



Plan for
Walking and Biking

2018



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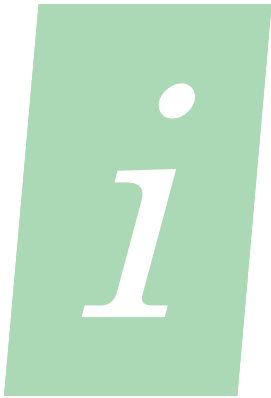
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Foreword

This Plan for Walking and Biking was adopted by the Planning Board of the City of Asbury Park on April 8, 2019 as an amendment to the City's Master Plan Circulation Element.

The presentation to the Planning Board was given by:

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The Planning Board adopted the Plan with the following recommendations for implementation:

1. Incorporate green infrastructure into the installation of Complete Streets and traffic calming infrastructure, such as rain gardens and bioswales integrated into curb extensions.
2. Encourage the installation of “No Right Turn on Red” signage at all City intersections controlled by traffic signals where possible.
3. Utilize gateway points into the City to create a sense of place and calm traffic through infrastructure and signage.
4. When possible, ensure that adequate lighting of streets throughout the City is incorporated into all projects.
5. When possible, encourage the reduction of speed limits on City streets, particularly the streets recommended in the Plan to be reduced to 20 mph.



1

Introduction

Biking and walking are essential components of Asbury Park's transportation system. Each plays an important role in enhancing livability throughout the City, supporting its on-going growth and redevelopment, and bolstering its economic vitality. Both also provide affordable, accessible travel options for all residents, enhance the City as a regional destination for tourism and entertainment, and can help mitigate traffic and parking issues.

While walking and biking are popular ways to get around Asbury Park today, whether for recreation or transportation, barriers such as difficult street crossings, lack of dedicated bicycle facilities, and concerns related to safety discourage more people from choosing these modes. Growing interest throughout the community point to opportunities and a need to address these issues, and shift the perception of Asbury Park to a place renowned as a bicycle- and pedestrian-friendly community, where residents and visitors alike choose to walk or bike as the preferred travel option.

Several recent projects and initiatives have sought to improve walking and bicycling in Asbury Park, from adopting a Complete Streets policy in 2015, to implementing streetscape improvements along Cookman Ave, advancing plans for a road diet along Main St (NJ 71), expanding bicycle parking and installing the City's first bicycle corrals, and launching Asbury Park Bike Share in August 2017.

Building upon these efforts and other existing plans, the Asbury Park Plan for Biking and Walking defines a vision for the future of bicycle and pedestrian mobility in the City and provides a framework to guide future investment decisions. The plan identifies a core bicycle network for the City, priority infrastructure improvement concepts, and policies and programs that support and encourage biking and walking. Implemented over time, the plan will help Asbury Park advance its Complete Streets policy and make walking and biking safe, comfortable, and convenient for people of all ages and abilities.



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Planning Context

The City of Asbury Park is in the midst of a transformative revitalization. After decades of decline and disinvestment since its heyday in the 1960s, a blend of private redevelopment projects and supportive planning efforts and public infrastructure improvements are ushering in the City’s resurgence. This has led to an influx of new residents, visitors, shops, restaurants, and entertainment venues as Asbury Park once again becomes a thriving regional destination.

Geography and Transportation Network

Asbury Park has a long history as a vibrant seaside resort community along the coast of Monmouth County. Developed as a residential resort in 1871, attractions such as the boardwalk, Convention Hall, Paramount Theater, the Casino Pier, and Palace Amusements drew generations of visitors from New York City, Philadelphia, and the surrounding region through the mid-twentieth century, supporting a bustling City and strong local economy.

Combined with its flat terrain, the City’s compact development pattern created an environment conducive to walking and biking that remains today. As the City grew, its street system was laid out in a general grid with short block lengths that provide a high degree of street network connectivity and encourages dense development patterns. Its tree-lined, wide east/west avenues typically provide ample space and opportunities to enhance accommodations for all street users. In addition to boardwalk attractions on the waterfront, a traditional central business district (CBD) emerged along Main St (NJ Route 71) and Cookman Ave near the center of the City, with two- to three- story buildings adjacent to the street and broad sidewalks.

While the City fell on hard times in the second half of the twentieth

century, the start of the twenty-first century brought with it a new era of investment. Large-scale, new-urbanism style development near the waterfront and redevelopment within the central business district (CBD), in particular, have helped revitalize the local economy. The City's waterfront and landmarks once again attract throngs of visitors.

As Asbury Park reemerges as a vibrant regional center for culture, entertainment, and recreation, it is also becoming more and more of a year-round rather than a seasonal destination. The City's proximity to regional highways (NJ Routes 18, 33, 35, 66, and 71 and the Garden State Parkway), as well as its downtown NJ TRANSIT commuter rail station along the North Jersey Coast Line, support convenient access to the City. Within the City, street space is in high demand, particularly near the CBD. As visitors flock to local businesses and the boardwalk, streets must balance the needs of vehicular circulation, with pedestrian and bicycle activity, transit access, local deliveries, and parking. This also provides an opportunity for bicycling and walking to help alleviate demand on the City's streets, by making them convenient, comfortable travel options that can encourage residents and visitors to park once and walk or bike within the City rather than drive to multiple destinations.

Although the street grid is largely continuous, there are also some barriers to bicycle and pedestrian circulation. Deal Lake forms the northern border of City, which limits linkages to its northern neighbors to five bridge connections. Similarly, Wesley Lake at the southern border limits connectivity between Ocean Grove and Asbury Park. Two bicycle and pedestrian bridges spanning the lake, in addition to the boardwalk along the shore, help strengthen the connection between the communities. Within the City, Sunset Lake fragments the north/south corridor of Park Ave/Heck St. The North Jersey Coast Line, while typically

not fragmenting the street network, also creates an obstacle to vehicular, bicycle, and pedestrian circulation due to the numerous at-grade crossings adjacent to Main St. The City's street grid also deteriorates towards the western side of the City, where a combination of longer blocks and fragmented street network reduces overall connectivity.

Demographics

Asbury Park has a year-round population of 15,945 residents (U.S. Census 2015 American Community Survey 5-Year Estimates) within its 1.6 total square miles (1.4 sq mi land area). Its high population density (11,197 people/sq mi, approximately eight times greater than Monmouth County as a whole) indicates the viability of walking and bicycling as a convenient transportation option.

Related to its history as a resort community, Asbury Park is also in many ways a "tale of two cities." Divided by the railroad tracks, the southwest quadrant of the City was developed to accommodate workers' housing, who supported the thriving tourism industry along the waterfront and in the downtown. The legacy of this development pattern remains today, as the west side of the City, and the southwest quadrant in particular, include many underserved populations. These demographic factors highlight the importance of equity in the developing of the plan to ensure inclusivity that accommodates the needs of all residents. Development of a City-wide bicycle and pedestrian network provides an opportunity to help connect neighborhoods and unify the community.

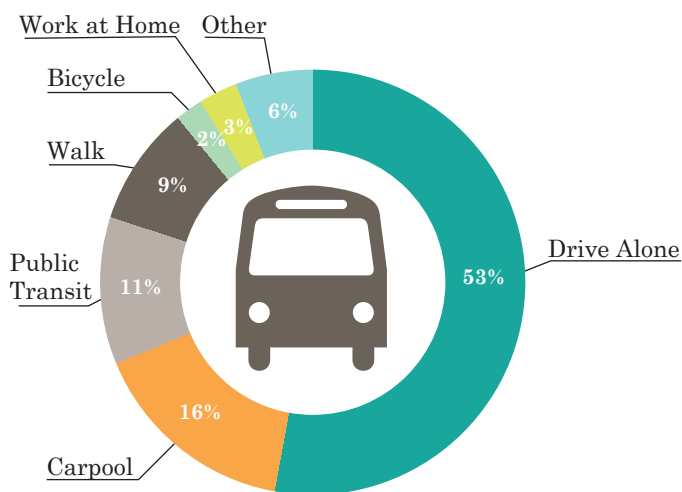
Several socio-economic factors indicate the need and opportunity for bicycle and pedestrian infrastructure to better serve residents. As of 2015, 9.4 percent of workers living in Asbury Park also worked in the City. Given the proximity between home and work for many residents, bicycling and

walking are very viable commuting options. Currently, 9.1 percent of workers in Asbury Park walk to work, and 2.1 percent bike, both significantly higher than statewide averages (3.1 percent and 0.3 percent, respectively). An additional 11.2 percent typically take transit to work, which often also involves walking to/from the transit stop and/or to the final destination.

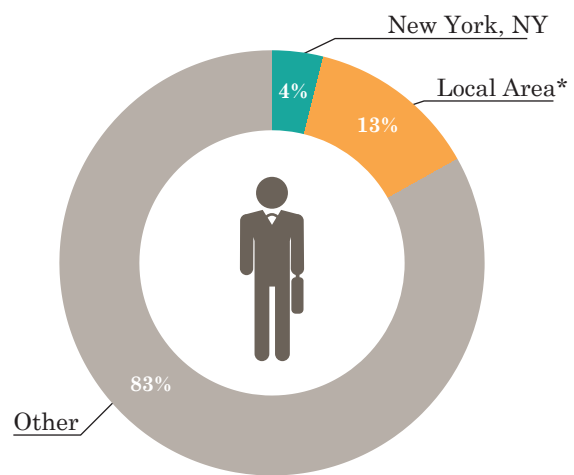
Many residents do not have access to a car, whether by choice or due to the cost of car ownership. Approximately 32.0

percent of households do not have access to a car, considerably higher than the statewide average (11.7 percent). Similarly, approximately 32.0 percent of residents City-wide live below poverty level, including 45.6 percent of residents in areas of the southwest quadrant of the City (compared to 10.8 percent statewide). These factors underscore the importance of safe and convenient access for walking and biking as affordable transportation options for nearly one-third of Asbury Park’s residents.

Means of Transportation to Work for Asbury Park Residents



Place of Work for Asbury Park Residents



* Includes Asbury Park, Neptune City & Twp, Loch Arbour, Bradley Beach, Belmar, Allenhurst, Deal, Ocean Twp, West Belmar (Wall Twp), and Lake Como

Previous Studies, Policies, and Programs

The City, as well as jurisdictions that impact local transportation (New Jersey Department of Transportation (NJDOT), Monmouth County, NJ TRANSIT), have a variety of existing policies, programs, and previous studies relevant to the Plan for Walking and Biking. These programs and previous work support walking and bicycling initiatives in Asbury Park and help inform and guide the planning process.

Complete Streets

All three entities with roadway jurisdiction within Asbury Park – the City, Monmouth County, and NJDOT – have adopted Complete Streets policies. These policies require future roadway projects to consider all modes of transportation, including pedestrians, bicyclists, public transit users, and motorized vehicles. With the policies already in place, this provides a common framework of Complete Streets analysis and decision making, spanning all jurisdictions, and an opportunity to work collaboratively on policy

implementation to create a network of Complete Streets within Asbury Park and connections to the surrounding region.

2005 Asbury Park Transportation Improvement Study

In response to the rapid redevelopment during the mid-2000s, Asbury Park conducted a Transportation Improvement Study to examine the James J. Howard Transportation Center and its vital role in the City. The study area consisted of a ¼ mile buffer around the transportation center in addition to three major roadways connecting the City to the transportation hub (Cookman Ave, Main St, and Springwood Ave). Four categories of needs were quickly identified: underutilization of the transportation center, unmet transportation demand and service gaps, bicycle and pedestrian facility needs, and traffic circulation. Based on these needs, the study team proposed five primary transportation improvement strategies. Items related to bicycle and pedestrian mobility include:

1. Improvements to the transportation center: Including enhanced connections to the surrounding community, new pedestrian connections between the transportation center and the municipal building, improved security, and better wayfinding signage within the transportation center and along the study corridors.
2. Enhancement to public transit services: An internal bus circulation service within Asbury Park should be established to meet the needs of new redevelopment projects and existing neighborhoods.
3. Implementation of bicycle and pedestrian amenities and improvements: Implementation of a comprehensive wayfinding signage system, which should consist of pedestrian-oriented directional, informational, and identity signage; improved station access from the west,

including a new crosswalk at Cookman Ave and Memorial Dr and a pedestrian overpass to allow for easier crossing of the railroad tracks (long term); improved bicycle storage and a rental facility; and a variety of intersection and streetscape improvements along the three study corridors.

4. Safety and streetscape improvements: Enhancements along Cookman Ave, Main St, and Springwood Ave, including the use of highly visible paving material at crosswalks, gateway treatments, traffic calming, wide sidewalks, marked bicycle facilities, street trees, street furniture, bus shelters with live schedule information, and improved street lighting for both drivers and pedestrians.

5. Roadway Improvements: Including signal re-timing, daylighting intersections, installing exclusive turn lanes, and travel lane striping changes to accommodate increased travel demand in the future.

2006 Asbury Park Master Plan

One year after the completion of the Transportation Improvement Study, the Asbury Park Master Plan was also completed and adopted by the City Planning Board. Within the circulation element of the plan, public input was gathered for issue identification. The public identified several bicycle and pedestrian related issues within the City, including the need for traffic calming, better wayfinding signage, a complete bicycle network, pedestrian connectivity to Ocean Grove, redevelopment of the transportation center, and the need for a citywide streetscape and sidewalk plan. The plan provided several recommendations to improve transportation circulation in the City. These include:

1. Promote pedestrian and bicycle safety and circulation by implementing intersection improvements at high traffic locations and bicycle lanes and storage racks where appropriate
2. Reinforce gateway locations to provide

attractive entrances to the City by using wayfinding signage, landscaping, and streetscape improvements. Primary gateways were identified as Main St (northern and southern boundaries), and Asbury Ave

3. Work with Monmouth County to determine designated bicycle routes within the City. Routes should connect public areas with other destinations, including the transportation center

4. Evaluate the feasibility of “boulevarding” Memorial Dr

2017 Asbury Park Master Plan Reexamination Report

A current effort is underway to update the 2006 Asbury Park Master Plan. Each of the original circulation objectives is being re-examined, along with a new set of recommendations going forward, including:

1. Increase bicycle parking capacity
2. Improve visibility of bicyclists and pedestrians with standardized markings and signage
3. Address deliveries and passenger drop-off/pick-up in streetscape design
4. Prepare a streetscape study for the western Asbury Ave corridor
5. Improve existing and create new wayfinding
6. Improve rail crossings
7. Enhance the transportation center

2008 Springwood Avenue Redevelopment Plan (Amended 2014)

The Springwood Avenue Redevelopment Plan, first completed in 2008 and later amended in 2014, was designed to enhance the quality of life along Springwood Ave in the southwestern portion of the City.

The plan called for the creation of new businesses, housing, public spaces, and a park along the Springwood Ave corridor between Memorial Dr and Ridge Road. Included in the plan’s recommendations were several circulation related improvements. These improvements, limited to the Springwood Ave corridor, include the installation of decorative pedestrian lighting, benches, trash receptacles, highly visible marked crosswalks, street trees, planters, bus shelters, bicycle lanes, bicycle racks, and a wayfinding signage system. In addition to streetscape improvements, the plan recommended site development standards to support a more pedestrian-friendly environment and improved walkability, including buildings oriented towards the street, rear parking, and access control with primary access via side streets or rear alleys.

2006-2012 Asbury Park Cultural Plan

The Asbury Park Cultural Plan was the first plan of its kind in Monmouth County. The plan was created specifically to guide the efforts of every organization and agency that cares about arts and culture in Asbury Park. While most the goals and objectives outlined in the plan deal specifically with those issues, one of the goals relates directly to this study. The plan calls for the development of a public transportation loop that makes arts and historic sites accessible to all residents and visitors.

2008 Main St Redevelopment Plan

The 2008 Main Street Redevelopment Plan was an effort to improve the vitality of the most heavily utilized roadway in Asbury Park. The City viewed this roadway as a critical piece of the overall effort to revitalize Asbury Park. The plan examined the entire length of Main St within the City, from the southern to the northern border. The primary takeaway from the plan was the recommendation of a road

diet on Main St. The plan calls for the removal of two vehicular travel lanes and for the installation of a median and two bicycle lanes in their place. In addition to the road diet, the plan also outlines the need for streetscape improvements along the corridor, including street furniture, pedestrian lighting, and sidewalk widening. Finally, the plan recommended installing sidewalks on both sides of the train station to improve connectivity and pedestrian safety between the train station and the City.

2010 Coastal Monmouth Plan

The Coastal Monmouth plan was initially completed in 2007 and later revised in 2010. The plan was initiated to address future development of the County's Atlantic coastal region, which accounts for 40% of the County's population. The plan recommended that a bicycle facilities plan be drafted to address the entire region rather than on a municipal level, especially due to the small nature of many municipalities, including Asbury Park.

2012 Connecting Community Corridors

The 2012 Connecting Community Corridors Plan, prepared by Together North Jersey, was an effort to study several transportation corridors beyond municipal boundaries. The study area focused on NJ TRANSIT's North Jersey Coast Line, anchored around the Asbury Park and Bradley Beach Train Stations as well as several major roadways, including Main St, Memorial Dr, and east-west gateways into the study area. The research team identified several project themes for the study, one of which was traffic calming and pedestrian and bicycle improvements. Within this theme, the following recommendations were made:

1. Add crosswalks, curb ramps, traffic and pedestrian signals, and 'stop for pedestrian' signs on key Memorial Dr intersections

2. Examine the feasibility of installing bicycle lanes on Memorial Dr

3. Add 'share the road' signage and stripe sharrows on select east-west streets and Ocean Ave

4. Amend ordinances to encourage pedestrian-friendly mixed-use development that enhances the existing business district

5. Expand storefront façade program

In addition to these improvements, the project team created a concept plan for the area around the Asbury Park Train Station. Key recommendations stemming from this element include:

1. Create public spaces to connect the train station to Cookman Ave

2. Intersection improvements at Springwood Ave and Memorial Dr for better connectivity to the west

3. Public green space, improved parking lot, bus shelters, and streetscape along Memorial Dr

4. Artist mural program to address blank walls to serve as public art and wayfinding

SRTS Program

Asbury Park has been an avid participant in the Safe Routes to School (SRTS) Program since 2014. The program is a national initiative designed to make routes safer for all children to walk and bicycle to school. Three schools in the Asbury Park School District have participated in the SRTS program, including the Barack Obama Elementary School, Bradley Elementary School, and Thurgood Marshall Elementary School. The schools have participated in the International Walk to School Day and National Bike Month numerous times. In addition, several SRTS programs have been conducted at the schools, including pedestrian safety programs, bicycle rodeos, and a bookmark design contest to promote walking and biking for students. Due to

their high level of participation and positive results, two of the schools recently won the 2017 SRTS Gold recognition award, along with numerous other awards in recent years.

Monmouth County Bicycle Facility Policy and Guidelines

In April 2015, Monmouth County Freeholders adopted a resolution amending the Monmouth County Bicycle Facility Policy and Guidelines. Where possible, off-road, shared-use paths are encouraged. For on-road facilities, all bicycle facilities on county roads must follow AASHTO design guidance.

Bike Share

In August of 2017, Asbury Park unveiled its first ever bicycle sharing service, complete with six docking stations. The program has attracted over 400 new members in the first month alone. Over 700 rides were taken in the month of August, totaling over 100,000 minutes and offsetting 17,000 lbs of carbon dioxide emissions.

NJ 71 Road Diet

In May of 2017, Asbury Park City Council voted to move forward with a road diet for Main St and Deal Lake Dr. Slated to begin work in 2018, the project will narrow the existing four lanes of traffic down to two, install bicycle lanes in both directions, install curb extensions, and improve bus stop shelters.

Monmouth County Bicycle Facility Policy and Guidelines

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Local Bicycle Advocates

Bicycle Recycling Program

Second Life Bikes, located along Main St runs a program that provides lower income children with bicycles. The bike shop collects donated bicycles from across the region and redistributes them to Asbury Park residents at a reduced cost or free of charge.

Asbury Park Complete Streets Coalition

The Asbury Park Complete Streets Coalition conducts frequent bicycle rides with local residents to raise public awareness about bicycling in Asbury Park. These bike rides are designed to encourage more people to ride, as well as to remind drivers that bicycles are entitled to ride in the primary right-of-way.



3

Community Vision and Goals

Public involvement is an essential component of the Asbury Park Plan for Walking and Biking. The planning process is intended to involve key stakeholders and the general public throughout the plan’s development. The community has provided valuable input, insights, and feedback on existing conditions, areas of need, and improvement concepts, and shaped the goals and vision statement that ultimately guide the plan. The result will be a plan that is reflective of the priorities and interests of the community and its residents, leading to broader support for implementation.

Community Involvement Activities

The team engaged stakeholders and the general public throughout the plan’s development. The community has provided valuable input, insights, and feedback on existing conditions, areas of need, and improvement concepts, and shaped the goals and vision statement that ultimately guide the plan. The result will be a plan that is truly reflective of the priorities and interests of the community and its residents, leading to broader support for implementation.

SAC

A local Study Advisory Committee (SAC) is providing input and guidance at key intervals during the planning process. The SAC includes representatives from Asbury Park’s local government, engineering and public works, business association, Complete Streets Coalition, residents, Monmouth County Division of Planning, NJDOT, NJ TRANSIT, EZ Ride Transportation Management Association, and local residents. The SAC met formally to conduct a visioning exercise and brainstormed strengths and weaknesses of the existing bicycle and pedestrian networks in the City. The SAC will meet two more times during the duration of the project, once to discuss existing conditions and findings, and once for the proposed recommendations.

Kick-off and Visioning Exercise – 7/19/2017

The study team presented the initial study overview to the SAC. The SAC then participated in a visioning exercise designed to guide the future recommendations of the study. Members were asked to envision what success may look like in Asbury Park, as well as goals for the plan and challenges and obstacles to success. Members then participated in a map markup exercise where they marked comments about various locations in Asbury Park that need to be addressed by the plan.

Focus Groups

In addition to the SAC, the project team also sought input from local advocates and the business community by participating in two focus groups. The members of each focus group brought their extensive knowledge of Asbury Park to the table.

Business Community Focus Group – 09/13/2017

The project team facilitated a discussion with representatives from local businesses to get their input on the plan. Topics of discussion included employee commuting, economic development, bicycle parking, bicycle safety, and more. The group also participated in a map markup exercise to illustrate their bicycle and pedestrian related ideas.

Advocates Focus Group – 09/28/2017

The project team facilitated a discussion with representatives from local advocate groups to get their input on the plan. Topics of discussion included equity, accessibility, bicycle safety, senior citizens, tourism, and more. The group also participated in a map markup exercise to illustrate their bicycle and pedestrian related ideas, emphasizing the need to actively engage the City's west ward residents and minority communities.

Public Events & Meetings

The project team also sought input from the general public by participating in community events around the City. Events included:

Asbury Park Night Out - 8/1/2017

The project team staffed a small space during the community's Night Out event in the parking lot of the municipal complex. The event was an opportunity for project staff to distribute project information and talk with members of the public early in the planning process about key issues and needs. Members of the public provided input via comment forms and marking-up a large map of the City, identifying problem areas and desired walking and bicycling routes.

Blue Bishop Community Outreach Day – 08/19/2017

It was recognized at the SAC meeting that the underrepresented southwest quadrant of Asbury Park must be included in the outreach process. The project team saw the Blue Bishop Community Outreach Day as a major opportunity to reach out to that community. The project team staffed a small space during the community's Blue Bishop event along Springwood Ave near the intersection of Atkins Ave. The event was an opportunity for project staff to distribute project information and talk with members of the public early in the planning process about key issues and needs. Members of the public provided input via comment forms and marking-up a large map of the City, identifying problem areas and desired walking and bicycling routes.

Wikimap

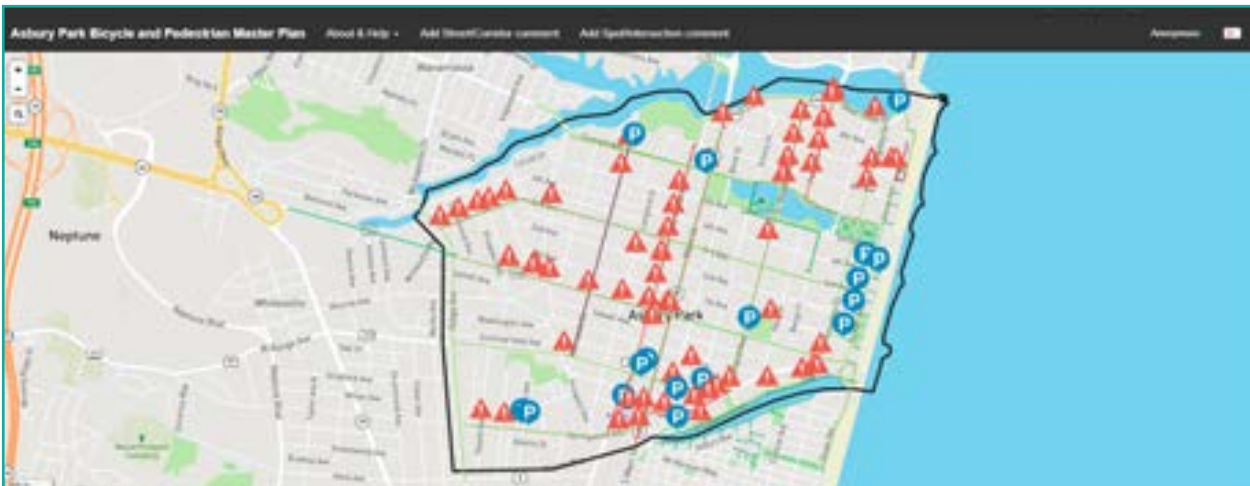
An online "Wikimap" website (shown on next page) was launched in July 2017 to collect place-based comments about walking and biking in Asbury Park. Similar to hard-copy maps used at public events, the web interface allowed users to mark-up a virtual map of the City. Accessible to the

general public, the Wikimap application engages users to identify corridors and spot locations that are difficult for walking and biking, desired walking and biking routes, and desired locations for additional bicycle parking.

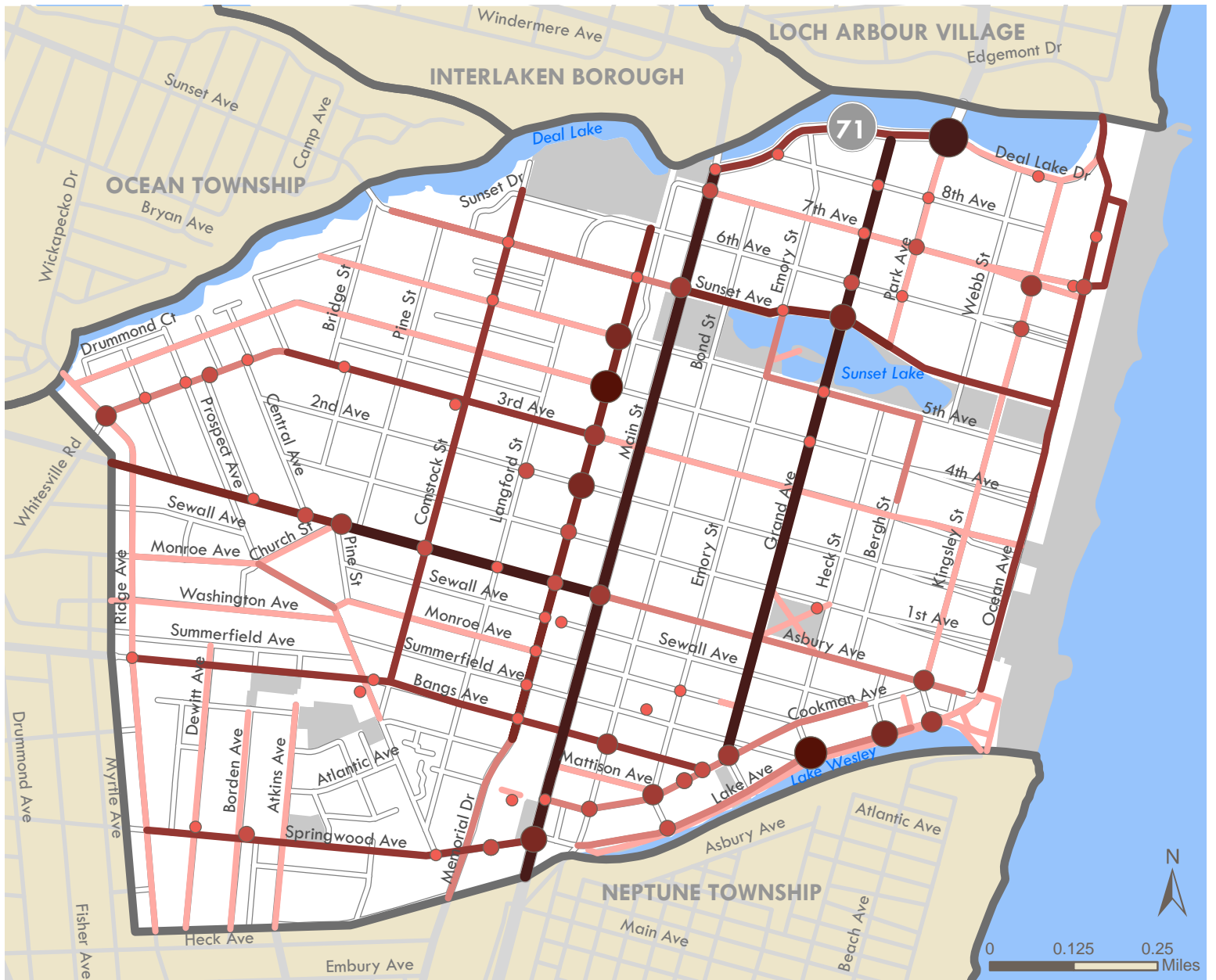
The synthesis of all public input provided to the project team, (Wikimap, public events,

SAC meetings, and focus groups) can be seen in Map 1 on page 14.

Below:
Markups provided by local residents during the Blue Bishop community outreach event



Above: Over the course of the study, 111 unique users accessed the Wikimap site and provided a total of 193 comments on current issues and desired improvements



MAP 1 - PUBLIC INPUT FROM MEETINGS, OUTREACH EVENTS AND WIKIMAP

Comment Frequency



Several roadways and intersections were repeatedly mentioned during meetings, outreach events, and on the Wikimap. The most frequently mentioned of these locations are Grand Ave, Main St, Asbury Ave, Memorial Dr, and the intersections of Deal Lake Dr and Park Ave, Memorial Dr and 4th Ave, Grand Ave and Sunset Ave, and Lake Ave and Park Ave



Clockwise from top:

(1) Local Advocates Focus Group

(2) Study Advisory Committee Meeting #1

(3) Public engagement at Blue Bishop Community Outreach Day

Vision and Goals

Developed collaboratively with the SAC, the Asbury Park Plan for Biking and Walking defines an aspirational vision for the future of active transportation in the City, and its role in community life.

Vision

Walking and bicycling are preferred modes of travel in Asbury Park. They are comfortable, safe, convenient, and accessible options for all residents and intuitive, attractive choices for visitors. The City's multimodal network of Complete Streets enhances access to neighborhoods throughout the City, reduces reliance on the automobile, and supports continued economic growth and tourism.

To support this vision, the plan seeks to achieve the following goals. The goals are listed in the order in which they were prioritized by attendees of the first SAC meeting:

Equity and Community

Create a City-wide plan that unites the community, engages and links neighborhoods across the City, and improves safety and mobility for all residents

Safety

Improve bicycle and pedestrian safety through targeted infrastructure improvements, traffic calming, Complete Streets design treatments, and education strategies for all roadway users

Encourage Walking and Bicycling

Create a robust bicycle network and identify pedestrian improvements that provide access to destinations and neighborhoods throughout the City and make it easy, comfortable, and convenient for all residents to walk or bicycle as a part of their daily routine

Tourism

Enhance bicycling and walking to support tourism and local businesses, promote the City as a regional destination, provide last-mile connections to transit, and mitigate traffic and parking demand

Implementation

Develop a feasible plan that can be implemented over time, guide long term planning, and be integrated into capital improvement projects

Benefits of Walking and Biking

Active transportation provides many community-oriented and regional benefits:



Transportation Equity

Bicycling and walking are more than recreation. They are a means of getting to work, running errands, and seeing friends, particularly for those that are too young to drive, unable to drive, cannot afford or choose not to own a car, or simply prefer not to drive. In most communities, 20%-40% of the population does not drive. Short trips of one mile or less can easily be made by bicycle or on foot, yet 60% of these trips are typically made by car.¹



Environmental Sustainability

Active transportation provides a greener, more sustainable alternative to driving. It has a reduced impact on roadways, both in terms of space consumed and infrastructure maintenance required. Shifts from driving to walking or bicycling can reduce vehicle miles traveled and congestion; fuel consumption; and emissions of CO₂, CO, NO_x, and VOCs.



Public Health

Active transportation integrates physical activity into everyday life. This can lead to decreased rates of obesity, diabetes, heart disease, high blood pressure, and other ailments. Children who walk or bike to school, for example, have been found to be more attentive, better able to concentrate, and have mental alertness that is one-half school year more advanced than their less active counterparts.²



Economic Vitality

An increase in bicycling and walking has a variety of positive economic impacts. Customers arriving by bicycle or by foot are more likely to shop locally, which is beneficial to the economic strength and stability of the community. Though spending less per trip than motorists, they tend to spend more over the course of a month.³ Pedestrian infrastructure can also support a more vibrant community, boost property values and sales revenues, and spur private investment.



Safety

Safety improvements are an essential component to encouraging more people to walk or bicycle. Investments in bicycle and pedestrian infrastructure also improve safety for all roadway users. High vehicle speeds can inhibit a driver's ability to react to activities happening along the roadway and narrow a driver's peripheral vision. Traffic calming enhancements reduce crash severity for all modes and create a more attractive environment for active transportation.

¹ *National Highway Travel Survey, 2009*

² *Egelund, N. et al., Mass Experiment, 2012*

³ *Popovich and Handy, Bicyclists as Consumers, 2014*



4

Existing Conditions

In order to develop bicycle and pedestrian recommendations for Asbury Park, the project team first inventoried and/or analyzed existing conditions within the City, including key destinations, crash locations, the bicycling network, off-road paths, bicycle parking, and the new bicycle share program.

Key Destinations

Locations that could attract or produce a high number of bicycle trips were inventoried and mapped, as shown in Map 2. Key destinations were grouped into the following categories:

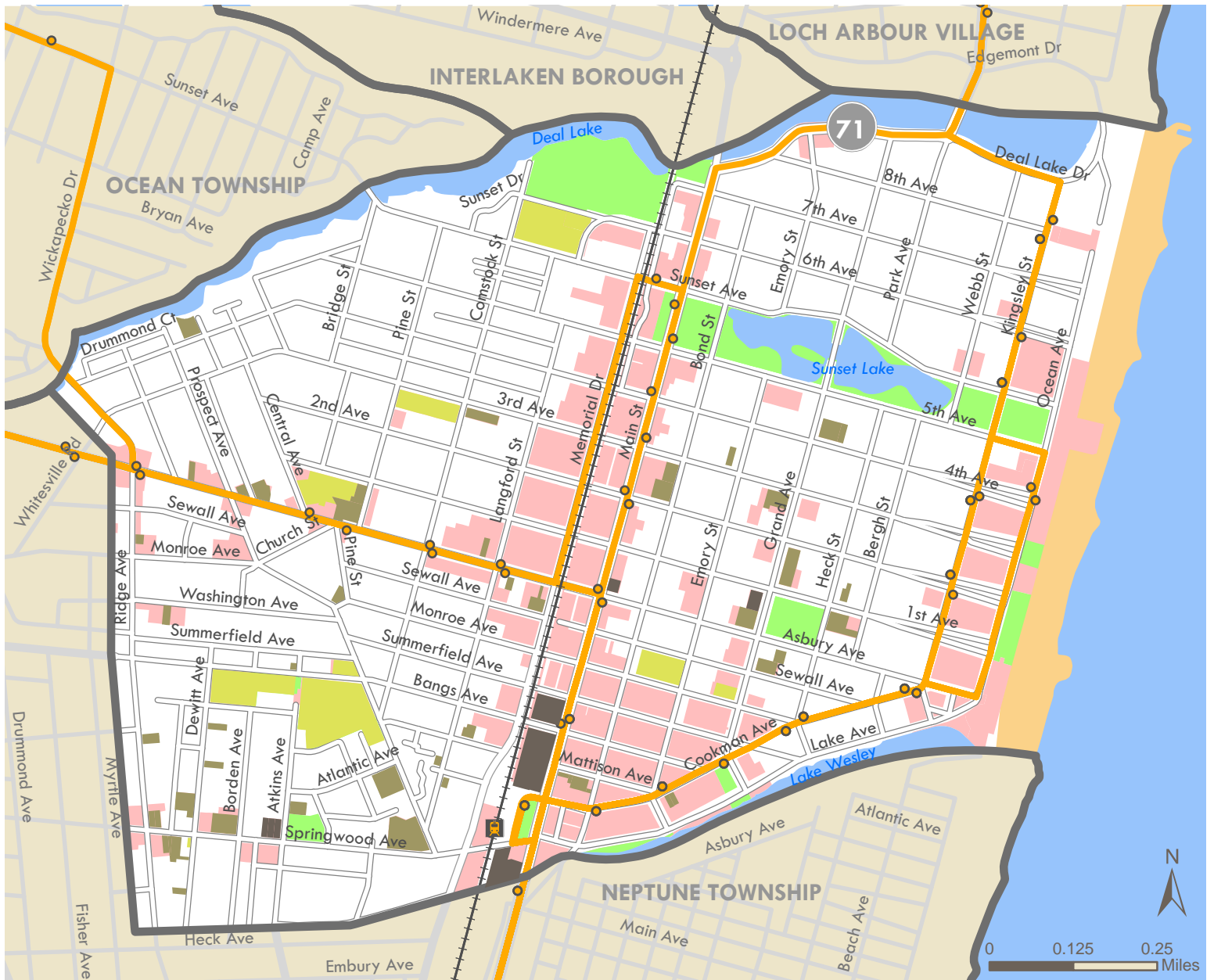
Schools – Schools are among the largest generators of foot and bicycle traffic. Most school-children in Asbury Park are within walking distance of the City’s schools. There are nine schools in the study area, five of which are public, three that are private, and a single charter school.

