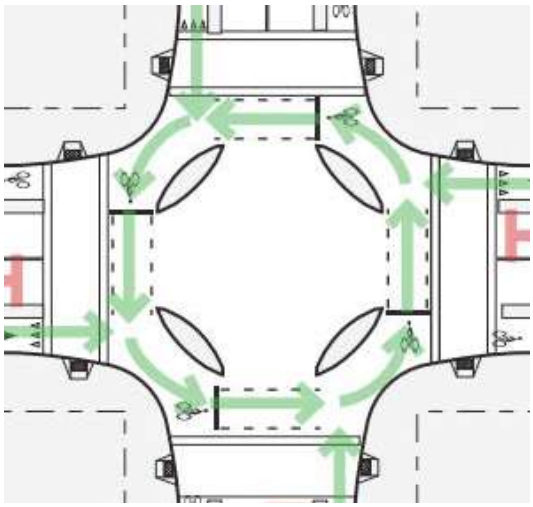
- **Design guidance: Some form of shared lane marking should be used to clarify desired positioning within the combined lane. A 4-foot minimum is suggested for the marked multimodal lane, with 9 feet to 13 feet total width in the turn lane.**
- Should be accompanied by signage to designate lane use and may be accompanied by hashed colored pavement to call attention to the nature of the mixed traffic.
- Recommended at all intersections at which a green lane continues through, a right-turn lane is present, and roadway width is constrained.

A way to preserve dedicated bicycle space where turn lanes are needed. Photo: NACTO

Protected Intersections

Protected intersections use corner refuge islands and colored pavement to create a safe pathway for cyclists through signalized intersections, separated from vehicle traffic. This treatment is relatively new to the U.S. and has been implemented in only a handful of locations around the country. As such, no standard design criteria has been widely adopted. These treatments should be considered at intersections where two protected green lanes meet and where intersection geometry allows for installation of concrete traffic islands without impeding vehicle movements.

- **Design guidance: Should include a leading bicycle signal phase to allow for added separation from vehicle traffic. Size of concrete traffic islands will vary based on intersection geometry and turning movements.**
- Recommended at the signalized crossing of two, two-way gateway streets or special focus overlay streets with dedicated facilities. Each individual crossing will need to be uniquely designed to ensure the resulting geometry allows sufficient turning space while preserving protection for active transportation users. This treatment is likely unnecessary on lower-traffic roadways.



A diagram of a protected intersection. The concreted traffic islands allow for two-stage left turns by cyclists. Photo: ourstreetsmpls.org

Curbside Zone Management

Curbside space plays an important role in a city's transportation system and the competition for this scarce resource has only become more intense in recent years. While traditionally the curbside has accommodated parking, increased freight and delivery activities and the introduction of rideshare, carsharing, and e-mobility activities have created new demands on curbside space. These shared mobility additions require a new strategy for how to best design and manage the curbside zone.

Parking

Parallel on-street parking is present on both sides of almost every block in Hoboken and is regulated 24 hours per day. A typical street will have resident permit-only parking on one side and a combination of resident permit parking and paid visitor parking with a four-hour limit on the other side. Paid parking on both sides of the street is common on blocks with significant commercial activity. Limited instances of back-in angled parking exist as well on commercial corridors.

Metered parking in Hoboken.

- **Design Guidance: Parallel parking may be provided at a 7-foot to 8-foot width on both sides of the streets, except where preempted by another use. Spaces may be delineated by pavement markings (e.g. ,T-stripes) at 18 feet to 20 feet in length to minimize double parking and encourage efficient use of the block length.**
- Pavement marking should be used to indicated where parking is prohibited. For instance, diagonal stripes should be used to indicate a flex zone, yellow painted curbs indicate conditional/temporary no parking restriction, and red painted curbs indicate parking prohibited at all times.
- When parking spaces are delineated, the pavement markings should indicate the beginning and end of the permitted parking area, thereby eliminating the need to specifically mark driveways.
- Permeable pavement should be considered within the parking lane where possible to improve stormwater management capabilities.
- Hoboken prohibits parking within 15 feet of the outbound leg of a crosswalk and 25 feet of the inbound leg.
- Recommended on neighborhood streets, community corridors, and gateway streets.

Integrating Technology

The curbside zone is a natural place to integrate innovative technology and mobility modes. Electric vehicle charging stations, interactive kiosks, e-mobility, and autonomous vehicles are all very real elements of the 21st century streetscape, with new innovations continually on the horizon. The City should monitor current trends and demand and remain flexible to adapting its curbside management priorities as technology advances and travel options change the way residents interact with the street.

Transit

Space along the curb should be reserved where necessary for buses to pull over and pick up passengers without blocking through travel. This movement must be accommodated at intersections with marked transit stops.

- **Design Guidance: Where possible, stops should be located at the far side of intersections on the right side of the street, before parking or other uses begin. Typically between 40 and 80 feet of clear space is needed, but stop placement and configuration should be coordinated with transit providers.**
- Shelters and other amenities should be provided wherever possible and where space is available to accommodate them without encroaching on the pedestrian through zone.
- Pavement in front of bus stops should be painted red and clearly marked to identify the area as a no parking zone.
- For additional transit stop guidance, see the NACTO Transit Design Guide or NJDOT Complete Streets Design Manual.
- Recommended at all marked transit stops.

Curbside transit pickup on Washington Street.

Flex Zone

Flex zones (similar to traditional loading zones) are used to reserve some of the City's valuable curbside space for freight and passenger loading and rideshare passenger pick-up and drop-off. Having designated space for these activities prevents street blockage by trucks, transit vehicles, and ride sharing services. These areas may be flexible for special uses temporarily, such as mobile vendors and parklets, and may revert back to permit parking after a certain time each day.

- **Design Guidance: Minimum of 40feet, recommended 60 feet at the beginning or the end of on-street parking and should not encroach on daylighting areas. Location may be changed to accommodate location specific needs.**
- Through a partnership with rideshare companies, these zones may become designated rideshare pick-up and drop-off areas to encourage these activities to take place at these locations rather than block street operations.
- Recommended on neighborhood streets and community corridors.

A traditional loading zone well delineated by pavement markings.

Corner Cars

Hoboken currently dedicates curb space to its successful Corner Cars program, which provides shared vehicles for rent. Making this option visible and readily accessible aids in providing alternatives to car ownership in a compact urban environment.

- **Design guidance: Reserve 1 to 2 parking spaces at the end of a parking lane at a frequency determined by demand.**
- Recommended on neighborhood streets and community corridors

Corner Cars program parking

School Zones

School zones provide dedicated space and policies for the typical movements that accompany school operations. This includes dedicated pick-up and drop-off zones with parking restrictions during certain hours.

- **Design guidance: Prohibit parking with signage along the entire block face during school hours (e.g., No parking 7 a.m. to 5 p.m. on weekdays). Block faces adjacent to school buildings should include extended flex zones to preserve loading capabilities even while parking is allowed. Enforcement of these regulations should be heavily emphasized.**
- Recommended on community corridors and gateway streets adjacent to elementary, middle, and high schools

A school zone prohibits parking during school hours.

Special Uses

Parklets and mobile vendors extend the public realm into space traditionally reserved for on-street parking. These additions may be temporary or permanent and may be public or private. These uses provide valuable opportunities to enhance the public realm with the constrained right-of-way and should be encouraged in the more heavily commercial areas of Hoboken. Applications for special uses should be considered on a case-by-case basis.

A public parklet as part of Seattle's established parklet program. Photo: Seattle DOT

Intersection Daylighting

Daylighting an intersection refers to providing a clear zone on intersection approaches by prohibiting parking for a certain distance on either side of crosswalks. This improves pedestrian visibility and provides many opportunities to enhance the streetscape and mobility of the overall corridor through additional amenities, such as shared mobility options, green infrastructure, and additional pedestrian space.

- **Design Guidance: As shown in Figure 13, parking is prohibited within 15 feet of the outbound leg of a crosswalk and 25 feet of the inbound leg. This space, with a width matching the existing parking lane, should be designated for use by one of the uses below.**

Traditional daylighting treatment

Traditional Intersection Daylighting

Hoboken's traditional intersection daylighting practice uses pavement markings and movable bollards to block vehicles from parking in that area.

Bicycle and Shared Mobility Parking

Bicycle parking corrals and designated shared mobility parking areas (such as bike share and e-scooters) can use the curbside space within the intersection daylighting area. This provides convenient and visible space for these options, maintains consistency, and preserves valuable pedestrian space. Refer to the City's Bike Corral Application for additional siting requirements.

Bicycle parking within the daylighting area

Curb Extensions

Curb extensions may be installed to extend the pedestrian space into the travelway, shorten crossing distances and turning radius, and improve pedestrian visibility. Curb extensions may be comprised of a variety of materials, including movable bollards for short-term or pilot projects, an epoxy surface treatment where turning radius is a concern, and full-scale extensions of the concrete pedestrian realm for permanent treatments where turning geometry allows.

Green Infrastructure

Curb extensions often provide the opportunity to install engineered bioswales or permeable pavement within the right-of-way to aid in drainage and stormwater management. Where bioswales are installed, care must be taken to ensure that adequate clearance and space is provided at the corner to allow pedestrians to wait. More detailed guidance is provided in the section on Green Infrastructure.

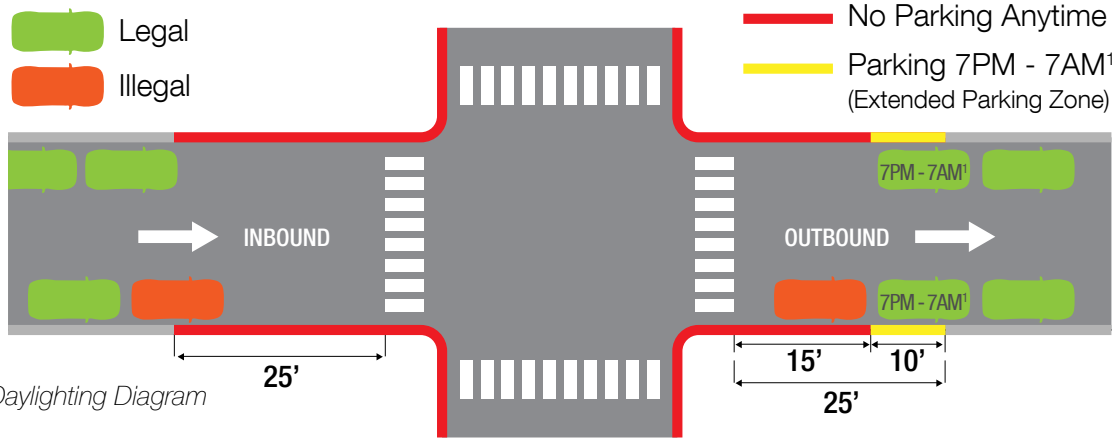


Figure 13: *Daylighting Diagram*

Intersection Toolbox

Many intersections in the City represent an opportunity to improve safety, aesthetics, and mobility by applying different Complete Streets treatments. Not every treatment is appropriate in every location, so the list below should be thought of as a toolbox of options. Though some suggestions are provided for priority locations, each intersection should be evaluated to determine the appropriate course of action.

