BICYCLE AND PEDESTRIAN PLAN FOR CAPE MAY CITY AND CAPE MAY POINT BOROUGH

Bike Walk Cape May

Bike Walk Cape May

Bicycle and Pedestrian Plan for Cape May City and Cape May Point Borough

2017 |

New Jersey Department of Transportation
WSP USA


GENERAL STORE
CAPE MAY POINT SINCE 1946

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CAPE MAY
1943

1 Introduction

Cape May and Cape May Point are two of New Jersey's most historic and scenic tourist destinations. Here, residents and visitors find unique places where walking and cycling is the norm. Both are compact, built-out communities where vehicular traffic often allows for simpler and more convenient trips on bike or on foot. Through *Bike Walk Cape May*, each municipality seeks to make improvements for non-motorized traffic on its dense roadway and sidewalk network, identify off-road trail opportunities, and better linkages between the two municipalities.

To advance this objective, the City of Cape May and the Borough of Cape May Point in Cape May County have undertaken the development of a bicycle and pedestrian circulation plan as part of the New Jersey Department of Transportation's (NJDOT) Local Bicycle/Pedestrian Planning Assistance Program, which seeks to foster the development of non-motorized transportation modes in accordance with statewide goals and local needs.

This report provides an overview of the existing conditions for bicyclists and pedestrians in the study area. It includes an analysis of crash data; identification of key pedestrian and bicycle traffic generators; review of key corridors and intersections for non-motorized traffic within study area and connections between the two; and a review of the roadway network's bicycle level of traffic stress (LTS) within the study area.

This report includes recommendations for improved facilities to enhance the overall bicycle and pedestrian network and strategies to encourage safe biking and walking.


Bath Time

2 Study Area
Background

This chapter describes the study area, demographics, local context, and previous studies conducted relevant to improving bicycle and pedestrian infrastructure and public spaces in Cape May City and Cape May Point Borough.

Cape May City and Cape May Point Borough are compact, shore communities on Cape May peninsula located at the southernmost tip of New Jersey. With access to beaches along the Atlantic coast and Delaware Bay, rich history, cultural attractions, shopping, open space resources, recreational amenities, and numerous restaurants and lodging options, the municipalities are major tourist destinations with significant bicycle and pedestrian activity, particularly in the summer months.

Cape May is one of only five places in the United States designated as a National Historic Landmark City, and the only such place designated in New Jersey. It is known internationally for its collection of well-maintained Victorian homes, beaches, and shopping areas. Cape May Point, while smaller (in both population and land mass), boasts similar international accolades, primarily for eco-tourism and bird watching. The Cape May Bird Observatory benefits from Lake Lily, a freshwater lake that draws a multitude of rare species and attracts more than 1 million visitors annually.

Both municipalities have recognized the importance of biking and walking as safe, comfortable, and convenient transportation options for both residents and the influx of visitors and tourists. Cape May City, for example, adopted a Complete Streets policy in August 2012 to formally integrate access for all users into the design and implementation of transportation projects in the City. In accordance with the policy, the City has advanced numerous projects and studies to improve multimodal access and mobility.

Cape May Point embodies a focus on pedestrian circulation. Their 2007 Master Plan explicitly states that “development in the community must be grounded on maintaining pedestrian use of our streets and on preservation of the traditional streetscapes.”

2.1 Demographics and Area Summary

CAPE MAY CITY

AREA
2.2 SQ. MI

YEAR-ROUND POP
3,576 (1,625/SQMI)

SUMMER POP
47,747 (21,703/SQMI)

SEASONAL CHANGE
+1,235%

CAPE MAY POINT

AREA
0.33 SQ. MI

YEAR-ROUND POP
200 (606/SQMI)

SUMMER POP
4,243 (12,857/SQMI)

SEASONAL CHANGE
+2,022%

The Cape May City and Cape May Point Borough study area is illustrated in Map 01. The two municipalities are separated from the New Jersey mainland by Cape May Harbor and the Cape May Canal. This island comprises the City of Cape May, the Boroughs of West Cape May and Cape May Point, and a portion of Lower Township. Access to the island is limited to two locations. The Schellenger's Landing Bridge (NJ Route 109) provides the main route for vehicular traffic approaching Cape May and connects to U.S. Route 9 and the southern terminus of the Garden State Parkway. A second access point between the island and the mainland is available via Seashore Road (NJ Route 162) through West Cape May.