Parks – Many users, including children and the elderly, bike or walk to parks for recreation. There are several parks in Asbury Park and each one generates foot and bicycle traffic.











Transit – Many transit riders arrive at bus stops and train stations by foot or bicycle. Asbury Park has over 80 NJ TRANSIT bus stops in addition to the Asbury Park Train Station along the North Jersey Coast rail line.

Municipal Buildings – The public library, post office, senior center, City hall, and other public buildings generate foot and bicycle traffic.

Commercial – Many people walk or bike to commercial establishments. Those that drive inevitably walk at some point in their journey. There are multiple commercial districts in Asbury Park, including Cookman Ave, Springwood Ave, and Main St. Each of these districts generates varying degrees of foot and bicycle traffic.



MAP 2 - KEY DESTINATIONS AND TRIP GENERATORS

-  Asbury Park Train Station
-  NJ Transit Bus Stop
-  NJ Transit Commuter Rail
-  NJ Transit Bus Route
-  School
-  Park
-  Commercial
-  Municipal Building
-  Place of Worship
-  Beach

Much of Asbury Park can be accessed on foot. As a walking school district, each school within the City generates a large number of pedestrian and bicycle trips. The concentration of places of worship, municipal services, parks, commercial activities, transit facilities, and waterfront destinations within just 1.6 square miles makes these destinations easily accessible by walking or biking.

Houses of Worship – Community gathering spots may attract residents from the surrounding neighborhoods. There are nearly 30 houses of worship in Asbury Park alone. Each of these buildings serves its own community and each one has the potential to generate foot and bicycle traffic.

The Beaches and the Boardwalk – Possibly the single greatest generator of foot and bicycle traffic is the mile-long Asbury Park Oceanfront, with its popular boardwalk and sandy beaches. While the majority of foot and bicycle traffic originates in the adjacent visitor parking lots, many Asbury Park residents walk and bicycle to the beach through the City.

Crash Analysis

Analysis of reported crashes can provide information related to roadway safety issues, such as common crash locations or common crash characteristics and contributing factors. However, it is important to recognize the limitations of the data. Bicycle and pedestrian crashes are frequently under-reported. Crashes that do not result in injury, have minimal property damage, or do not involve a motor vehicle are less likely to be reported to the police, where most crash data is collected and tracked.

Furthermore, a lack of reported crashes does not necessarily indicate a safe bicycling or walking environment. Perceived safety issues and conflicts with motor vehicle traffic are often indicated as the highest concerns that deter more people from bicycling or walking. Thus a road perceived as “unsafe” may have few actual reported crashes in part because few people choose to walk or bicycle along it.

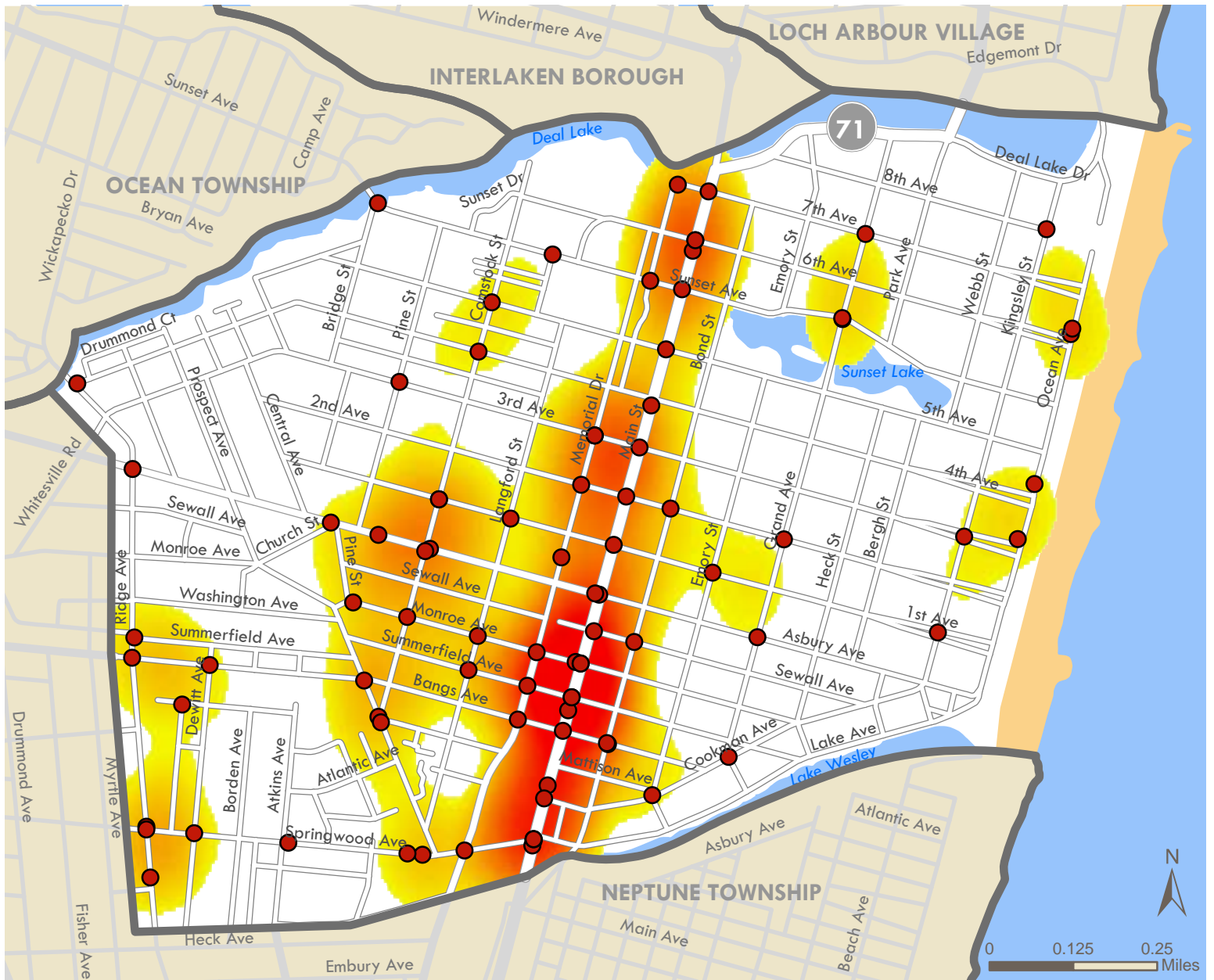
Despite the known limitations, analysis of reported crashes can provide important insights. If a significant number of crashes

in the same area were severe enough to be reported, it can indicate a potential safety issue and problem area for further assessment.

The project team reviewed the most recent six years of NJDOT bicycle and pedestrian crash data for the study area in order to identify the most dangerous roadways and intersections. Between the years of 2011 and 2016, a total of 203 bicycle and pedestrian crashes involving 220 victims were recorded in Asbury Park. 111 of these crashes (55%) involved pedestrians while 92 crashes (45%) involved bicyclists. A total of nine pedestrians and one bicyclist sustained incapacitating injuries, while 31 pedestrians and 29 bicyclists sustained moderate injuries. No fatal crashes were reported between 2011 and 2016.

Crash victims were documented from all age groups, though two age groups contained a disproportionate number of victims when compared to the age distribution of the City. Pedestrians over the age of 85 and between the ages of 15 and 17 were the most overrepresented age groups involved in crashes. Males were involved in 55% of all pedestrian crashes and 73% of all bicycle crashes, or about the state average. Just over half the crashes occurred at an intersection and 60% occurred during daylight hours. Driver inattention was the primary culprit in 51% of all pedestrian crashes and 62% of all bicycle crashes.

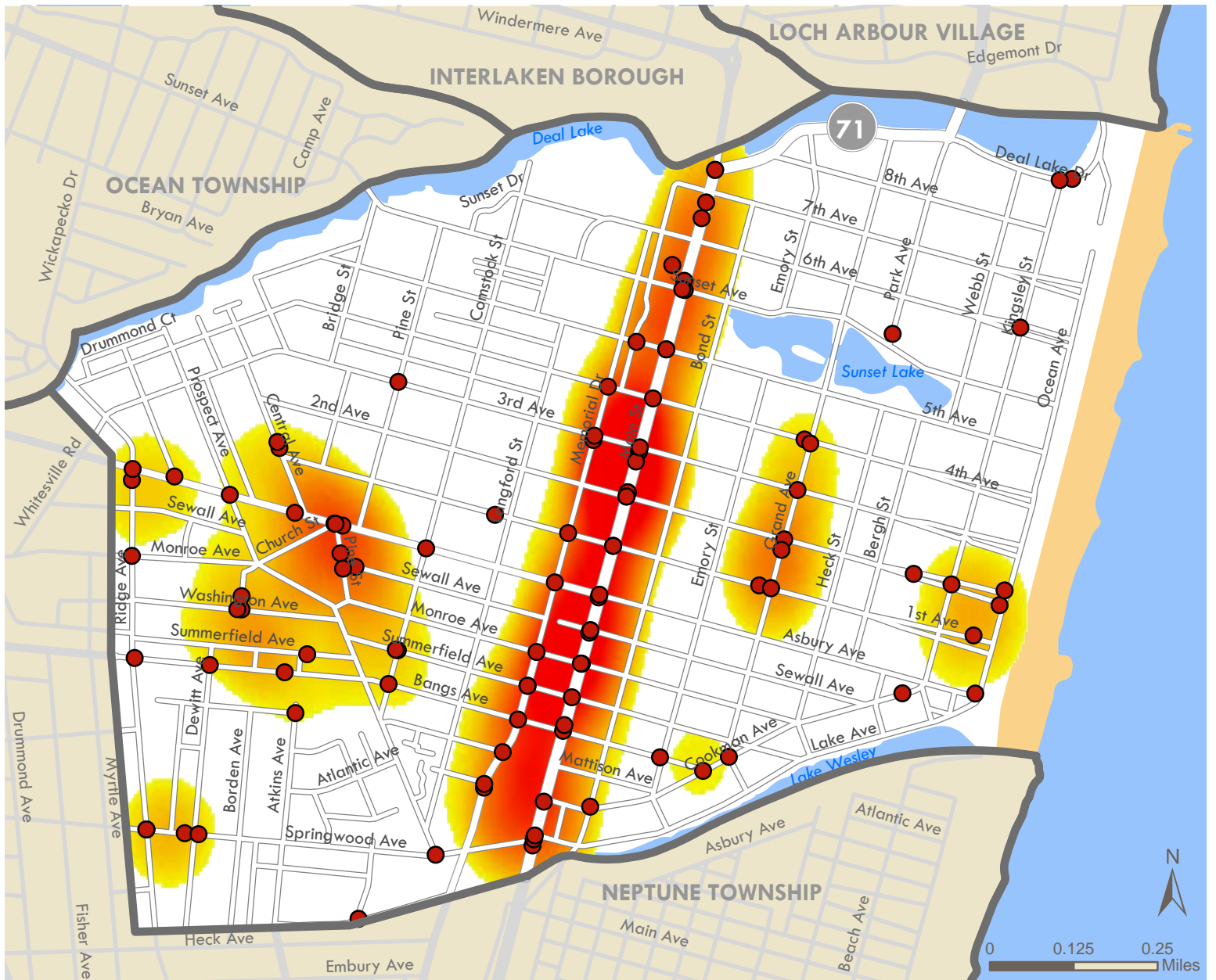
The distribution of bicycle and pedestrian crashes centers around Main St. Smaller crash hotspots are situated along Asbury Ave near the intersections of Comstock St and Pine St. Pedestrian crashes are a bit more polarized to Main St, with less overall concentration elsewhere, while bicycle crashes are slightly more distributed throughout the City, as shown in Map 3 and Map 4.



MAP 3 - BICYCLE CRASH LOCATIONS AND CONCENTRATIONS (2011-2016)

- Bicycle Crash
- High Concentration of Crashes
- Low Concentration of Crashes

The largest concentration of bicycle crashes can be seen along Main St, especially in the southern section of the City. While ridership along the boardwalk and near the waterfront is substantially higher than elsewhere in the City, the same concentration of bicycle crashes are not seen in these areas.



MAP 4 - PEDESTRIAN CRASH LOCATIONS AND CONCENTRATIONS (2011-2016)

- Pedestrian Crash
- High Concentration of Crashes
- Low Concentration of Crashes

The largest concentration of pedestrian crashes can be seen along Main St, with additional clusters along Asbury Ave and Grand Ave. Crash concentrations are located along the roadways with the highest volumes and vehicle travel speeds in the City.

Pedestrian Network

As part of the existing conditions analysis, the project team conducted a high-level inventory of pedestrian infrastructure along the street network within Asbury Park.

The latest satellite imagery, combined with targeted field observations were used to document the presence of, or lack of, sidewalks and pedestrian countdown signals at signalized intersections, shown in Map 5. A more detailed inventory, documenting ADA facilities, sidewalk widths, and crosswalk striping, will be addressed on an as-needed basis in the recommendations portion of the plan.

Existing Sidewalk Network

The sidewalk network in Asbury Park is largely complete. Of the 37 miles of pavement in the City, just 1.4 miles lack adequate sidewalks on at least one side. The most significant sidewalk gaps exist on Deal Lake Dr between Webb St and Main St and along Sunset Ave between Webb St and Bond St. Several additional segments of roadways lack adequate sidewalks, but only for short durations. Many of these segments are located next to vacant lots or unkept properties. None of the sidewalk gaps exist on both sides of the road.

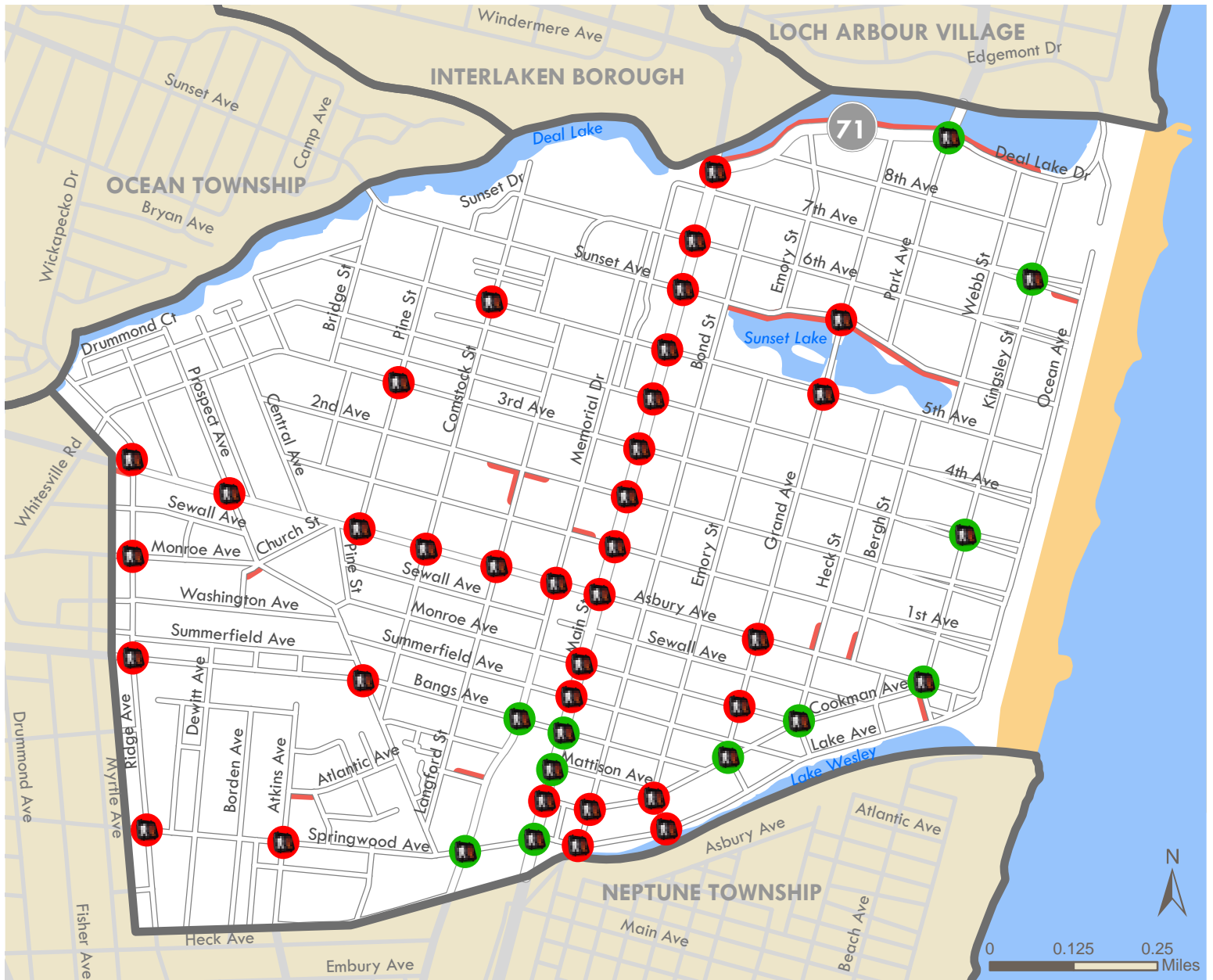
The most challenging sections of the sidewalk network for pedestrians to navigate, as often noted by public input, are located near the railroad crossings between Memorial Dr and Main St. Due to the abundance of driveways, long stretches of roadways without curb lines, a lack of pedestrian signals, and a lack of striped

crosswalks, walking in these areas can be challenging. In addition to these segments, Asbury Park has several natural boundaries that restrict pedestrian movements to a limited number of roadways and/or shared-use paths. Most notably, Wesley Lake to the south, Deal Lake to the north, and Sunset Lake between Sunset Ave and 5th Ave. The communities of Loch Arbour and Interlaken to the north of Asbury Park can only be accessed by three roadways, while the community of Ocean Grove to the south can be accessed by two pedestrian bridges and the Boardwalk. A recently opened pedestrian bridge provides access across Sunset Lake, effectively joining two segments of Emory St that are otherwise discontinuous to vehicular traffic.

Due to the rapid pace of redevelopment, many sidewalks will be installed or rehabilitated by the City and by developers in the future, likely widening them in the process.




Pedestrian Signals

Asbury Park currently has 44 multi-phase signalized intersections throughout the City. Much of the City's signal infrastructure lacks pedestrian countdown signals. Just 11 out of 44 signalized intersections currently have these ped-heads installed. Busy intersections that lack such infrastructure pose a significant safety risk to pedestrians and drivers. Some of the most notable intersections lacking ped-heads include Mattison Ave at Cookman Ave, Main St at Deal Lake Drive, and Asbury Ave at Main St.



MAP 5 - PEDESTRIAN INFRASTRUCTURE INVENTORY

Pedestrian Infrastructure

-  Intersection Missing Pedestrian Signals
-  Intersection With Operational Pedestrian Signals
-  Sidewalk Gap

While the overall sidewalk network is nearly complete, Asbury Park's traffic signals often lack pedestrian signal heads and countdown timers.

Bicycle Network

Existing Bicycle Infrastructure

Asbury Park currently has three major roadways with bicycle facilities. Bicycle lanes are striped on the entire one-mile stretch of Grand Ave on the eastern side of the City and along portions of Sunset Ave and 4th Ave. Along these roadways, unbuffered bicycle lanes are striped in both directions at a width of 5.5 feet (see below). Supplementing the bicycle lanes are three off-road paths that offer vital connections to Asbury Park’s cyclists; the Boardwalk, the Sunset Ave Pedestrian Bridge, and the path around a portion of Deal Lake. The Boardwalk is the epicenter of bicycling activity in Asbury Park, drawing hundreds of locals and visitors each day. The Boardwalk is open to cyclists between 10 PM and 10 AM daily and provides a seamless, low stress, north-south route between Lake Wesley and Bradley Cove. The pedestrian bridge spanning Sunset Lake was reopened in late June of 2017 to a City-wide embrace. It offers low-stress connectivity between Sunset Ave and 5th Ave. The shared-use path adjacent to Deal Lake provides a low stress connection between Asbury Park and Loch Arbour.

To support the high rates of cycling in Asbury Park, several dozen bicycle parking

locations are scattered throughout the City. Primarily concentrated near the Boardwalk and in the area between City Hall and the Cookman Ave commercial district, these bicycle parking locations take on one of four designs; Inverted U, wave, corral, or bike-share docking station. There are 74 documented inverted U style bicycle parking locations within the City, each supporting two bicycles. 12 wave style bicycle parking locations throughout the City provide anywhere from five to nine bicycle parking spots each. Two bicycle corrals, located along Cookman Ave and Lake Ave provide ten parking spaces each. To support the new bicycle share program, eight docking stations have been installed in the City, each supporting between eight and 14 bicycles. Map 6 illustrates the existing bicycle infrastructure in the City.

In addition to the bicycle lanes and shared-use paths, Asbury Park recently unveiled a new bicycle share program, complete with eight docking stations distributed throughout the City. Within the first month of its debut, 442 new members have taken a combined 716 trips totaling over 105,000 minutes of cycling. Trip activity can be seen in Map 7. As the system gains popularity, new docking stations and addition bicycles will be added.



Above: Bicycle Lanes are striped the entire length of Grand Ave



MAP 6 - BICYCLE INFRASTRUCTURE INVENTORY (As of January 2018)

Bicycle Parking Type

- Inverted U
- Wave
- Corral
- Z Zagster Bicycle Share Station

Facility Type

- Bicycle Lane
- Shared-use Path
- Shared Lane Marking

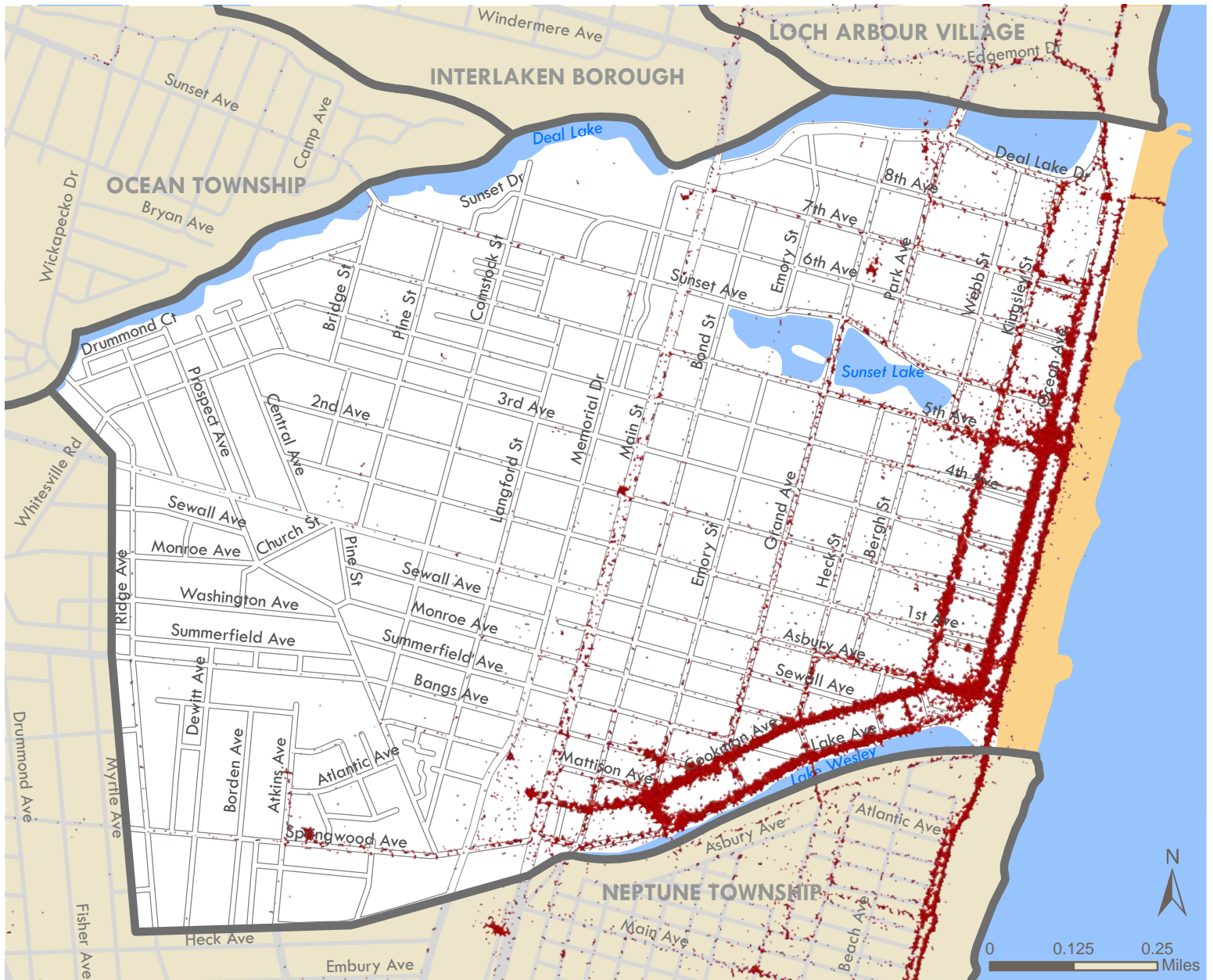
The City has been rapidly investing in bicycle parking at high demand locations around the City. In addition, The new bike-sharing program is expected to generate far more trips in 2018 as the tourist season approaches and more residents find utility in the program.

Strava Data

Since 2008, the Strava application for Android and Apple devices has been used by runners and cyclists to record their trips. While used primarily by enthusiasts for recreational and health related tracking, Strava's data provides an insight into bicycle demand around Asbury Park by showing the most heavily used roadways for cycling. Strava has created a world-wide heat map illustrating all logged bicycle activity. As shown below, the eastern half of the City has substantially more bicycle miles logged. The primary roadways being used by Strava users are Main St, Grand Ave, Deal Lake Dr, Ocean Ave, Cookman Ave, Lake Ave, the Boardwalk, Sunset Ave and Park Ave. The lack of Strava data in the southwest portion of the City does not indicate that bicycle demand is necessarily lower, but rather fewer residents may have access to the application.



Picture Source: https://cdn-images-1.medium.com/max/1400/1*mbXdGNB4vAJ18V54g3glXw.png



MAP 7 - Bike Share GPS Locations (August - October 2017)

● Bike-share GPS Location

Since becoming operational in August 2017, Asbury Park's bicycle share program has generated hundreds of rides throughout the City and beyond. The majority of rides were taken along the Cookman Ave business district and along the shore. Many rides continued into Neptune Township to the south and Loch Arbour to the north. The program has been sparsely used on the western side of the City.

LTS (Bicycle Level of Traffic Stress)

Bicycle Level of Traffic Stress (LTS) evaluates a cyclist's potential comfort level given the current conditions of the roadway. Different bicyclists have different tolerances for stress created by volume, speed, and proximity of automobile traffic (see graphic on next page). The LTS metric is based on the Dutch concept of low-stress bicycle facilities and has proven influential in the advancement of bicycle planning in the United States.

In general, lower stress facilities have increased separation between cyclists and vehicular traffic and/or have lower speeds and lower traffic volumes. Higher stress environments generally involve cyclists riding in close proximity to vehicular traffic, multi-lane roadways, and higher speeds or traffic volumes.

Four levels of traffic stress were used to evaluate the roadways of Asbury Park:

Level of Traffic Stress 1: The level most users can tolerate (including children and seniors)

Level of Traffic Stress 2: The level tolerated by most adults

Level of Traffic Stress 3: The level tolerated by "enthusiastic" riders who might still prefer dedicated space

Level of Traffic Stress 4: The level tolerated by the most experienced riders

The LTS was evaluated for all roads in Asbury Park. The project team assessed major roadways and key minor roadways in the study using a variety of data sources, including base mapping, GIS data files, NJDOT Straight Line Diagrams, and traffic data from NJDOT. The team also conducted field evaluations to take measurements and verify the various roadway features, character, parameters, and user behavior. For many of the local roads in the study

area, basic assumptions were made of their typical characteristics.

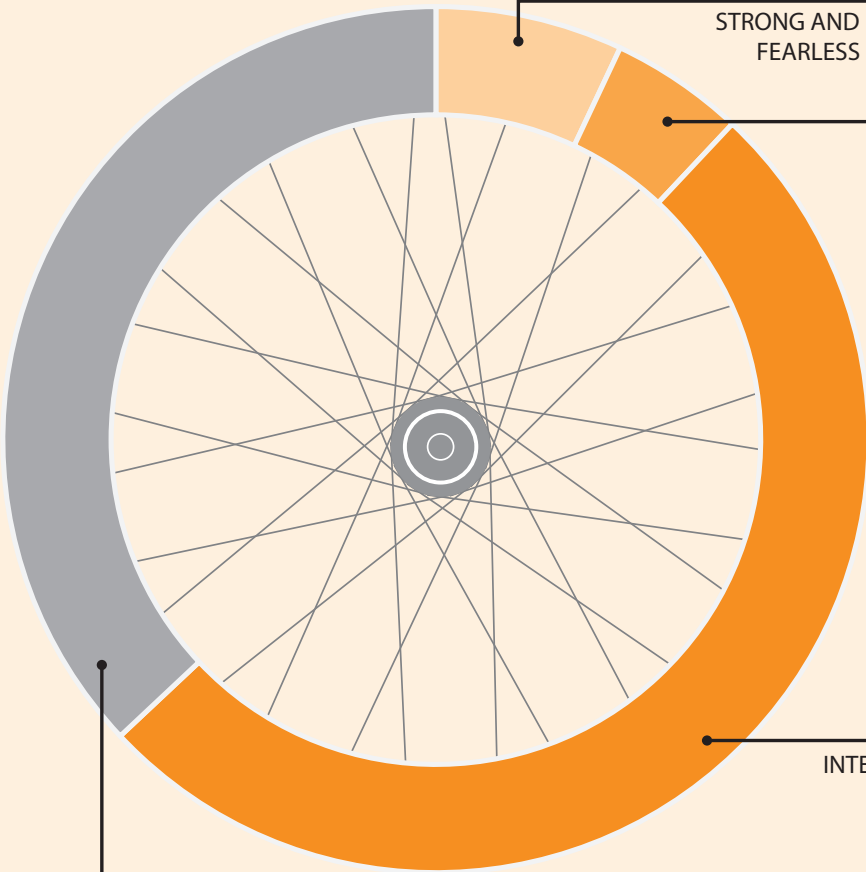
The majority of the streets in Asbury Park are residential streets with relatively low overall volumes, making them LTS 1 roadways that are accessible to all users. There are several roadways classified as LTS 2 due to their higher volumes and more frequent turning movements. Asbury Ave, Springwood Ave, Cookman Ave, Sunset Ave, Kingsley St, and Ocean Ave are among the most noteworthy LTS 2 roadways.

The high-stress (LTS 3 and LTS 4) roadways within Asbury Park include the higher speed and/or higher volume Memorial Dr and Main St. Memorial Dr has a speed limit of 30 MPH and varies between two and four lanes of traffic, with multiple unsignalized intersections. Main St is the primary arterial through the City with four busy lanes of traffic, in addition to high vehicle speeds. Together, these two roadways bisect the City and guarantee a high-stress component to any bicycle ride from one side of the City to the other.

From the perspective of LTS 1 cyclists, such as children bicycling to school or senior citizens bicycling to the store, Asbury Park has many LTS 1 roadways. However, Main St and Memorial Dr function as a barrier to either side of Asbury Park due to their high-stress levels. As a result, LTS 1 bicyclists must rely on two LTS 1 roadways to cross Main St and Memorial Dr, either 6th Ave or 2nd Ave. The lack of low-stress east-west connections is most obvious in the southern half of the City, where no LTS 1 roadways cross Main St and Memorial Dr.

The LTS analysis seeks to uncover an "Island" effect whereby LTS 1 roadways alone are contained in low-stress "islands" (typically low volume residential areas) and are physically blocked from other portions of the City by high-stress arterial roadways. While Asbury Park's LTS analysis did not uncover a major island effect, it did highlight the significant bicycling challenges that Main St and Memorial Dr

4 Types of Bicyclists



7%

STRONG AND FEARLESS

5%

ENTHUSIED AND CONFIDENT



51%

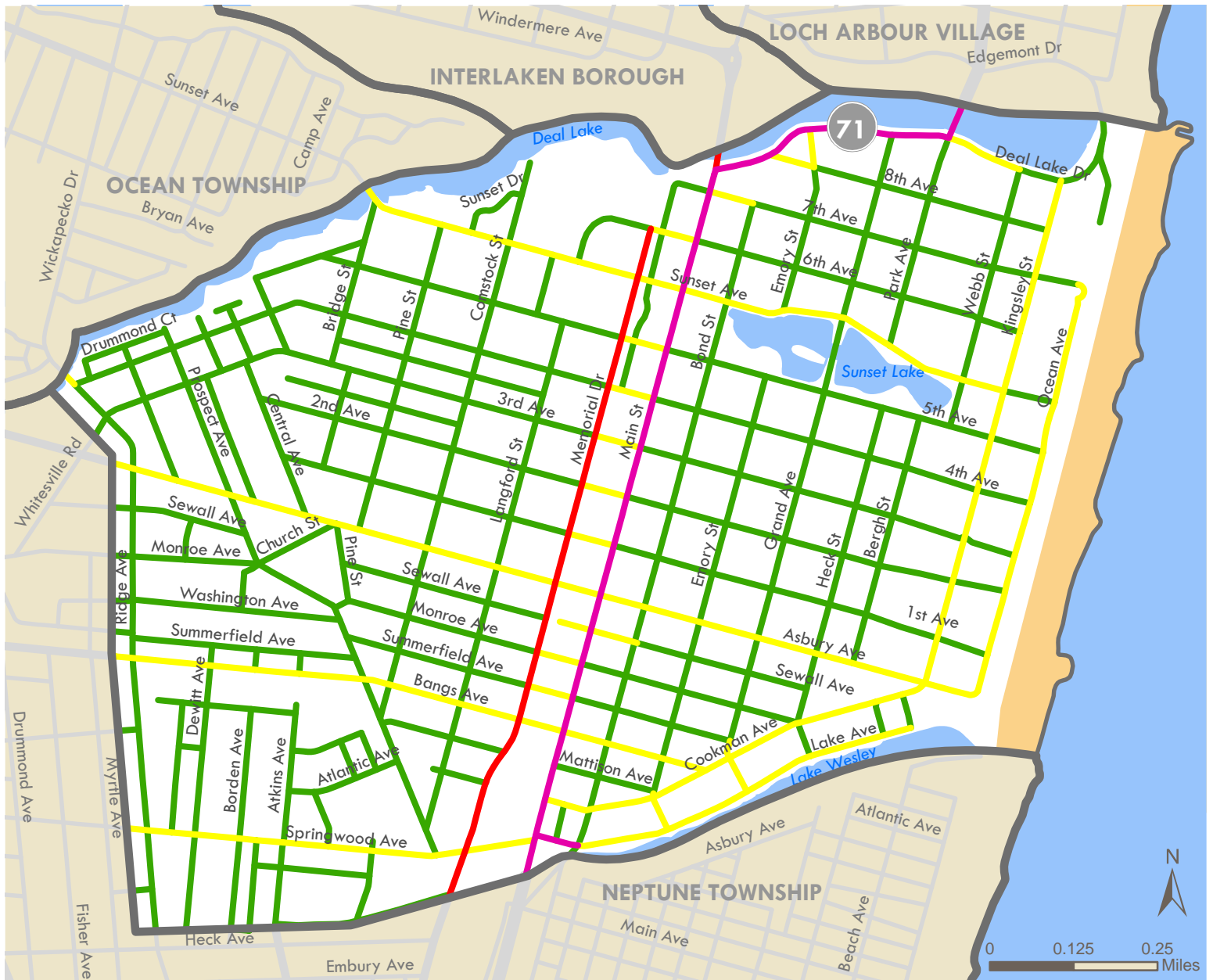
INTERESTED BUT CONCERNED



37%

NOT ABLE OR INTERESTED





MAP 8 - BICYCLE LEVEL OF TRAFFIC STRESS

- Level of Stress 1
- Level of Stress 2
- Level of Stress 3
- Level of Stress 4

Main St, Deal Lake Dr, and Memorial Dr have the highest levels of traffic stress in Asbury Park. These roadways act as barriers for low-stress bicycle riding and may discourage would-be bicyclists from making their journey

While the majority of Asbury Park's roadway network is LTS 1, as shown to the right, there is a major barrier between the east and west sides of the City. The area in the middle of the municipality circled in red is Main St and Memorial Dr, which act as barriers to the low stress network, due to their high volumes and speeds. A second barrier to low-stress cycling exists along the northern boundary of the City, due to high volume, and higher speed bridges.



contribute to the low-stress bicycle network (See Map 8).

Although the LTS analysis helps identify bicycle network issues in Asbury Park, its methodology alone does not necessarily reflect the perceptions of all street users. Actual stress levels may vary between individuals and be based on other factors, such as busy beach days, inclement weather, poor driving culture, and pavement conditions.