Typical Treatments

The treatments below are generally inexpensive and can be deployed relatively quickly in conjunction with other street improvements. Many only involve changes to the roadway markings or a few roadway bollards. These should be considered for wide deployment throughout the City wherever possible to improve bicycle and pedestrian safety.

Photo: Civic Eye Collaborative

Intersection Crossing Markings

Where painted green lanes are present, these markings indicate the intended path of bicyclists through an intersection and serve as a boundary between the paths of motorists and bicyclists.

Photo: NACTO

Combined Bike Lane/Turn Lane

Used in areas with constrained space, this provides a suggested bike lane within the inside portion of dedicated motor vehicle turn lane. When used properly, this treatment maintains bicycle guidance where turn lanes are needed while providing adequate vehicle capacity where turning movements necessitate. This may be applicable on some of the City's gateway streets.

Photo: NACTO

Bike Boxes

Where painted or buffered green lanes are present, these markings create a designated area at the head of a traffic lane at a signalized intersection that provide bicyclists with a safe and visible way to get ahead of queuing traffic during the red signal phase.

Photo: NJDOT

Two-Stage Turn Queue Bike Boxes

Two-stage turn queue bike boxes should be used with protected bicycle facilities to allow for safe left turns at signalized intersections. These treatments provide safe places for cyclists to pull out of the through-lane and proceed when the signal changes.

High Visibility Crossings

These crossings can be created through a variety of means including ladder, zebra, or continental striping, textured paving materials, or supplemental signage or signalization (especially at mid-block locations).

Intersection Daylighting

Intersection daylighting provides a clear zone at intersection approaches by prohibiting parking for a certain distance before the intersection. This may be done via on-street pavement markings and bollards or by using engineered bioswales to improve aesthetics and drainage. This improves visibility of the crosswalks and street and increases pedestrian safety.

Signal Phasing

Signalized intersections should include a leading pedestrian interval to allow pedestrians to enter the crosswalk ahead of motorists, lending them additional visibility. “No turn on red” signs should be considered at all signalized intersections. In the case of protected intersections or protected green lanes, leading bicycle intervals may be introduced.

Special Treatments

The intersection treatments below should be considered in special cases to elevate the priority of an intersection. These treatments require a greater investment but provide a greater aesthetic, safety, and mobility benefits to set these locations apart from the network as a whole. These treatments should be considered at the intersection of special focus overlay streets or near schools and parks to create a comfortable walking and biking environment. Most of the listed treatments can be found in the NACTO Street Design Guide for additional information.

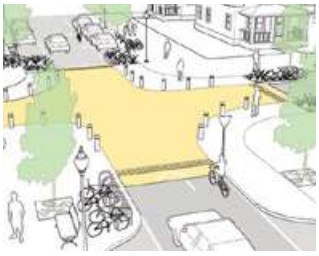


Photo: NACTO

Raised Intersections

Raised intersections are created by raising the intersection to the same elevation as the sidewalk. These features can be used as an entry treatment to indicate that drivers are transitioning to a more pedestrian friendly environment. If an alternative surface treatment is desired, permeable interlocking pavers may be considered for added green infrastructure benefits. See Traffic Calming Toolbox for more information.

Photo: NACTO

Curb Extensions

Curb extensions are created by extending sidewalks at corners or midblock and are intended to increase safety by improving visibility at crossing locations, calming traffic, and providing extra space along sidewalks for users and amenities (trees, drainage, public art, etc.). Curb extensions also provide excellent opportunities to install bioswales or other green infrastructure to improve drainage and stormwater management.

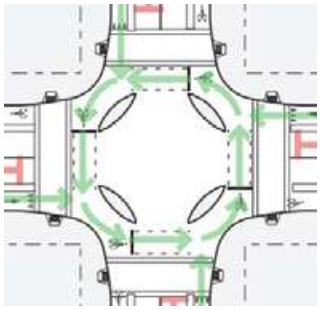


Photo: Ourstreetsmpls.org

Protected Intersection

Protected intersections use corner refuge islands and colored pavement to create a safe pathway through intersections that are separated from vehicle traffic. The opportunity for protected intersections in Hoboken may be limited by available space but should be considered where two perpendicular protected multimodal facilities meet at a signalized intersection.

Photo: NACTO

Neighborhood Traffic Circle

Neighborhood traffic circles encourage lower traffic speeds through intersections and ideally are installed at uncontrolled intersections. They may be as simple as painted pavement markings or may include concrete islands and plantings to improve drainage and streetscape. Neighborhood traffic circles do not modify the intersection geometry but should be installed only where adequate turning radius for emergency vehicles can be maintained. For this reason, mountable curbs are often used.

Source: City of Jersey City

Intersection Art

Painted pavement provides an affordable and simple way to involve the community in placemaking and street improvement projects throughout the City and to promote neighborhood identity. Generally, intersection artwork should be limited to locations where stop conditions apply and where speeds do not exceed 30 mph. Places such as Denver and Seattle have developed application processes with general guidelines to ensure this activity is accomplished safely.

Source: NYC.gov

Left Turn Calming

Left turn calming is a New York City initiative aimed at reducing left turn speeds and intersection crashes. In most intersections in Hoboken where two one-way streets intersect, the treatment would include a painted or concrete wedge inside the intersection, potentially coupled with flexible bollards. This should be installed where crash numbers or turning movements warrant such a treatment.

Other considerations

Transit stops

Adequate space should be reserved at intersections with marked transit stops for buses to pull over and drop off/pick up passengers without blocking through travel. Ideally, this should be located on the far side of intersections before parking or other uses begin.

Shared Mobility/Corner Car

Shared mobility areas provide space at intersections for the storage of shared mobility options, such as car sharing vehicles, bike share parking, and e-mobility options. Providing convenient space for these options helps reserve valuable pedestrian space and provide consistency. Space should be reserved every one to two blocks for shared mobility applications.

Green Infrastructure/Drainage

Curb extensions provide a unique opportunity to incorporate green infrastructure and improved drainage into the street design. When any intersection change is considered, the location of existing drainage should be reviewed so as to not disrupt current stormwater impacts.

Menu of Options

Table 7 lists some possible intersection treatment options for each type of intersection. Each intersection is unique with different geometries, traffic volumes, crash history, and surrounding land uses, so specific solutions should be evaluated at each individual location.

Table 7

Street Type Intersection Options

		Street 1			
		Neighborhood Streets	**Community Corridors**	**Gateway Streets**	**Special Focus Overlays**
Street 2	**Neighborhood Streets**	• Raised Crosswalks • Curb Extensions	• Bike Boxes • Intersection Crossing Markings • Left-Turn Calming • Curb Extensions	• Bike Boxes • Intersection Crossing Markings • Curb Extensions	• Bike Boxes • Intersection Crossing Markings • Raised Intersections • Curb Extensions
	Community Corridors		• Bike Boxes • Intersection Crossing Markings • Neighborhood Traffic Circles • Curb Extensions	• Bike Boxes • Intersection Crossing Markings • Combined Bike Lane/ Turn Lane • Left-Turn Calming • Curb Extensions	• Bike Boxes • Intersection Crossing Markings • Raised Intersections • Curb Extensions • Neighborhood Traffic Circles
	Gateway Streets			• Bike Boxes • Intersection Crossing Markings • Combined Bike Lane/ Turn Lane • Left-Turn Calming • Curb Extensions • Protected Intersections	• Bike Boxes • Intersection Crossing Markings • Left-Turn Calming • Curb Extensions • Protected Intersections
	Special Focus Overlays				• Bike Boxes • Intersection Crossing Markings • Left-Turn Calming • Protected Intersections • Raised Intersections • Curb Extensions • Neighborhood Traffic Circles

Example Priority Intersections

The intersections in Figure 14 were identified based on the crossings of special focus overlay corridors as well as proximity to parks and schools. As the City develops its Vision Zero action plan, it will undertake a detailed analysis of safety data that could identify additional locations.

Figure 14: *Example Priority Intersections*

Green Infrastructure

Green infrastructure uses natural processes to properly capture, store, and filter stormwater. This is especially important in coastal regions like Hoboken, which experiences recurrent flooding and tidal conditions. Incorporating these opportunities into future street improvement projects can incrementally improve the City's stormwater management capabilities as well as provide vegetative greenery and improved aesthetics along urban corridors. Within the right-of-way, there are several opportunities to include green infrastructure as street projects are designed. The most common opportunities in Hoboken are defined below and referenced throughout the design manual. *Through the Rebuild by Design planning process, 61 sites were identified as potential locations for green infrastructure installations. Future street improvement projects at these locations should reference Rebuild by Design recommendations and be completed with a full feasibility analysis to determine the appropriate approach for each location.*

Bioswale in the Furnishing Zone. Photo: Tetra Tech

Bioswales

Bioswales are shallow, open, vegetated channels—often referred to as linear bioretention, as defined by the San Antonio River Authority. They are designed to treat runoff and remove pollutants, including trash, through a variety of physical, biological, and chemical treatment processes. The primary pollutant removal functions are filtration through soil media and infiltration. Bioswales can be used in place of traditional curbs and gutters to convey stormwater runoff; however, the primary objective of bioswales is to filter or infiltrate water and improve water quality. Bioswales can have ranges of design variations with or without check dams, subsurface storage media, and underdrains, as shown in Figure 15. Use of an engineered soil media is recommended to improve water quality, reduce the runoff volume, and modulate the peak runoff rate, while also conveying excess runoff. Bioswales are typically planted with grasses, shrubs, and trees (for trees, refer to the City of Hoboken Street Tree Installation Specifications) that can withstand short periods of saturation (12 to 96 hours) followed by longer periods of drought. A typical bioswale cross section shown on the right can be implemented in the furnishing zone or in curb extensions at intersections (as shown throughout this guide).