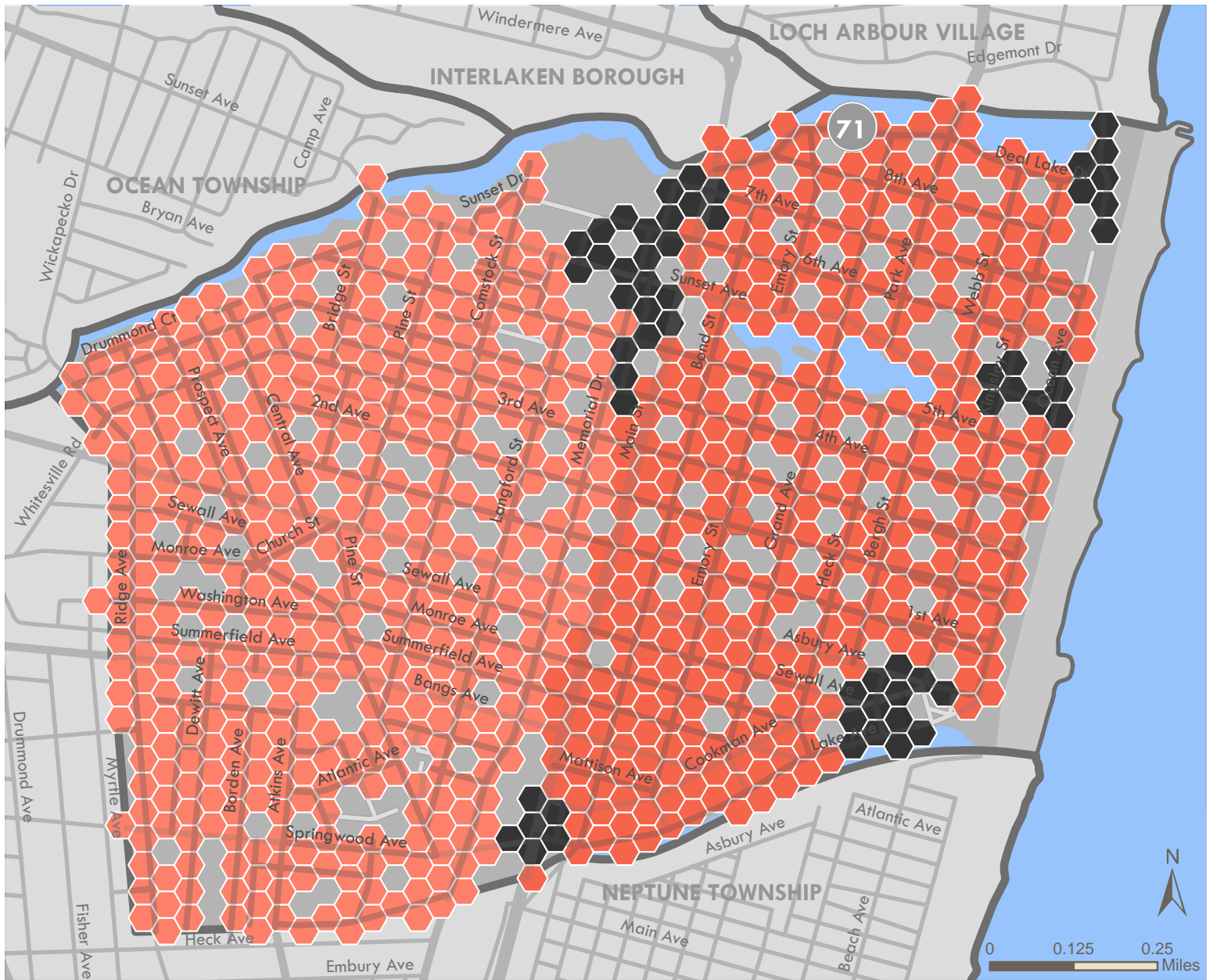
Bicycle Penalty Metric

In order to better understand the bicycle network connectivity in Asbury Park, a technique called Bicycle Penalty was used. The guiding principle behind this analysis is that high stress links in a bicycle network can penalize and hamper bicyclists' ability to access the entire network when compared to an automobile. The analysis works by measuring the percent difference in the ability of a user at one point in the network to access any other point in the network. The analysis compares a user in an automobile, where the entire network is available, to a user on a bicycle who can only use LTS 1 roads (shown in Map 9).

The Bicycle Penalty measurement is expressed on a percentage scale from 0 to 100 percent, which indicates, at a given point, the percentage of the network that is accessible by car but not by bike. For example, a Bicycle Penalty of 60 percent indicates that a bicyclist from that point can access 60 percent less of the network compared to a motorist.

Map 9 shows the Bicycle Penalty for a bicyclist using only LTS 1 road and limited to a two-mile trip distance. Areas of the City shown to have a high Bicycle Penalty, indicate that there is a lack of connectivity between LTS 1 routes, which limits the mobility of these users, who are often children.

As shown in Map 9, northern portions of the City near Memorial Dr and Sunset Ave are not accessible via low stress roadways, as well as portions of Ocean Ave, near the intersection of Main St and Cookman Ave, and at the intersection of Lake Ave and Heck St. Additionally, the entire eastern half of the City is relatively isolated and difficult to navigate for LTS 1 bicyclists compared to motorists. This is largely due to the high stress barrier effect of Main St and Memorial Dr.



MAP 9 - Existing Bicycle Penalty

Bicycle Penalty

- ≤ 12.5%
- ≤ 25%
- ≤ 37.5%
- ≤ 50%
- ≤ 62.5%
- ≤ 75%
- ≤ 87.5%
- ≤ 99.9%
- Not Accessible

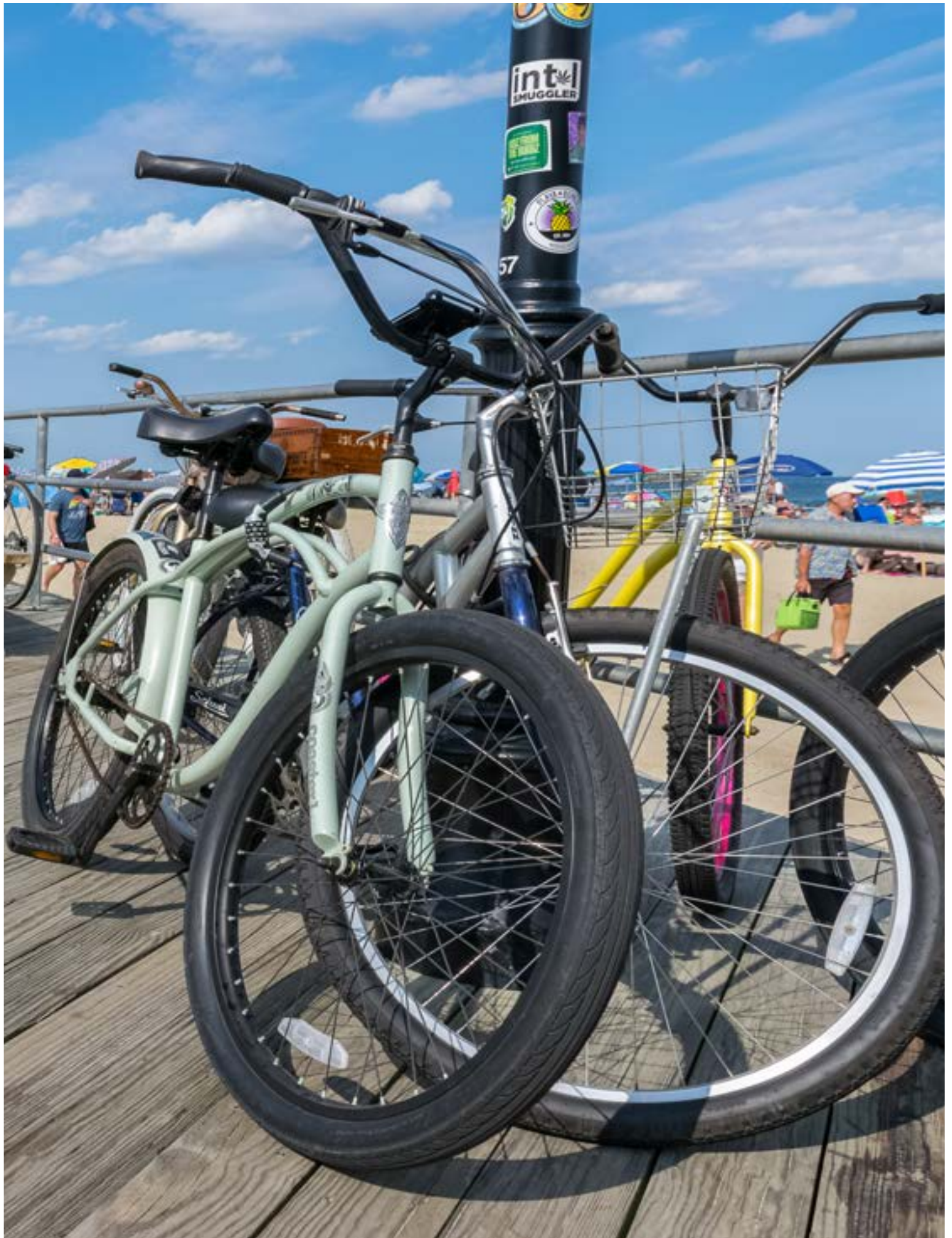
The bicycle penalty map helps illustrate gaps in connectivity and the decrease in destinations that can be reached when a bicyclist is restricted to the low stress network compared to a vehicle able to use all roads

Priority Intersections

Based on the project team’s analysis of bicycle and pedestrian data, in addition to strong recommendations from the SAC and public outreach, seven intersections have been identified as priority intersections to be investigated further. These seven intersections were chosen to serve as templates for future intersection improvements elsewhere in Asbury Park. The intersections were chosen based on the frequency with which they were mentioned by stakeholders and the public, the prevalence of bicycle and pedestrian crashes, the existing LTS score along the nearby roadways, and by the overall conditions of the bicycle and pedestrian facilities at the intersection. The seven priority intersections are:

1. Memorial Dr at 4th Ave
2. Asbury Ave at Church St/Pine St
3. Bangs Ave at Prospect Ave
4. Ridge Ave at 3rd Ave
5. Deal Lake Dr at Park Ave
6. Grand Ave at 4th Ave
7. Prospect Ave at Church St/Monroe Ave

These intersections are addressed in detail in Chapter 7.



5

Programs and Policies

While proper design and physical infrastructure improvements are essential to creating a safe, comfortable, and convenient environment for bicycling and walking in Asbury Park, they are only part of the process. Underlying policies and programs sponsored by the municipality, as well as partnerships with non-governmental organizations or local businesses, can help create a successful and sustaining bicycle and pedestrian friendly community, support and promote higher rates of bicycling and walking, and foster mutual respect among all roadway users. Efforts can include educational programs, encouragement initiatives, and enforcement activities. Appropriate travel behaviors and practices among bicyclists, pedestrians, and drivers alike are essential to creating safe and accessible communities.

Education

Educational programs provide all roadway users – cyclists, pedestrians, and motorists – with information about their rights and responsibilities and applicable laws. These efforts can increase general awareness and promote courteous and safe interaction among all users. Educational programs may include a simple distribution of information in a wide range of formats to improve motorist, cyclist, or pedestrian awareness and understanding of traffic laws and safe practices. Larger efforts could include a more structured, hands-on training program to improve individual skills and abilities. Educational programs should be tailored to specific audiences, such as school-age children, parents, adults, seniors, or motorists.

Specific recommendations for the study area include:

- Distribute public service announcements (PSAs) and brochures on topics such as speeding, safe bicycling, how to bicycle with traffic, proper helmet usage, bicycle routes, and safe pedestrian behavior. Materials can be posted or distributed at the Asbury Park Public Library, the municipal office, the schools, and/or at community events.

PSAs may also be printed in the local newspaper or posted on the Asbury Park City website or social media site. Resources with safety information and brochures include the Meadowlink Transportation Management Association (TMA), also known as EZ Ride; NJDOT's Bicycling in New Jersey and Pedestrian Safety websites; the Pedestrian and Bicycle Information Center, a national clearinghouse of information related to walking and bicycling sponsored by the FHWA and operated by the University of North Carolina Highway Safety Research Center; and the National Highway Traffic Safety Administration (NHTSA).

- Emphasize distribution of information to parents of Asbury Park school children who walk and bicycle to school. Coordinating with school officials is the most effective way to distribute safety information.
- Work with nearby municipalities including Neptune City and Township, Ocean Township, Allenhurst, Loch Arbour, Interlaken, Deal, Bradley Beach and Belmar along with the EZ Ride TMA to develop a brochure tailored to the regional needs of bicyclists and pedestrians and how they can travel seamlessly between the municipalities to their destinations.
- Integrate bicycle and pedestrian educational programs into school curriculums. All schools within the Asbury Park School District are within walking and bicycling distance of the majority of the City. To support and foster safe bicycling and walking to and from the schools, as well as to develop lifelong habits, educational programs tailored for children should be an important element of the overall community campaign. Several types of resources are available:
 - » Traffic Safety Learning Progression Component: Funded by the Division

of Highway Traffic Safety and developed by Kean and Rowan Universities, the curriculum includes lessons on pedestrian, bicycle, and traffic safety. It is an on-going educational program, with lesson plans on several pedestrian safety issues tailored to each age group with interactive activities. These materials are available to all New Jersey schools free of charge. Kindergarten through Grade 8 lesson plans can be found at <http://bianj.org/prevention/childhood-safety/pedestriansafety/> and Grade 9-12 lesson plans at <http://teensafedriving.bianj.org/submit-a-lesson-plan/>.

- » Other programs, such as WalkSafe®, BikeSafe™, and Safe Kids also offer educational materials and other activities focused on school-aged children.
- Partner with local community groups, schools, the police department, businesses, local advocacy groups, or other interested parties to organize bicycle training through the League of American Bicyclists (LAB). The LAB offers a range of courses by certified instructors for different ages and different abilities. These interactive training courses are a good way to educate cyclists on traffic rules and safety equipment, as well as to practice cycling skills that enable novices and experts to ride confidently and safely with traffic.
- Provide training for local officials, planners, engineers, and public works staff to support Complete Streets implementation. Asbury Park's adoption of a Complete Streets policy in 2015 ensures that transportation projects should provide for all expected users, including pedestrians and cyclists. Providing training on effective implementation and maintenance will

reinforce the City’s policy and help make it part of all future transportation investments in the study area. NJDOT has resources available online and periodically provides training workshops.

- » Other programs, such as WalkSafe™, BikeSafe™, and Safe Kids also offer educational materials and other activities focused on school-aged children.
- EZ Ride (Meadowlink) TMA also provides technical expertise and educational resources to support local Complete Street initiatives, including:
 - » Administering the Safe Routes to School program to schools and municipalities to encourage walking and bicycling to school in a safe manner
 - » Organizing a “walking school bus” and providing a step by step guide to faculty and parents
 - » Presenting about pedestrian safety in schools, including topics such as yielding to cars, pedestrian signal indicators, distracted driving, and more
 - » Conducting a walkability/bikeability audit to identify obstacles to pedestrians and bicyclists along local roadways
 - » Conducting a bicycle rodeo event to teach children the basic skills needed to ride their bicycles. Students typically learn about pre-ride safety checks, bicycle sizing and helmet fitting, bicycle handling and safety drills, and information on how to interact with traffic
 - » Presenting about bicycle safety in schools, including topics such as helmet fitting, where to ride on the road, rules of the road, hand signals, visibility and predictability, and

more

- » Creating school travel plans that lay out suggested steps towards increasing walking and bicycling for a school. A typical travel plan includes the following elements
 - School description
 - Working group and partnership
 - Walk/bike barriers and opportunities
 - Map of school neighborhood
 - Goals and proposed actions
 - Program evaluation and monitoring
- » Administer the “Train the Trainer” program by supplying teachers with all of the necessary information, including training, to teach grade-schoolers about bicycle and pedestrian safety
- Utilize the Ambassadors in Motion program (AIM) at the Alan M. Voorhees Transportation Center at Rutgers University as a resource for bicycle and pedestrian education. AIM provides training on helmet fittings, bicycle skills, bike safety checks, and other topics related to bicycling and Complete Streets.
- Organize and participate in an NJDOT sponsored senior mobility workshop to discuss barriers to bicycling and walking in the Asbury Park senior citizen community and context sensitive solutions to removing these barriers.

Encouragement

Encouraging active modes of transportation such as walking and bicycling has a host of benefits for residents and the community, including better health, reduced road congestion, support for local businesses, reduced environmental impact, and lower per-trip costs. By supporting and promoting walking and bicycling activities, the City can spur a change in travel habits among residents and visitors, and entice more residents to walk and bike more regularly. Recommendations include:

- Encourage the use of “Walking School Buses” and “Bike Trains” to promote physical activity for children and parents traveling to and from schools. Walking school buses and bike trains provide an organized and supervised way for children to walk and bike to school, particularly for younger children, and can make walking and bicycling a fun, social activity. Work with school staff, parent volunteers, and the police department to organize the events. Assistance is available through the EZ Ride (Meadowlink) TMA.
- Continue utilizing resources through SRTS and EZ Ride (Meadowlink) TMA to provide activities that encourage bicycling and walking at local schools, such as bike rodeos or other events.
- Create and publish an online bike map on the Asbury Park municipal website and social media account, highlighting the location of bicycle lanes, off-road facilities, preferred on-road cycling routes, bike parking, and major destinations (schools, businesses, etc). Providing information on Asbury Park’s bicycle facilities and best routes can encourage more people to try cycling.
- Highlight pedestrian and bicycle improvements that accompany transportation projects through press releases, websites, and social media.

By focusing on these elements and improved conditions, more people will be encouraged to walk and bike.

- Apply to become a Bicycle or Walk Friendly Community. These programs, sponsored by the League of American Bicyclists and the Federal Highway Administration, respectively, will not only encourage bicycle use or increased walking by residents, but serve as a potential marketing tool to encourage visitors to travel to the study area.
- Continue to publicize and participate in Bike Month, including events such as Bike to School Day, Bike to Work Day, and Bike to Work Week. Use the events to encourage cycling throughout the month and the year.
- Participate in Park(ing) Day or other temporary implementation event as a way to pilot an idea and demonstrate different ways to utilize public space. Typically held in September every year, cities and towns around the world use Park(ing) Day to temporarily convert a parking space into a parklet. A parklet is a small public space that could include planters, greenery, or street furniture, among other things. Like any “tactical urbanism” event, Park(ing) Day is an opportunity to collaborate with and engage residents, businesses, and other interested stakeholders to think creatively about the City’s streets and public space and try out ideas using temporary materials. This allows residents to visualize other uses of the street and see first-hand how the street would function. Temporary installations can spur new ideas or refine initial concepts, and lead to more permanent or longer term piloting of a concept. In New Jersey, communities such as New Brunswick and Morristown have participated in Park(ing) Day, while Princeton and Rahway have implemented longer-term parklets.
- Continue to hold periodic community

bike rides sponsored by the Asbury Park Complete Streets Coalition. These events foster community engagement and encourage prospective cyclists to become comfortable bicycling around the municipality.

Enforcement

When combined with education, enforcement is a key element to ensuring safe travel for all roadway users. While the police department cannot dedicate a significant amount of resources to enforce traffic regulations, targeted enforcement campaigns, through warnings and tickets, are effective at correcting unsafe behaviors. Enforcement should apply to both motorists (speeding, failure to stop for pedestrians) and cyclists (riding on the wrong side of the street, failure to adhere to traffic control devices). Potential strategies for Asbury Park include:

- Implement a pedestrian safety enforcement (PSE) program. A key resource for local police departments is the PSE program sponsored by the NJ Division of Highway Traffic Safety (NJDHTS) with support from NJDOT. The PSE program provides a structured approach to crosswalk compliance enforcement, with training and support for local police officers. It addresses two important contributing factors to pedestrian crashes: driver knowledge of the law and driver yielding behavior.

A variety of resources for enforcement are available through the NJDHTS, including grant funding. PSE training workshops are also available through the NJ Bicycle and Pedestrian Resource Center. One common PSE program supported by the NJDHTS is the “Cops in Crosswalks” decoy program. Used in municipalities throughout New Jersey, the program is a targeted enforcement campaign. A plainclothes police officer attempts to cross a marked crosswalk, and drivers who fail to stop for the pedestrian are given a warning or citation. NJDOT provides additional information about PSE programs and resources in its Pedestrian Safety Action Plan Toolbox.

- Institute a community-oriented traffic calming campaign to help raise awareness about speeding and safety.
- Distribute safe behavior tickets to children to positively reinforce their good bicycle and pedestrian travel behaviors.
- Implement variable message signage and mobile radar units on main roadways throughout Asbury Park (e.g., Main St, Asbury Ave, Memorial Dr, Sunset Ave, Springwood Ave, Cookman Ave, and Lake Ave), but especially near the schools, to make motorists more aware of their travel speeds.



Park(ing) Day Parklet in New Brunswick

Policies

Supportive local policies can help create avenues to advance infrastructure improvements and facilitate implementation of the plan. This section summarizes several potential policy initiatives.

- **Land Use and Development Review:** Continue to use the land use and development review process to ensure new development includes appropriate bicycle and pedestrian accommodations. Leveraging private development activity provides an opportunity for the City to advance planned improvements and preferred design standards by requiring their integration in development site plans. Potential elements that could be addressed through site plan review include, but are not limited to, streetscape improvements, filling sidewalk gaps, repairs to existing sidewalk, driveway access modifications, and bicycle parking. Large scale projects could also include intersection or roadway improvements.
- **Redevelopment Plans:** Continue to focus on redevelopment areas throughout the City. Asbury Park currently has seven targeted redevelopment areas, each with its own redevelopment planning document. Periodically revisit each plan and explore new redevelopment areas as the City evolves. All redevelopment plans should integrate land use and transportation objectives and define desired streetscape improvements and typologies, pedestrian and bicycle circulation needs, building setbacks, placemaking strategies, and site access and parking considerations, among others. Redevelopment plans allow the City to guide redevelopment activity through the planning and development review process.
- **Bicycle Parking Ordinance:** Adopt an ordinance requiring bicycle parking with new development. The ordinance should

define minimum short-term and long-term bicycle parking facilities based on the land use and its size, and define appropriate design standards.

- **Sidewalk Program:** To implement sidewalk maintenance and construction projects, the City should continue to require sidewalk repair or installation as a part of new development or major renovation. For properties where sidewalk is not necessary, the developer should contribute to a City sidewalk fund that can be used to support sidewalk repair and construction projects in other areas of the City. This dedicated sidewalk fund can be supplemented with grant funding and other funding sources. Where applicable, sidewalk improvements should be bundled into other roadway projects to reduce costs.

Another common funding mechanism for sidewalk projects used in New Jersey municipalities is to require abutting property owners to contribute to the costs of sidewalk repairs. Rather than require individual property owners to make repairs themselves, the City could consider administering a program where they bundle improvements together to reduce costs. Abutting property owners could be asked to contribute a percentage of the cost, with the City covering the remainder through other funding sources.

In commercial areas, the City could consider establishing a business improvement district or other strategies to collaborate with local businesses to support streetscape projects in the downtown.

- **Speed Limits:** Adjust the speed limit on all bicycle boulevards to 20 MPH. Work with Monmouth County to reduce the speed limit to 25 MPH along Memorial Dr and Main St.
- **Public Private Partnerships:** The City

should partner with local business owners to sponsor and maintain bicycle parking, bicycle corrals, and/or parklets near their businesses. These partnerships benefit the business owner through increased patronage and the visitors and residents through improved infrastructure.

- Branding and Promotion as Bike-Friendly Community: Asbury Park is known as a walkable and bikeable

destination with a thriving arts scene. The City should harness the talent of local artists to help design a unified wayfinding network, a unique bicycle parking design, and vibrant gateways into the City from neighboring municipalities. Partner with local schools and youth organizations to involve as much of the community as possible.



Asbury Park Has a Thriving Arts Community



6

Bicycle Network Concepts

With its compact layout, beach-town character, and network of low-speed streets, Asbury Park is an attractive community for non-motorized travel, as evidenced by the large number of bicyclists throughout the City. To advance the goals of this Plan, the bicycle network improvements present opportunities to build upon the community's strengths and existing assets to continue improving cyclist safety and comfort, enhance access and connections to key destinations, and provide linkages to the regional bicycle network. The following sections discuss different types of bicycle facilities and proposed bicycle network and bicycle parking improvements for Asbury Park.

Bicycle Facility Design

Bicycle treatments should be implemented in a standardized manner in order to create uniform, effective, and recognizable treatments throughout the City. Adhering to best practices helps ensure universal understanding of bicyclist and motorist behavior and expectations for a given facility type among all roadway users.

As the City implements elements of the Plan, facility design should refer to current best practice guidance for more detailed information, including:

- *New Jersey Complete Streets Design Guide*
- *NACTO Urban Bikeway Design Guide*
- *FHWA Small Town and Rural Multimodal Networks*
- *AASHTO Guide for the Development of Bicycle Facilities*

The following section provides a brief overview of common bicycle facility types, summarizing the main characteristics, applications, and benefits of each, including:

- Separated bicycle lanes
- Buffered bicycle lanes
- Conventional bicycle lanes
- Advisory bicycle lanes
- Bicycle boulevards
- Shared-lane markings



Newark, NJ (source: City of Newark)

Separated Bicycle Lane

A separated bicycle lane provides vertical separation to improve safety, prevent encroachment, and deter double-parking. Physical separation from passing traffic is provided by bollards, planters, on-street parking, curbing, or medians. This extra separation from motor vehicle traffic makes a separated bicycle lane more attractive for bicyclists of all ages and abilities. Typically used to enhance bicyclist comfort on streets with higher traffic speeds and/or volumes, they also require additional street width and consideration of street maintenance needs.



Newark, NJ

Buffered Bicycle Lane

Buffered bicycle lanes can enhance conventional bicycle lanes by providing a marked buffer space and creating additional horizontal separation between bicyclists and motorists. Buffers can be used where there is extra roadway width in order to visually narrow the travel lanes and calm traffic. While buffers are typically used between bicycle lanes and travel lanes to increase bicyclist comfort, they can also be used between bicycle lanes and parking lanes to discourage cyclists from riding too close to parked vehicles, decreasing the risk of conflicts with drivers opening their car door.



Asbury Park, NJ

Conventional Bicycle Lane

Bicycle lanes provide an exclusive space for bicyclists through the use of pavement markings and signage. They enable bicyclists to ride at their preferred speed, free from interference from motorists, and help facilitate predictable behavior and interaction between bicyclists and motorists. Bicyclists may leave the bicycle lane to pass other bicyclists, make turns, or avoid obstacles and conflicts. Motorists may pass through the bicycle lane to access parking or make other turning movements, but they cannot stand or park in the lane.

Advisory Bicycle Lane

Advisory bicycle lanes prioritize bicycle movement by creating a usable space for bicycle lanes that would otherwise be too narrow for dedicated lanes. Unlike other mixed-traffic facilities, such as shared-lane markings or bicycle boulevards, advisory lanes function similarly to conventional bicycle lanes. The lanes are delineated with dashed striping, which can be supplemented with signage or colored pavement. Motorists share a two-way center travel lane, and only encroach into the bicycle lane when necessary to pass other vehicles. Advisory bicycle lanes are typically applied on local streets with relatively low speeds and low to moderate traffic volumes.

Although common internationally, advisory bicycle lanes (also referred to as advisory shoulders or dashed bicycle lanes) are relatively new in the United States. As

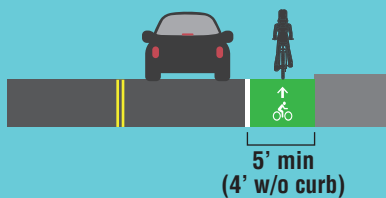


Edina, MN (source: FHWA's Guide to Small Town and Rural Multimodal Networks)

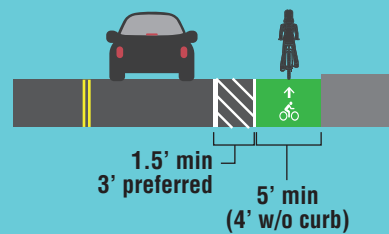
such, they currently require a Request to Experiment from the Federal Highway Administration (FHWA), as they track projects and gather data on implementation.

Typical Dimensions

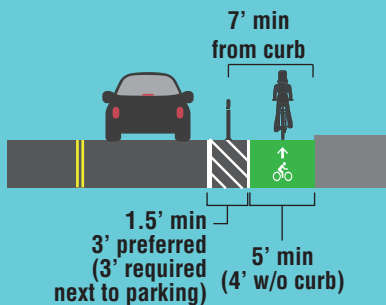
Conventional Bicycle Lane



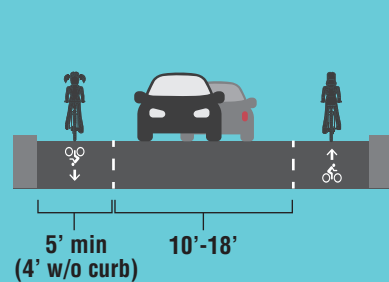
Buffered Bicycle Lane



Separated Bicycle Lane



Advisory Bicycle Lane





Ocean City, NJ

Bicycle Boulevard

Bicycle boulevards, also referred to as neighborhood greenways or quiet streets, are traffic calmed streets that prioritize bicycle travel and create a more comfortable bicycling environment. While bicyclists share the street with motor vehicles, the low speed and low volume character of a bicycle boulevard creates a low-stress facility for bicyclists of all ages and all abilities.

Many neighborhood, residential streets provide the basic components of a bicycle boulevard. These streets can be enhanced to create a bicycle boulevard by a variety of design treatments that deter high vehicle speeds and discourage through trips by motor vehicles. Many of these treatments benefit not only bicyclists, but by creating a safe and quiet environment, they benefit all users of the street.

Where constraints prevent bicycle improvements on arterial roadways, utilizing parallel neighborhood streets as bicycle boulevards can often provide convenient, attractive alternative routes for bicyclists.

Key elements of a bicycle boulevard include:

- **Reduced Speed Limits:** The preferred speed limit of a bicycle boulevard is 20 mph, five miles-per-hour slower than most of Asbury Park’s residential streets
- **Signage and Markings:** Pavement markings and wayfinding signage highlight the corridor as a priority route for bicyclists and the intention for the roadway as a shared, slow street
- **Speed Management:** Traffic calming elements appropriate for the context, such as curb extensions, speed cushions, chicanes, or mini-roundabouts, should be used to reinforce the low speed limit and discourage cut-through traffic
- **Access Management:** Depending on the context, elements such as diverters or medians can be used to deter or prevent vehicular through-traffic, while still accommodating local access and prioritizing bicycle through-trips
- **Intersection Crossings:** Appropriate intersection treatments, especially at crossings of major streets, are crucial to minimize bicyclist delay and ensure a safe, comfortable street for bicyclists of all ages and all abilities

Shared-Lane Markings

On roadways where it is not feasible or appropriate to provide dedicated bicycle facilities, shared-lane markings may be used to indicate a shared environment for bicycles and automobiles. Shared-lane markings alone do not reduce bicycle level of traffic stress or create an “all ages and abilities” facility; however, they can provide several benefits, including:

- Assert the legitimacy of bicyclists on the roadway
- Provide directional and wayfinding guidance
- Direct bicyclists to ride in the most appropriate location on the roadway
- Provide motorists with visual cues to anticipate the presence of bicyclists

Shared-lane markings can be used to complete gaps in a bicycle network and provide connections to major destinations

where there is limited cartway width or other constraints that limit implementation of other bicycle facilities.

Shared-lane markings are typically applied on streets with a speed limit of 25 mph or less. The markings typically consist of a bicycle and chevron symbol (photo below). Shared-lane markings should also be paired with traffic calming treatments to reinforce the low speed limit and support a more comfortable environment conducive to sharing the roadway with motorists and other traffic.

To increase the visibility and effectiveness of the marking, the marking can be applied on a green background, such as the example from Newark shown to the bottom left. This “enhanced” or “green back” shared-lane marking is particularly useful on streets with higher traffic volumes and more activity, which may benefit from the improved visibility.



Newark, NJ



Princeton, NJ

Proposed Bicycle Network

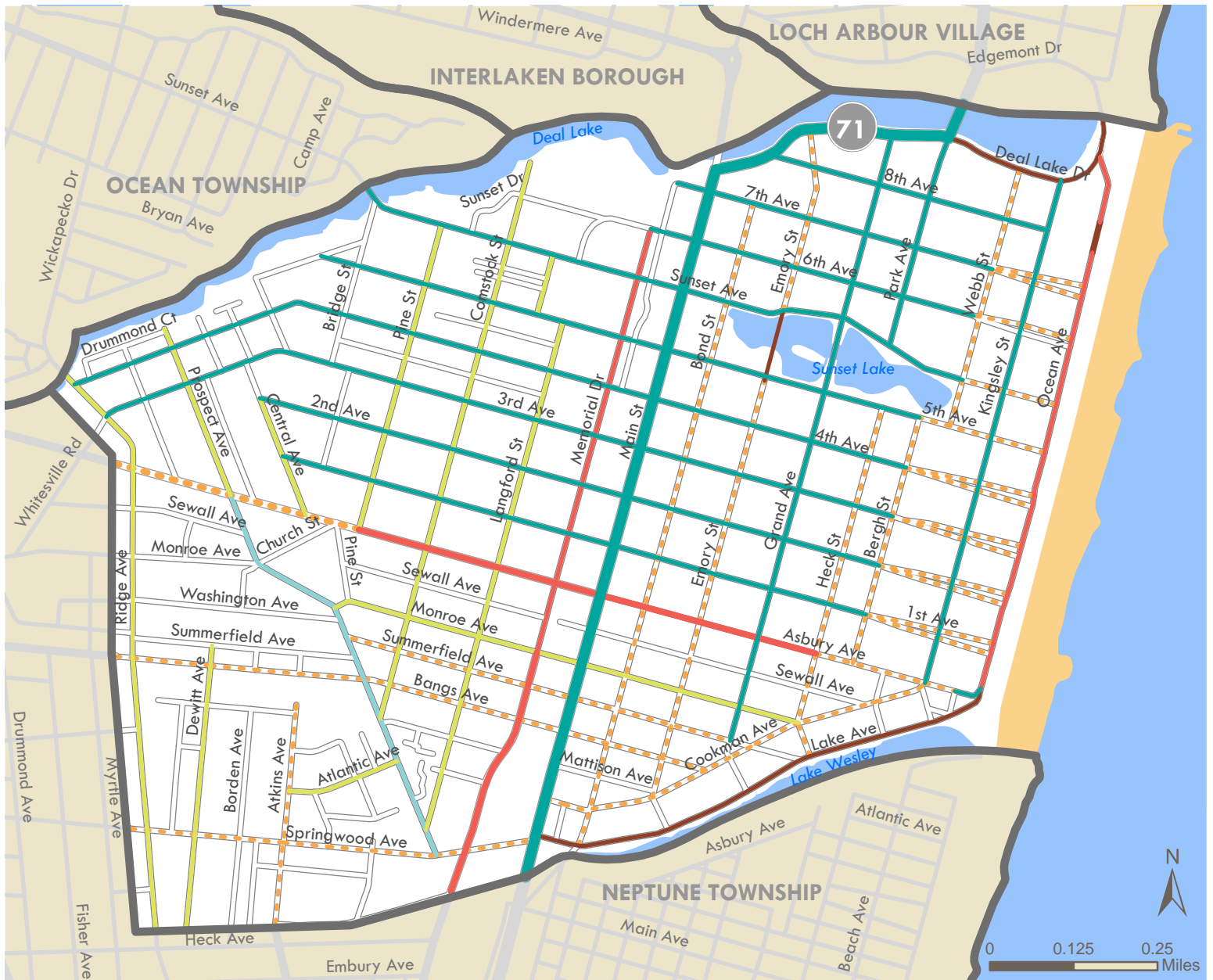
The proposed Asbury Park bicycle network provides a framework to support the goals of this Plan. The network utilizes several of the bicycle facilities summarized in the previous section, where feasible, and identifies a series of improvements guided by:

- **Public input:** Incorporates input from the Study Advisory Committee, Wikimap, and public meetings on existing issues and desired routes
- **Bicycle level of traffic stress (LTS):** Utilizes the existing conditions LTS analysis as a guide to identify high traffic stress roadways and develop targeted recommendations to improve user comfort and connectivity of the low stress network
- **Existing bicycle lanes:** Builds upon existing facilities to enhance network connectivity and leverage existing infrastructure
- **Major destinations:** Seeks opportunities to provide convenient access to key destinations

- **Regional linkages:** Identifies opportunities to create more comfortable bicycle connections to neighboring communities.
- **Roadway constraints:** Prioritizes easily implementable improvements that can be constructed within existing roadway widths with minimal disruption to current roadway configurations and existing on-street parking. Although Asbury Park is a built out municipality, many of the City's streets are wide enough to accommodate bicycle facilities without requiring the alteration of pavement.

The proposed bicycle network is illustrated in Map 10 on the opposite page. The Main St and Deal Lake Dr (NJ 71) road diet and proposed bicycle facilities are reflected in the proposed bicycle network map. The following sections summarize the proposed improvements for each key corridor in the network.