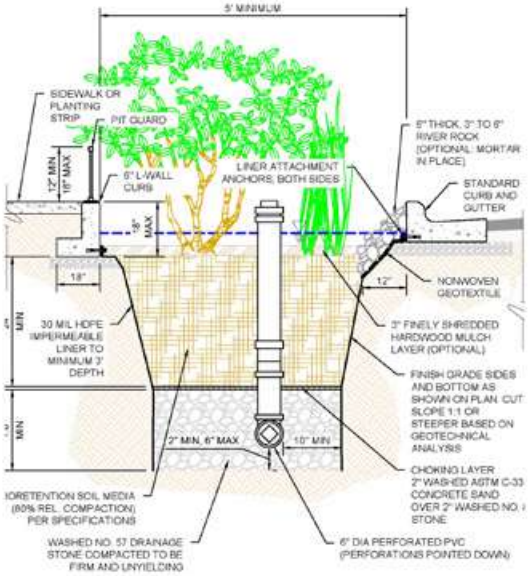


Figure 15: *Curb Extension Bioswale (Source: Tetra Tech)*

Bioswale in the Curb Extension. Photo: Tetra Tech

Design Guidance

Bioswales are well-suited for green street retrofit projects because of their narrow linear design. They can be applied in multiple configurations including in the furnishing zone and in traffic calming features such as curb extensions at intersections and mid-block curb extensions.

Curb extensions are created by extending sidewalks at corners or midblock and are intended to increase safety through improving visibility at crossing locations, calming traffic, and providing extra space along sidewalks for users and amenities (trees, drainage, public art, etc.). The area created by extending the curb provides an opportunity to integrate a bioswale. Bioswale design must comply with the design criteria included in the Siting Criteria Checklist for Green Infrastructure in the Appendix.

Maintenance

Bioswales require regular and routine maintenance similar to a typical landscaped area.

Stormwater Tree

According to the NACTO Urban Street Stormwater Guide, stormwater trees are housed in a tree well or tree pit and are typically a concrete box that contains an engineered filter media where runoff can be routed for treatment. A stormwater tree should be considered for any location where a street tree is required or will be installed. Engineered soils are designed to protect the tree and soil from compaction while removing pollutants—including trash—through a variety of physical, biological, and chemical treatment processes, as shown in Figure 16.

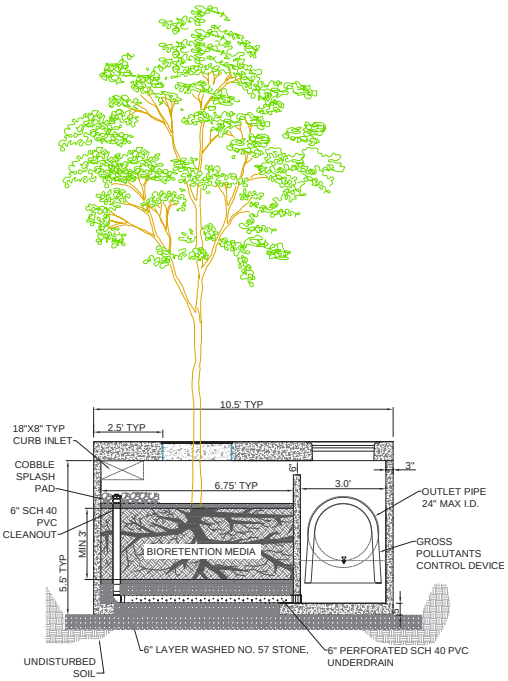


Figure 16: *Typical Stormwater Treet Cross Section (Source: Tetra Tech)*

The primary pollutant removal functions and performance are similar to bioswales where pollutants are removed through filtration through soil media and infiltration where possible. Street trees can contribute to runoff removal with high-volume reduction by absorbing rainfall and through evapotranspiration. Stormwater tress and tree wells should be designed to fit within the sidewalk and must conform to all street tree requirements as specified in the City of Hoboken Street Tree Installation Specifications. Tree pits should be a minimum of 15 square feet and should not be wider than the furnishing zone they are planted in.

Design Guidance

Stormwater trees perform similar to bioswales but are compact and contained in a concrete box the width of the sidewalk with a single tree. They are designed to be narrow and linear to fit within the constraints of the sidewalk. Stormwater trees should be considered for any area where a street tree is recommended or required. Stormwater tree design must comply with the design criteria included in the Siting Criteria Checklist for Green Infrastructure in the Appendix.

Typical Stormwater Tree installation. Photo: Tetra Tech

Permeable Pavement

The American Society of Civil Engineers defines permeable pavement as a surface that can allow for infiltration of stormwater while simultaneously providing a stable load-bearing surface suitable for walking and driving. When applied appropriately, permeable pavement can dramatically reduce impervious surface coverage without sacrificing intensity of use. Three types of permeable pavement are recommended for use in Hoboken, including poured-in-place pervious concrete, porous asphalt, and permeable interlocking concrete pavers. A diagram of a typical permeable pavement treatment is shown in Figure 17.

Pervious Concrete at the Hoboken Police Department

Pervious Concrete

Pervious concrete, like standard concretes, acts as a rigid slab with an open, rough appearance and provides a walking or driving surface similar to aggregate concrete. Pervious concrete is typically laid with a 4-inch to 8-inch thickness over a gravel reservoir. Pervious concrete will typically exhibit a coarser surface texture than impervious concrete but is ADA compliant. Pervious concrete is suitable for light- to medium-duty applications such as residential access roads, residential street parking lanes, parking lots, overflow parking areas, utility access, sidewalks, bike paths, maintenance walkways/trails, residential driveways, stopping lanes on divided highways, and patios.

Porous Concrete

Porous Asphalt

Porous asphalt is composed of fine and coarse aggregate. Unlike traditional asphalt, porous asphalt contains very little fine aggregate (dust or sand) and is comprised almost entirely of stone aggregate, which makes it very permeable. Porous asphalt is suitable for light- to medium-duty applications such as residential access roads, residential street parking lanes, parking lots, overflow parking areas, utility access, sidewalks, bike paths, maintenance walkways/trails, residential driveways, stopping lanes on divided highways, and patios.

Permeable Interlocking Concrete Pavers

Permeable Interlocking Concrete Pavers (PICP)

PICP are a type of permeable pavement system consisting of structural units with void areas that are filled with gravel. The paver infill and bedding course consist of aggregate, which forms an interlocking pavement surface that can bear heavy traffic loads. Stormwater infiltrates the pavement profile through the gravel-filled void spaces between the pavers. PICP design prevents shifting and rocking that can occur when using open cell unit pavers or brick/natural stone pavers. PICP tends to have high abrasion resistance and

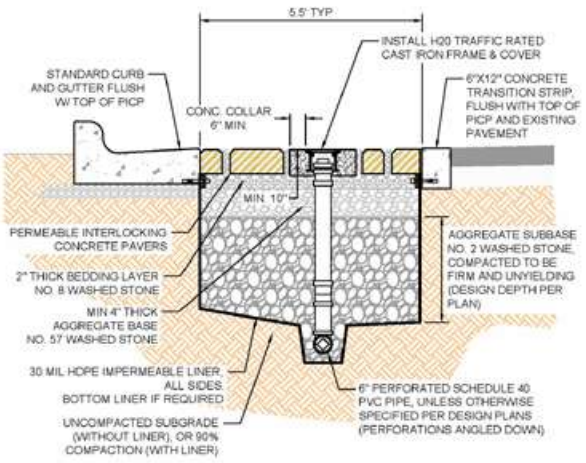


Figure 17: *Typical Permeable Paver Parking Lane Section (Source: Tetra Tech)*

can be suitable in situations where vehicle turning may cause other permeable pavements to ravel. PICP is available in a wide variety of colors, shapes, sizes, and textures.

Design Guidance

Permeable pavement can be used in a wide array of applications, including parking lots, parking lanes on light duty roads, pedestrian plazas, in sidewalks, and alleys. Permeable pavement design must comply with the design criteria included in the Siting Criteria Checklist for Green Infrastructure in the appendix.

Maintenance

Maintenance for permeable pavement typically requires sweeping with a vacuum powered or regenerative air street sweeper. Other necessary maintenance activities are detailed below in Table 8.

Table 8
Green Infrastructure Maintenance Requirements

Task	Frequency	Description
Catchment inspection	3 times per year	Remove any sediment accumulated on adjacent impervious surfaces or in voids/joints of permeable pavement
Miscellaneous upkeep	Monthly	Remove trash, leaves, weeds, or other debris accumulated on permeable pavement surface
Preventative vacuum/ regenerative air street sweeping	Once annually (twice a year in higher sediment areas)	Preventative or routine maintenance should be performed on a regular basis to remove accumulated sediment in the void spaces of the permeable pavement. Sediment accumulation is an indication that restorative maintenance may be required
Replace fill materials	As needed	Replace the fill materials whenever void space between joints becomes apparent or after vacuum sweeping
Restorative vacuum street sweeping	As needed	When surface infiltration test indicates poor performance or water is ponding on pavement surface during rainfall. Perform as many passes with a vacuum powered street sweeper as necessary to restore infiltration to design standards

SPECIAL FOCUS OVERLAYS

Introduction

Every community has unique places that require special treatment, such as waterfronts, parks, historic destinations, primary streets, and premium transit hubs. There are also areas that are more likely to experience change, such as places near significant community investment centers, places adjacent to community amenities and areas that have been planned for revitalization and redevelopment. While a consistent transportation strategy is important, these special focus areas require a departure from the norm to acknowledge, protect, and elevate the characteristics that make them unique.

Early in the process, several corridors that act as Hoboken's primary streets were identified as "Special Focus Overlays" for their unique contributions to the community, shown in Figure 18. These corridors connect neighborhoods to commercial services, schools, parks, and the Hudson River Waterfront. Given their opportunity to impact mobility and placemaking in a transformative manner, investments in these corridors should be a high priority for Hoboken.

These streets are:

- Observer Highway
- 4th/5th and 8th/9th Streets
- 11th and 12th Streets
- 15th Street
- Washington Street
- Frank Sinatra Drive

In addition, some priorities related to implementing the Green Circuit, the City's initiative to create a continuous network of parks and pathways around the perimeter of the City, are examined in this chapter.

Elevated Design

Identifying each of these corridors as a unique place allowed for shaping a long-term vision. The vision for each of these corridors embraces innovative strategies, high-quality active transportation investments, and enhanced streetscaping and green infrastructure improvements to elevate these locations as signature community corridors. While these investments may seem daunting today, it is important to remember that many of these changes can be made incrementally over time as opportunity presents. The visions presented in the following pages are intended to be viewed as investments to enhance mobility as well as the creation of quality places with lasting value to the community

Equal Access

The special focus overlays are intentionally distributed throughout the community to ensure that all Hoboken residents live or work within close proximity to special corridors. The selection of these corridors was also intended to provide the much-needed east-west connectivity in a city that has historically been organized around north-south movement. This investment strategy ensures an equity of access and provides all residents high quality bicycle and pedestrian mobility throughout the city.

Only a draft vision has been put forward for each corridor in the following pages with illustrative and not-to-scale graphics. It will be crucial to complete a feasibility study and public planning process for each of these special corridors to fully examine the opportunities, constraints, and design solutions.

Figure 18: *Special Focus Overlays*

Observer Highway

Hoboken's southern gateway presents many challenges. Redevelopment opportunities in the area present future opportunities to reconnect the grid and dedicate continuous space for safe bicycle and pedestrian travel. The ultimate solution is likely to be a blended approach, reached through a process that seeks to resolve conflicts between the southwest, Neumann Leathers, and Hoboken Yard redevelopment plans and brings all stakeholders to the table. The proposed cross section from the Hoboken Yards Plan is shown in Figure 20. Regardless, repairing the street grid and creating a safe and comfortable connection for active mobility to and from the terminal should be a major priority in this section of the City.

Priorities

- Conduct an overall feasibility study to explore options to reconfigure several problematic intersections and simplify travel through the area. While several options have been put forward in individual redevelopment plans, no single plan currently examines the corridor as a whole or provides transformative options for enhancing mobility. The study should identify performance measures and feasible options and provide feedback on the performance of options so that an informed decision can be made. The process should consider the shared interest of property owners and residents, while contemplating placemaking, traffic operations, mobility, stormwater, and safety.
- Extend the existing separated multimodal facility to create a continuous protected connection along the City's south end to carry commuters along the corridor between Jersey City and the Hoboken Terminal. The existing conditions are shown in Figure 19.
- Enhance pedestrian conditions and crossings to improve safety and connectivity.
- Create a sense of arrival as the southern gateway to Hoboken.

Figure 19: *Existing Conditions*

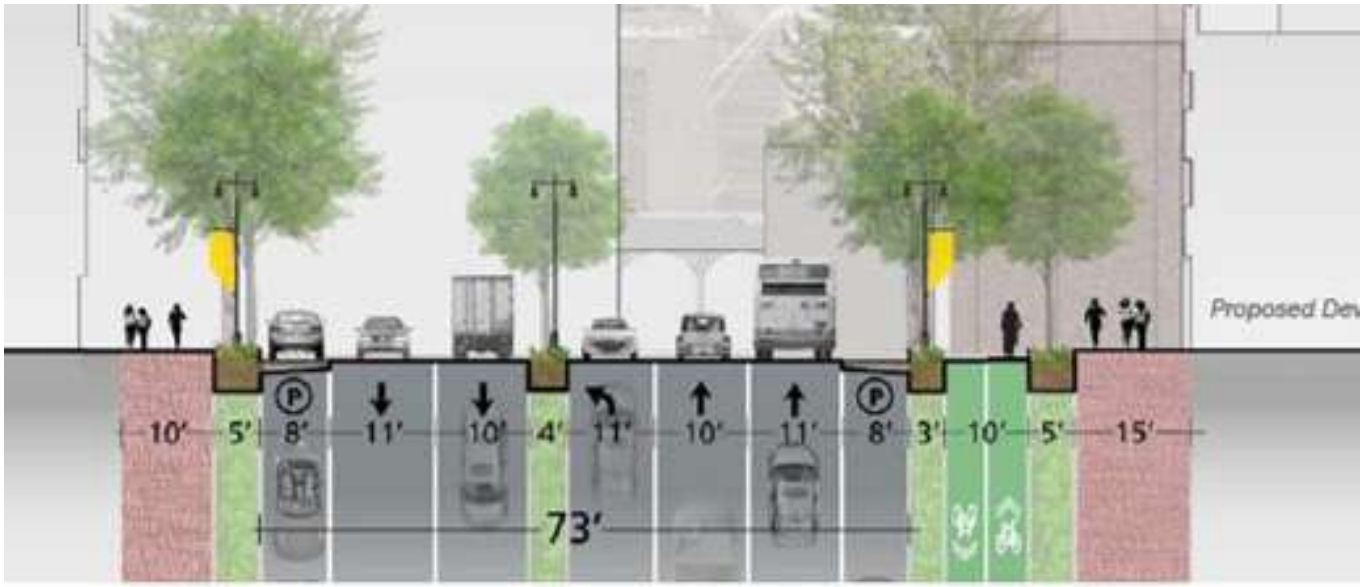


Figure 20: *Proposed Cross Section (Hoboken Yards Redevelopment Plan).*

4th/5th and 8th/9th Streets: Neighborhood Bicycle Boulevards Traffic Calming

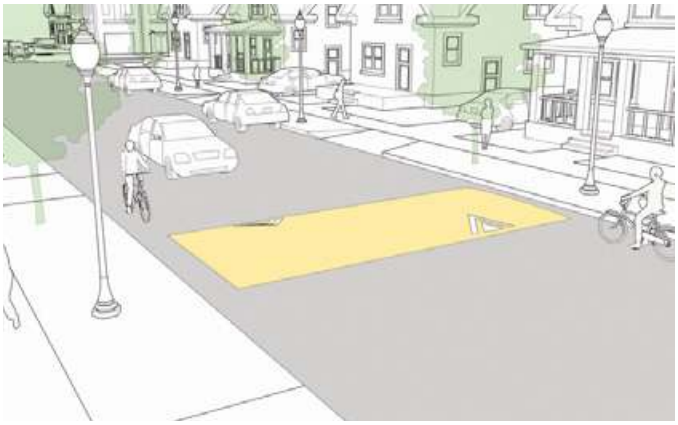
These one-way couplets, chosen for their proximity to unique community resources, represent valuable opportunities to enhance bicycle and pedestrian travel and improve safety along these corridors, which are shown in Figure 21. Designating these streets as bicycle boulevards and pursuing traffic calming measures at strategic locations will help slow travel speeds, improve safety, and create a shared-street environment conducive to neighborhood goals.

The future vision for these corridors makes use of this guide's Traffic Calming Toolbox on page 33 to ensure that travel speeds do not pose a danger to bicyclists and pedestrians and to identify these corridors as part of a system of streets where the level of stress that bicyclists experience is reduced, thereby broadening the spectrum of users. Despite their narrow width that prevents full green lane treatments without removing parking, these calmer streets function as important east-west bicycle routes for all ages and abilities.

Priorities

- Implement traffic calming techniques to decrease vehicle speeds to 15 mph or less. This is done with an aim of improving comfort for bicyclists and pedestrians along these corridors and improving east-west connections through the City.
- Integrate green infrastructure throughout the corridor through the use of curb extensions, street trees, and permeable pavement in parking lanes and special intersection treatments.
- Monitor the future parking demand in these corridors and work towards mobility policies that will decrease parking demand here. In the future, space currently dedicated to parking may be reallocated to create protected green lanes.

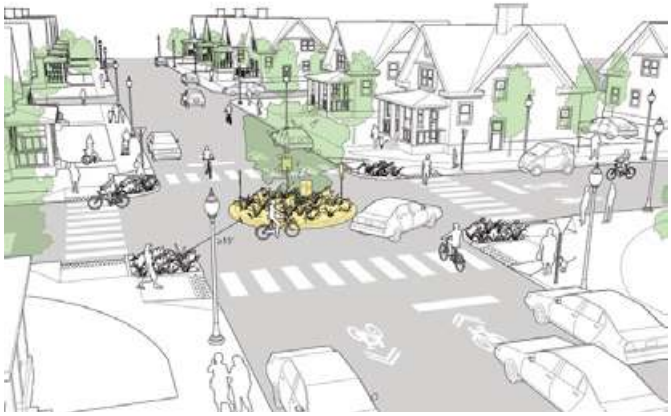
Figure 21: 4th/5th Street and 8th/9th Street Locations



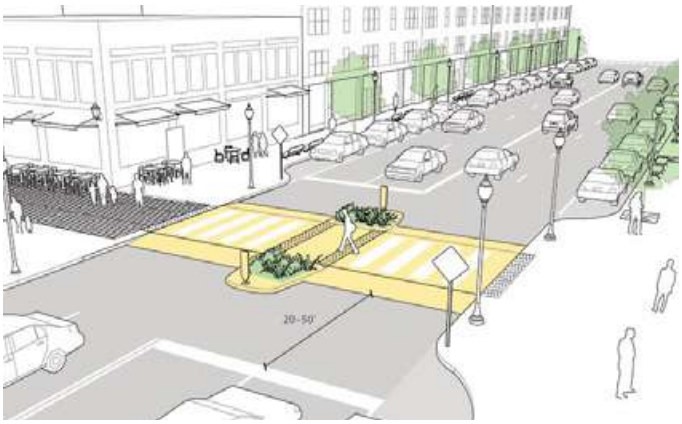
SPEED HUMPS

All diagrams from NACTO

PINCHPOINTS



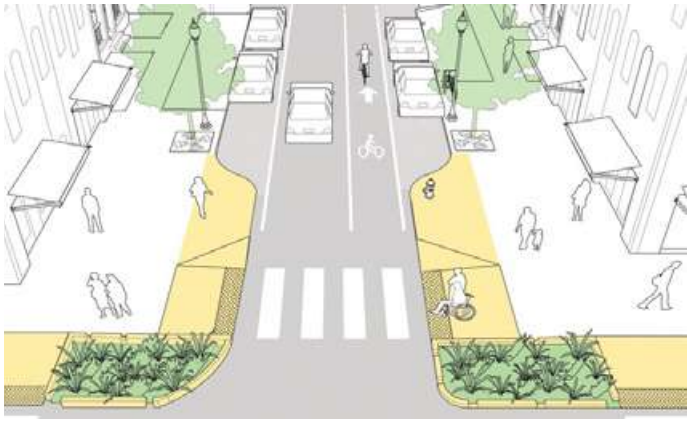
NEIGHBORHOOD TRAFFIC CIRCLES



RAISED CROSSINGS

RAISED INTERSECTIONS

CHICANES



CURB EXTENSIONS

11th and 12th Streets Bicycle Circulation

These streets present a unique challenge to mobility on the north side of Hoboken. While 11th Street and 12th Street function as a one-way couplet west of Willow Avenue, 11th Street converts to a two-way boulevard with striped green lanes east of Willow Avenue. The location of this focus area is shown in Figure 22. Each street is also disconnected at Adams Street, creating offset intersections. The creation of the new Northwest Resiliency Park at 7th and Jackson Streets presents a rare opportunity to create an enhanced connection and arrival feature to a future community gem at 12th Street. The goal of this priority project is to create a logical, safe, active transportation circulation network between the two streets that prioritizes pedestrian and bicyclist connectivity between the new park and the waterfront, as shown in Figure 23.