MAP 10 - Proposed Bicycle Network

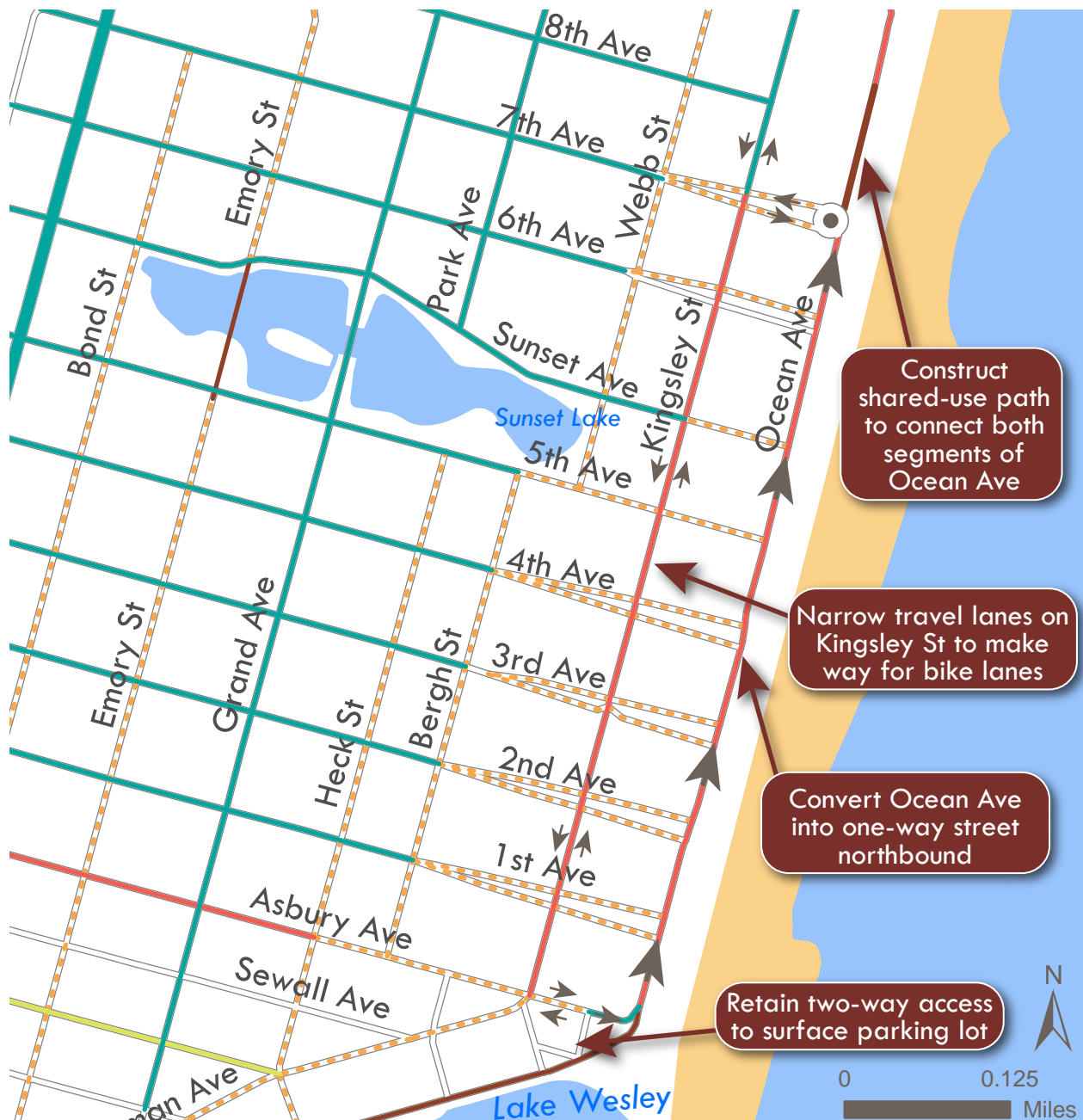
Proposed Bicycle Network

- Bicycle Lane
- Buffered or Separated Bicycle Lane
- Bicycle Boulevard
- Advisory Bicycle Lane
- Shared-use Path
- - - Shared Lane Markings

Asbury Park's invaluable advantage in creating a strong bicycle network lies in the existing width of many of the City's roadways. Without significant investment, more than ten municipal roadways are capable of supporting bicycle lanes with a simple re-stripping.

Ocean Ave One-way Conversion

In order to accommodate bicycle facilities near Asbury Park's waterfront, vehicular circulation must be addressed. Currently, Kingsley St and Ocean Ave are two-way streets with no bicycle facilities. Circulation can be difficult, especially along Ocean Ave due to high vehicle turnover that result in constant conflicts. By converting Ocean Ave to a one way street northbound, traffic circulation will improve due to the elimination of time-costly left turns. The conversion will also vacate space to be used for bicycle facilities without sacrificing on-street parking. The Ocean Avenue conversion is described on the next page.



Ocean Avenue

Ocean Ave serves the entire beach-front area of Asbury Park, running from Asbury Ave to 7th Ave. The roadway is one of the most heavily bicycled and walked corridors in the City. Immediately west of the boardwalk, Ocean Ave provides the most convenient parking for beach-goers and commercial patrons along the shore. The street hosts numerous destinations including the Asbury Convention Hall, and famed music venue, The Stone Pony. Several higher density residential buildings and hotels are also found on Ocean Ave.

The street operates with one lane of traffic in each direction. For most of the corridor, the west curb has parallel parking and the east has angled parking except for the block between 5th Ave and Sunset Ave where the cartway narrows to 30 feet and parking is not allowed on either side. The angled parking spaces are extra-long to accommodate the heavy turnover and frequent stopped vehicles along the street. Ocean Ave terminates at a traffic circle with the intersection of 7th Ave.

With an LTS of 2, Ocean Ave can be stressful to cycle on or cross due to the high number of out-of-town motorists, the number of pedestrians crossing the street to and from the boardwalk and angled parking which encourages speeding. The street's location and oceanside view also prompt high cycling volumes.

EXISTING ROADWAY CHARACTERISTICS

Speed Limit: 25 mph

Typical Cartway Width: 58 ft

AADT: 2,036

Travel Lanes: 2 (with marked centerline)

Parking: parallel on west, angled on east

Existing LTS: 2

Proposed LTS: 1

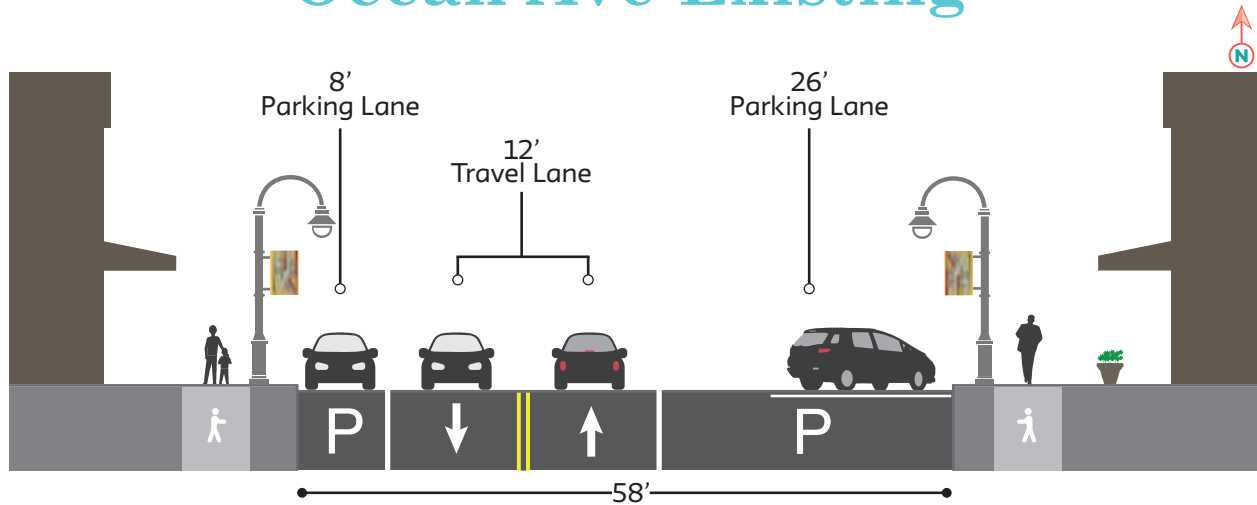
Recommendations

- Re-designate corridor to one-way northbound between Asbury Ave and 7th Ave. Retain single northbound lane, widened to 15 ft
- Convert existing front-in angled parking to back-in angled parking to improve driver visibility along roadway. Reduce total width of parking lane to 19 ft
- Install two-way buffered bicycle lanes on the eastern side of Ocean Ave. Supplement with a 3 ft buffer to protect bicyclists from parked cars
- Widen parallel parking lane from 8 ft to 9ft along the western side of Ocean Ave

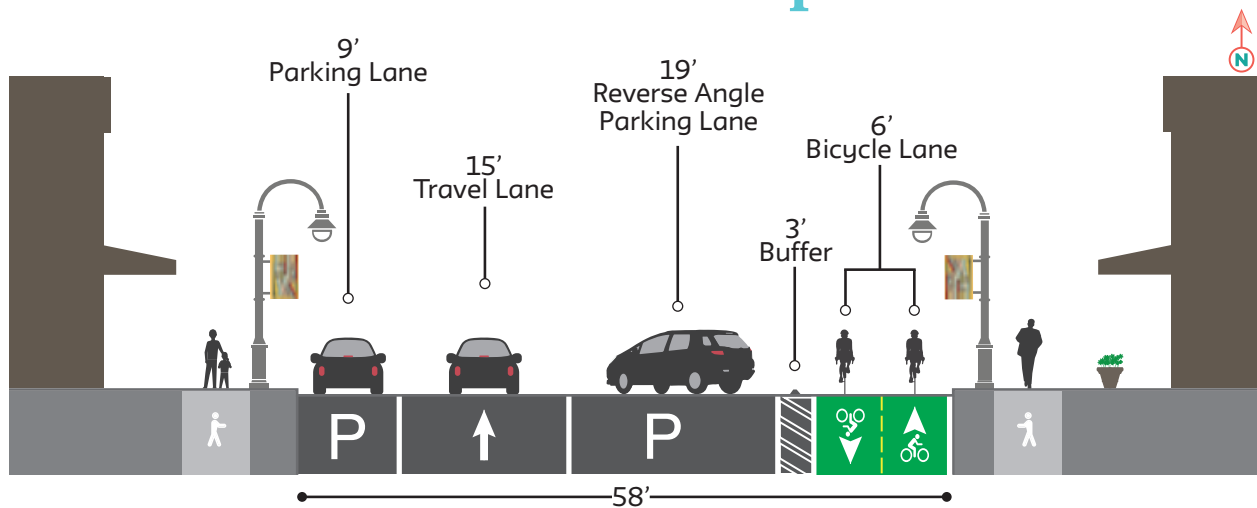


Existing Cross-Section along Ocean Ave

Ocean Ave-Existing



Ocean Ave-Proposed



Kingsley Street

One block west of Ocean Ave, Kingsley St functions as a reliever road between Asbury Ave to the south and Deal Lake Dr to the north. Southward it continues as Cookman Ave to NJ 71/Main St. Being one block from the boardwalk, Kingsley St provides circulation for drivers destined for the beach and other attractions, especially south of 7th Ave.

The entire corridor operates with one wide travel lane in each direction and parallel parking against both curbs.

Like Ocean Ave, Kingsley St has an LTS of 2, primarily because of high traffic volumes. The road can be difficult to cycle on and cross due to the high number of out-of-town motorists and the number of pedestrians crossing the street to and from the boardwalk and adjacent attractions.

Recommendations

- Install 6 ft dedicated bicycle lanes on each side of Kingsley St

EXISTING ROADWAY CHARACTERISTICS

Speed Limit: 25 mph

Typical Cartway Width: 50 ft

Travel Lanes: 2 (with marked centerline)

Parking: parallel on both sides

Existing LTS: 2

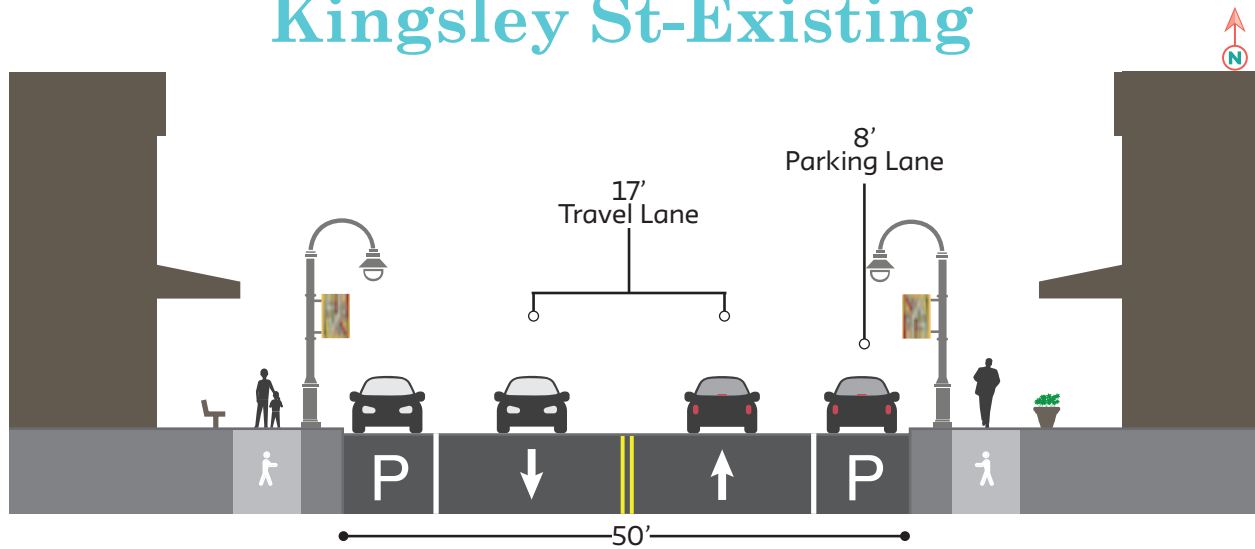
Proposed LTS: 1

- Maintain two-way traffic by narrowing travel lanes to 11 ft. Due to the presence of NJTransit bus operations, it is not advised to narrow travel lanes beyond 11 ft
- The intersection of Kingsley St and 7th Ave should be re-stripped to delineate a highly visible bicycle crossing to account for the increased northbound traffic along Ocean Ave
- Retain 8' parallel parking on both sides of the street

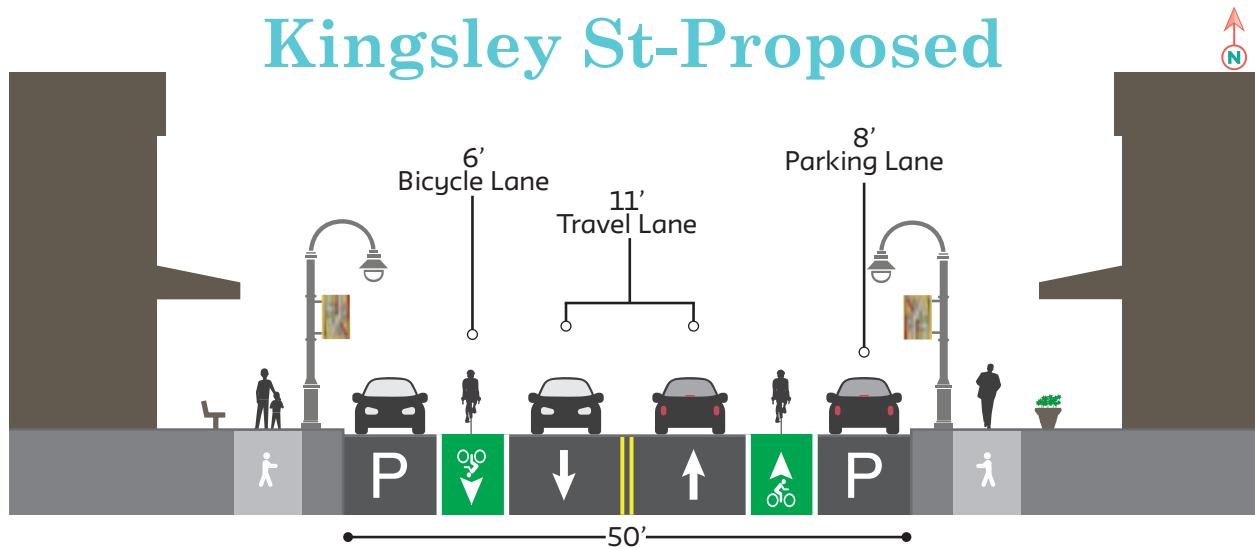


Existing Cross-Section along Kingsley St

Kingsley St-Existing



Kingsley St-Proposed



Asbury Avenue

Asbury Ave is the primary east-west connector in Asbury Park, extending west into Neptune Township and east to Ocean Ave and the boardwalk. The street is one of the only east-west routes catering to commercial uses in the City. West of Heck St, Asbury Ave has parallel parking on both sides, while east of Kingsley St the roadway has angled parking on the north side and no parking on the south. Also, there is angled parking on both sides of the street between Heck St and Kingsley St. The street consists of one wide travel lane in each direction for its entire length.

The nature of Asbury Ave as a minor arterial make navigating along or across the street difficult for bicyclists and pedestrians. The entirety of Asbury Ave has an LTS of 2 due to the high vehicular volumes. (8,229 as of 2012).

The portion of Asbury Ave between Main St and the Neptune Township boundary is under Monmouth County jurisdiction. The following recommendations that coincide with this segment of roadway should be addressed in partnership with the County.

Recommendations

Due to roadway space constraints, the portions of Asbury Ave between Pine St and the Neptune Township boundary cannot accommodate dedicated bicycle facilities without roadway expansion or the removal of parking facilities. Shared-lane markings are recommended for these segments of the roadway.

Between Heck St and Pine St

- Install 5 ft two-way separated bicycle lanes on the southern side of the roadway. Supplement with a 3 ft buffer to protect bicyclists from parked cars. As an alternative, traditional bicycle lanes or one way protected bicycle lanes can be striped, depending on space availability and future bicycle demand.
- Narrow travel lanes to 11 ft and parallel parking lanes to 7.5 ft to accommodate

EXISTING ROADWAY CHARACTERISTICS

Speed Limit: 25 mph

Typical Cartway Width: 50 ft

AA DT: 7,416

Travel Lanes: 2 (with marked centerline)

Parking: parallel west of Heck St, parallel in both directions, between Heck St and Kingsley St; angled on both sides, east of Kingsley St, angled in WB direction, no parking in EB direction

Existing LTS: 2

Proposed LTS: 2 west of Kingsley St, 1 east of Kingsley St

new bicycle lanes. Because bus services operate on Asbury Ave, travel lanes should not be narrower than 11 ft.

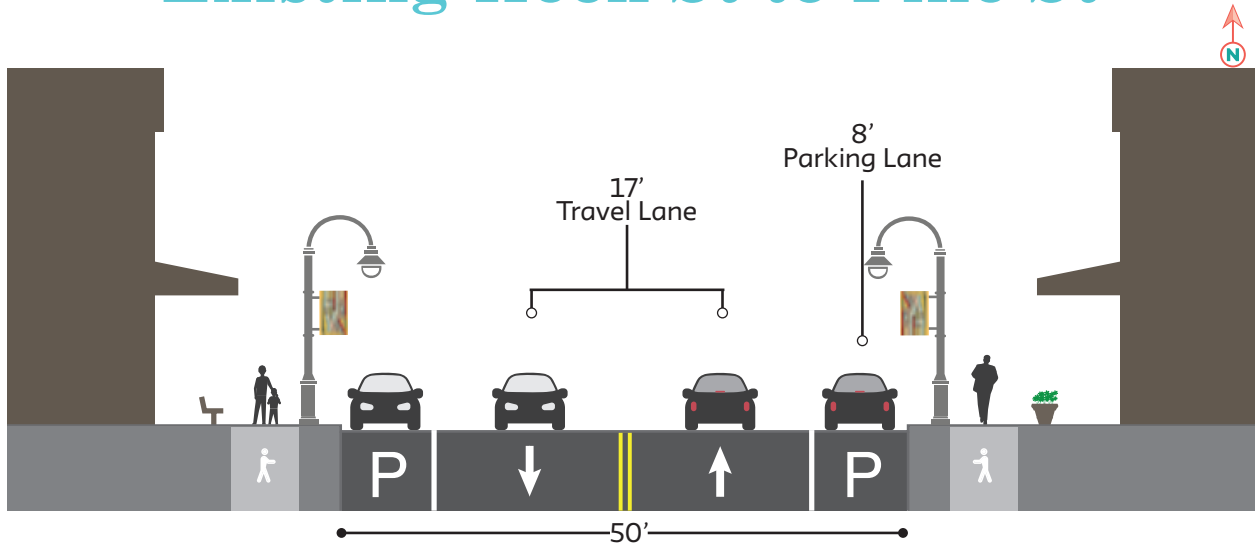
Between Kingsley St and Ocean Ave

- Convert Asbury Ave to a one way street for this short stretch. Retain two-way movement between Kingsley St and the surface parking lot adjacent to the Carousel Building. Retain all parking and convert front-in angled parking on the north side to back-in angled parking. This conversion complements the one-way conversion along Ocean Ave by feeding northbound movements while eliminating southbound movements.
- Stripe shared-lane markings between Kingsley St and the surface lot entrance. Due to roadway constraints, dedicated bicycle facilities cannot be accommodated on this stretch of Asbury Ave without roadway expansion. Travel speeds along this stretch should be low enough to keep the LTS low without dedicated bicycle facilities in place
- Install 5 ft two-way bicycle lanes on the southern side of the roadway between the surface lot entrance and Ocean Ave. These bicycle lanes will continue seamlessly along the proposed Ocean Ave bicycle lanes

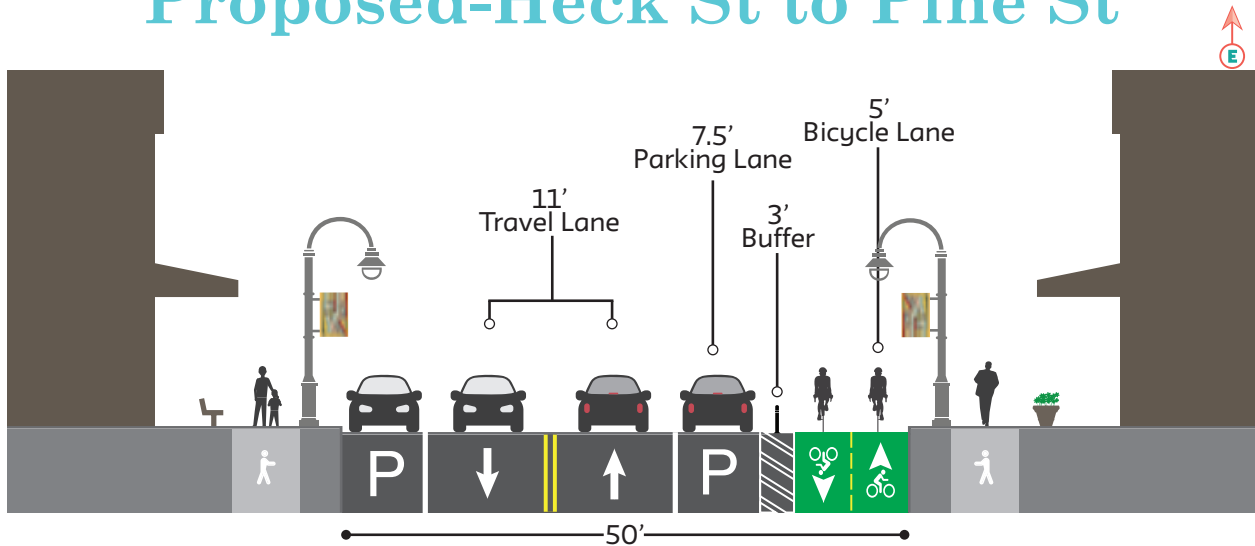


Existing cross-section along Asbury Ave near Comstock St

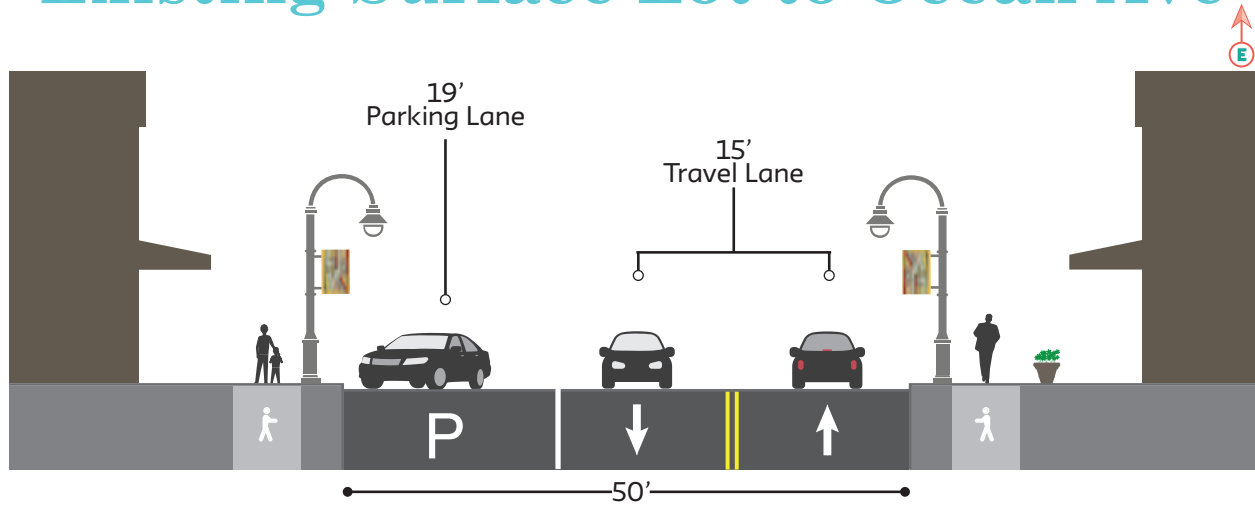
Existing-Heck St to Pine St



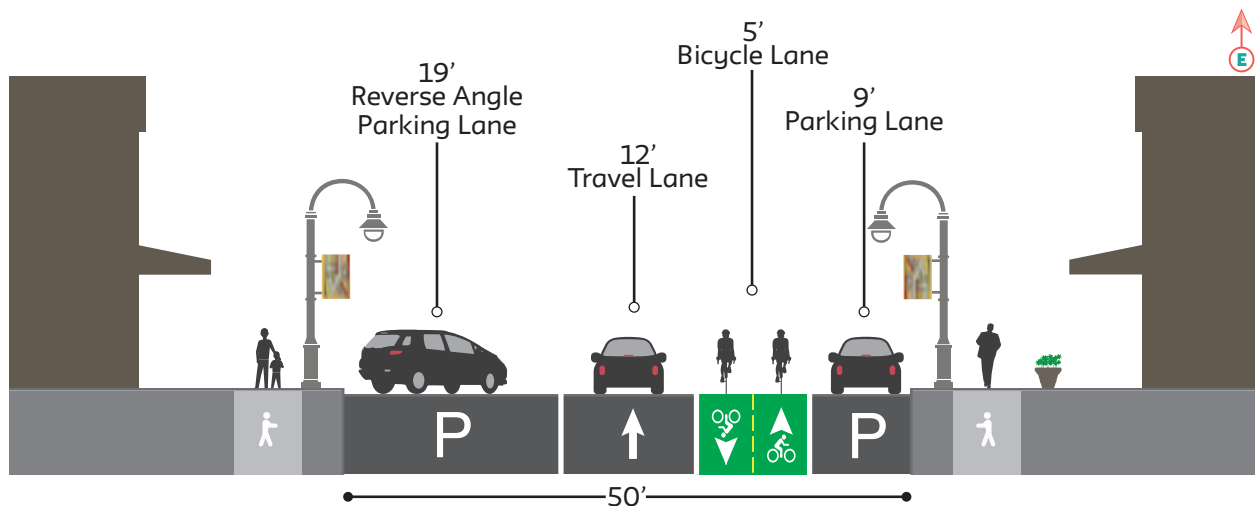
Proposed-Heck St to Pine St



Existing-Surface Lot to Ocean Ave



Proposed-Surface Lot to Ocean Ave



Lake Avenue

Lake Ave travels east-west between Main St (NJ 71) and Wesley Lake Dr. The roadway provides relief to Cookman Ave, which is the primary roadway serving the Asbury Park business district. Lake Ave provides crucial parking spaces for visitors to the business district and the City at large. Lake Ave has angled parking on both sides from Grand Ave to the west, while retaining angled parking on the southern side and parallel parking on the northern side to the east of Grand Ave. The roadway's secondary function as a high-turnover parking area creates vehicular conflicts similar to those found on Ocean Ave. As a result, bicycling can be challenging on the roadway.

Most of Lake Ave currently operates with an LTS of 2 due to the high volumes and vehicular conflicts. The section of roadway between Bond St and Main St (NJ 71) currently operates with an LTS of 4 due to the additional left turn stacking lane. Because of the high LTS along Lake Ave, the majority of observed cyclists currently use the lakeside sidewalk alongside pedestrians, creating a potentially dangerous situation.

Recommendations

The high LTS levels along Lake Ave cannot be adequately mitigated with shared-space bicycle facilities. In addition, there is insufficient space on the roadway to implement dedicated bicycle facilities. The high bicycle ridership along the roadway should be met with the highest level of bicycle accommodation, an off-road, shared-use path.

- Replace existing lakeside sidewalk between Main St and Wesley Lake Dr with a 10 to 12 ft shared-use path to accommodate cyclists and pedestrians. Note that the greenspace between the existing sidewalk and Wesley Lake has been observed settling towards the water in recent years. This movement should be monitored and mitigated in the

EXISTING ROADWAY CHARACTERISTICS

Speed Limit: 25 mph

Typical Cartway Width: 52 ft

Travel Lanes: 2 (with marked centerline)

Parking: Angled parking on both sides

Existing LTS: 2-4

Proposed LTS: 1

engineering phases as needed

- Extend this path eastward, passing to the south of the surface parking lot adjacent to the Carousel Building and join the path to the proposed Ocean Ave bicycle lanes
- Integrate the proposed path with the existing shared-use path pedestrian bridges spanning Wesley Lake at Emory St and at Heck St for seamless bicycle travel between Ocean Grove and Asbury Park
- An alternative to the shared-use path extension can be the conversion of Lake Ave to one-way eastbound for vehicles. The extra space can accommodate two-way protected bicycle lanes, which would be striped on the south side of the roadway



Existing shared-use path bridge between Ocean Grove and Lake Ave



Lake Ave proposed shared-use path

Memorial Drive

Operating from 6th Ave south into Neptune Township, Memorial Dr operates as a reliever for NJ 71 (Main St) one block to the east. New Jersey Transit's North Jersey Coast Line operates immediately east of Memorial Dr and the Asbury Park station lies on Memorial Dr north of Springwood Ave. Due to its length and proximity to Main St and the train station, Memorial Dr is well-traveled.

Memorial Dr north of Monroe St is comprised of one travel lane in each direction with parallel parking on the west curb and a 7.5 ft shoulder on the east, against the tracks. South of Monroe St, each side has a 6 ft shoulder with one travel lane in each direction and a center turn lane.

The entirety of Memorial Dr has an LTS of 3 due to high vehicular volumes and a 30 mph speed limit.

Recommendations

North of Monroe Ave, the existing 7.5 ft shoulder in addition to the wide travel lanes contain the necessary space required to install dedicated bicycle facilities without requiring the removal of parking. The speed limit along the entire corridor should be reduced to 25 mph.

EXISTING ROADWAY CHARACTERISTICS

Speed Limit: 30 mph

Typical Cartway Width: 48 ft

Travel Lanes: 2 (with marked centerline)

Parking: parallel on west, none on east

Existing LTS: 3

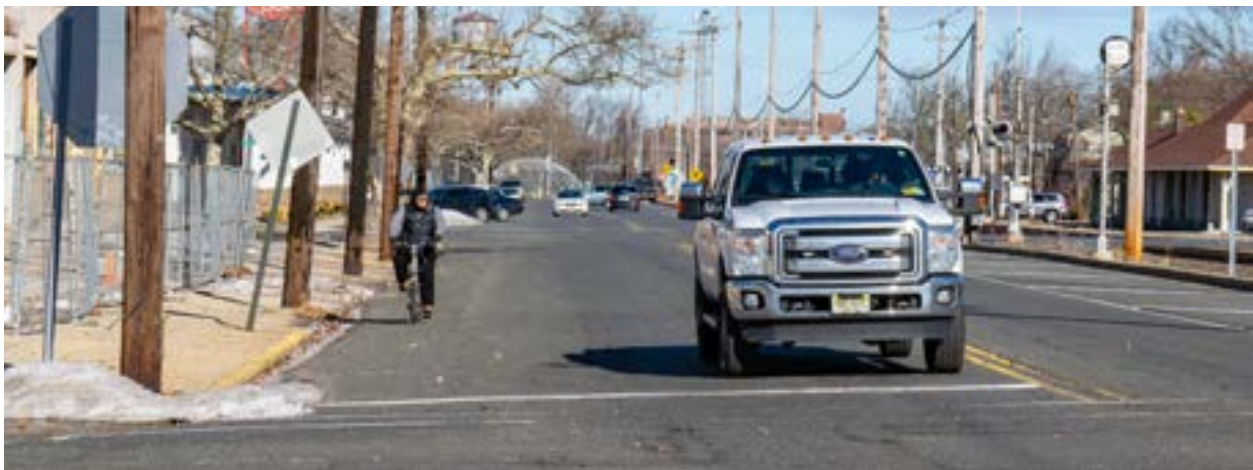
Proposed LTS: 1

North of Monroe Ave

- Narrow travel lanes to 12 ft each. Remove 7.5 ft shoulder from the eastern side of the roadway. Widen parallel parking lane from 8.5 ft to 9 ft
- Install 6 ft bicycle lanes along each direction of Memorial Dr. Supplement with a 1.5 ft buffer to protect bicyclists from parked vehicles on the southbound side and traveling vehicles on the northbound side

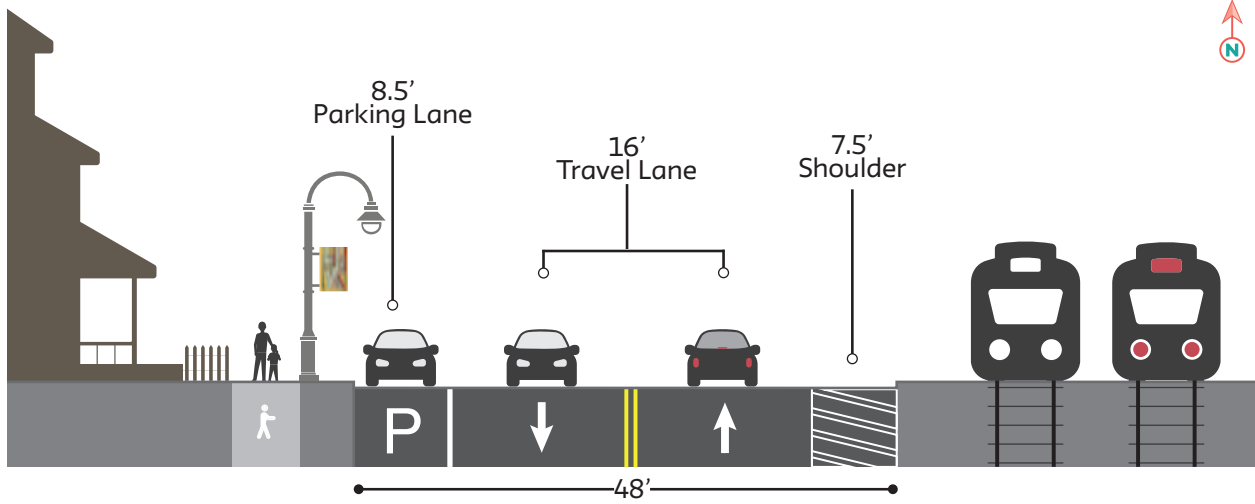
South of Monroe Ave

- Narrow center turn lane to 11 ft to allow for bicycle facilities along both sides of the roadway. Utilize both 6 ft shoulders to implement the recommendations below
- Install 5 ft bicycle lanes along each direction of Memorial Dr. Supplement with a 1.5 ft buffer to protect bicyclists from vehicles in the travel lanes

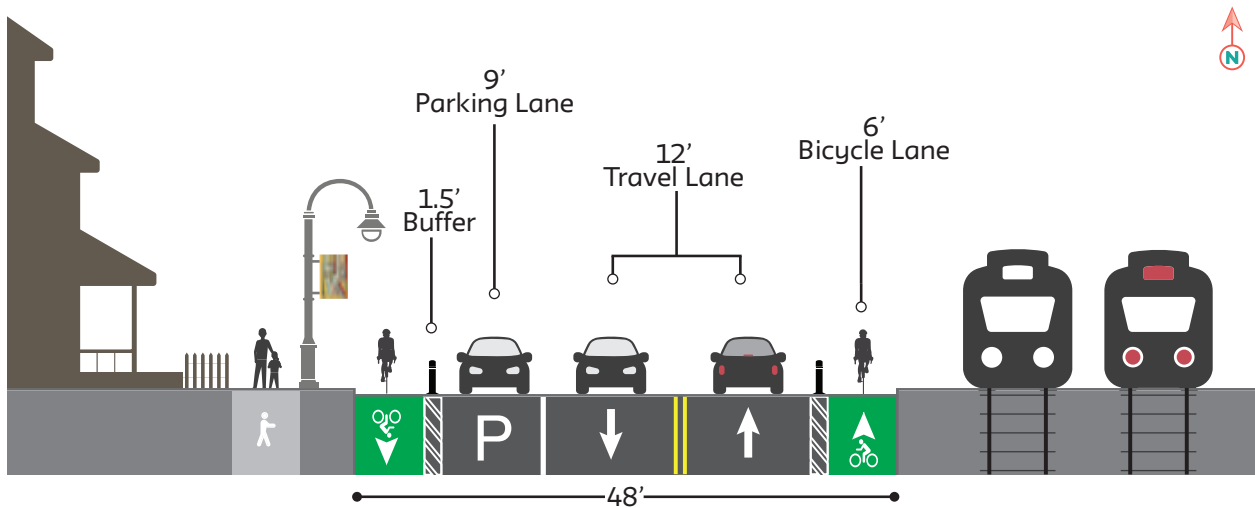


Existing Cross-Section along Memorial Dr

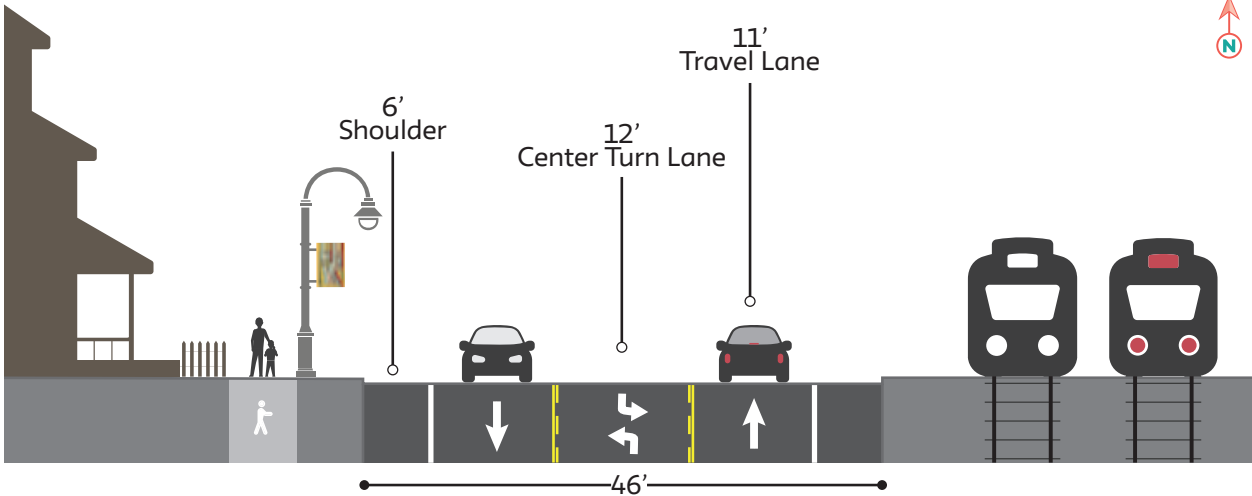
Existing-North of Monroe Ave



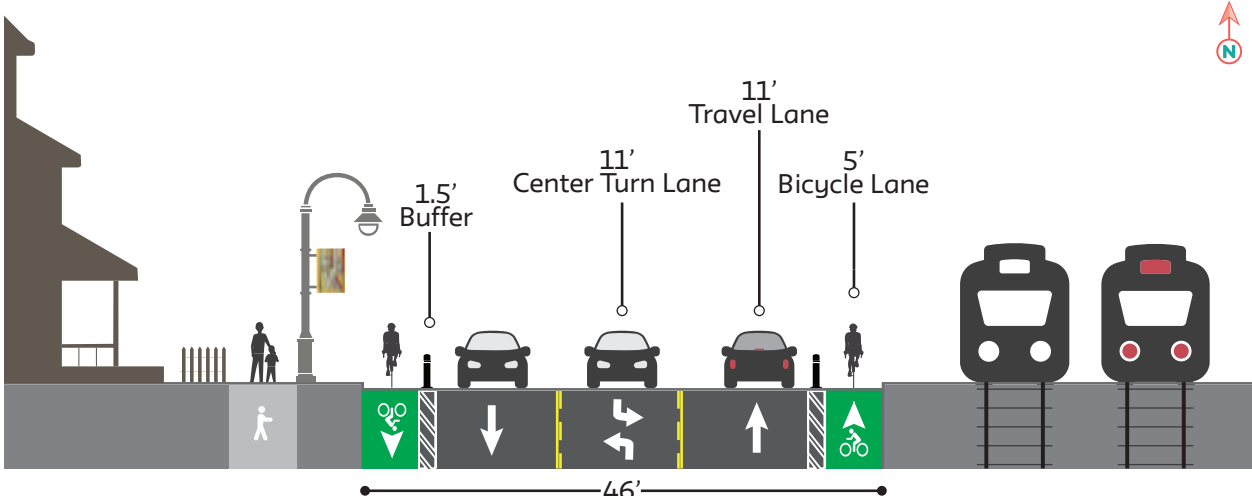
Proposed-North of Monroe Ave



Existing-South of Monroe Ave



Proposed-South of Monroe Ave



Sunset Avenue

Sunset Ave travels east-west in the northern portion of Asbury Park, from Ocean Ave and the boardwalk over Deal Lake into Ocean Township where it intersects with NJ 35. Sunset Ave's continuation west marks it as a through route. Sunset Park and Sunset Lake lie adjacent the roadway.

Sunset Ave operates with parallel parking on both sides and one wide travel lane in each direction. Slight variation in street width is visible along the curve around Sunset Lake, but the overall cross-section is generally consistent. Sunset Ave west of Kingsley St has an LTS of 2 and the one-way westbound portion east of Kingsley St has an LTS of 1.

In mid 2018, The City repaved a portion of Sunset Ave and striped bicycle lanes between Bridge St Ave and Memorial Dr. The recommendations for this corridor thus call for the extension of bicycle lanes east to Kingsley St.

EXISTING ROADWAY CHARACTERISTICS

Speed Limit: 25 mph

Typical Cartway Width: 50 ft

Travel Lanes: 2 (with marked centerline)

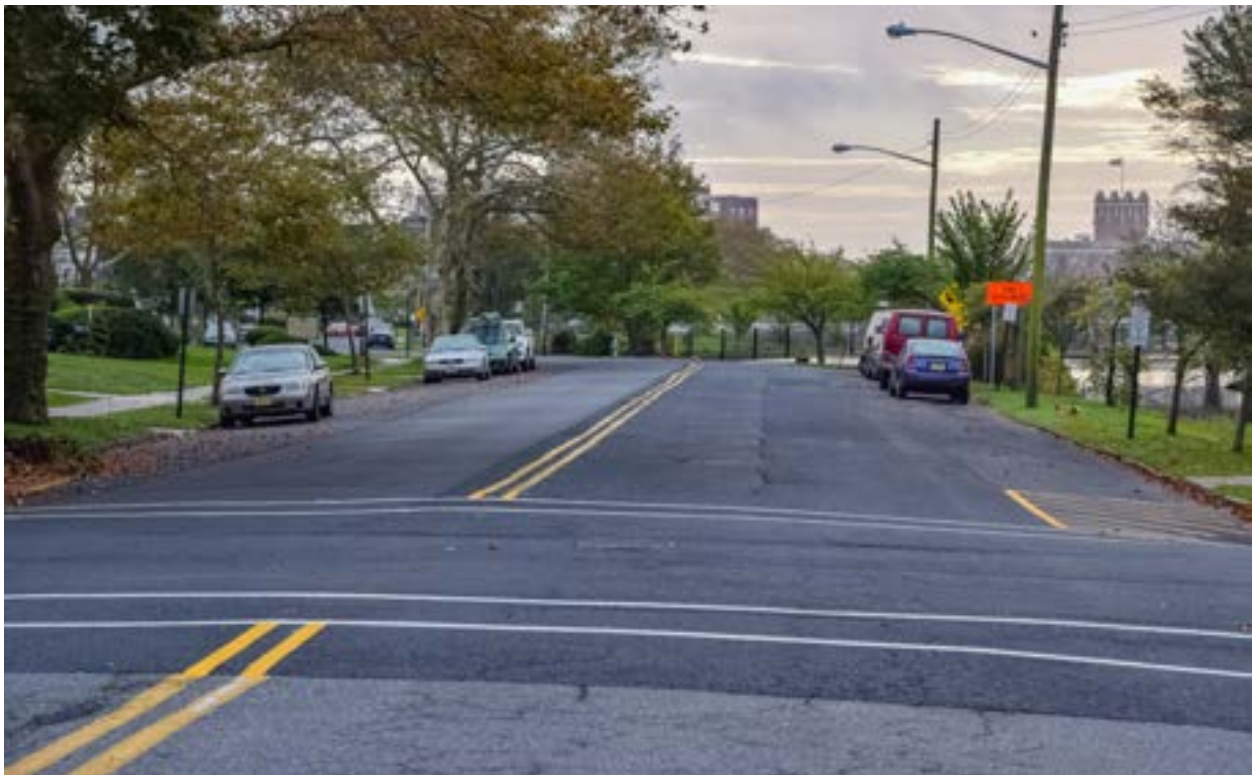
Parking: parallel in both directions

Existing LTS: 2

Proposed LTS: 2

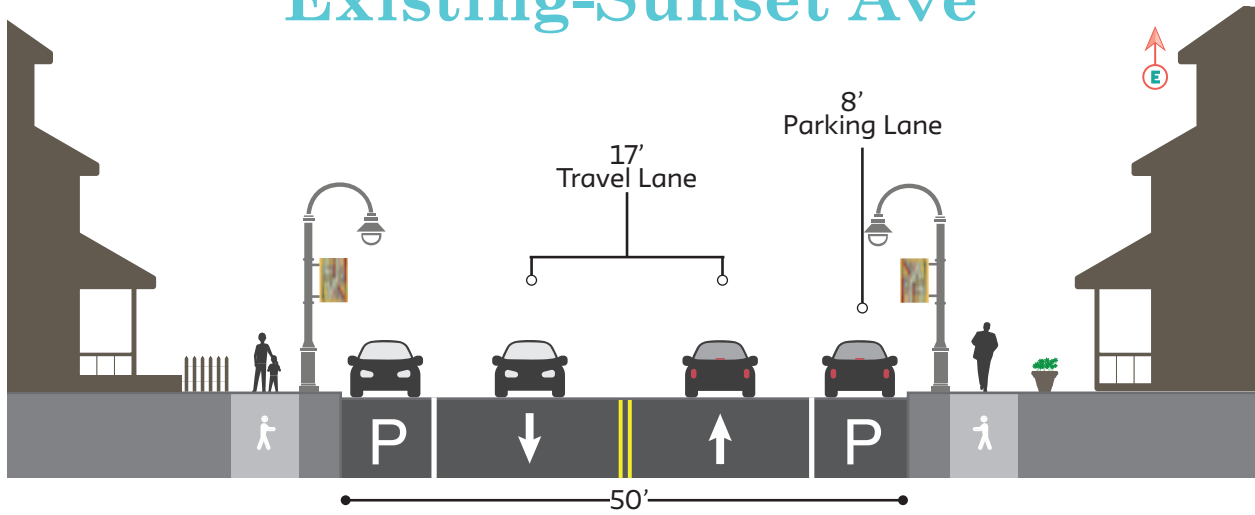
Recommendations

- Narrow travel lanes from 17 ft to 11ft. Because bus services operate on Sunset Ave, travel lanes should not be narrower than 11 ft.
- Retain existing parallel parking
- Stripe 5.5 ft dedicated bicycle lanes along the remaining segment of Sunset Ave that has not been upgraded, east to Kingsley St

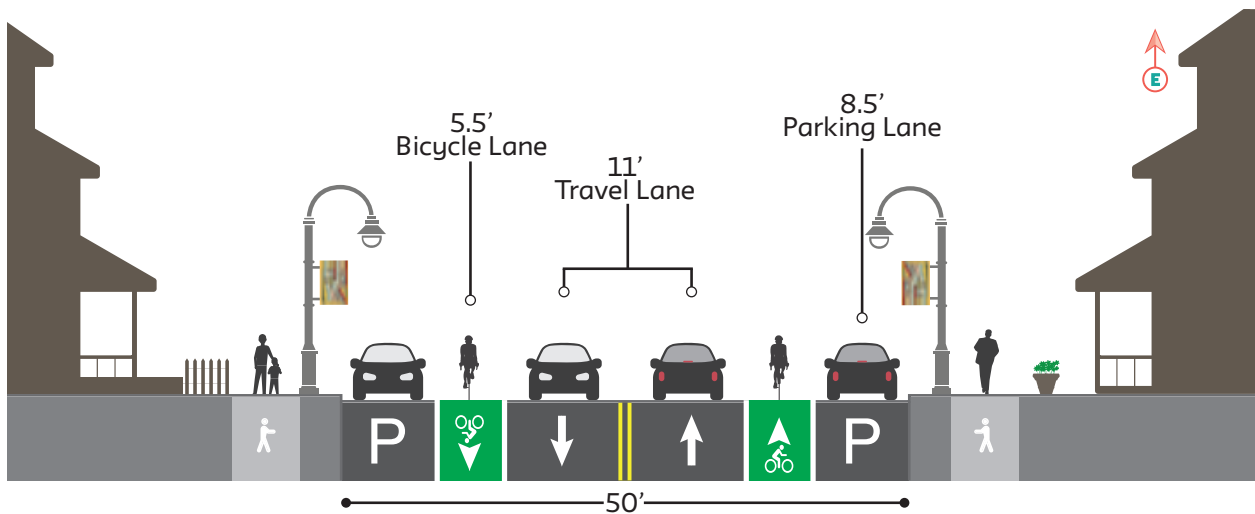


Existing Cross-Section along Sunset Ave

Existing-Sunset Ave



Proposed-Sunset Ave



4th Avenue

4th Ave is one of several streets traveling east-west from one end of Asbury Park to the other. Mainly residential in nature, the street provides a direct connection between the waterfront and Ridge Ave, which provides access to Ocean Township and NJ 35. The roadway's wide travel lanes encourage speeding, reducing safety and discouraging cycling. The connection between Ridge Ave and Ocean Ave makes 4th Ave a common choice for beach-going visitors, many of which speed along the corridor.

4th Ave has parallel parking on both sides, with one wide travel lane in each direction. East of Bergh St, 4th Ave splits into two diagonal one-way streets with angled parking.

Most of 4th Ave currently operates with an LTS of 1. The segment between Memorial Dr and Main St has an LTS of 2 due to the higher volumes and instances of turning vehicles between these two roadways.

In mid 2018, the City repaved a portion of 4th Ave and striped bicycle lanes between Jeffrey

EXISTING ROADWAY CHARACTERISTICS

Speed Limit: 25 mph

Typical Cartway Width: 48 ft

Travel Lanes: 2 (without marked centerline)

Parking: parallel on both

Existing LTS: 1-2

Proposed LTS: 1

St and Memorial Dr and striped shared-lane markings between Jeffrey St and Ridge Ave. The recommendations for this corridor thus call for the extension of bicycle lanes west to Ridge Ave and east to Bergh St.

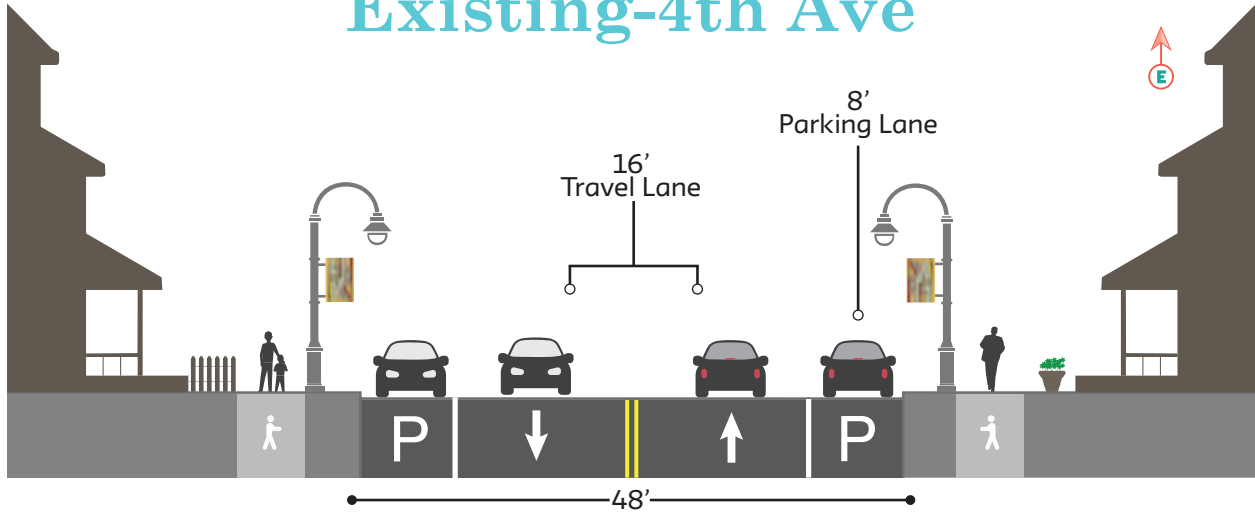
Recommendations

- Narrow travel lanes from 16 ft to 11 ft
- Retain existing parallel parking
- Stripe 5 ft dedicated bicycle lanes along the remaining segments of 4th Ave that have not been upgraded, west to Ridge Ave and east to Bergh St

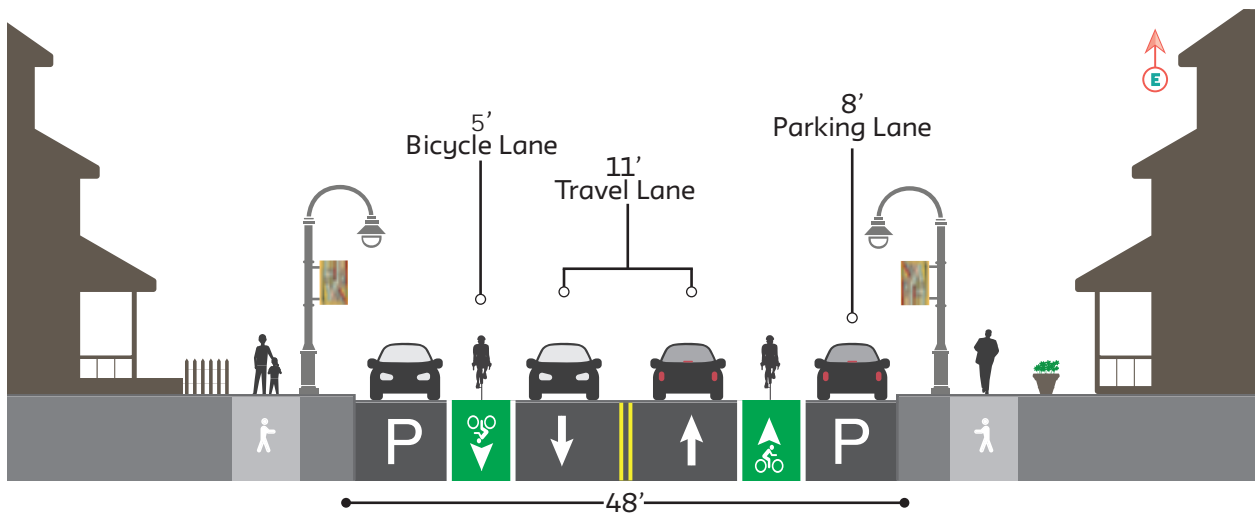


New Bicycle Lanes along 4th Ave at Langford St

Existing-4th Ave



Proposed-4th Ave



Additional Bicycle Lanes

Several major roadways in Asbury Park have identical cross section dimensions to 4th Ave. With the exception of the bicycle facilities on Grand Ave, none of these roadways currently have dedicated bicycle facilities. Fortunately, all of the following roadways are wide enough to accommodate bicycle lanes while retaining parking and two travel lanes. The following roadways should receive upgrades that are identical to those performed on 4th Ave to help create a strong bicycle network in Asbury Park:

- 1st Ave between Central Ave & Bergh St
- 2nd Ave between Central Ave & Bergh St
- 3rd Ave between Ridge Ave & Bergh St
- 5th Ave between Locust Dr & Bergh St
- 6th Ave between Memorial Dr & Webb St
- 7th Ave between Memorial Dr & Webb St
- 8th Ave between NJ 71 & Kingsley St
- Park Ave between NJ 71 & Sunset Ave



Top to Bottom: 6th Ave, Park Ave, & 3rd Ave can easily support dedicated bicycle facilities due to their widths

Prospect Avenue

Prospect Ave runs diagonally northwest/southeast through Asbury Park from Drummond Court to Springwood Ave. The street is mainly residential with Asbury Park Middle School located at the intersection with Bangs Ave. As one of Asbury Park's few diagonal streets, Prospect Ave more directly connects portions of the City.

The width of Prospect Ave varies along the corridor; widening toward the southeast. Parallel parking is present on both sides with one travel lane in each direction and no centerline. The entirety of Prospect Ave has an LTS of 1 due to the lower vehicular volumes and the residential nature of the street.

Recommendations

Prospect Ave is an ideal candidate for an advisory bicycle lane pilot project. The roadway lacks the width for dedicated bicycle facilities and currently has relatively low vehicular volumes. An advisory bicycle lane functions as a bicycle lane when no vehicles are present, giving cyclists a clear, delineated space on the road. Of all mixed-traffic bicycle facilities, advisory bicycle lanes give cyclists the highest level of autonomy. Due to the connectivity that Prospect Ave provides, the

EXISTING ROADWAY CHARACTERISTICS

Speed Limit: 25 mph

Typical Cartway Width: 32-38ft

Travel Lanes: 2 (without marked centerline)

Parking: parallel in both directions

Existing LTS: 1

Proposed LTS: 1

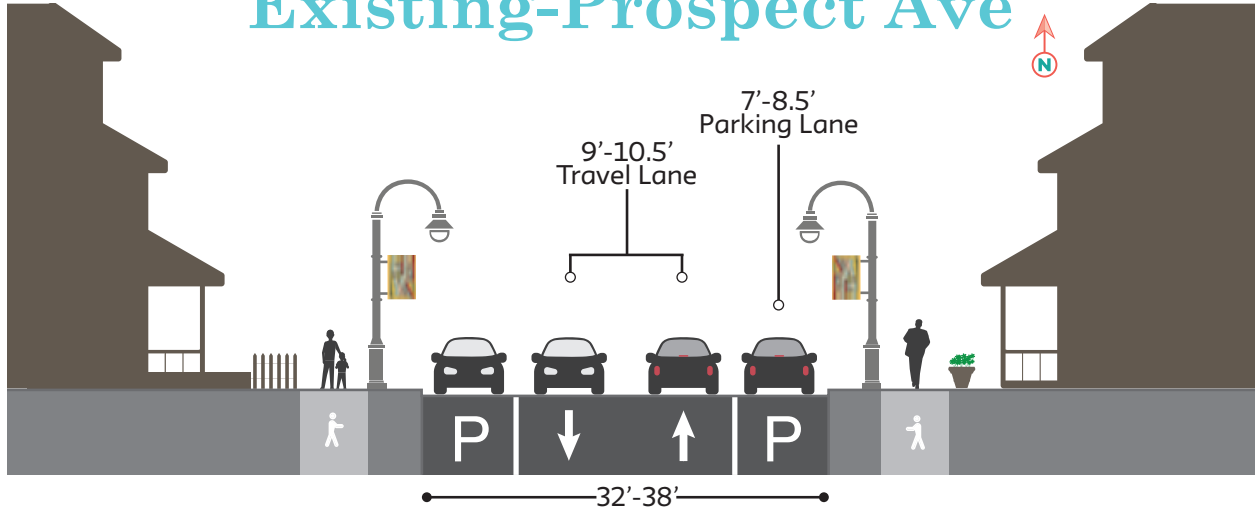
advisory bicycle lanes should encourage more cycling than simple shared-lane markings alone.

- Stripe a single 10 ft shared travel lane along the entire stretch of Prospect Ave
- Retain parallel parking on both sides of the street.
- Install advisory bicycle lanes on either side of the shared travel lane
- Adjust the width of both parking lanes and advisory bicycle lanes so as to retain a constant 10 ft shared travel lane. Based on the observed street width, the parallel parking widths will vary between 8 ft and 9 ft, while advisory bicycle lane widths will vary between 3 ft and 4 ft

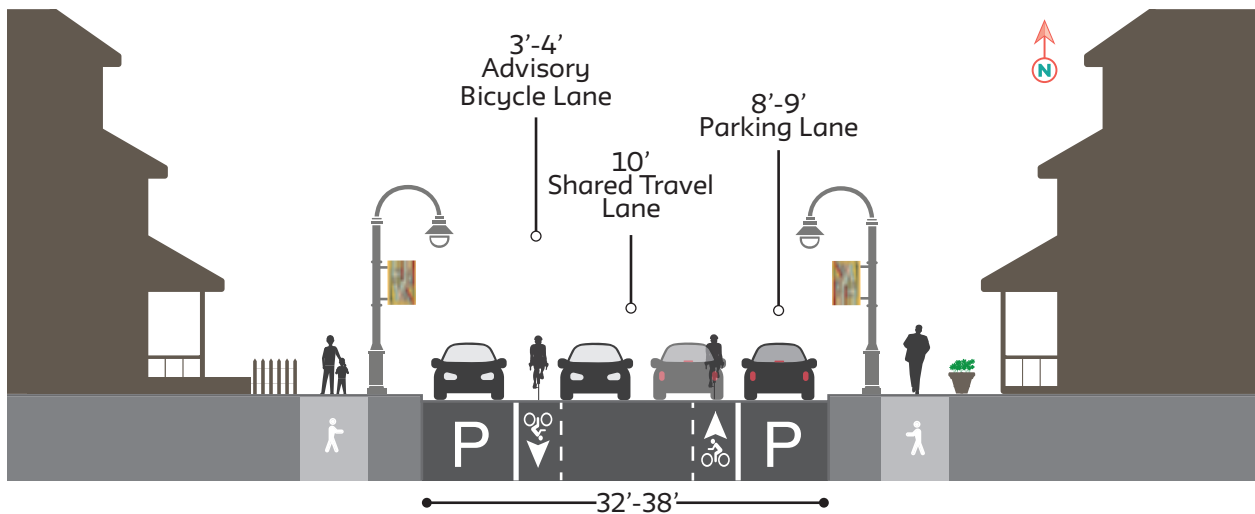


Existing Cross-Section along Prospect Ave

Existing-Prospect Ave



Proposed-Prospect Ave



Bicycle Boulevards

Several roadways in Asbury Park are ideal candidates for bicycle boulevard treatments. As described earlier in the report, bicycle boulevards are traffic calmed streets that prioritize bicycle travel and create a more comfortable bicycling environment. Ideal bicycle boulevard candidates are roadways with low volumes and low speeds. Many neighborhood streets already have elements of bicycle boulevards. These streets can be enhanced by design treatments that deter high vehicle speeds and discouraging through trips, such as signage, markings and reduced speed limits. Bicycle Boulevard components should be implemented on the following streets in Asbury Park to strengthen the bicycle network established in the previous recommendations:

- Atlantic Ave between Prospect Ave & Atkins Ave
- Central Ave between 2nd Ave & Asbury Ave
- Comstock St between Prospect Ave &

EXISTING ROADWAY CHARACTERISTICS

Speed Limit: 25 mph (Drop to 20 mph)

Typical Cartway Width: Variable

Travel Lanes: 2 (without marked centerline)

Parking: Variable

Existing LTS: 1-2

Proposed LTS: 1-2

northern Terminus

- Dewitt Ave between Summerfield Ave & southern municipal boundary
- Langford St between Prospect Ave & Sunset Ave
- Monroe Ave between Prospect Ave & Cookman Ave
- Pine St between Sunset Ave & Asbury Ave
- Ridge Ave between 4th Ave & southern municipal boundary



Existing cross-section along Langford St adjacent to the Asbury Park High School

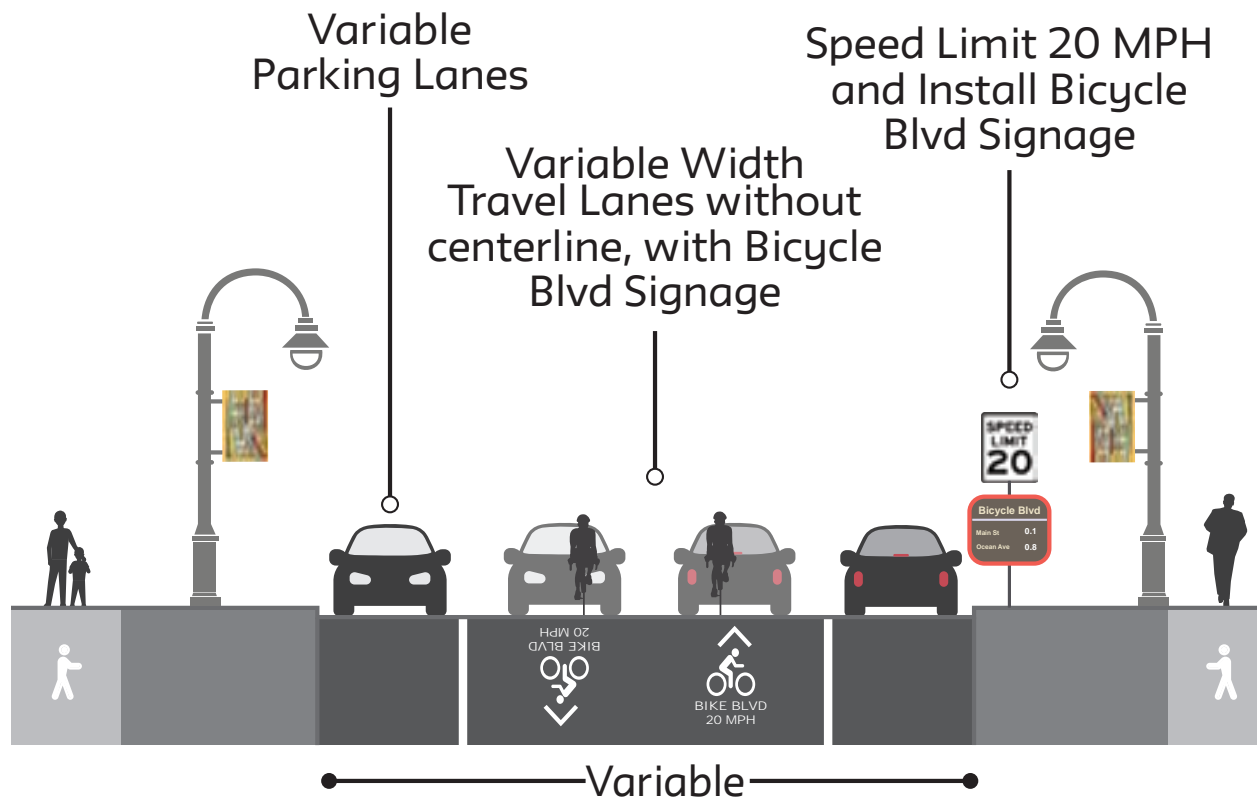
Recommendations

- Stripe bicycle boulevard signage onto pavement
- Reduce speed limits to 20 mph
- Install bicycle signage, such as wayfinding and distances to destinations along the corridors
- Implement traffic calming measures where applicable, such as curb extensions, center islands, neighborhood traffic circles, raised crosswalks and speed tables



Haven Ave Bicycle Boulevard in Ocean City, NJ

Proposed Bicycle Blvd Components



Shared-Lane Markings

Several roadways in Asbury Park lack the space for dedicated bicycle facilities. Vehicular volumes on these roadways are too high for bicycle boulevard and advisory bicycle lane application. The preferred application for these roadways is a shared-lane marking (“Sharrow”). These should be placed at least 11 feet from the curb when parallel parking is present (4 feet when no parking is present), but the preferred placement is in the middle of the travel lanes so that drivers understand that cyclists have equal right-off-way on the street. Sharrows should be installed on the following road segments in Asbury Park:

- 1st Ave, 2nd Ave, 3rd Ave, 4th Ave & 5th Ave between Bergh St & Ocean Ave
- Asbury Ave between western municipal boundary and Pine St & between Heck St & the entrance to the surface parking lot

adjacent to the Carousel Building

- Atkins Ave between northern terminus & southern municipal boundary
- Bergh St between 5th Ave & Asbury Ave
- Bond St between 7th Ave & southern municipal boundary
- Cookman Ave between Main St & Asbury Ave
- Emory St between NJ 71 & Cookman Ave
- Heck St between 5th Ave & Lake Ave
- The entirety of Springwood Ave within the City
- Sunset Ave, 6th Ave, & 7th Ave between Webb St & Ocean Ave
- Webb St between Lake Dr & 5th Ave
- Summerfield Ave between Prospect Ave and Cookman Ave



Existing cross-section along Asbury Ave at Pine St. The roadway is a prime candidate for shared-lane markings

Bicycle LTS Revisited

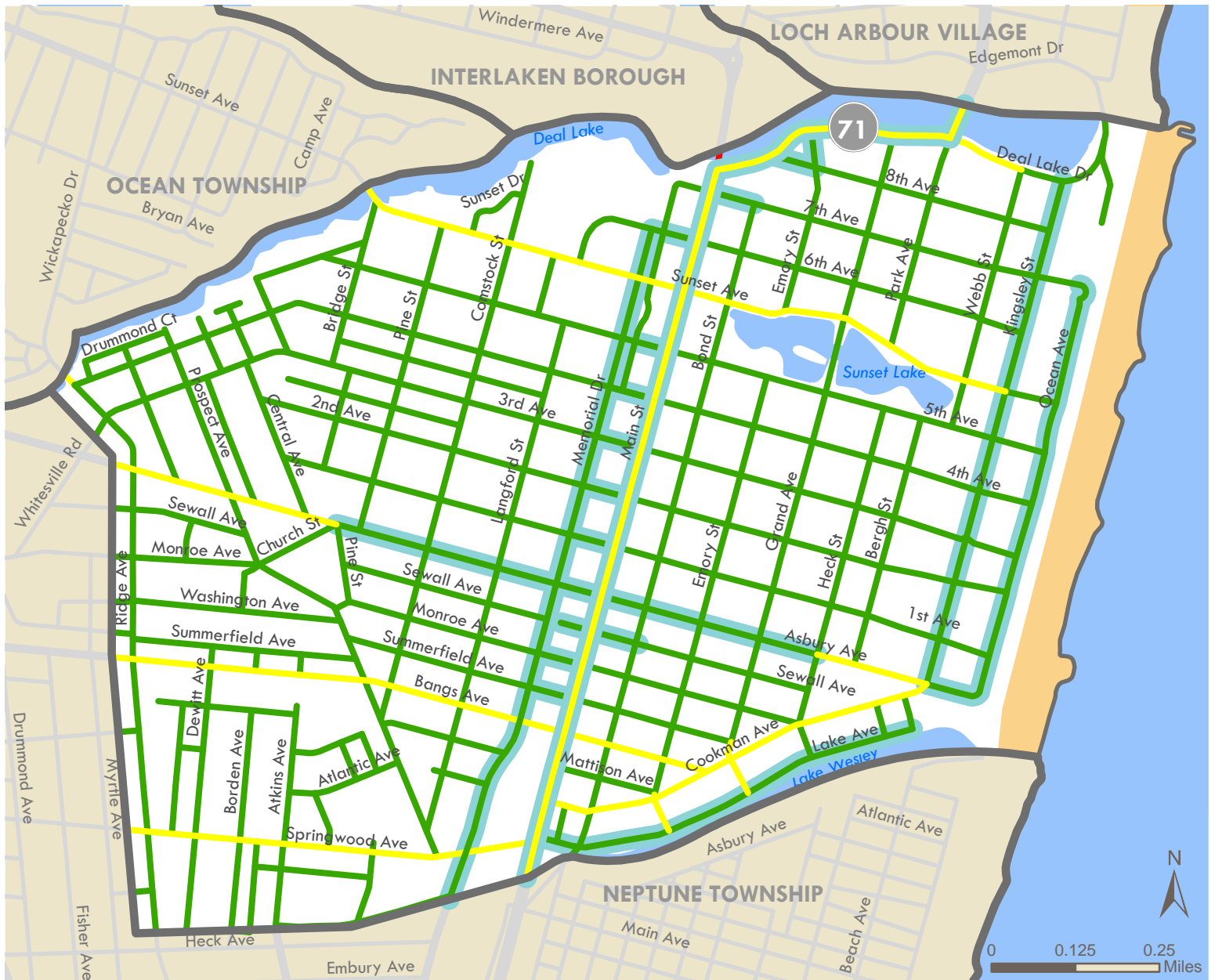
The proposed program of improvements described in the previous section are intended to create a more comfortable, convenient, and interconnected bicycle network for cyclists of all ages and abilities. Improving the bicycle facilities for the roadways mentioned in the previous section will create a more comprehensive bicycle network for Asbury Park. As shown in Map 10, the proposed bicycle network builds upon existing bicycle facilities, connects major destinations for residents and visitors, and improves linkages between the eastern and western sections of the City.

Re-evaluating the bicycle level of traffic stress (LTS) for the proposed network is one way to measure the anticipated benefits to user comfort. Map 11 shows the revised LTS analysis with all the recommended bicycle improvements implemented, both short term and long term. The result is a network composed entirely of LTS 1 or 2 roadways.