Priorities

- Focus on traffic calming west of Willow Avenue to allow for the creation of bicycle boulevards, designated by shared lane markings.
- Explore the feasibility of a road diet on Willow Avenue to eliminate the center turn-lane. Replace it with a pair of dedicated green lanes so that there is consistent bicycle infrastructure feeding into and from the 11th/12th Streets couplet.
- Create a gateway intersection treatment at the intersection of 12th Street and Adams Street with a raised intersection and permeable pavement, in conjunction with the design of the Northwest Resiliency Park.

Figure 22: Focus Area Location

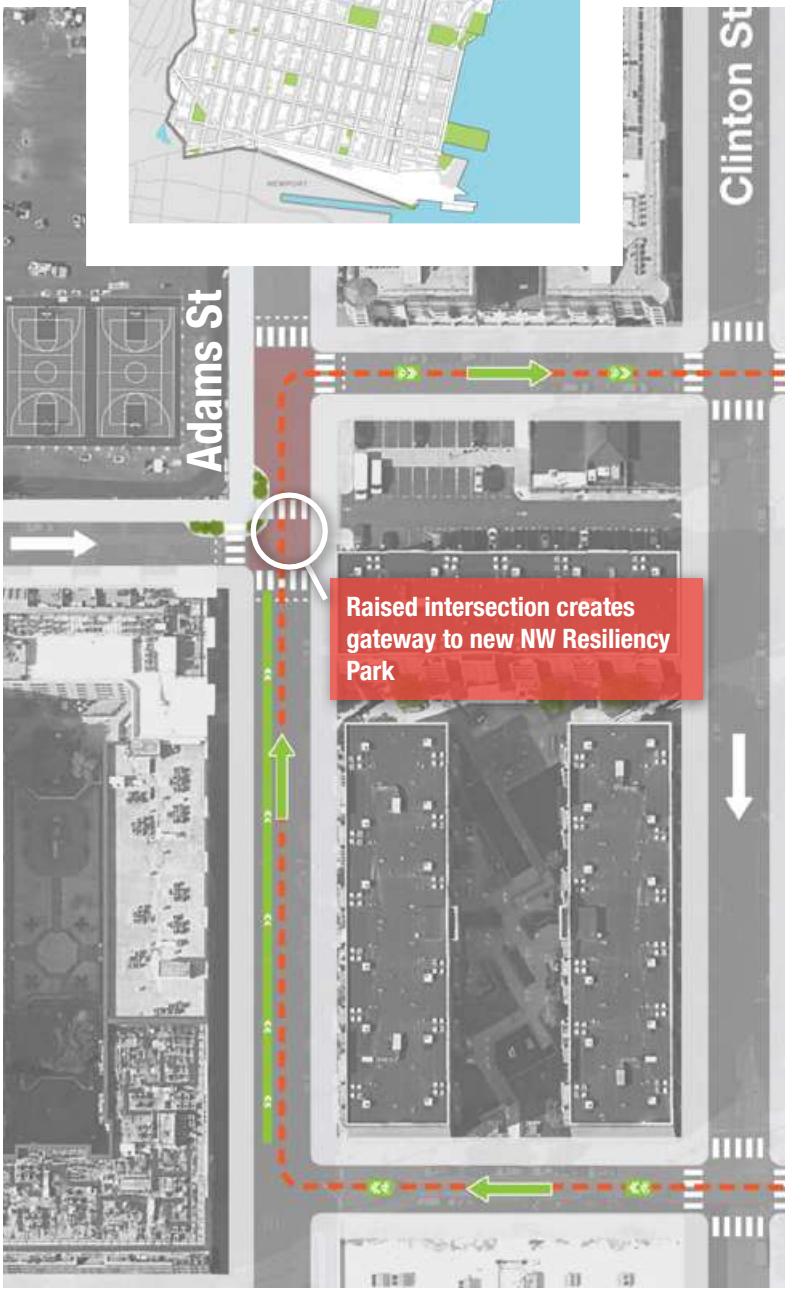
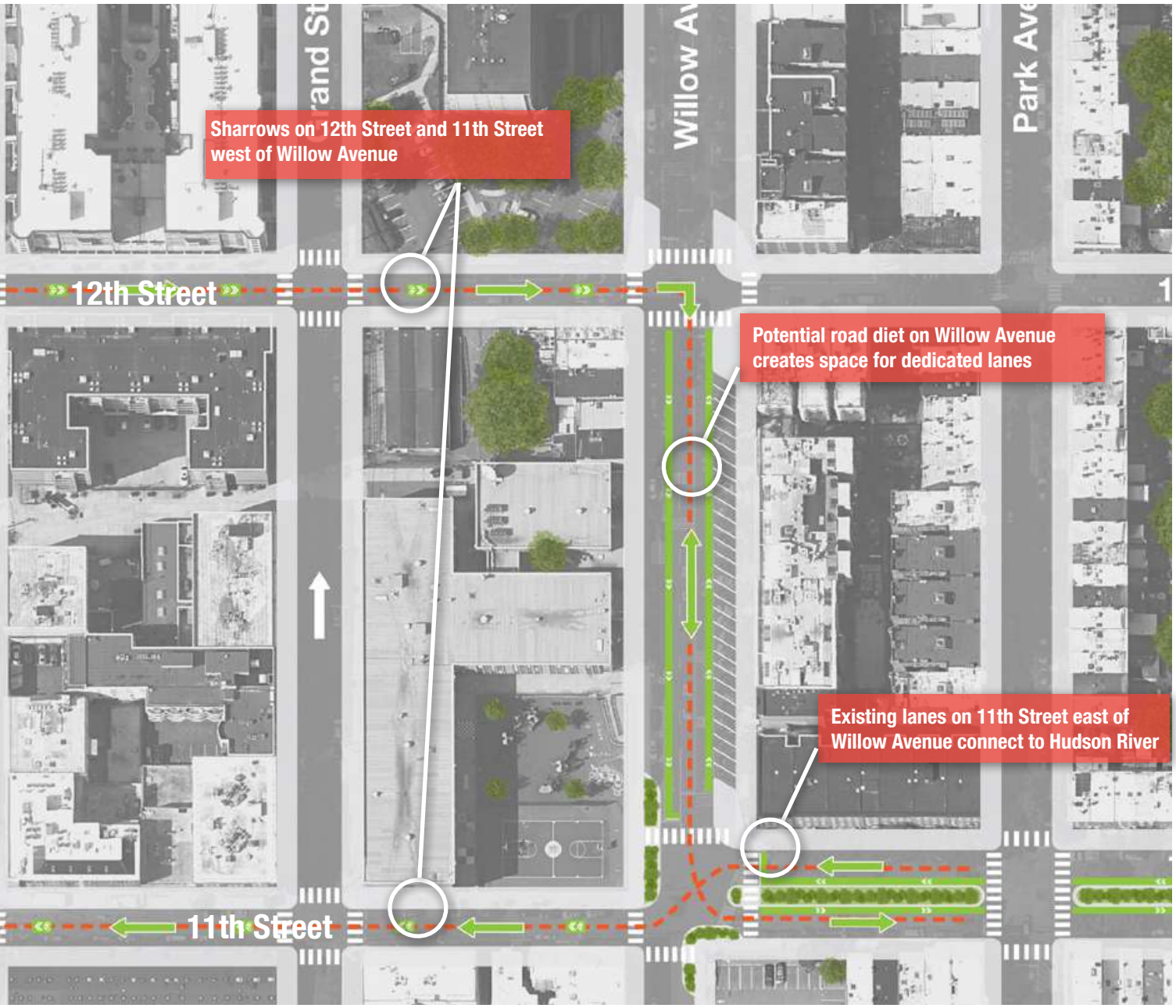


Figure 23: Active Transportation Circulation


Sharrows on 12th Street and 11th Street west of Willow Avenue
Willow Av
Park Ave
12th Street
Potential road diet on Willow Avenue creates space for dedicated lanes
Existing lanes on 11th Street east of Willow Avenue connect to Hudson River
11th Street

15th Street Redevelopment

Located on the northern edge of the City within the North End Redevelopment Area, as shown in Figure 24, 15th Street is full of opportunities. While today the street functions as a traditional vehicular thoroughfare, an incremental re-imagining of the neighborhood could totally transform this corridor into a modern, multimodal gateway. Right-of-way expansion opportunities will open up possibilities to enhance pedestrian and active transportation facilities. Completing improvements to this corridor achieves a goal of the 2018 Master Plan, and improves connections to the new developments in the North End, including the North End redevelopment project and a new NJ TRANSIT Hudson-Bergen Light Rail station. Two options have been imagined for this corridor, as shown in Figures 25 and 26, both of which prioritize the movement of pedestrians and cyclists, while allowing room for green infrastructure.

Priorities:

- Create a designated east-west active transportation connection between the Hudson River Waterfront Walkway and a potential new light rail station. This connection may come in the form of designated and protected lanes or a separated pathway, and the ultimate strategy should be coordinated with the North End Redevelopment Plan.
- Acquire additional right-of-way between Park Avenue and Willow Avenue during redevelopment processes to create a cohesive cross-section.
- Install green infrastructure in strategic locations along the corridor through the strategic use of curb extensions, permeable pavement, or street tree installation.

Figure 24: 15th Street Location

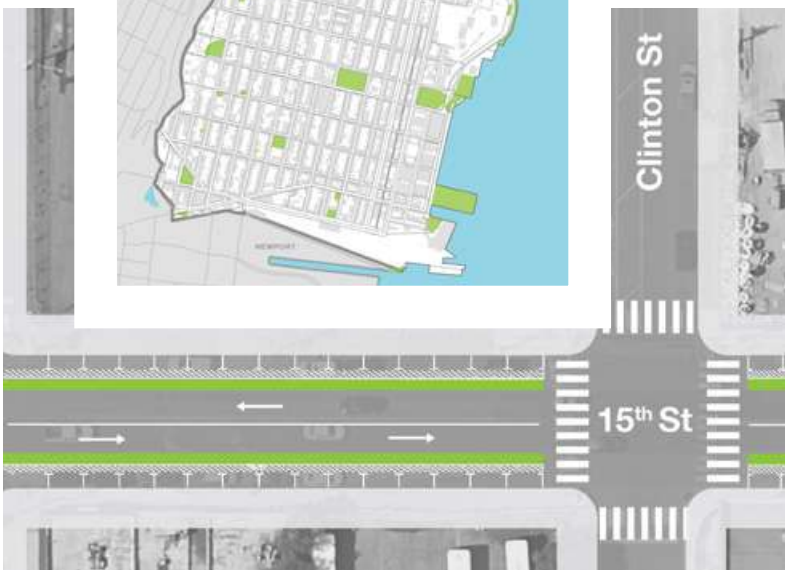


Figure 25: Redesign Option 1

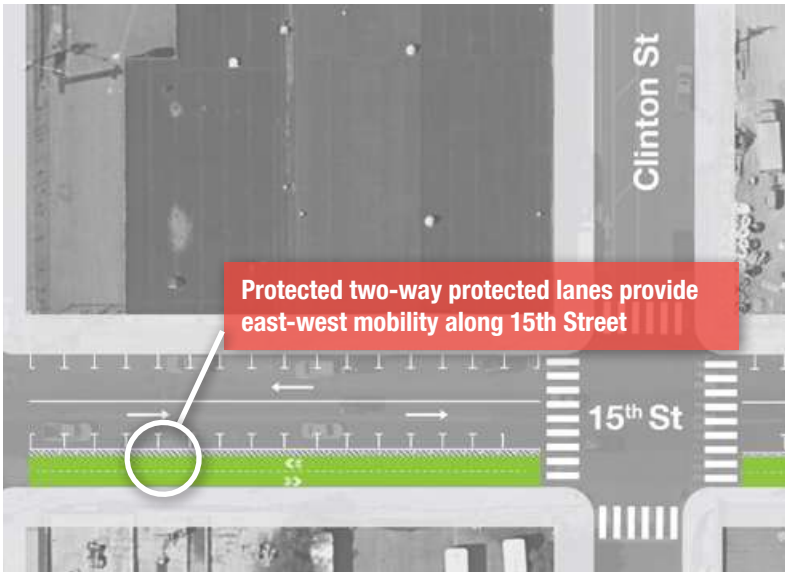


Figure 26: Redesign Option 2

15th Street today

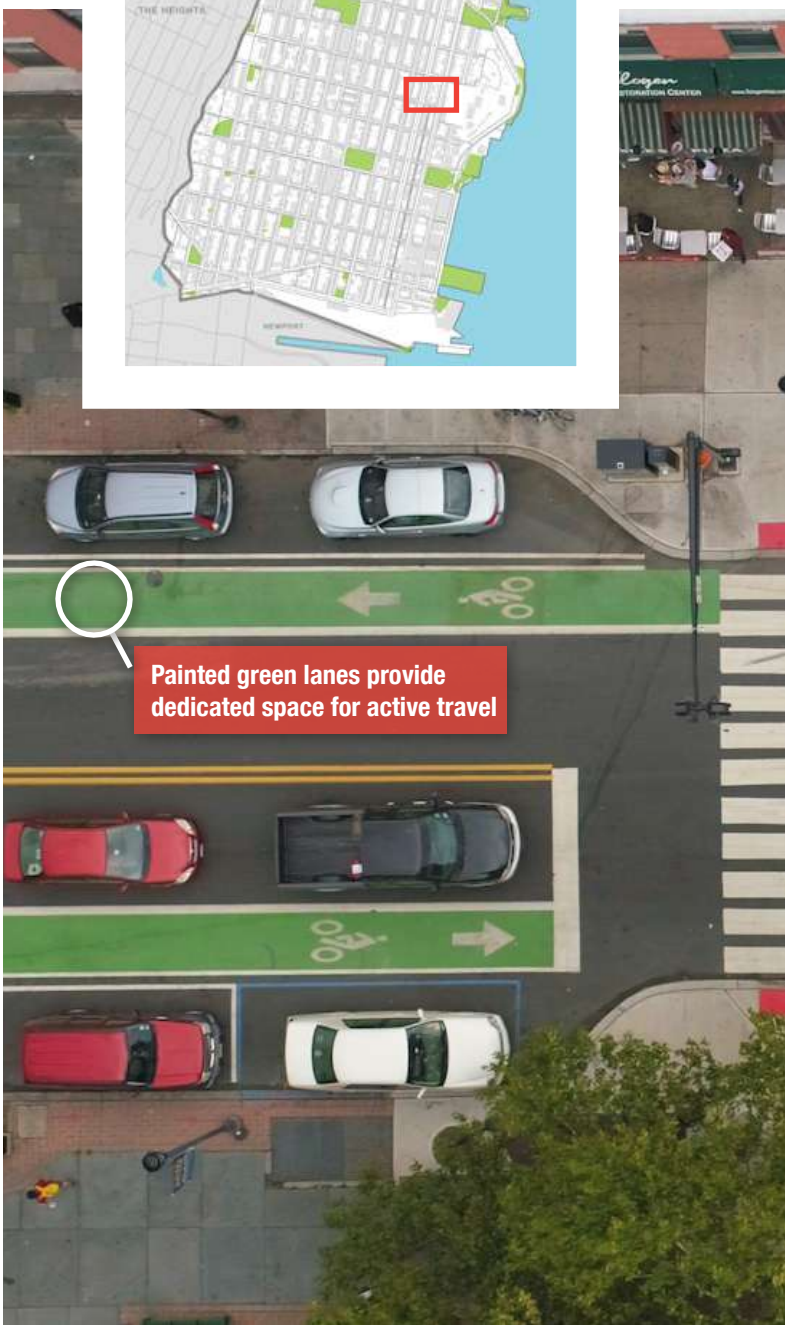
Washington Street

Hoboken's main thoroughfare underwent a rehabilitation project, completed in spring 2019, that transformed the historic corridor into a 21st century community, main-street. Curb extensions and green infrastructure help extend the pedestrian environment while providing aesthetic benefits and much-needed stormwater management. Dedicated green lanes emphasize the importance of active transportation connections and bus stop pavement markings improve the function and visibility of the City's well-used transit system. The proximity of so many travel modes within a confined corridor create challenges, to be sure, but this vision of Washington Street provides the flexibility to grow as Hoboken's needs change. Figure 27 shows the location of the photo at right.

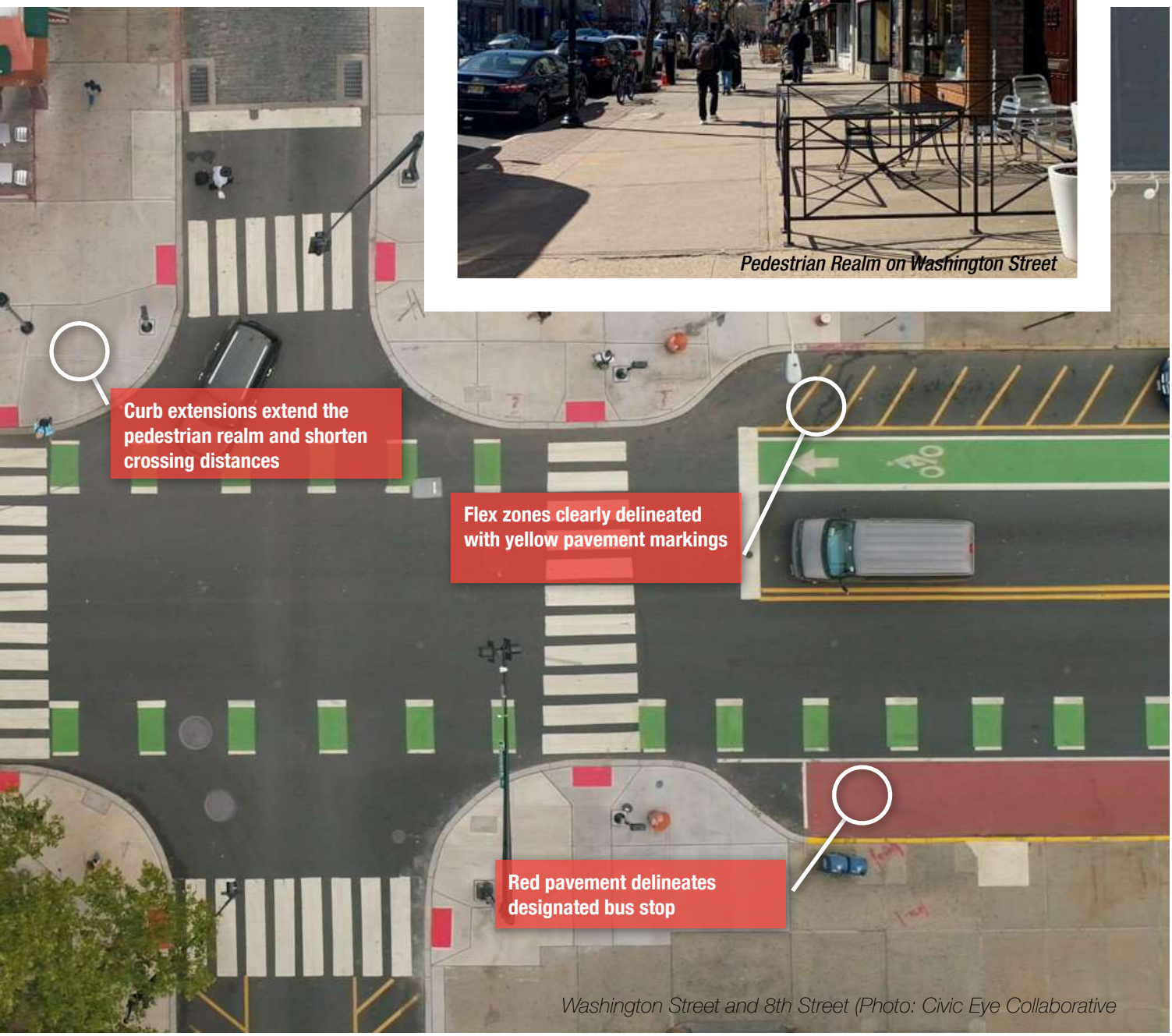
Priorities:

- Enforce appropriate parking along Washington Street. Double parking, misuse of the designated loading zones and bus lanes, and other parking violations threaten the operations of the Washington Street corridor as well as the safety of all users. Enforcement should be made a priority to ensure that the multimodal design functions are used.
- Designate shared mobility zones. To improve corridor operations and enhance the experience of those who choose not to drive, shared mobility zones should be designated and enforced along the corridor to allow passenger pick-up and drop-off at certain locations.
- Incorporate additional transit improvements. Washington Street has several different bus routes, and is one of the highest transit ridership corridors in New Jersey. While the painted pavement markings do work as bus loading zones, future improvements may include bus bulbs or curb extensions to allow for buses to remain in the travel lane while loading. Improved shelters should be offered at all stops where space is available.