The most significant change in the network is an LTS decrease from 4 to a 2 along Main St and Deal Lake Dr. This change is a result of the Main St Road Diet implementation that will reduce the number of travel lanes on NJ 71 from 4 to 2, with a center turn lane and dedicated bicycle lanes. Nearby Memorial Dr will see an LTS reduction from 3 to a 1 due to the proposed separated bicycle lanes along the entire corridor. Lake Ave will have an LTS reduction from 2 and 4 to a 1 due to the proposed separated shared-use paths that will remove bicyclists from the busy roadway. The LTS on Kingsley St and Ocean Ave will be reduced from 2 to a 1 thanks to a reconfiguration of the roadways to include separated bicycle lanes.

The level of traffic stress metric measures the comfort level of a roadway for different types of users. By focusing on providing connections that are either LTS 1 or 2, the network better accommodates current cyclists and is more attractive to potential new bicyclists.

Most of the remaining recommendations were proposed for roadways that were classified as LTS 1 initially. While the LTS metric helps identify high stress roadways, it does not account for perceived safety or driver behavior. SAC members described several roadways throughout Asbury Park as unsafe for cyclists, even though the LTS metric was a 1. While the proposed improvements to these existing LTS 1 roadways may not have in impact on the LTS based on the metric's methodology, the goal is that they will change perceived safety to encourage new users to cycle on these new bicycle facilities.



MAP 11 - Proposed Bicycle Level of Stress

- Level of Stress 1
- Level of Stress 2
- Level of Stress 3
- Level of Stress 4
- LTS Change from Existing

In addition to the implementation of the Main St and Deal Lake Dr (NJ 71) road diet, 17 roadways will experience a drop in Bicycle Level of traffic Stress (LTS) in the long term

Bicycle Penalty Metric Revisited

Along with the updated LTS analysis, the bicycle penalty metric was also be revisited to estimate the impact of the proposed improvements. As discussed in Chapter 4, the bicycle penalty metric helps evaluate and illustrate the connectivity of the low stress bicycle metric. A reduction in the bicycle penalty indicates that more of the roadway network is accessible and comfortable for casual cyclists, families, and children.

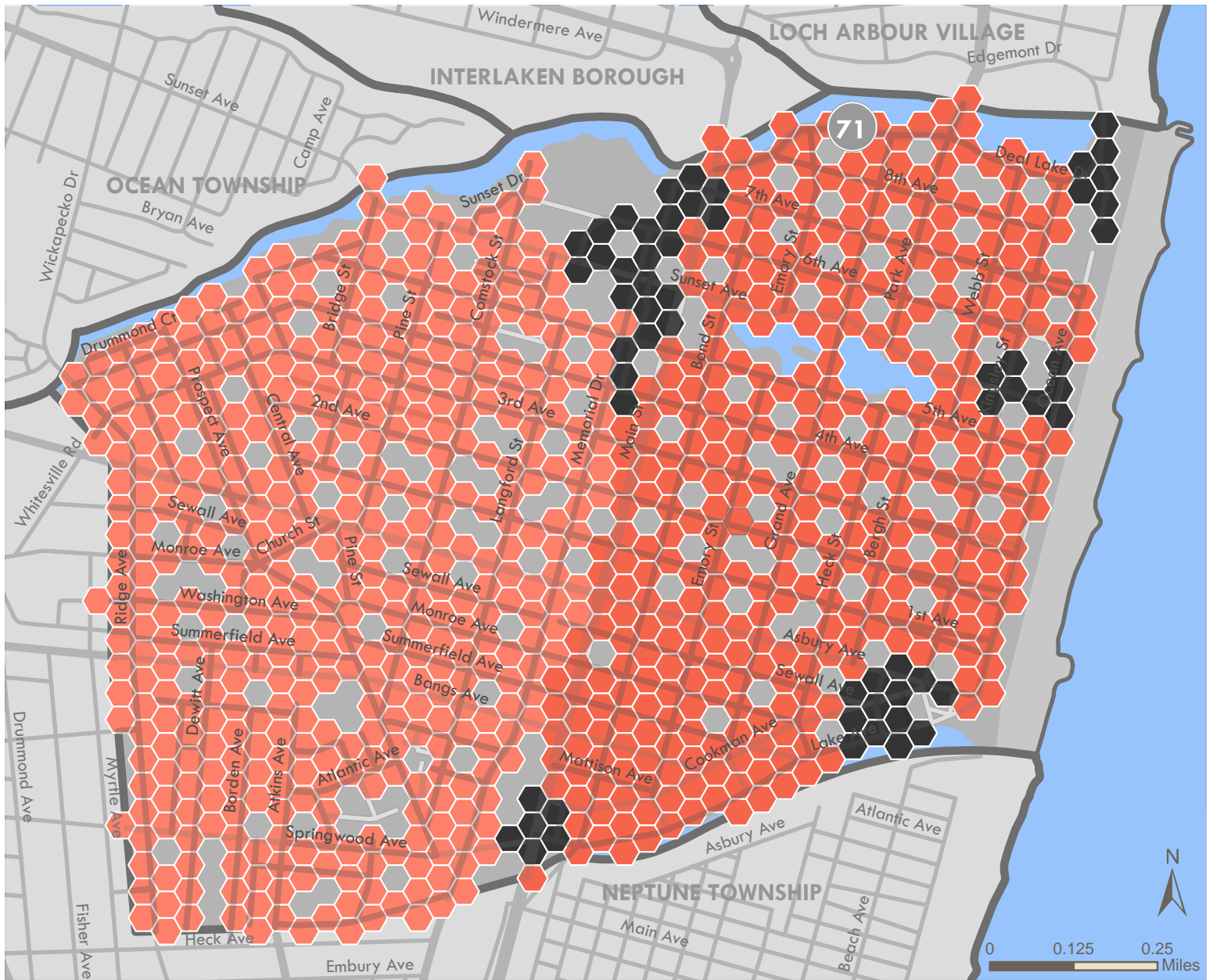
Using only LTS 1 roadways and limiting trip distance to two miles, Map 12 on page 79 (Map 9 repeated), illustrates the bicycle penalty prior to implementation of the recommendations. Map 13 on page 80 illustrates the changes in the bicycle penalty analysis assuming implementation of all the proposed bicycle network recommendations.

In the existing configuration, Main St and Memorial Dr create a high stress barrier to cycling, effectively splitting Asbury Park into two sections on opposite sides of the railroad tracks with limited access between them. Other locations are completely inaccessible due to the island effect created when LTS 1 roadways are completely surrounded by higher LTS roadways.

The proposed bicycle penalty metric indicates that virtually all bicycle penalty is reduced to less than 12.5% when all recommendations are implemented, including the Main St and Deal Lake Dr (NJ 71) road diet. This effectively means that any location in Asbury Park will be equally accessible to a bicyclist as to a motor vehicle.



The largest barriers to bicycle mobility are Main St, Memorial Ave, and the NJ Transit railroad tracks

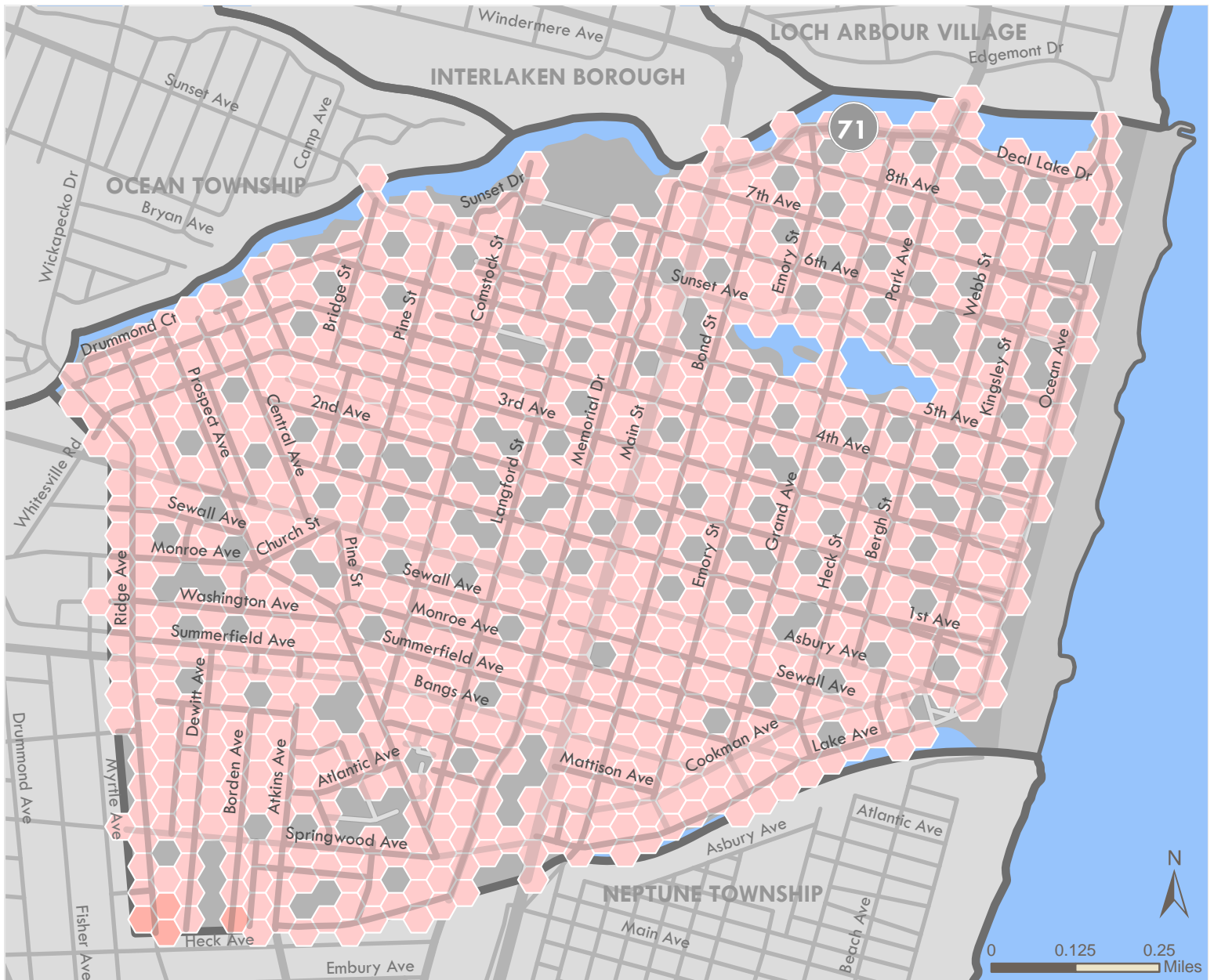


MAP 12 - Existing Bicycle Penalty Metric

Bicycle Penalty

- ◻ ≤ 12.5%
- ◻ ≤ 25%
- ◻ ≤ 37.5%
- ◻ ≤ 50%
- ◻ ≤ 62.5%
- ◻ ≤ 75%
- ◻ ≤ 87.5%
- ◻ ≤ 99.9%
- ◻ Not Accessible

Main St and Memorial Ave create a high stress barrier, effectively splitting the City into two sides with limited access to each other. Other locations are completely inaccessible due to the island effect created when LTS 1 roadways are completely surrounded by higher LTS roadways



MAP 13 - Proposed Bicycle Penalty Metric

Bicycle Penalty

- ≤ 12.5%
- ≤ 25%
- ≤ 37.5%
- ≤ 50%
- ≤ 62.5%
- ≤ 75%
- ≤ 87.5%
- ≤ 99.9%
- Not Accessible

The reduction in bicycle LTS along Main St and Memorial Dr are largely responsible for the vast improvement in the bicycle penalty metric in Asbury Park. In addition, previously inaccessible segments have been reconnected with the LTS 1 network due to the proposed improvements, resulting in bicycle penalty reductions across the board

Bicycle Parking

Bicycle parking facilities are needed to extend bicycle use from an opportunity for recreation to a feasible mode of transportation.

Providing adequate, secure bicycle parking is an important measure to accommodate and encourage cycling. Proper parking facilities increase the convenience of cycling for commuting, utilitarian, or recreational purposes while also alleviating the threat of theft. Appropriate infrastructure design and siting standards, additional bicycle parking capacity, and a bicycle parking ordinance can all help improve options for bicycle parking in Asbury Park.

Priority Locations

The inventory of existing conditions indicated that while substantial bicycle parking exists on the eastern side of the City, very limited bicycle facilities exist on the west side. Based on the existing locations and capacities of bicycle parking facilities, the following locations are prime candidates for additional bicycle parking:

- The Asbury Park High School
- Martin Luther King Middle School
- Along the Asbury Ave corridor between Grand Ave and Ridge Rd
- Along Main St
- Along Memorial Dr
- Along Springwood Ave, especially west of Atkins Ave
- Along the boardwalk, especially at high volume access points

Rack Design

Parking should be conveniently located, well lit, and easily visible for cyclists arriving at a destination. There are a variety of bicycle parking racks available to meet different capacity needs or accommodate space constraints. The majority of existing

bicycle racks in Asbury Park adhere to the new bicycle rack guidelines provided by the Association of Pedestrian and Bicycle Professionals (APBP). Several of the racks, primarily located along Cookman Ave and Springwood Ave, utilize old design guidelines. As they are replaced and additional capacity is added, new racks should meet the ARBP guidelines, including:

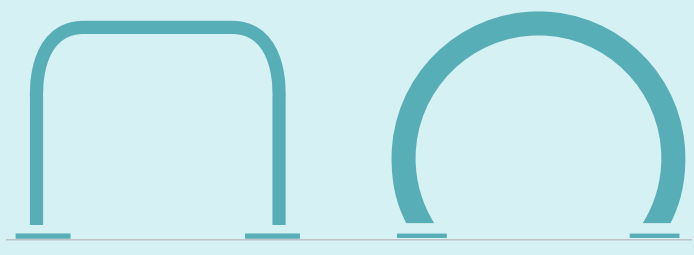
- Be intuitive to use
- Support the bicycle upright by its frame in two locations
- Prevent the wheel of the bicycle from tipping over
- Enable the frame and one or both wheels to be secured
- Accommodate a variety of bicycles and attachments, including bicycles without a diamond shaped frame and horizontal top tube
- Allow both front-in and back-in parking with a U-lock through the frame and front or rear wheel
- Resist the cutting or detaching of any rack element with hand tools

Older style racks, such as the “comb”/ “schoolyard”, “toast”, and “wave” are not recommended because they do not properly support the bicycle frame, generally do not facilitate locking of the frame to the rack, and frequently cause interference between the handlebars of adjacent bikes when the rack is near capacity. The preferred rack is the “inverted U”. Other acceptable designs include the “post and ring”, and “wheelwell secure.” These rack types are illustrated in the figure on the following page.

Bike racks should also be properly spaced to allow easy, independent access to each bike. This includes providing sufficient space between racks and buildings, walls and parked cars, as well as between other bikes. Additional guidance on bike rack design and placement can be found in the Association of

Recommended Bike Rack Designs

Preferred Design



Inverted U

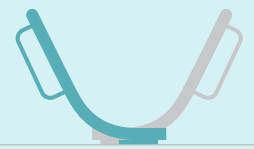
Common style appropriate for many uses; two points of ground contact. Can be installed in series on rails to create a free-standing parking area in variable quantities. Available in many variations.

Other Acceptable Designs



Post and Ring

Common style appropriate for many uses; one point of ground contact. Compared to inverted-U racks, these are less prone to unintended perpendicular parking. Products exist for converting unused parking meter posts.



Wheelwell Secure

Includes an element that cradles one wheel. Design and performance vary by manufacturer; typically contains bikes well, which is desirable for long-term parking and in large-scale installations (e.g. campus); accommodates fewer bicycle types than other recommended designs.

Racks to Avoid

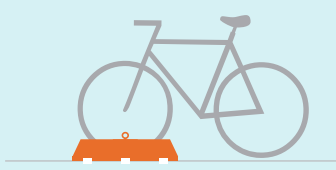
Wave

Not intuitive or user-friendly; real-world use of this style often falls short of expectations; supports bike frame at only one location when used as intended.



Wheelwell

Racks that cradle bicycles with only a wheelwell do not provide suitable security, pose a tripping hazard, and can lead to wheel damage.



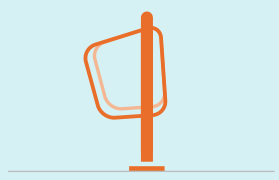
Schoolyard (comb)

Does not allow locking of frame and can lead to wheel damage. Inappropriate for most public uses, but useful for temporary attended bike storage at events and in locations with no theft concerns.



Coathanger

This style has a top bar that limits the types of bikes it can accommodate.



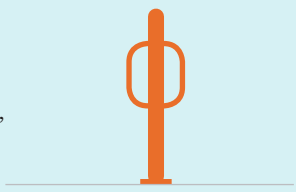
Spiral

Despite possible aesthetic appeal, spiral racks have functional downsides related to access, real-world use, and the need to lift a wheel to park.



Bollard

This style typically does not appropriately support a bike's frame at two separate locations, which limits its framelock capability and bicycle stability.



Images and descriptions courtesy of APBP Essentials of Bicycle Parking

Bicycle and Pedestrian Professionals' (APBP) guide: Essentials of Bicycle Parking (2015).

Enhanced Bicycle Parking Options

Covered Parking

To further enhance bicycle parking options, the City should consider providing covered bicycle parking at the local schools. Covered parking helps protect bicycles from inclement weather and is particularly appealing for people parking for longer periods of time, such as students, commuters, or employees. Having covered parking available can make bicycling a more practical and attractive option if rain is forecast during the day, but not during commuting or travel times.

While covered parking requires more capital investment than racks alone, a variety of pre-fabricated shelters are available for a relatively low cost. Installation of covered parking could be a long term improvement, either implemented incrementally or integrated into larger capital projects at the schools.

Bicycle Corrals

Bicycle corrals are rows of bike racks installed in the parking lane of the street instead of on the sidewalk. Bicycle corrals help provide highly visible and ample bicycle parking without occupying sidewalk space, making them particularly useful in areas with constrained sidewalk space and/or high pedestrian activity. They can convert a parking space for a single automobile to parking for 8 to 12 bicycles, creating more convenient access for more customers of nearby businesses. Additionally, bicycle corrals help “daylight” an intersection by preventing motor vehicles from parking close to the intersection. This helps improve the visibility of all road users at the intersection and creates an easier crossing for pedestrians. Corrals are also temporary, and can be easily removed during the winter.

Bicycle corrals are one tool to provide additional parking in the downtown. Asbury Park currently has a bicycle corral along Cookman Ave in the central business district. The City should explore opportunities for additional bicycle corrals near commercial nodes, including Asbury Ave, Main St, Lake Ave, Springwood Ave, Kingsley St, Bangs Ave, and Mattison Ave.

Bicycle corrals can be an amenity for local shops and cafes, and there may be opportunities for businesses to partner with the City or sponsor corrals adjacent to them.

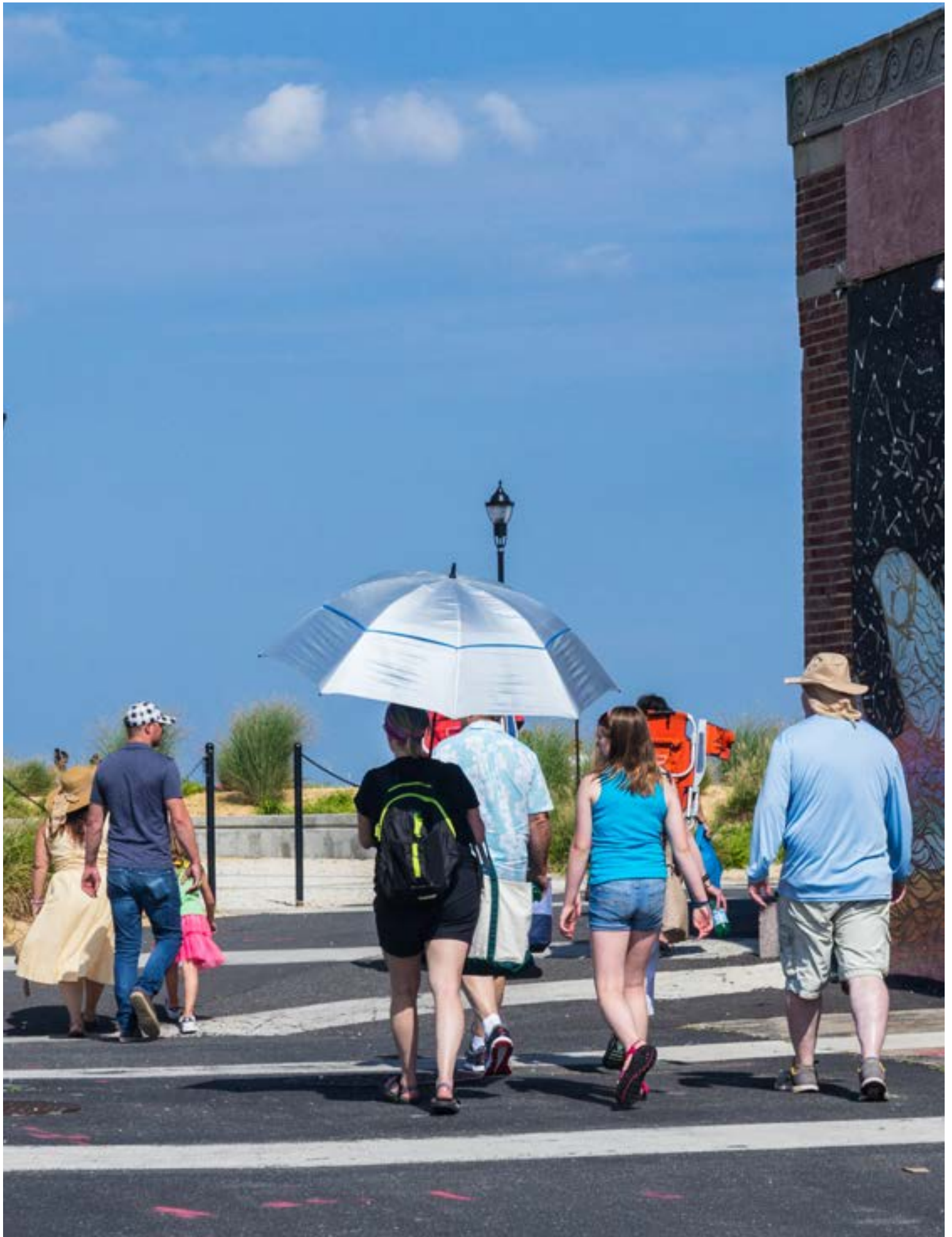
Bicycle Parking Ordinance

The City should also consider adopting a bicycle parking ordinance to further integrate bicycling into the City's planning process and development regulations. The ordinance would ensure that appropriate bicycle parking is provided as redevelopment occurs, supporting additional parking capacity throughout the community and increasing the convenience of bicycling.

Similar to automobile parking requirements, the ordinance should reflect different demands for different types of land uses and scaled based on an appropriate metric for the land use, such as square footage, number of bedrooms, or number of employees. The ordinance should also address both short-term and long-term parking needs. While customers or visitors making quick trips may require a simple bicycle rack, employees and residents often desire more secure parking options protected from the weather.

In addition to setting capacity requirements, the ordinance should also stipulate the design standards summarized in this chapter and reference best practice design guidelines from the Association of Pedestrian and Bicycle Professionals.

As an incentive, the City may also consider allowing developers to provide additional bicycle parking and/or higher quality facilities (e.g., covered parking) to offset vehicular parking requirements.





Pedestrian Network Concepts

Based upon the existing conditions analysis, feedback from the Study Advisory Committee, and public input, the proposed pedestrian improvement concepts for Asbury Park identify targeted opportunities to improve pedestrian comfort, access, and safety. The recommendations outlined in this chapter include general design principles applicable to the City, expansion of the sidewalk network, and priority intersection enhancements.

The proposed improvements are intended as conceptual recommendations that would likely require varying levels of design or further analysis, depending on the magnitude of the improvement. Many concepts are intended to be easily implementable and emphasize low-cost options, where applicable, such as re-stripping of existing roadways or enhanced signage.

Projects may be implemented over time as funding allows. The recommendations can be used to support grant applications, integrate pedestrian projects into the capital improvement pipeline, and/or incorporate pedestrian improvements into routine roadway maintenance and resurfacing projects or development activity to minimize additional costs.

The recommendations are also summarized in an implementation matrix in Appendix A2. Where practical, order-of-magnitude cost estimates are included for each improvement based on average material rates for sidewalks, crosswalks, striping, etc. These estimates are intended to convey the level of investment that proposed concepts would require for implementation. The cost estimates are based on industry standards for per-unit material costs, and do not include the cost of right-of-way acquisition, relocation of utilities or drainage, engineering design, or contingencies.

Pedestrian Design Elements

Due to the presence of a mostly complete sidewalk network throughout the City, proposed pedestrian network improvements in Asbury Park are generally focused on intersection design. Many of the concepts proposed for the priority intersections include common design elements that may also be applicable elsewhere in the City and could be incorporated into other intersection improvement projects as opportunities arise. Pedestrian design elements applicable throughout Asbury Park include:

- Enhanced pedestrian crossings
- Traffic calming

The following sections briefly summarize key elements of these pedestrian treatments. As the City implements various roadway projects, pedestrian facility design should refer to current best practice guidance for more detailed information, including:

- New Jersey Complete Streets Design Guide
- NACTO Urban Street Design Guide
- FHWA Small Town and Rural Multimodal Networks
- AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities

Enhanced Pedestrian Crossings

Based on the surrounding context, traffic volumes, and traffic speeds, enhanced pedestrian crossings utilize a variety of design elements to improve pedestrian visibility, enhance user comfort, increase driver compliance with the State’s “stop for pedestrians” law, and/or decrease the crossing distance for pedestrians.

On low volume and low speed roadways, crosswalk striping alone is often sufficient. However, on higher volume and/or higher speed roadways, additional pedestrian treatments are recommended to enhance the crossing and supplement crosswalk striping.

Key corridors in Asbury Park that would benefit from enhanced pedestrian crossings include:

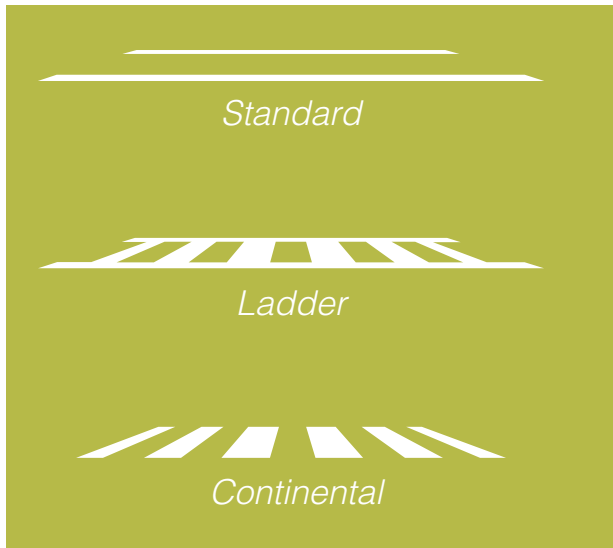
- Memorial Drive
- Main Street
- Asbury Avenue
- Springwood Ave
- Sunset Avenue
- Ocean Avenue

Elements of an enhanced pedestrian crossing may include:

High Visibility Crosswalk Striping

Striping design can significantly enhance the visibility of a crosswalk. Transverse striping, typically a pair of parallel lines oriented perpendicular to the driver, has a very limited visual profile to motorists. Conversely, longitudinal striping (often referred to as “continental” striping) is oriented parallel to motor vehicle travel, which significantly improves the visibility of the crossing to motorists. Typical types of crosswalk striping are illustrated on the following page.

Pavers or stamped brick crosswalks are often incorporated into downtown streetscape designs. While these designs may provide additional aesthetic value consistent with an overall streetscape program, they generally do not have the same visibility benefits as the continental



Left: Typical crosswalk striping designs

Above: Example of incorporating high-visibility striping with brick/paver material aesthetic (www.atlanticpaving.com)

striping due to the low color contrast between the pavers and the asphalt. If the brick aesthetic is preferred, it can be combined with higher visibility striping patterns to enhance visibility, as shown in the example above.

Pedestrian Crossing Signage and Beacons

Signage can further enhance the visibility of a pedestrian crossing and reinforce driver compliance with the State’s stop for pedestrian law. Signage options include in-road “Stop for Pedestrian” (MUTCD R1-6a) and pedestrian crossing (W11-2) signs. Both options improve motorist awareness of the crossing and their obligation to stop for pedestrians.

Crossings with higher vehicle speeds, higher vehicle volumes, or a higher volume of pedestrians may also be suitable locations for beacons. Pedestrian-actuated rectangular rapid flashing beacons (RRFBs) further improve the visibility of the crossing by combining signage with flashing amber LED lights.

Intersection Daylighting

Daylighting an intersection refers to improving the visibility of a crossing by

removing obstacles obstructing the vision of either the pedestrian or approaching motorists. On-street parking too close to an intersection (i.e., closer than 20 feet, per design standards), for example, is a common obstruction to visibility.

Daylighting treatments range from short-term installations that are removed seasonally, to pilot projects demonstrating a design concept, interim treatments until a long-term improvement can be



Examples of in-road “Stop for Pedestrian” signage already used in Asbury Park to enhance pedestrian crossings

implemented, or permanent, raised curb extensions.

Short-term or interim daylighting treatments can utilize low-cost, quickly implementable materials to reinforce the clear zone around a pedestrian crossing and deter parking or loading. This serves to improve safety by enhancing visibility, reducing the crossing distance, and calming traffic. Elements include a surface treatment to define the space, such as striping, paint, or epoxy gravel

coating. A vertical element, such as flexible delineators, bollards, or planters, deters vehicles from entering the space and narrows the crossing. A bicycle corral (discussed on page 83) can also serve as the vertical element in a daylighting scheme, providing an opportunity to expand bicycle parking as well as improving the pedestrian crossing.

Long-term solutions involve installing a curb extension. This extends the sidewalk and streetscape into the parking lane and/

Integrating Public Art into the Streetscape

Community crosswalk programs provide opportunities to integrate public art into the streetscape. They engage the creativity of local residents to design crosswalks or paint an entire intersection as a way to encourage community building and transform public roadway space into neighborhood assets. Designs must abide by requirements of the MUTCD or other regulating standards related to paint color and patterns, and should follow the principle of using high-contrast to enhance visibility and improve safety. Community crosswalk programs have been implemented in municipalities across the U.S., such as Ocean City, NJ; Fort Lauderdale, FL; and Seattle, WA.



(clockwise from top right) Residents installing a painted intersection in Boulder, CO (www.bouldercolorado.gov); painted intersection in Ft. Lauderdale, FL (www.fortlauderdale.gov); colorful crosswalk in Silver Springs, MD (www.montgomeryplanning.org)



Daylighting treatments can include the use of quickly implementable, inexpensive materials in order to shorten crossings, improve visibility, and slow traffic, such as the example to the left from Hoboken, NJ. They can be used as an interim treatment until a permanent curb extension is installed, or maintained longer term in order to permit more flexible use of the street.

or narrows the travel lane. In addition to improved visibility and safety, curb extensions also provide an opportunity to integrate green stormwater management strategies and/or enhance the streetscape with street furniture, plantings, or other amenities.

Traffic Calming

Traffic calming strategies aim to reduce motor vehicle speeds. Lower speeds support a more bicycle- and pedestrian-friendly environment by reducing instances of vehicles overtaking bicyclists, enhancing the drivers' ability to see and react to bicyclists and pedestrians, and reducing the severity and likelihood of crashes for all street users. Reducing vehicle speeds also improves bicyclist comfort by reducing the speed differential between motor vehicles and bicyclists, and is a critical element of a bicycle boulevard.

Benefits of traffic calming techniques include:

- Decreased motor vehicle speeds
- Decreased crash likelihood and crash severity for all street users
- Improved bicyclist and pedestrian comfort
- Improved conditions for pedestrians and

residents by reducing vehicle speeds

- Establishes and reinforces bicycle priority on bicycle boulevards
- Provides opportunity for landscaping and other community features, such as benches, communal space, and artistic painted intersections, benefiting all roadway users and residents

In Asbury Park, traffic calming is particularly applicable to Main St, Asbury Ave, Bangs Ave, Comstock St, Cookman Ave, Springwood Ave, as well as other streets with recommended shared-lane markings or bicycle boulevards as a part of the proposed bicycle network (discussed in Chapter 6).

Speed management treatments can be divided into two types: horizontal and vertical deflection. These treatments can be implemented individually or in combination to increase their effectiveness. Examples of traffic calming strategies are described on the following pages and the case study above.

As with all roadway features, traffic calming elements should be designed to consider the context and needs of the street.

Enhanced signing strategies can also support lower traffic speeds. Radar speed signs or driver feedback signs, for example,

alert drivers of their speed and the actual speed limit. These relatively low cost, easily implementable tools have been shown to have a moderate impact on reducing 85th percentile speeds, and a significant impact on reducing high-end speeds – those exceeding the speed limit by 10 MPH or

more (Spotlighting Speed Feedback Signs, Public Roads/FHWA, 2016). These devices may be used as part of a gateway treatment along Asbury Ave approaching Asbury Park from the west, Memorial Dr approaching from the south or along Main St, Bangs Ave, Springwood Ave and Ridge Ave.



Different traffic calming design elements and strategies can be used in combination to improve their effectiveness as part of a comprehensive program. The above example from a residential street in Princeton, NJ, includes: (top) Raised intersections, helping both calm traffic and enhance pedestrian crossings. (center) Median islands, which calm traffic by narrowing the travel lane. Median islands are a versatile treatment, ranging from a cobblestone island that can be easily mounted by vehicles (as shown in the photo) to a raised curb island with street trees or other features. (bottom) Neighborhood roundabouts, which also narrow travel lanes and tighten turning radii at intersections to reduce traffic speeds. Other treatments used in the neighborhood include neckdowns (midblock curb extensions to narrow the roadway) and speed humps.

Horizontal Deflection

Horizontal speed control devices are used to slow motorists by either visually narrowing the roadway or deflecting motorists through an artificial curve. Where possible, sufficient space should be provided for bicyclists to pass around the outside of the elements. The following are examples of horizontal deflection:

Curb Extensions

Curb extensions, or bulb-outs, extend the sidewalk or curbface into the parking lane at an intersection. Curb extensions narrow the roadway at intersections, contributing to lower motor vehicle speeds, as well as reducing the crossing distance for pedestrians and increasing the amount of space available for street furniture and green stormwater management features. They are typically applied at locations with on-street parking and should not extend into bicycle lanes.



Chicanes

Chicanes are a series of raised or delineated curb extensions, edge islands, or parking bays placed on alternating sides of a street to create an S-shaped bend in the roadway. Chicanes reduce vehicle speeds by requiring drivers to shift laterally through narrow travel lanes.



Neighborhood Roundabout

Neighborhood roundabouts, or mini roundabouts, are raised or delineated islands used at minor street crossings to reduce vehicle travel speeds by reducing turning radii, narrowing the travel lanes, and, if planted, obscuring the visual corridor along the roadway.



Vertical Deflection

Vertical speed control measures are composed of wide, slight changes in pavement elevation that self-enforce a slower speed for motorists. Narrow and abrupt speed bumps often used in private driveways and parking lots are not recommended for public streets and are hazardous to bicyclists.

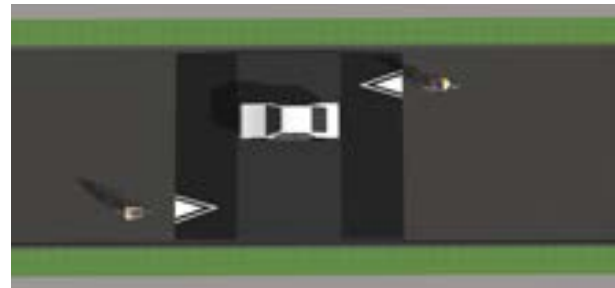
Speed Humps

Speed humps are 3 to 4 inches high and 12 to 14 feet long, with an intended vehicle speed of 15 to 20 mph. Speed hump design should adhere to the guidelines of the New Jersey “Speed Hump Law,” (C.39:4-8.9, C.39:4-8.11), which adopted the ITE design standards for speed humps.



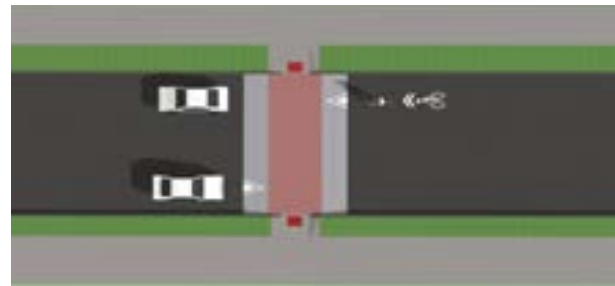
Speed Tables

Speed tables are longer than speed humps and have a flat top, with a typical height of 3 to 3.5 inches and a length of 22 feet. Intended vehicle operating speeds range from 25 to 35 mph, depending on the spacing. Speed tables may be used on collector streets, transit, and/or emergency responder routes.



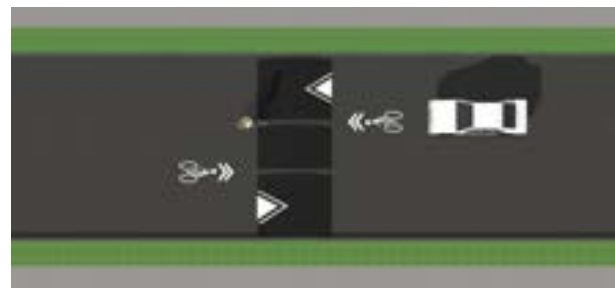
Raised Crosswalk / Raised Intersection

A raised crosswalk is a speed table that is signed and marked as a pedestrian crossing. It extends the full width of the street and is typically 3 inches high. At minor intersections the entire intersection can be raised to reduce motor vehicle speeds in all directions.