Figure 27: Photo location



Pedestrian Realm on Washington Street



Washington Street and 8th Street (Photo: Civic Eye Collaborative

Frank Sinatra Drive

Frank Sinatra Drive is Hoboken's scenic waterfront corridor with views of the Hudson River and the Manhattan Skyline. Over the past century, the waterfront has been transformed from an industrial and maritime shoreline marked by warehouses and finger piers to a post-industrial landscape marked by office buildings, esplanades, and public space. This section of Frank Sinatra Drive (between 4th Street and Sinatra Drive N, as shown in Figure 28) is currently a two-lane roadway that carries both northbound and southbound traffic with parallel parking on both sides. Despite the length of the roadway, there are only four intersections and two traffic signals. These conditions have the unintended consequence of encouraging speeding thereby impacting safety for all travel modes. Reenvisioning this section of Frank Sinatra Drive, as shown in Fiwill help reclaim some of the travelway for pedestrians, bicyclists and green infrastructure while enhancing the aesthetic and recreational value of the corridor.

Priorities

- Install a protected multimodal facility along the entire corridor. This is one of the few corridors in the City with enough space to support this type of protected facility. It is also a corridor with heavy bicycle and pedestrian volumes given the connection to regional transit and ferry activities and a place where bike riders with a diversity of skill can be found experiencing this iconic waterfront and supporting parks.
- Complete the Hudson River Waterfront Walkway along the corridor.
- Following up on the 2018 Master Plan recommendations to create a cohesive parkway that will become one of Hoboken's signature corridors and provide waterfront recreational opportunities.
- Integrate green infrastructure opportunities through bioswales, curb extensions, and street trees throughout the corridor. This is a premier location to showcase these applications while enhancing the aesthetics of the corridor.

Figure 28 Section Location

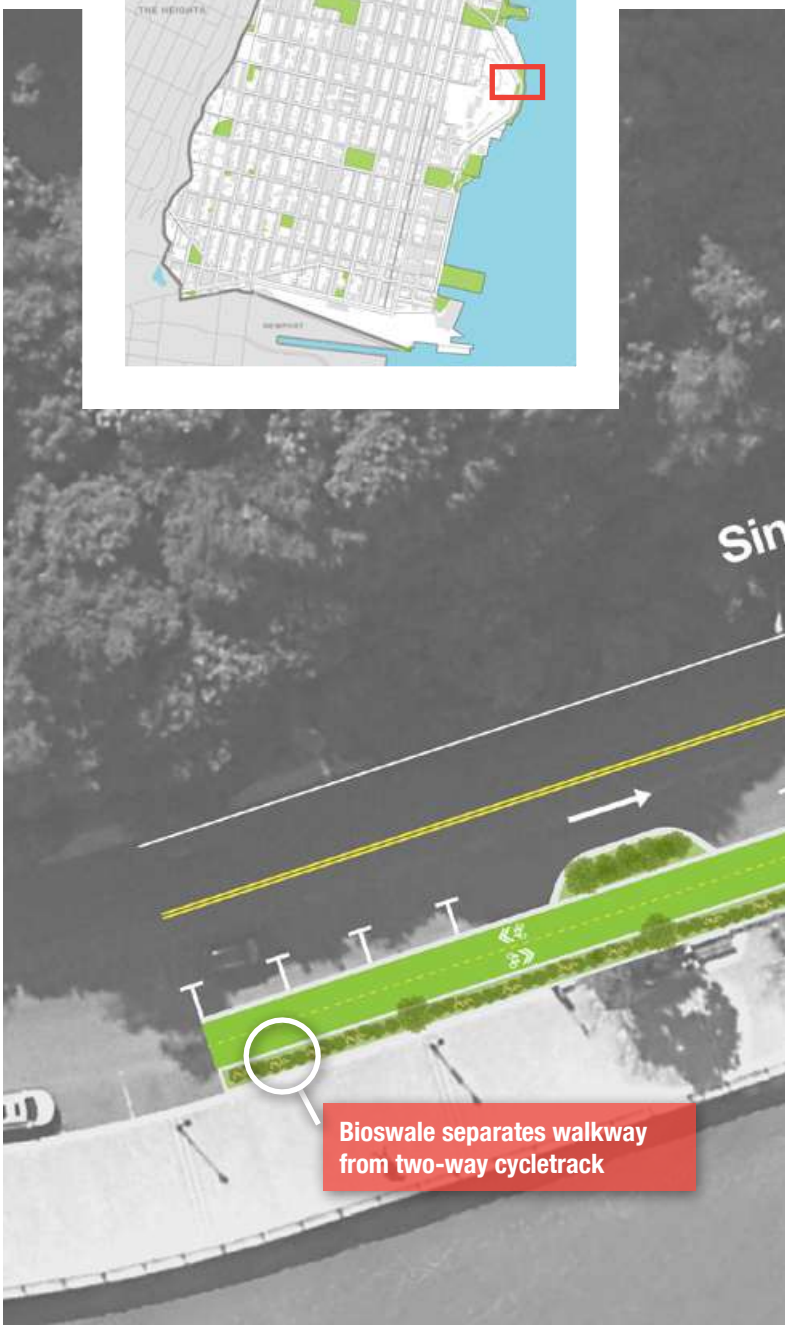


Figure 29: Proposed Redesign

Frank Sinatra Drive Today

Green Circuit

The Green Circuit is a City initiative described in the Hoboken Master Plan to create a continuous network of parks and pathways connecting around the perimeter of the City (see Figure 30). This long-term strategy is not only a recreational and mobility element, but it would also make heavy use of green infrastructure elements such as stormwater management techniques. As the City identifies an alignment for the Green Circuit, the Design Guide offers a variety of methods to make critical connections between these green features.

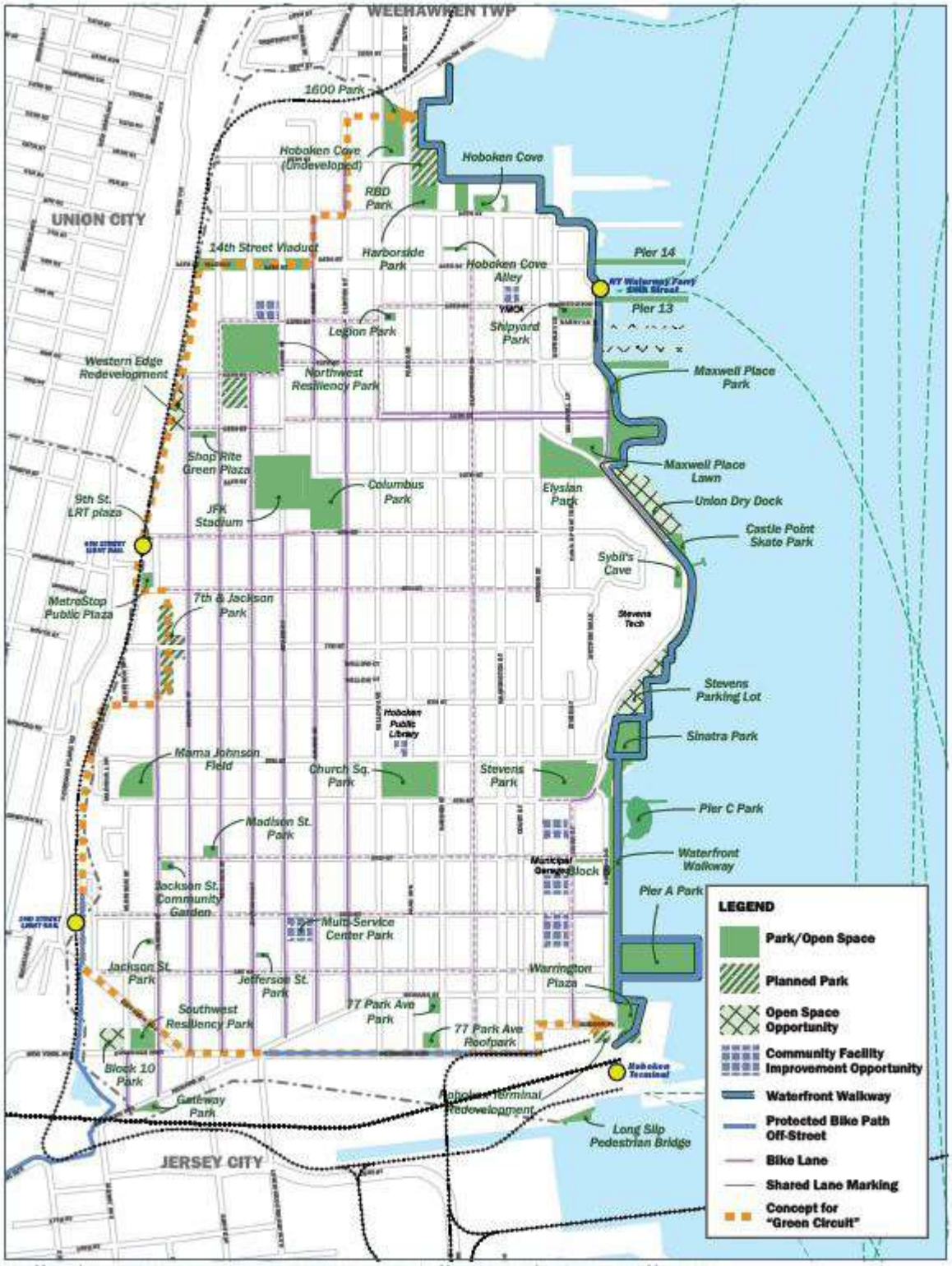
Creating a continuous dedicated pathway is a long-term goal but it can be realized through short-term projects. Where off-road facilities are not available, connections should be accommodated through on-road markings and signage designating the segment as part of the Green Circuit. As redevelopment occurs, separated facilities that connect existing trails and pathways should be prioritized to create a continuous circuit.

Sinatra Drive, proposed to form one link in the Green Circuit.

Priorities

- Conduct a Green Circuit feasibility study. This should evaluate the concept of a Green Circuit and identify feasible options to realize the vision of a connected greenbelt of parks encircling the city.
- Upon identification of a preferred alignment, use design techniques within the Street Design Guide to inventory future corridor enhancements. An inventory of improvements should be created to ensure that design features are captured during street maintenance and improvement activities, including redevelopment plans.
- Promote the Green Circuit. The branding and promotion of an agreed upon circuit will help build momentum and promote partnership opportunities

Figure 30: Green Circuit Concept (Hoboken Master Plan Land Use Element)



IMPLEMENTATION

Implementation

Implementation of the design guidelines is critical to improving transportation equity, safety, and mobility in Hoboken. The goals, guidelines, and design techniques presented in this document are intended for incorporation into all roadway design projects, roadway maintenance, major development/redevelopment projects, and streetscaping improvements. The action plan outlined in this chapter is a roadmap to ensure that the Complete Streets vision is fully implemented throughout the City and becomes a foundational part of all projects moving forward.