Speed Cushions

Speed cushions are speed humps that include wheel cutouts allowing larger vehicles to pass unaffected, but reduce passenger vehicle speeds. They are often used on key emergency response routes to allow emergency vehicles to pass unimpeded. Speed cushions should be used with caution, however, as drivers will often seek out the space in between the humps.



Pedestrian Network Improvements

Sidewalks

Based on the sidewalk inventory conducted during the existing conditions analysis, Asbury Park’s sidewalk network was found to be largely complete, though in various states of repair. Two significant sidewalk gaps were identified:

- Eastbound Sunset Ave between Bond St and Webb St
- Southbound NJ 71 between Park Ave and Main St

The City should consider installing the Sunset Lake sidewalk and partner with NJDOT to facilitate the construction of the NJ 71 sidewalk, preferably during the NJ 71 road diet implementation.

Additional small gaps in the sidewalk network have also identified, though most of these gaps are less than one City block in length and are adjacent to vacant or redeveloping properties, as shown in Map 14 on page 95. As the properties are developed, new sidewalks should be installed, adhering to current design standards.

New sidewalks should have a typical minimum width of five feet; generally sufficient for most residential neighborhoods. Where space is available, a wider width may be preferred in areas with greater pedestrian activity, such as in the vicinity of schools or parks. Where right-of-way allows, a planting

strip between the sidewalk and curb should also be considered to provide an additional buffer between pedestrians and the roadway, which is typical of much of the existing sidewalk network in Asbury Park.

During sidewalk construction, curb ramps compliant with the Americans with Disabilities Act (ADA) must also be constructed to ensure the sidewalk network is accessible for everyone, including seniors, children, families with strollers, and those in wheelchairs or with other mobility impairments.

At driveway crossings, design should make it clear and intuitive that the pedestrian has the right-of-way. As illustrated in the images below, the sidewalk should extend through the driveway. A continuous, level sidewalk, requires the vehicle to cross at sidewalk grade, prioritizing pedestrian movement and encouraging turning motorists to stop for pedestrians.

In addition to the sidewalk network improvements, two common pedestrian network inadequacies in Asbury Park should be addressed. These include:

- All Memorial Dr pedestrian crossings are particularly challenging. The proposed intersection improvements in the next section address the best strategies to improve Memorial Dr intersections.
- A lack of pedestrian countdown signals at the majority of signalized intersections

Sidewalks and Driveway Design



Pedestrian-friendly Design



Auto-centric Design

Pedestrian Signals

Per the Manual on Uniform Traffic Control Devices (MUTCD), signalized intersections should include pedestrian signal heads with countdown timers. These accommodations provide clarity to pedestrians and increase safety by clearly indicating when it is appropriate to cross the intersection and how long they have to do so.

Adequate clearance time should be provided so that all pedestrians, including those who walk slower than average, can cross the street. For most locations, a walk speed of 3.5 feet per second is adequate, though in locations commonly used by slower pedestrians, a slower walk speed should be used.

The use of pedestrian actuation such as push buttons should be discouraged. At intersections with high pedestrian volumes, the pedestrian phase should be provided for all crossings during each cycle. In the case where pedestrian volumes are low and vehicular volumes are high, three strategies should be considered before resorting to full pedestrian actuation:

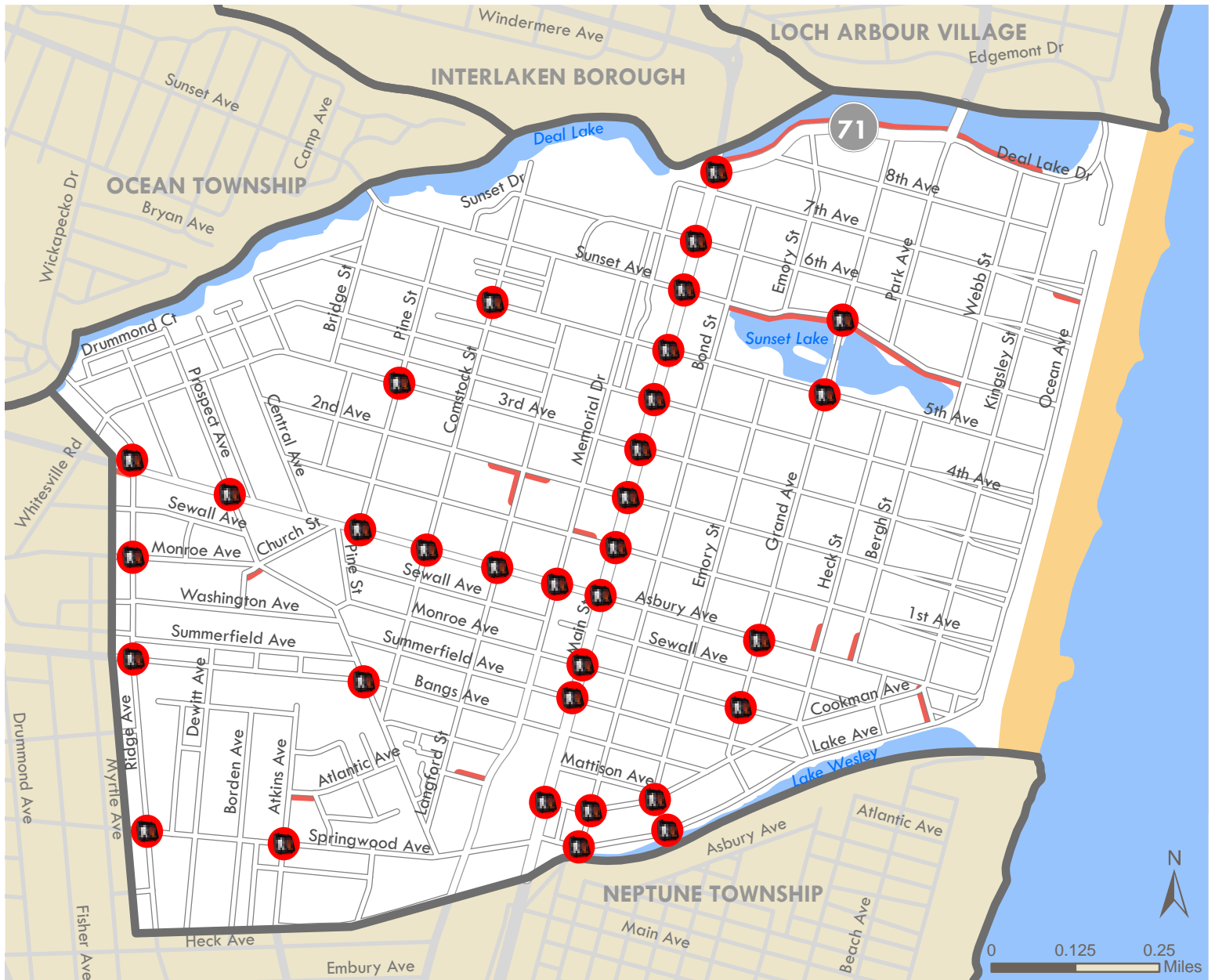
- Provide pedestrian signal phasing during hours of high pedestrian activity
- Eliminate the need for actuation by reducing the length of a crossing by installing curb extensions
- Reduce the total cycle length at the intersection

In locations with visibility issues, a pedestrian lead time of 3-5 seconds will allow drivers to better see pedestrians in the crosswalks.

Pedestrian signals should be installed at the 33 signalized intersections illustrated in Map 14 on Page 95.



(Top) Signalized intersection lacking pedestrian signals at Asbury Ave & Church St/Pine St. (Bottom) Pedestrian signal at Park Ave & Deal Lake Dr (NJ 71) with pedestrian actuation. Ideally, the signal should have a dedicated pedestrian signal without the need for actuation.



MAP 14 - Proposed Sidewalk Network & Pedestrian Signal Improvements

Pedestrian Infrastructure

-  Install Pedestrian Signals with Countdown Timers
-  Construct Sidewalk

33 signalized intersections lack pedestrian signals in Asbury Park. A lack of pedestrian signals can create confusion that often results in vehicle-pedestrian conflicts. In addition, sidewalks should be installed along Deal Lake Dr, Sunset Ave and along vacant and redeveloping properties throughout the City.

Priority Intersection Improvements

Based on the results of field observations, data analysis, and stakeholder input, as detailed in the existing conditions section, pedestrian improvement recommendations were developed for several targeted intersections within the City. Generally, these locations are crossings of main roadways and are located near, or along walking routes to major destinations. Recommendations for these targeted locations may also serve as templates to help guide future improvements elsewhere in the community. The recommendations from the proposed bicycle network are integrated into the intersection improvement concepts.

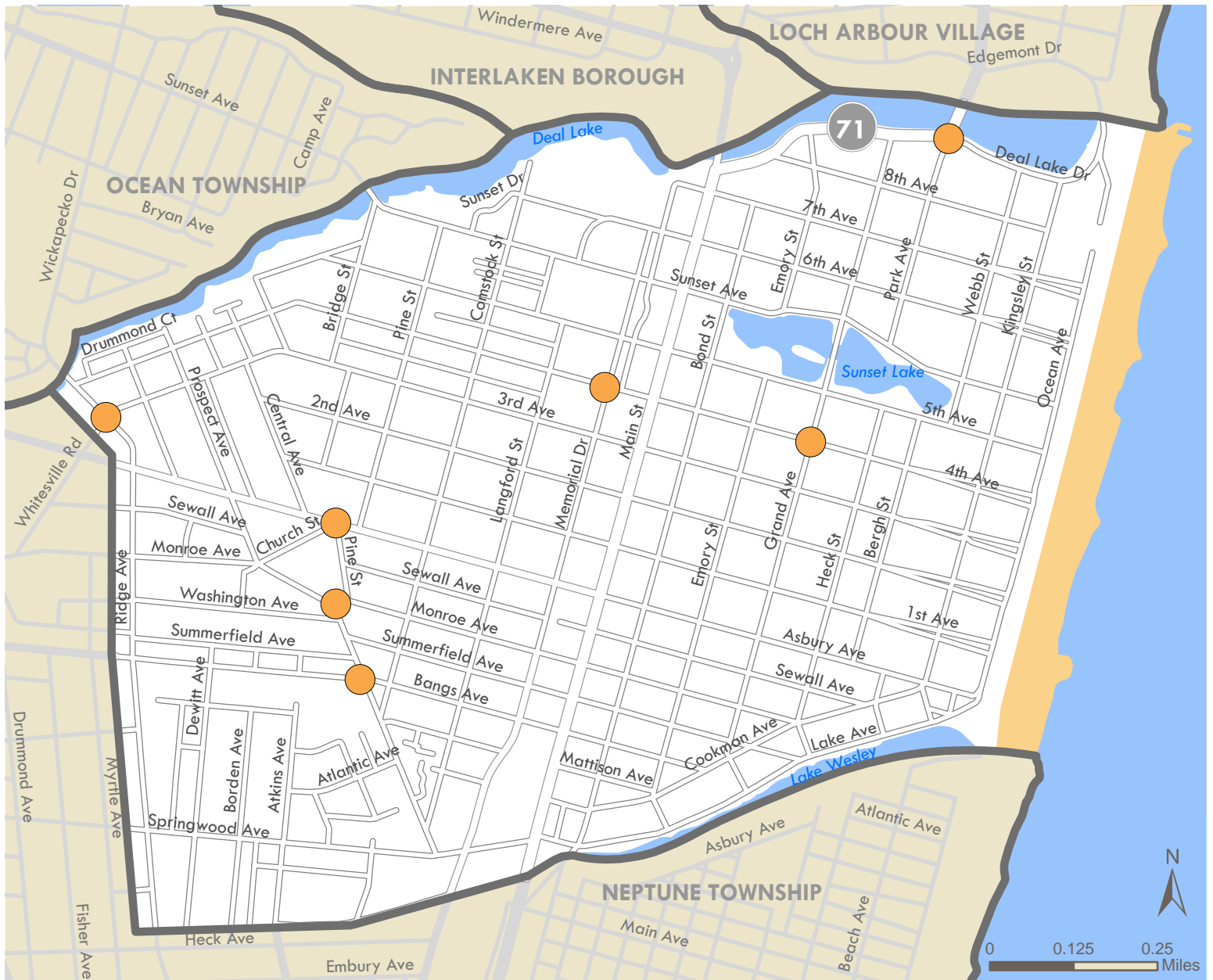
The improvement concepts reflect state-of-the-practice guidance (i.e., NJDOT, NACTO, AASHTO, FHWA), and are consistent with both statewide and national standards for multimodal safety and mobility through implementation of Complete Streets principles. For each location, an aerial view is shown depicting recommendations.

For each location, improvements are classified as short-term (less than 1 year), mid-term (1 year to 3 years), or long-term (more than 3 years), based primarily on the scope of the improvement and the anticipated level of design and/or resources required for implementation. The rate at which improvements are implemented is also subject to availability of funding.

The following intersections are summarized in the following pages:

- Memorial Dr and 4th Ave
- Asbury Ave, Church St and Pine St
- Bangs Ave and Prospect Ave
- Ridge Ave and 3rd Ave
- Deal Lake Dr and Park Ave
- Grand Ave and 4th Ave
- Prospect Ave and Church St and Monroe Ave





MAP 15 - Priority Intersection Locations

 Priority Intersection

These 7 intersections comprise a representative cross-section of the various challenges that exist at Asbury Park intersections. The recommended improvements should serve as templates for similar intersections throughout the City.

Memorial Dr and 4th Ave

This unsignalized intersection is mainly surrounded by industrial uses. Memorial Dr is directly parallel to New Jersey Transit’s North Jersey Coast Line. Immediately east of the intersection is an at-grade crossing of the line on 4th Ave. 4th Ave is one of numerous streets crossing Asbury Park east-west. One block west of NJ 71, Memorial Dr is a primary reliever road. Additionally, the Asbury Park train station is 0.6 miles south of the intersection.

The south, north, and west legs of the intersection have standard crosswalk markings. Parking is allowed on the west side of Memorial Dr and 7.5-ft painted shoulder marks the east side of the street.

Recommendations

- Upgrade existing crosswalks to high visibility
- Fill in sidewalk gap on 4th Ave on both sides of the railroad crossing
- Construct curb extensions and pedestrian refuge islands on the northwest and southwest corners
- Better define curb extents and curb cuts for the driveway on the south side of 4th Ave immediately east of the railroad tracks
- Install two conventional bicycle lanes on 4th Ave
- Install two separated bicycle lanes with bollards along each direction of Memorial Dr





Most Memorial Dr crossings lack highly visible crosswalks and ADA compliant curb ramps. Additionally, crossings are long and unpredictable due to the offset stop bars and railroad tracks

Asbury Ave, Church St and Pine St

This partially signalized intersection caters to retail uses and a church and associated school with residential beyond. Asbury Ave and Church St operate with two-way traffic and Pine St, one-way southbound. Asbury Ave is a primary corridor in Asbury Park, continuing east to Ocean Ave and the boardwalk and west along the Ocean and Neptune Townships' border to points beyond. Eastbound traffic on Asbury and northeast-bound traffic on Church St share a traffic signal while westbound traffic on Asbury Ave has no traffic controls.

The west leg of Asbury Ave has standard crosswalk markings and the east side has ladder markings. No crosswalk markings exist on Church or Pine St. The speed limit on Asbury Ave, Pine St, and Church St is 25 mph.

Recommendations

- Install high visibility crosswalks across Church St and Pine St
- Upgrade existing crosswalks to high visibility
- Install double yellow centerline on Church St
- Incorporate westbound traffic into existing traffic signal phasing and install appropriate stop bar
- Install four curb extensions; two on the north side of Asbury Ave on either side of the church driveway, one on the southwest corner and one on the south-central corner surrounding the deli
- Install pedestrian signal heads for Asbury Ave crosswalks





(Top) Vehicles blocking the crosswalk, rendering them ADA inaccessible. (Bottom) The intersection lacks crosswalks and ADA curb ramps

Bangs Ave and Prospect Ave

This signalized intersection is adjacent to Asbury Park Middle School on the southwest corner. Bangs Ave continues east to Cookman Ave and Wesley Lake and west into Neptune Township to NJ 35. Both streets cater primarily to residential uses, though during peak tourist months, drivers regularly use Bangs Ave as a through-route from NJ 35 to the waterfront.

Each leg has standard crosswalk markings. Prospect Ave enters the intersection at a diagonal. The speed limit on both streets is 25 mph. Vehicles entering the intersection southbound and westbound cannot turn right on red Monday-Friday, 7:30-8:00 AM and 2:00-3:00 PM. Pedestrian signals are missing at the intersection.

Recommendations

- Install pedestrian signals for each crossing at the intersection
- Upgrade all crosswalks to high visibility
- Construct ADA curb ramps with truncated dome pads
- Install curb extensions on all four corners
- Stripe shared-lane markings on Bangs Ave
- Install advisory bicycle lanes on both sides of Prospect Ave





(Top) Vehicles frequently park at the intersection, compromising visibility for all intersection users.
(Bottom) The intersection lacks pedestrian signals and highly visible crosswalks

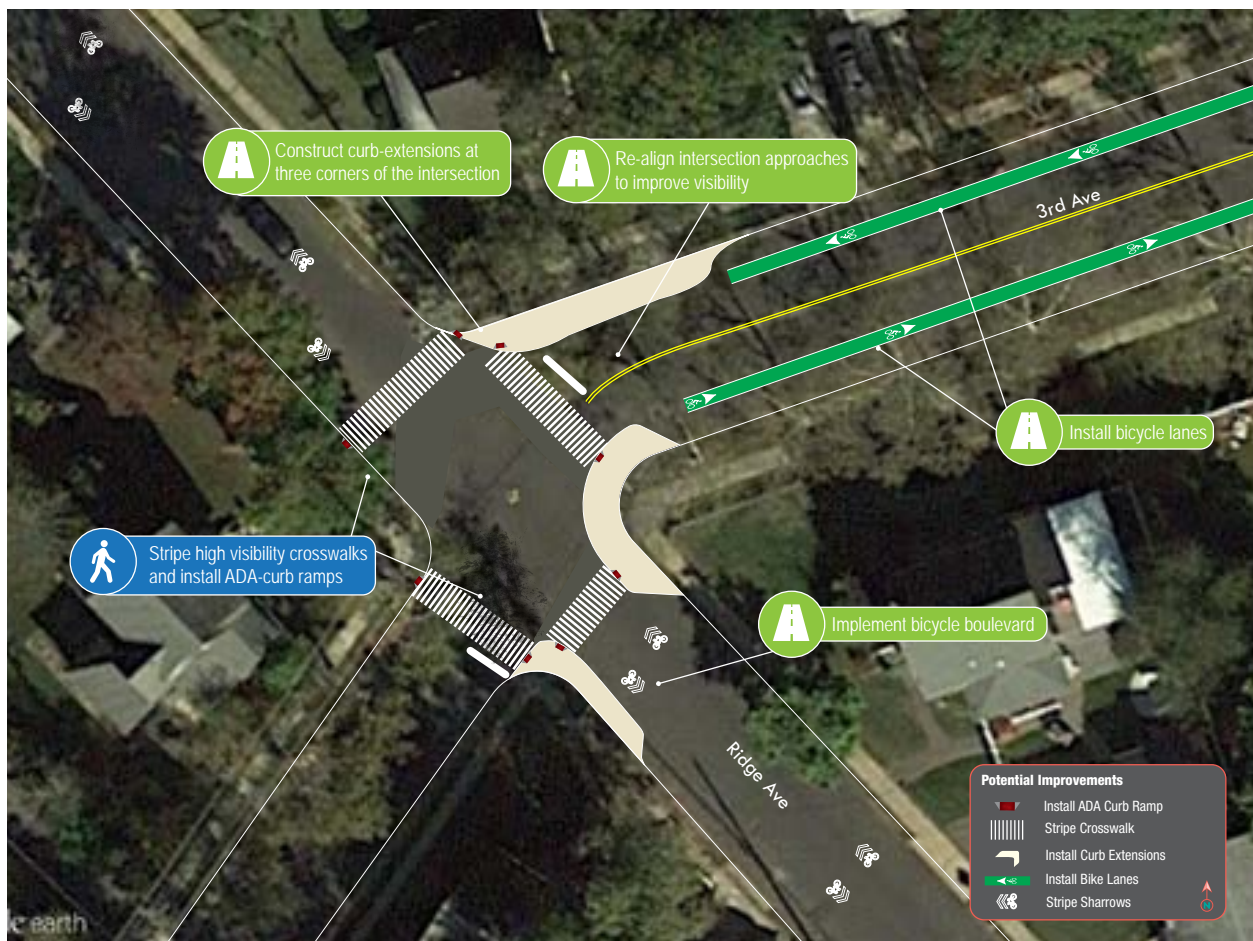
Ridge Ave and 3rd Ave

This unsignalized intersection is near Asbury Park’s western border with Ocean Township. 500 feet to the northwest, the street continues as Wickapecko Dr, serving residential areas of Ocean Township. Ridge Ave continues south along Asbury Park’s western border, continuing into Neptune Township and Neptune City. 3rd Ave traverses Asbury Park, catering to residential uses.

Traffic on 3rd Ave presently has stop controls. Each leg has standard crosswalk markings. The leg of 3rd Ave to the east enters Ridge Ave at an angle, facilitating high-speed right turns and requiring a small angled turn for through movements. The speed limit on both streets is 25 mph.

Recommendations

- Upgrade all crosswalks to high visibility
- Construct ADA curb ramps with truncated dome pads
- Install curb extensions on the northwest, northeast and southeast corners to improve the alignment of 3rd Ave at the intersection
- Designate Ridge Ave a bicycle boulevard, installing appropriate shared marking and traffic calming features along the corridor
- Install conventional bicycle lanes on 3rd Ave east of Ridge Ave





(Top) Existing intersection lacks individual curb ramps for each crossing and truncated dome pads.
(Bottom) Existing crosswalks are not highly visible to motorists along 3rd Ave.

Deal Lake Dr and Park Ave

This signalized intersection is located along Asbury Park's northern border with the Village of Loch Arbour. Immediately north of the intersection is Deal Lake which is surrounded by Deal Lake Dr. Park Ave travels south a few blocks before terminating at Sunset Ave. North of the intersection, Park Ave continues into Loch Arbour and Allenhurst, becoming Norwood Ave and overlapping with NJ 71.

The west, south and east legs have standard crosswalk markings. Park Ave's northbound berth into Deal Lake Dr is wider than the corridor further down, allowing for high speed turns.

Recommendations

- Upgrade existing crosswalks to high visibility
- Install high visibility crosswalk on north leg
- Install ADA curb ramps with truncated dome pads at all 4 corners
- Extend multi-use path west along banks of Deal Lake
- Install conventional bicycle lanes with channelization on Park Ave north of Deal Lake Dr
- Install conventional bicycle lanes on Park Ave south of Deal Lake Dr
- Install parking protected bicycle lanes on Deal Lake Dr west of Park Ave as part of the NJ 71 Road Diet project





(Top) The northbound approach to Deal Lake Dr is excessively wide, resulting in fast turning vehicles and a challenging pedestrian crossing experience. (Bottom) A new sidewalk or shared-use path should be considered for the existing sidewalk gap on the north side of Deal Lake Dr

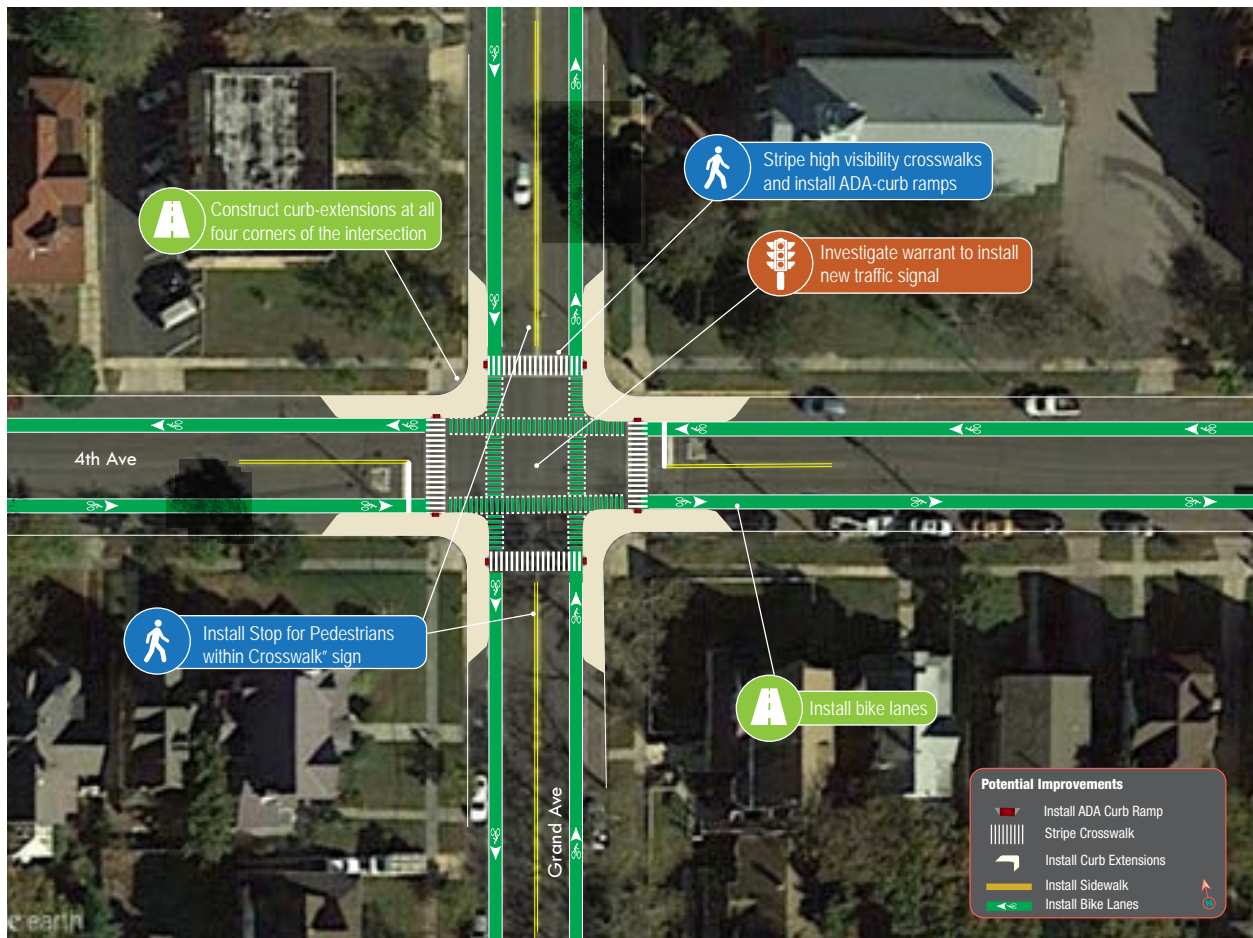
Grand Ave and 4th Ave

This unsignalized intersection is primarily surrounded by residential uses with a church on the northeast corner and Sunset Park located one block north. Traffic on 4th Ave has stop controls while Grand Ave moves freely. Both sides of Grand Ave currently have conventional bicycle lanes, though they are unpainted. All four legs of the intersection have standard crosswalk markings.

The intersection lacks ADA accommodation at all four crossings. Cars are parking at the intersection, greatly reducing visibility for drivers making turns.

Recommendations

- Upgrade existing crosswalks to high visibility
- Install ADA ramps with truncated dome pads at all corners
- Install curb extensions on all corners
- Install stop for pedestrians within crosswalk sign on all 4 approaches to the intersection
- Upgrade Grand Ave bicycle lanes to painted green
- Install conventional bicycle lanes on 4th Ave
- Investigate warrant to install new traffic signal at the intersection





(Top) The intersection lacks ADA accommodations at all four crossings. (Bottom) Because cars and trucks park at the intersection, drivers are forced to inch out into the roadway to look for oncoming traffic.

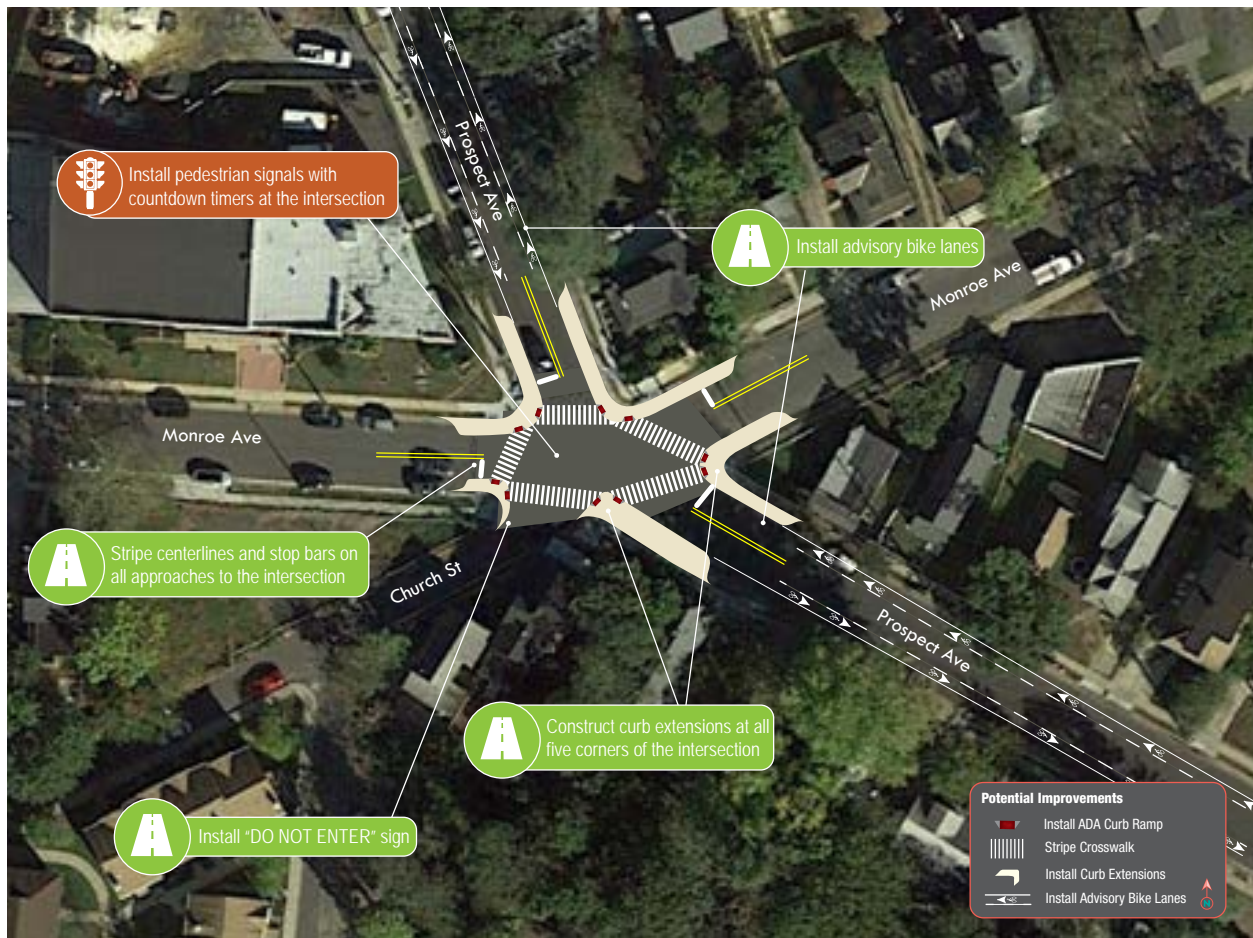
Prospect Ave, Church St and Monroe Ave

This signalized, 5-legged intersection is primarily surrounded by residential uses as well as the Boys and Girls Club, which is adjacent to the intersection. Four of the five legs of the intersection operate two-way, with the exception of Church St, which becomes one-way to the south and west of the intersection. The intersection was recently upgraded with highly visible crosswalks and ADA curb ramps with truncated dome pads.

The intersection lacks pedestrian signals, resulting in a confusing and dangerous crossing experience. The approach roadways have no centerlines, adding to the confusion of navigating the 5-legged intersection.

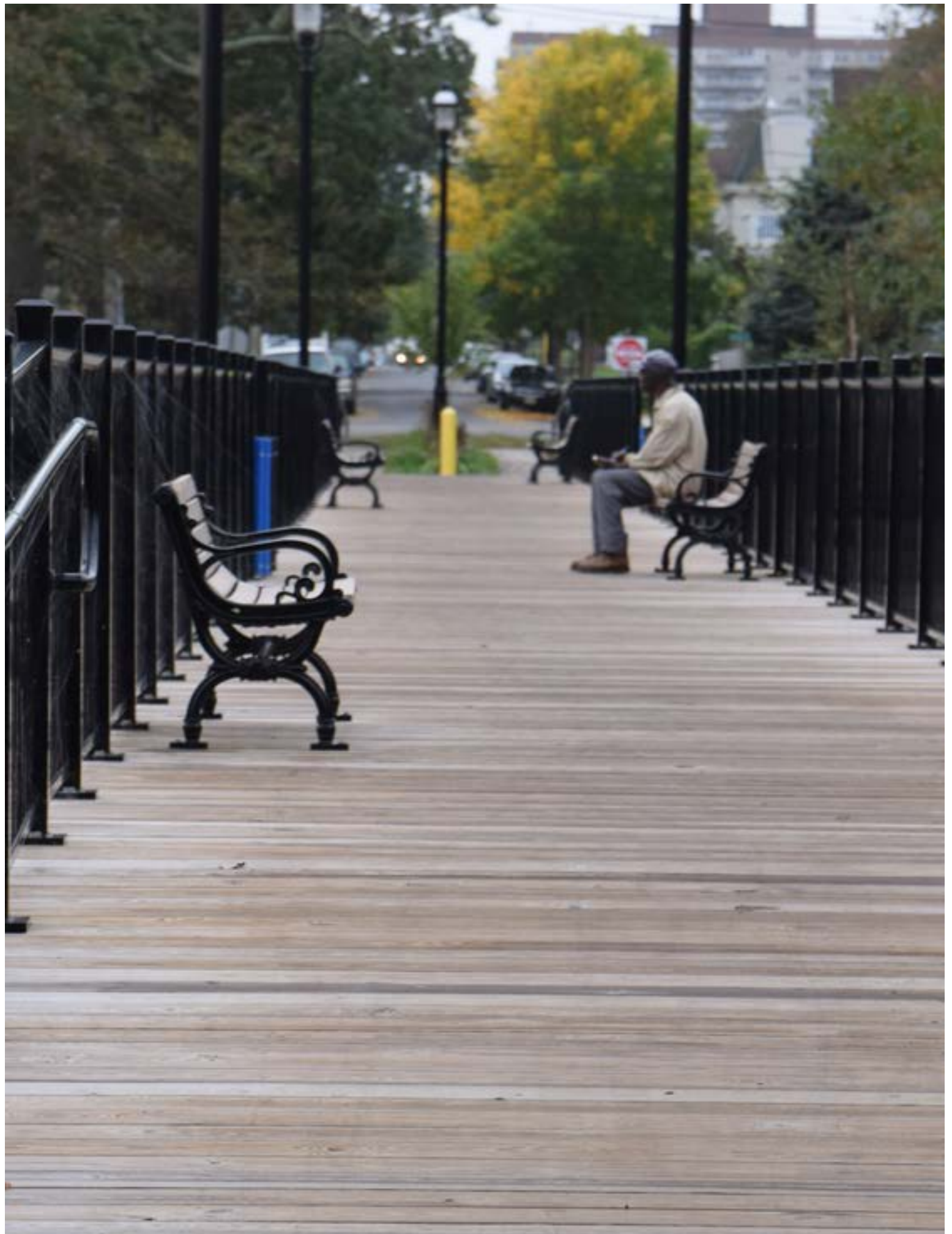
Recommendations

- Install temporary centerlines and stop bars on all approaches to the intersection to improve operations
- Install pedestrian signals with countdown timers at the intersection
- Construct curb extensions at all five corners of the intersection
- Install advisory bicycle lanes on Prospect Ave
- Install “DO NOT ENTER” on Church St facing south/west to help keep vehicles from improperly using the one-way street





(Top) The intersection pedestrian signals. (Bottom) Due to a lack of centerlines and stop bars at the intersections, vehicles often stop well into the intersection



8

Implementation and Next Steps

The recommendations in this Plan provide a roadmap for improving walking and bicycling in Asbury Park. Prioritized and implemented over time, they outline a blend of infrastructure improvements and supportive policies and programs to help the City realize its vision for making “walking and bicycling convenient, comfortable, and safe transportation options for people of all ages and abilities,” and the “natural, default choice” for children, residents, and visitors alike.

The pedestrian and bicycle infrastructure improvements presented in Chapters 6 and 7 are intended to be conceptual in nature, and may require varying levels of design, survey, or further analysis, and/or coordination with residents, businesses, or other stakeholders, depending on the magnitude of the improvement. As the concepts advance through engineering design, they should reflect the current best practices and guidelines referenced in the previous chapters. The recommendations are summarized in an implementation matrix in Appendix A2, which also identifies a time-frame for the improvement (short/medium/long), potential implementation partners, and order-of-magnitude cost (where practical).

The City should use this Plan to integrate additional improvement recommendations into planned projects and identify and prioritize future projects. The Plan can also help bolster applications for grant funding to support implementation efforts.