Adopt an updated Complete Streets Policy

While the City has a Complete Streets policy already in place, much has happened since its adoption. An updated policy and ordinance that reflect current trends, opportunities, and methods will provide the necessary tools to enforce universal compliance with the Complete Streets vision and increase the pace with which implementation occurs. During the creation of the Design Guide, a modern version of the Complete Streets policy was drafted for the City to consider. The updated policy defines the Complete Streets vision and purpose, references the design guidelines contained in this manual, and promotes a series of measures of effectiveness which officials can use in the future to evaluate and document success. In addition, the policy contains a limited number of exceptions, strengthening the City's ability to enforce the addition of high-quality facilities in future projects.

Adopting this policy is an important step for the City to modernize the way that transportation planning, design, and maintenance processes are undertaken. It also provides a foundation for the City to adapt to the changing needs of the community and better prepares the City for the future.

The updated policy is available in Appendix A.

Regulatory Changes

Complete Streets design will be more easily facilitated as local policy documents are updated with regulations that reflect the best practices identified in these guidelines. Design elements and recommendations in this document have been developed from national best practices and tailored where necessary to reflect local priorities and conditions. City of Hoboken planning officials should complete a thorough review of the City's street design standards, development ordinances, and other regulatory guidelines and promote updates to bring them in compliance with this Design Guide.

Adopt Complete Streets and Green Infrastructure Checklists

The Complete Streets and green infrastructure checklists are tools to be used during the project development phase to ensure that all projects within the public right-of-way comply with the Complete Streets policy and green infrastructure strategy. The checklists are required to be completed for all major site plans or roadway projects, and will be reviewed by a member of the City of Hoboken planning department to either certify compliance with the policy or identify areas of the design that should be changed to improve multimodal and green infrastructure accommodations. The checklists are an important tool to ensure the guidelines are being consistently applied as projects are approved

The checklists are available in Appendix C.

Leverage Quick-Build Projects

Quick-build projects are those that can be implemented quickly, at low cost, and planned with the expectation that the design may undergo changes in the future. When looking at the full spectrum of projects implemented by a city or government entity, from pop-up or demonstration projects to larger capital investments, quick builds fall somewhere in the middle. Like permanent capital investment projects, quick-build projects are meant to be durable transportation improvements used by the public for months or even years.

Photo: Quick-Builds for Better Streets (People for Bikes)

Quick-build projects can be pilot projects or interim build projects.

- Pilot projects tend to be based more on the concept of testing a solution during a cost-effective, quick-build implementation before deciding whether investment in a more permanent reconstruction is warranted.
- Interim-build projects are used to provide the public with the benefits of a project much earlier than otherwise would be available by waiting until the full reconstruction is funded, designed, and built.

Appropriate projects often include pedestrian space reclamation projects such as curb extensions, the addition of protected multimodal facilities, road diets, and intersection reconfigurations. The increased duration of these projects compared to pop-up projects requires materials that will last, such as roadway grade paint, flexible traffic delineators, temporary curbing products, and other street design elements that provide protection and separation while meeting durability requirements for roadway design. The longer evaluation period lends itself to data collection, such as motor vehicle, pedestrian, or bicycle volumes over the stretch of roadway undergoing the quick-build project, to enable a before and after comparison of the project's impacts on the roadway.

An example of a quick-build project in Hoboken is installing the multi-use path along Frank Sinatra Drive. The City removed parking along the east side of the roadway to create an approximately 9-foot wide, multi-use path utilizing concrete wheel stops and flex post delineators to separate the path from the travel lane.

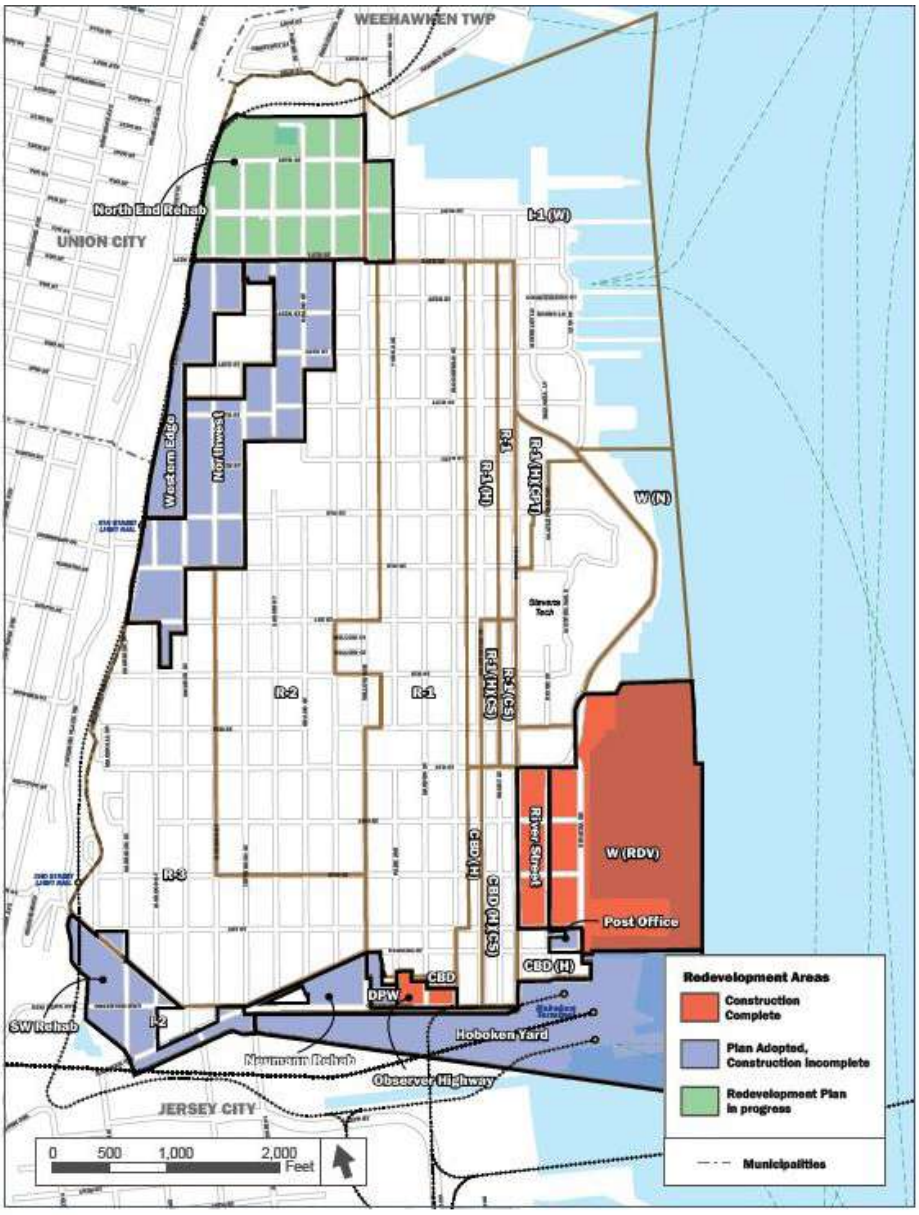
More information on quick-build projects can be found in Tactical Urbanism: ShortTerm Action for Long-Term Change by Mike Lydon and Anthony Garcia and Quick Builds for Better Streets: A New Project Delivery Model for U.S. Cities published by People for Bikes.

Develop a Vision Zero Action Plan

As noted in the Introduction chapter, Vision Zero is an international movement to eliminate traffic deaths. In 2019, Hoboken announced a desire to join this campaign and eliminate all traffic-related deaths and injuries within the City by 2030. To accomplish this goal, it will be important to adopt a clearly outlined action plan, inclusive of design strategies, enhanced enforcement, education, and updated policies. The design strategies included in this document should be used as a toolbox to implement the City's Vision Zero action plan and improve safety for all users.

Embrace Redevelopment

There are designated redevelopment planning areas in the north, west, south, and east portions of Hoboken. Each of these locations will be investing in detailed planning, data collection, and analysis activities. These redevelopment plans represent unique partnership opportunities to implement the City's mobility vision. During these processes, it is likely that new ideas will be generated, some of which may be contrary to current plans. Flexibility has always been a cornerstone of progress. For this reason, the City will require that the Design Guide be consulted as plans are developed. Any deviations from the guide or proposed modal connectivity should be accompanied by documentation that the proposed change represents an enhancement without detriment to the connectivity, circulation, and safety goals of the City prior to approval.



Redevelopment Plan Areas

Source: Hoboken Master Plan, Land Use Element

Document Success

Documenting the performance of Complete Street projects will be crucial to the continued success of the program. The City should continue to monitor the performance measures contained in the updated policy to analyze the program's effectiveness, adjust strategies accordingly, and communicate successes with the community. Doing so will help to inform decisions regarding project selection and scoping and demonstrate the benefits that arise from investments in Complete Street projects.

The measures of effectiveness listed below are uniquely tailored to demonstrate the benefits of Complete Streets on mobility, safety, equity, health, and many aspects of community life. They also are easily measured through quantifiable data and lend themselves easily to a report card format to communicate easily with stakeholders and community leaders.

Improved Safety

- Reduced frequency and severity of crashes (vehicle, pedestrian and bicycle)
- Maintained or improved emergency vehicle response times
- Reduced moving vehicle violations
- Progress toward the city's Vision Zero goals

Increased Equity

- More people live and work within proximity to high-quality pedestrian and multimodal facilities
- Increased bicycle parking provided

Improved Transportation System Effectiveness

- Increase in transit ridership
- Increase in bicycle and pedestrian mode share
- Reduced single-occupancy-vehicle commute share
- Improved user experience (via surveys)

Improved Transportation System Reliability

- Fewer blocked multimodal facilities
- Improved parking compliance
- Improved transit reliability

Improved resiliency and sustainability

- Increase in the City's total stormwater retention capacity due to addition of green infrastructure elements
- Increased use of shared mobility modes

Accommodate innovation

- Total number of pilot projects conducted

RIVER ST
NO TURN ON RED
DEAD END
ALL TRAFFIC
TAXI STAND