Asbury Park should also work with NJDOT, the North Jersey Transportation Planning Authority (NJTPA), and Monmouth County to help advance proposed improvements, leverage other projects, and identify resources and funding opportunities. Other entities, such as Meadowlink (EZ Ride) TMA, may also be able to support non-infrastructure strategies, such as Safe Routes to School activities. Development activity provides another avenue for implementation, leveraging private investment to construct elements of the Plan and enhance bicycle and pedestrian mobility.

Finally, the Plan should be shared with neighboring municipalities to help inform and advance efforts to create a regional, interconnected bicycle network.

The image shows the exterior of the Asbury Park Convention Hall at night. The building features a large window with three industrial-style pendant lights hanging in front of it. Below the window is a prominent red sign with white lettering. Underneath the red sign is a blue sign with white text listing events. The entrance to the building is visible at the bottom, with several people walking through the glass doors.

ASBURY PARK CONVENTION HALL

GREETINGS FROM ASBURY PARK
AUG 19 GLEN BURTNIK SUMMER OF LOVE
AUG 20 VEGAN POP UP
AUG 26 ASBURY PARK SURFMUSIC FEST
AUG 26 CRUISIN THE CIRCUIT

Appendices

A1 *Bicycle LTS Criteria*

116

A2 *Implementation Matrix*

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A3 *Public Involvement*

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Pedestrian Design Elements

Criteria for Level of Stress in Mixed Traffic

Posted Speed Limit	Street Width		
	2-3 Lanes	4-5 Lanes	6+
Up to 25 mph	LOS 1 or 2	LOS 3	LOS 4
30 mph	LOS 2 or 3	LOS 4	LOS 4
35 + mph	LOS 4	LOS 4	LOS 4

Level of Stress for Mixed Traffic in the Presence of a Right Turn Lane

Configuration	Level of Stress
Up to 25 mph Single right-turn lane with length ≤ 75 ft. and intersection angle and curb radius limit turning speed to 15 mph	(no effect on LOS)
Single right-turn lane with length between 75 and 150 ft., and intersection angle and curb radius limit turning speed to 15 mph	LOS ≥ 3
Otherwise	LOS = 4

Level of Stress for Unsignalized Crossings Without a Median Refuge

Speed Limit of Street Being Crossed	Width of Street Being Crossed		
	2-3 Lanes	4-5 Lanes	6+
Up to 25 mph	LOS 1	LOS 2	LOS 4
30 mph	LOS 1	LOS 2	LOS 4
35 + mph	LOS 2	LOS 3	LOS 4
40 + mph	LOS 3	LOS 4	LOS 4

Source: Low-Stress Bicycling and Network Connectivity, Mineta Transportation Institute, 2012

Criteria for Bike Lanes Alongside a Parking Lane

	LTS ≥ 1	LTS ≥ 2	LTS ≥ 3	LTS ≥ 4
Street width (through lanes per direction)	2	(no effect)	4 or more	(no effect)
Sum of bike lane and parking lane width (includes marked buffer and paved gutter)	15 ft. or more	14 ft.	13.5 ft or less	(no effect)
Speed limit or prevailing speed	25 mph or less	30 mph	35 mph	40 mph or more
Bike lane blockage (typically applies in commercial areas)	rare	(no effect)	frequent	(no effect)

Note: (no effect) = factor does not trigger an increase to this level of traffic stress

Criteria for Bike Lanes Not Alongside a Parking Lane

	LTS ≥ 1	LTS ≥ 2	LTS ≥ 3	LTS ≥ 4
Street width (through lanes per direction)	2	4, if directions are separated by a raised median	5, or 4 without a separating median	(no effect)
Bike lane width (includes marked buffer and paved gutter)	6 ft. or more	5.5 ft. or less	(no effect)	(no effect)
Speed limit or prevailing speed	30 mph or less	(no effect)	35 mph	40 mph or more
Bike lane blockage may apply in commercial areas)	rare	(no effect)	frequent	(no effect)

Note: (no effect) = factor does not trigger an increase to this level of traffic stress

Source: Low-Stress Bicycling and Network Connectivity, Mineta Transportation Institute, 2012

Volume Adjustment

Volume Threshold	Min. LTS
-	1
5,000	2
10,000	3
15,000	4

Implementation Matrix

The implementation matrix summarizes the improvements included in the Asbury Park Plan for Walking and Biking, including a proposed time-frame for the improvement (short/medium/long), potential implementation partners, and order-of-magnitude cost (where practical). These estimates are intended to convey the level of investment that proposed concepts would require for implementation. The cost estimates are based on industry standards for per-unit material costs, and do not include the cost of right-of-way acquisition, relocation of utilities or drainage that could be involved, engineering design, or contingencies.

Priority Intersection Improvements

Location	Treatment	Cost	Time Frame	Potential Partners
Deal Lake Dr at Park Ave	Stripe STOP bars (4)	\$271	Short-term	City/NJDOT
	Stripe high-visibility crosswalks (4)	\$4,339	Short-term	
	Install ADA-compliant curb ramps (12)	\$8,880	Medium-term	
	Construct curb extensions (2)	\$24,000	Medium-term	
	Construct pedestrian refuge islands (1)	\$3,300	Medium-term	
	Install pedestrian countdown timers (2)	\$2,000	Short-term	
	Install pedestrian push-buttons (4)	\$5,560	Short-term	
Ridge Ave at 3rd Ave	Stripe high-visibility crosswalks (4)	\$3,616	Short-term	City
	Install ADA-compliant curb ramps (8)	\$5,920	Short-term	
	Construct curb extensions (4)	\$48,000	Medium-term	
Prospect Ave at Bangs Ave	Stripe high-visibility crosswalks (4)	\$4,701	Short-term	City
	Install ADA-compliant curb ramps (8)	\$5,920	Short-term	
	Stripe STOP bars (3)	\$203	Short-term	
	Construct curb extensions (4)	\$48,000	Medium-term	
Asbury Ave at Church St and Pine St	Stripe high-visibility crosswalks (4)	\$3,254	Short-term	City & Monmouth County
	Construct curb extensions (4)	\$48,000	Medium-term	
	Install ADA-compliant curb ramps (8)	\$5,920	Short-term	
	Stripe STOP bars (3)	\$203	Short-term	
	Install pedestrian countdown timers (8)	\$8,000	Short-term	
	Install pedestrian push-buttons (8)	\$11,120	Short-term	

Location	Treatment	Cost	Time Frame	Potential Partners
Memorial Dr at 4th Ave	Complete sidewalk network gaps	\$2,987	Medium-term	City & NJTransit
	Install ADA-compliant curb ramps (14)	\$10,360	Medium-term	
	Stripe STOP bars (4)	\$271	Short-term	
	Stripe high-visibility crosswalks (4)	\$2,893	Short-term	
	Install "STOP for Pedestrians within crosswalk" sign (4)	\$400	Short-term	
	Construct curb extensions (2)	\$24,000	Medium-term	
	Construct pedestrian refuge islands (2)	\$4,480	Medium-term	
Grand Ave at 4th Ave	Stripe high-visibility crosswalks (4)	\$3,254	Short-term	City
	Install ADA-compliant curb ramps (8)	\$5,920	Short-term	
	Construct curb extensions (4)	\$48,000	Medium-term	
Prospect Ave at Church St and Monroe Ave	Stripe high-visibility crosswalks (5)	\$4,520	Short-term	City
	Install "Do Not Enter" sign (2)	\$200	Short-term	
	Install ADA-compliant curb ramps (10)	\$7,400	Short-term	
	Install pedestrian countdown timers (10)	\$10,000	Short-term	
	Install pedestrian push-buttons (10)	\$13,900	Short-term	
	Update Traffic lights and Signal timings	n/a	Medium-term	
	Construct curb extensions (5)	\$60,000	Medium-term	
Stripe STOP bars (4)	\$271	Short-term		

Bicycle Network

Roadway	Segment Location	Treatment	Segment Length (lf)	Cost	Time Frame	Potential Partners
1st Ave	Central Ave to Bergh St	Bike Lane	4760	\$14,000.00	Medium-term	City
1st Ave	Bergh St to Ocean Ave	Shared Lane Markings	990	\$2,200.00	Short-term	City
2nd Ave	Central Ave to Bergh St	Bike Lane	5030	\$14,700.00	Medium-term	City
2nd Ave	Bergh St to Ocean Ave	Shared Lane Markings	990	\$2,200.00	Short-term	City
3rd Ave	Ridge Ave to Bergh St	Bike Lane	6710	\$19,200.00	Medium-term	City
3rd Ave	Bergh St to Ocean Ave	Shared Lane Markings	990	\$2,200.00	Short-term	City
4th Ave	Jeffrey St to Ridge Ave & Memorial Dr to Bergh St	Bike Lane	4030	\$12,000.00	Medium-term	City

Roadway	Segment Location	Treatment	Segment Length (lf)	Cost	Time Frame	Potential Partners
4th Ave	Bergh St to Ocean Ave	Shared Lane Markings	990	\$2,200.00	Short-term	City
5th Ave	Bergh St to Ocean Ave	Shared Lane Markings	990	\$2,200.00	Short-term	City
5th Ave	Ridge Ave to Bergh St	Bike Lane	4860	\$14,100.00	Medium-term	City
6th Ave	Memorial Dr to Webb St	Bike Lane	2680	\$7,900.00	Medium-term	City
6th Ave	Webb St to Ocean Ave	Shared Lane Markings	720	\$1,700.00	Short-term	City
7th Ave	Steiner Pl to Webb St	Bike Lane	2560	\$7,600.00	Medium-term	City
7th Ave	Webb St to Ocean Ave	Shared Lane Markings	720	\$1,700.00	Short-term	City
8th Ave	NJ 71 to Kingsley St	Bike Lane	2240	\$6,400.00	Medium-term	City
Asbury Ave	Heck St to Pine St	Separated Bike Lane	4360	\$61,400.00	Long-term	City & Monmouth County
Asbury Ave	Kingsley St to carousel building parking lot entrance	Shared Lane Markings	1140	\$2,700.00	Short-term	City
Asbury Ave	Carousel building parking lot entrance to Ocean Ave	Two-Way Cycle Track	170	\$1,700.00	Medium-term	City
Asbury Ave	Pine St to City limit	Shared Lane Markings	1780	\$4,200.00	Short-term	City, Monmouth County & NJTransit
Atkins Ave	City limit to northern terminus	Shared Lane Markings	1720	\$3,700.00	Short-term	City
Atlantic Ave	Atkins Ave to Prospect Ave	Bicycle Boulevard	890	\$2,200.00	Medium-term	City
Bangs Ave	Cookman Ave to City limit	Shared Lane Markings	4670	\$9,900.00	Short-term	City
Bergh St	Asbury Ave to 5th Ave	Shared Lane Markings	2020	\$4,700.00	Short-term	City
Bond St	7th Ave to City limit	Shared Lane Markings	5200	\$10,900.00	Short-term	City
Central Ave	2nd Ave to Asbury Ave	Bicycle Boulevard	1300	\$3,200.00	Medium-term	City
Comstock St	Northern terminus to Prospect Ave	Bicycle Boulevard	4510	\$9,900.00	Medium-term	City
Cookman Ave	Kingsley St to Main St	Shared Lane Markings	3200	\$6,900.00	Short-term	City
Deal Lake Dr	Park Ave to Webb St	Multi-Use Path	575	\$37,800.00	Long-term	City & NJDOT

Roadway	Segment Location	Treatment	Segment Length (lf)	Cost	Time Frame	Potential Partners
Dewitt Ave	Summerfield Ave to City limit	Bicycle Boulevard	2210	\$4,700.00	Medium-term	City
Emory St	NJ 71 to Cookman Ave	Shared Lane Markings	4820	\$10,400.00	Short-term	City
Grand Ave	NJ 71 to Cookman Ave	Bike Lane	4950	\$14,200.00	Medium-term	City
Heck St	5th Ave to Lake Ave	Shared Lane Markings	2580	\$5,700.00	Short-term	City
Kingsley St	Deal Lake Dr to 7th Ave	Bike Lane	790	\$2,800.00	Medium-term	City
Kingsley St	7th Ave to Asbury Ave	Separated Bike Lane	3300	\$46,700.00	Long-term	City
Lake Ave	Main St to Ocean Ave	Multi-Use Path	3390	\$223,000.00	Long-term	City
Langford St	5th Ave to Prospect Ave	Bicycle Boulevard	4130	\$8,900.00	Medium-term	City
Memorial Dr	Monroe Ave to 6th Ave	Separated Bike Lane	3440	\$48,400.00	Long-term	City & Monmouth County
Memorial Dr	Monroe Ave to City limit	Separated Bike Lane	2060	\$29,000.00	Long-term	City & Monmouth County
Monroe Ave	Prospect Ave to Heck St	Bicycle Boulevard	3790	\$8,400.00	Medium-term	City
Ocean Ave	Lake Dr to Asbury Ave	Separated Bike Lane	3820	\$53,900.00	Long-term	City
Ocean Ave	Gap in Ocean Ave	Multi-Use Path	500	\$32,900.00	Long-term	City
Park Ave	Deal Lake Dr to Sunset Ave	Bike Lane	2300	\$6,900.00	Medium-term	City
Pine St	Sunset Ave to Asbury Ave	Bicycle Boulevard	2490	\$5,200.00	Medium-term	City
Prospect Ave	Asbury Ave to Drummond Ct	Bicycle Boulevard	1400	\$3,200.00	Medium-term	City
Prospect Ave	Springwood Ave to Asbury Ave	Advisory Bike Lane	3370	\$7,900.00	Medium-term	City
Ridge Ave	Deal Lake to City limit	Bicycle Boulevard	4570	\$9,900.00	Medium-term	City
Springwood Ave	Main St to City limit	Shared Lane Markings	3200	\$6,900.00	Short-term	City
Sunset Ave	Memorial Dr to Kingsley St	Bike Lane	3060	\$9,200.00	Medium-term	City
Sunset Ave	Kingsley St to Ocean Ave	Shared Lane Markings	420	\$1,200.00	Short-term	City
Webb St	Deal Lake Dr to 5th Ave	Shared Lane Markings	2110	\$4,700.00	Short-term	City

SAC #1 - 7/19/2017



Plan for Walking and Biking

Sign-In Sheet
 Study Advisory Committee Meeting #1
 July 19, 2017

Name	Representing	Email
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Rick Lambert	APCSC	rjl.lambert@gmail.com
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Sylvia Sylvia	AP CHAPTER OF CONSUMERS	sylvia@asburyparkconsumers.org
Michele Alonzo	Asbury Park	michele.alonzo@cityofasbury.com
William Riviere	NJDOT	william.riviere@dot.nj.gov



Flipboard Notes

all things not available in courses
 3rd party and lighting
 create the plan
 include all the city
 request various information
 include
 what / how / when / where
 how to use the plan
 how to use the plan

1. Plan
 2. Plan
 3. Plan
 4. Plan
 5. Plan
 6. Plan
 7. Plan
 8. Plan
 9. Plan
 10. Plan

Challenges

1. Lack of communication
 2. Lack of communication
 3. Lack of communication
 4. Lack of communication
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Asbury Night Out - 8/1/2017

Map Markups



ASBURY PARK
 Plan for Walking and Biking

Public Comments



Plan for Walking and Biking

Please tell us...

How would you improve walking and biking in Asbury Park?

Main St looking on sidewalk
move to street

need bike
parking
at train station

Some furniture
is needed on Cookman

Ridge Ave, sidewalks blocked by
trees, also Washington and Ridge



Plan for Walking and Biking

Please tell us...

How would you improve walking and biking in Asbury Park?

Wide streets throughout the city = difficult to cross

Signals

→ signal with signs

↳ Esplanade intersection = difficult

↳ Esplanade = bus lane with

↳ signal ~~with~~ stop running light

Signals → no sidewalk along lake

→ loop around Signal Lake

paths toward Signal park

4-way stops for traffic calming

bike lanes on side streets

bike lane on Lake/Spring road, its extension to west side of city



Plan for Walking and Biking

Please tell us...

How would you improve walking and biking in Asbury Park?

Ground is very wide, existing bike lanes / Primary North South bike route

4th Ave is a primary artery



SH lanes and bike lanes proposed and being constructed on 4th Ave

There need to go to pedestrians

Prospect and Springfield - dangerous



Plan for Walking and Biking

Please tell us...

How would you improve walking and biking in Asbury Park?

More paths up to...
...
...
...
...

Like Ave Blvd
Main
Cedar Ave, with...
Crosswalks are
dangerous

Blue Bishop Event - 8/19/2017

Map Markups



Public Comments



Plan for Walking and Biking

Please tell us...

How would you improve walking and biking in Asbury Park?

City-wide shuttle

Monroe Ave - personal safety / security issues on
old and dimly lit sidewalks ~~and~~ regularly to west

personal safety issues

↳ Washington, Dewitt, Board, Hickman, Atlantic
↳ street lighting

Atlantic Drive and Dewitt into crosswalk, bike

3rd-5th → great E/P considerations, security issues, bike lanes
Muhlisson → suggest bike lanes in this area

popular destinations + parks (e.g. Spruce / Atlantic) → lots of activity →
Main / Spruce → *consideration to provide services*

New near bike parking



Plan for Walking and Biking

Please tell us...

How would you improve walking and biking in Asbury Park?

Crossing Memorial and main
is difficult, especially by
the brewery

1st St Speedy

Memorial ~~Marking~~ - difficult to cross



Business Community Focus Group - 9/13/2017



Plan for Walking and Biking

Sign-In Sheet
Business Focus Group
September 13, 2017

Name	Representing	Email
Larry DeLuca	Asbury Hotel	larry@theasburyhotel.com
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Isaac Jones	New Barberlife	isaacsmokejones@gmail.com
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Jean Sparrow	Workshop Bookstore	jsparrow@ASGMC.com
Nancy Sabino	The Show Room Cinema	nancy@theshowroom.com
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Marilyn Sambostich	Langstalounge	ostingurl@gmail.com
Road Sibley	WSP	road.sibley@wsp.com
Pam Lebeaux	WSP	
REGGIE FLAMIN	Juice basin	Reggie@juicebasin.com



Map Markups





MEETING NOTES

PROJECT NAME	Asbury Park Plan for Biking and Walking
PROJECT NUMBER	52256TO17
DATE	13 September 2017
TIME	10:00 am
VENUE	Asbury Park City Hall
SUBJECT	Business Community Focus Group
ATTENDEES	See sign-in sheet

MEETING NOTES

WSP facilitated a discussion with representatives from local businesses to get their input on the Asbury Park Plan for Biking and Walking. Takeaways from the discussion are summarized below:

General Comments or Issues:

- All attendees indicated that many employees typically walk or bike to work
 - The Asbury Park Hotel provides loaner bikes to employees from Second Life Bikes. Bikes can be “checked out” by the week.
- There is a lot of sidewalk riding due to perceived safety issues with riding on the street and lack of on-street facilities
- The city has an ordinance prohibiting sidewalk riding
- Biking and walking provide a way to alleviate traffic and parking issues/demand
- Skateboarding an issue; creates conflicts with pedestrians

Safety Issues:

- Bike safety issues typically related to heavy vehicle traffic
- Better lighting needed, both on roadways and enforce requirement for bicyclists to have lights after dark
- Springwood Avenue
 - Major thoroughfare
 - Narrow lanes with on-street parking create stressful environment for cyclists

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Fax: +1 609 512-3600
wsp.com

MEETING NOTES

- Main Street
 - Very difficult environment for bikes and pedestrians
 - Bicyclists often on sidewalk because feel unsafe on the street
 - Planned road diet was received very favorably. Several attendees suggested pushing the envelope to provide separated bicycle facilities
 - Jaywalking is an issue, especially near the Dollar Store where there is no traffic signal. Potential for midblock crossing treatment there.
 - Pedestrians routinely cross against each signal along Route 71.
- Memorial Drive
 - Very difficult crossings, particularly east/west direction
 - Stop for pedestrian signs are helping
 - Inconsistent traffic control (alternating stop signs for Memorial or cross streets) creates challenging intersections and driver confusion/inconsistent expectation along the corridor. The stop signs are dictated by local ordinance, and any changes would have to be in agreement with NJDOT, NJ TRANSIT, and Monmouth County
 - Speeding
 - Adjacent railroad crossings add additional complexity
- 3rd Avenue – speeding
- 4th Avenue – speeding
- Ocean Avenue
 - Difficult circulation due to lack of continuity to the north

Bicycle Parking

- Bicyclists seek to park as close as possible to destinations. Lock bike to any available location (sign, tree, etc)
- Bike theft is a major issue. Police recently implemented a voluntary bike registration program
- Needs for more parking (also see map mark-up)
 - Cookman Avenue corridor
 - Bond
 - Bangs
 - Emory at Summerfield
 - At the beach – lockers or depot of some type desirable
- Attendees supportive of bicycle corral program
- Bike parking ordinance may not be needed; large developer in the city is already providing indoor parking for residents. Most new developments seek waiver from car parking requirement in any case.

Recommendations/Concept Ideas

- Brand and promote Asbury Park as a bike and walk friendly community
 - Encourage “park once and walk” for visitors and residents; keep cars at the periphery
 - Get businesses to support walking and biking by offer discounts to customers to bike or walk

MEETING NOTES

- Although attendees indicated conditions have improved significantly in recent years, crime/personal safety still perceived as an issue, particularly among outsiders/visitors. Need promotion program to change this narrative
- Implement gateway treatments into the City slowing traffic and helping brand the city as bike/ped friendly
- Create custom, artistic look for bike parking or other bike/ped infrastructure
- Education
 - Need for better education of rules of the road among both drivers and bicyclists
 - Need to change mindset throughout the community to become more accommodating to bicyclists and pedestrians
- Ocean Avenue – potential to convert to one-way NB with two-way separated bike lane along the shore
- Asbury Park is working with EZ Ride to evaluate options for a circulator shuttle within the City. Concepts include a shuttle and pedicab service paired with an on-demand app (like Uber)
- Improve bike access through parks (improve dirt paths), boardwalk, and bridges to Ocean Grove (e.g., reduce slope and widen path connections)
- Generally commit to prioritizing bicycle and pedestrian travel through better design in all development and roadway projects to make travel easier and more comfortable
- Implement a bike depot at the beach to provide secure, high-capacity storage and mitigate theft issue
- Open streets/cyclovia events (currently brainstorming/planning for next year)
- Business-supported initiatives – bike parking, bike corrals, parklets (Asbury doing a parklet pilot as part of Park(ing) Day 2017)
- Need for more systematic, integrated and branded information on bike/ped services, events and other initiatives, including communications campaigns to accompany the rollout of new services or facilities.



METAL DONUT OF THE WEEK
TOUR 2017
PURPLE GLAZE
DONUTS, ETC.
ASBURY PARK, NJ

Advocate Community Focus Group - 9/28/2017



Plan for Walking and Biking

Sign-In Sheet
 Advocates Focus Group
 September 28, 2017

Name	Representing	Email
POLI SCHEIDT	Asbury Park Complete Streets (APCSC) Coalition	pscheidt@gmail.com
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L. M. CORVINE	APCSC - Westside District	MATA@AOL
JARROD MCLARY	Asbury Park Complete Streets	JARROD@ASBURYPARKNJ.COM
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Kerri Martin	Second Life Bikes	kerri@secondlifebikes.org
GINNY GILSON	AP Complete Streets	GIN8476@AOL
Diana Pittet	Superior APCSC	DLDPittet@gmail.com
William Riviere	NJDOT	





MEETING NOTES

PROJECT NAME	Asbury Park Plan for Biking and Walking
PROJECT NUMBER	52256TO17
DATE	28 September 2017
TIME	6:00 pm
VENUE	Asbury Park City Hall
SUBJECT	Advocates Focus Group
ATTENDEES	See sign-in sheet

MEETING NOTES

WSP facilitated a discussion with representatives from local advocate groups to get their input on the Asbury Park Plan for Biking and Walking. Takeaways from the discussion are summarized below:

Key Issues/Goals for the Study:

- Equity
- Accessibility for everyone
- Improve safety/mobility for vulnerable users
- Involve, attract, and improve conditions for seniors. There are several senior housing areas/towers in the City.
- Ensure plan is a city-wide effort
 - Engage the west side of the City. Suggest going there in-person to get input, and/or having meetings located there at school, community center, or Boys and Girls Club, etc
 - Lack of trust on SW side to rest of City; historically feel left out/marginalized/ not included
- Unite the east and west sides of the City
- Need a culture shift to create more bike/ped friendly community (traffic calming, more people biking)
- Economic/socio-economic issues are the fundamental problem in the City, which drives a lot of the other issues, particularly in the SW
- Fear of bike lanes/bikes leads to gentrification
- Tourism important, but focus is on year-round residents

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wsp.com

MEETING NOTES

- Main Street crossing are terrible – old signal equipment with no ped heads, lack of striping, 4 lanes, high traffic/speeds
- Make it a bike-friendly city
- Minimize car traffic/need/demand
- Children often walk in street to/from school

Barriers/Challenges:

- Physical east/west divide created by RR, Memorial Drive, and Main Street
- North/south flow along Ocean Avenue
- Kingsley recently repaved but very wide. No traffic calming.
- Security/bike theft major problem
- Sidewalk riding very common throughout City, largely because bicyclists don't feel safe on-street
- Speeding on Lake Road due to very wide streets
- Issue with connections to ped bridges over Wesley Lake (narrow sidewalks, grade) and Sunset Lake (no crosswalk connections)
- Speeding common issue on the east/west avenues
- RR grade crossings lack concrete sidewalks

Ideas/Suggestions:

- Do a road-audit with kids at the Boys & Girls Club
- Linear park/multiuse path along east side of Memorial to create more attractive space for bikes/peds and soften the railroad barrier → rails with trails
- Gateway treatments into town (see 2005 Redev. Plan)
- Replace old traffic signals
- Consistent traffic flow/traffic control along Memorial
- Consistent design treatments city-wide (e.g., consistent crosswalk striping)
- Craft a message/branding that highlights the Plan is for the benefit of all residents and users of the streets
- Bike depot at train station
- Biker racks at high school
- Improve walking routes to schools
- Extend Memorial Drive improvements into Neptune (Neptune advocates also interested in improvements there)
- Bike parking at beach
- Better public transit service and access to transit, bus shelters → more dignified service and access

Allies Working with:

- NJ BikeWalk Coalition
- EZ Ride TMA

MEETING NOTES

- Alliance for Healthier Asbury Park
- Neptune (related to Memorial Drive)
- Arts Community – doing a mural 10/14
- Surf Rider (related to beach access issues)

General Info/Comments/Suggestions:

- “Light Up the Night” rides are a new initiative and successful, way to get people out together
- Streets in SW generally narrower, less of street grid, denser development
- SRTS program has been very good – doing helmet giveaways, bike rodeos, etc
- City has bike registration program



SAC #2 - 1/18/2018



Plan for Walking and Biking

Sign-In Sheet
 Study Advisory Committee Meeting #2
 January 18, 2018

Name	Representing	Email
William Riviere	NTSDOT	william.riviere@dot.nj.gov
Rick Lambert	AP Planner, Brad	rjl.lambert@gra.nj.gov
Francis Brown	NJ TRANSIT	francis.brown@njtransit.com
MIKE VISCAKZI	NJ TRANSIT	MIKE.VISCAKZI@NJTRANSIT.COM
Bill West	AP parking committee	willwest@westparking.com
James Bonanno	Monmouth County	James.Bonanno@monmouthnj.gov
MATTHEW WHELAN	ASBURY PARK MEMBER	MATTHEW.WHELAN@ASBURYPA.NJ.GOV
Mike Morale	City of Asbury Park	michael.morale@cityofasbury.com
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ERIC GALISTO	RESIDENT / COMMUNITY MEMBER	eric.galisto@gmail.com
Lisa Lee	eZ Ride - Mgr. Peter	lisa@eZRide.com
Yusef Clayton	City of Asbury Park	yusef@cityofasbury.com



SAC #2 Meeting Minutes

Location: [Asbury Park Senior Center, 1201 Springwood Ave, Asbury Park, NJ, 07712]

Date: [1/18/2018]

Time: [2:00 PM]

Attendees: [Mike Viscardi, Bill West, James Bonanno, Rick Lambert, Eric Galipo, Lisa Lee, William Riviere, Mike Kublanov, Pete Kremer, Michael Manzella, Yvonne Clayton, Ahmed Lawson, William Reng, Jennifer Buison, Matthew Whelan]

Meeting Notes

WSP presented the existing conditions component of the Asbury Park Plan for Biking and Walking to the study advisory committee. The study team then introduced the initial group of priority intersections chosen for future recommendations. The primary interactive activity during this meeting involved vetting the chosen intersections and narrowing down the number of priority intersections to a representative group of five or six. Takeaways from the discussion are summarized below:

General Comments:

- Comstock Street is a primary candidate for SRTS projects due to its proximity and connectivity to the major schools in the city. This street needs to be part of the Plan
- At least one of the intersections along Grand Ave between 1st and 4th Avenues should be a priority intersection
- School locations should get precedence when narrowing down priority intersections
- At least one priority intersection should be selected around the train station
- Springwood Ave and Atkins Ave should be a priority intersection due to the nearby bike share and Senior Center
- Enforcement of existing laws and ordinances can help reduce crashes
- Cookman Ave and Memorial Drive should be a priority intersection
- Priority intersections will need to be connected by pedestrian and bicycle network improvements

SAC #3 - 9/12/2018



Plan for Walking and Biking

Sign-In Sheet
 Study Advisory Committee Meeting #3
 September 12, 2018

Name	Representing	Email
James F. ...	Monmouth County	James.F...@monmouthnj.gov
Ricci Lambert	All Complete Streets Org.	ricci.lambert@gmail.com
Mike Ferullo	City of Asbury Park	michael.ferullo@cityofasbury.com
Mike Vaccaro	NJ TRANSIT	mike.vaccaro@njtransit.com
William Riviere	NJS DOT	william.riviere@dot.nj.gov
Kerri Martin	Second Life Bikes / APSC	kerri@secondlifebikes.org
Lisa Lee	EZ Ride	lee@ezride.org
Michele Alonso	City	michele.alonso@cityofasbury.com
Bret Minges	Coworking	bret@coworking.com



SAC #3 Meeting Minutes

Location: [Asbury Park Municipal Complex, 1 Municipal Plaza, Asbury Park, NJ, 07712]

Date: [9/12/2018]

Time: [2:00 PM]

Attendees: [See sign-in Sheet]

Stakeholder Feedback:

- OCEAN AVE: Ocean Ave two-way bike lane needs to be a parking-protected bike lane that is placed between the eastern curb of Ocean Ave and the reverse angle parking. The proposed configuration will cause the bike lane to become a "dropoff, waiting, and pickup lane" for drivers on Ocean Ave. The bike lane as proposed will always be blocked by cars. (This problem is already prevalent with unprotected bike lanes in NYC.)

- KINGSLEY: Kingsley doesn't necessarily need to become a one-way just because Ocean is one-way. Two travel lanes on Kingsley will encourage driver lane-jockeying and speeding. Why not consider keeping the two way proposal, with bike lanes on each side, for the entire length of Kingsley?

- ASBURY AVE: Asbury Avenue proposes a two-way bike lane on the north side from Pine to Heck, but then the lane shifts to the south side for one block from Kingsley to Ocean. There is a gap in between, from Heck to Kingsley, with no bike lane. Why not propose a two-way bike lane on the south side of Asbury Ave from Main Street to Ocean?

- SPRINGWOOD: Springwood proposes to remove parking from both sides of the street to add buffered bike lanes. While commendable, remember that street parking was a big issue in the approval of the new housing complexes on the south side of Springwood. As proposed, cars will undoubtedly block the buffered bike lanes on either side, causing bikes to have to ride in the travel lane. Why not keep the parking on the south side of Springwood and put the bike lanes on the north side of Springwood for that section?

- DEAL LAKE DR: Deal Lake Drive should have a wide, bollard protected, multi-use pathway on the north side of the street from Main Street to Ocean. The path could be on the roadway west of Park and on the lake buffer area east of Park to Ocean. (Not sure if that's what is proposed as depicted.)

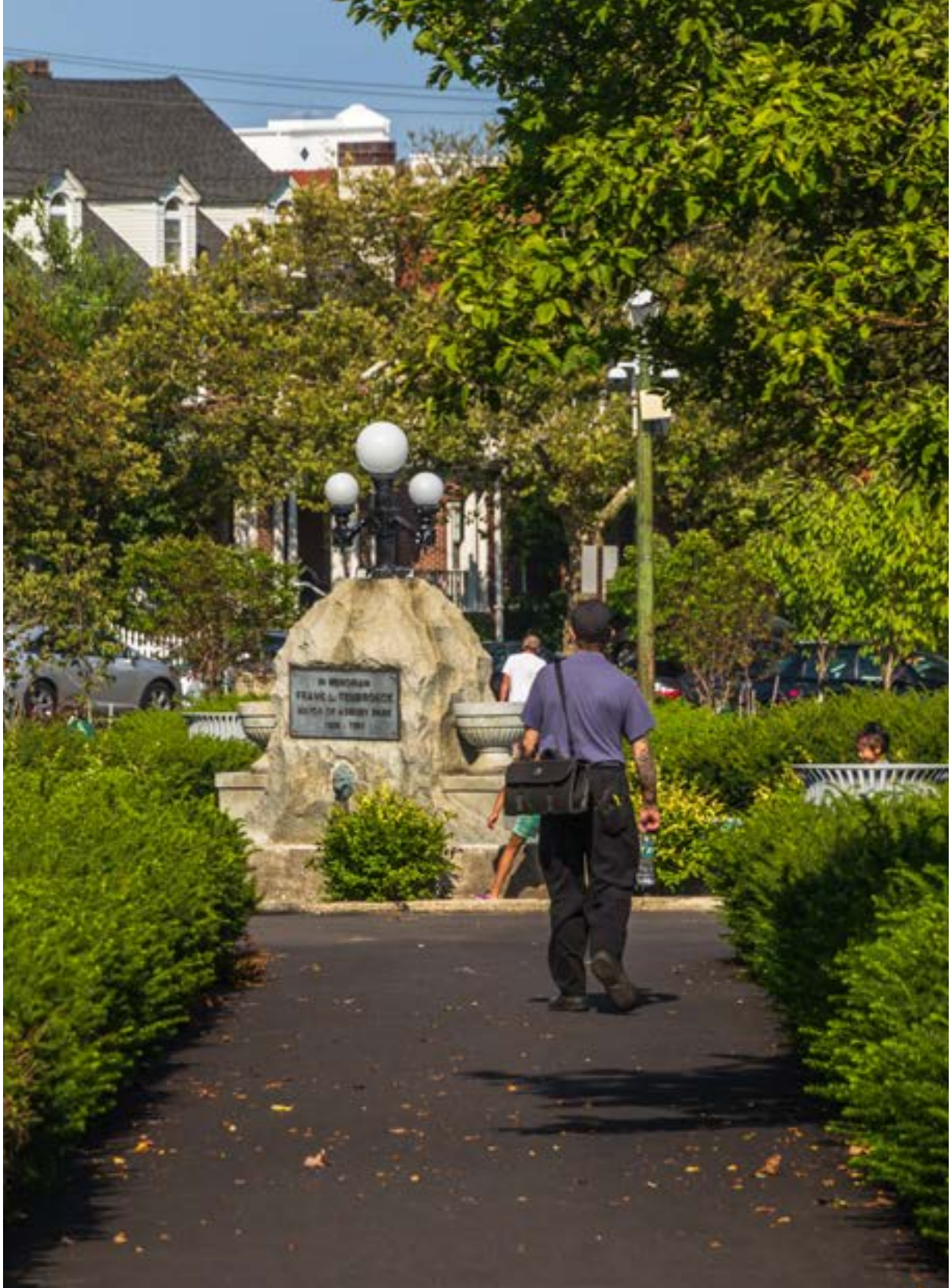
- DEAL LAKE DR / PARK: The south side of Park Ave at the Deal Lake Drive intersection is an ideal spot for a planted pedestrian island in the center, with smaller curb extensions on either side.

- ASBURY AVE at CHURCH ST: The design of these curb extensions will create a pinch point for bikes traveling on Asbury Ave. Design of the curb extensions should be tweaked to ensure protection for east-west bike riders.

- GRAND / FOURTH: The curb extensions at Grand and Fourth are great, as they daylight the intersection by about 50 feet from the corner. Will the 50 foot daylighting be a change to the current 25 foot parking restriction for daylighting?

- Protected bike lanes on west side of Memorial? Would east side make more sense?
- Deal Lake Drive – not sure we are going to be able to fit protected lanes on each side of Deal Lake Drive plus angled parking – that is still being debated
- Ridge/Third – split through/right-turn lanes on westbound approach?

- Prospect/Bangs – We can probably recommend fixing alignment on westbound approach (i.e. bumping that curb out further)
- Grand/Fourth – I would add install traffic signal (if warranted). We are going to be doing the warrant study.
- After typical parking lane width, can you add “7.5 min.”?
- Slide 55 that is Sunset at Comstock
- For the proposed bike network:
 - o Deal Lake Drive may or may not be buffered/protected
 - o Can we proposed protected bike lanes on Asbury Avenue from Church/Pine to Heck Street?
- Ocean Ave proposed – shouldn’t the protected two-way bike lane be against the curb? Might it be better to squeeze two travel lanes northbound? (17’ angled parking, 10’ bikeway with 3’ buffer, 8’ parking lane, two 10’ travel lanes)
- Kingsley Street – why the change in uptown configuration?
- Protected lanes on Asbury from Heck to Pine?
- Where on Sunset is that being proposed?
- No parking on Springwood??....might be controversial



**Asbury Park
Plan for Walking & Biking**