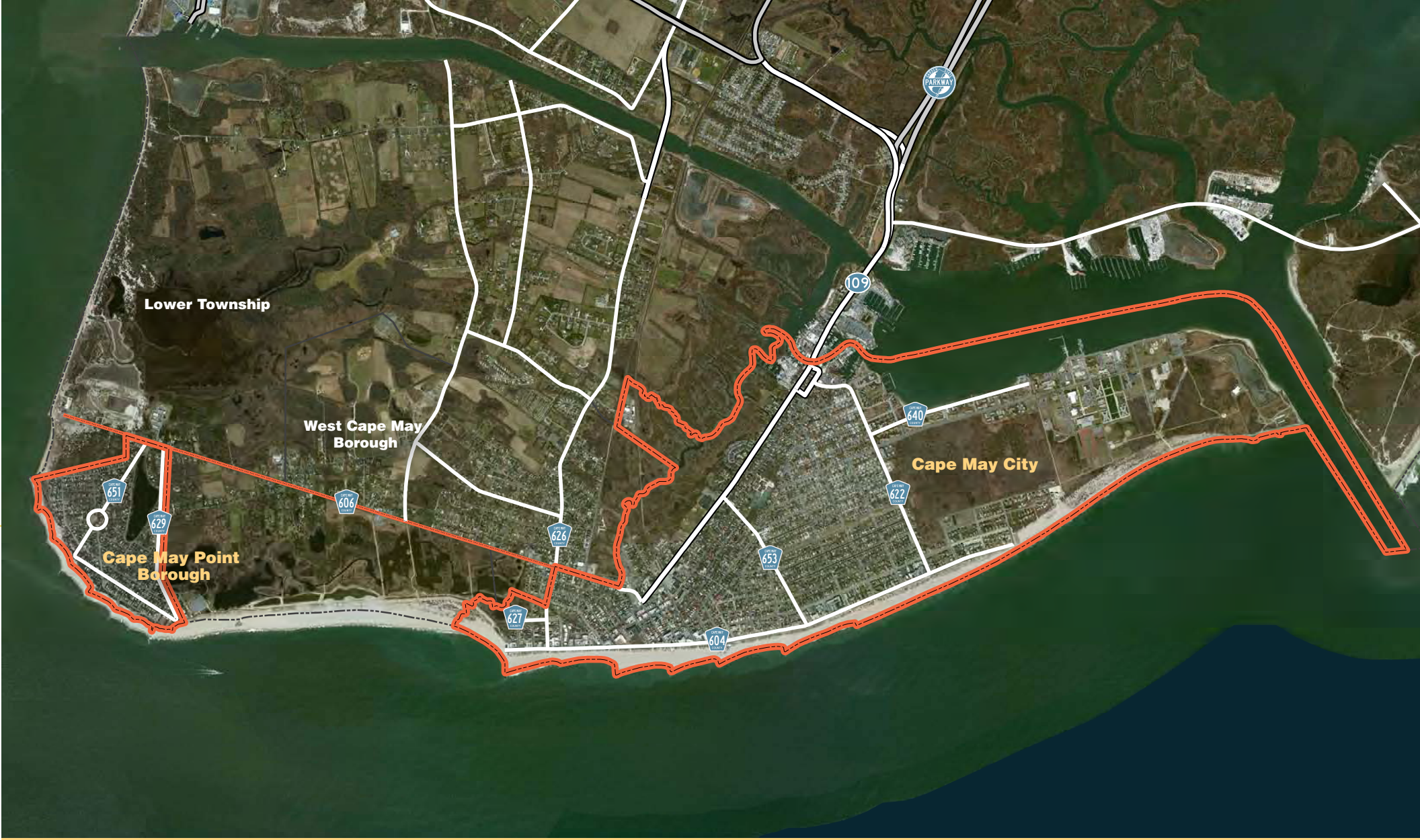
In addition to vehicular access, two forms of public transit also service the island. NJ TRANSIT operates six bus routes with stops at the Cape May Welcome Center in Cape May City. The routes provide frequent daily bus service on a year-round basis, with connections to Atlantic City, Philadelphia, North Jersey destinations, and New York City, as well as coastal towns in Cape May and Atlantic Counties. The Cape May-Lewes Point Ferry, operated by the Delaware River and Bay Authority, provides connections to points south in Delaware. The ferry terminal is located on the mainland side of the Cape May Canal in Lower Township.

The City of Cape May is a densely populated 2.2 square mile municipality on the eastern side of the island. First colonized in the 1600s and formally incorporated in 1848, the City is well-known for its historic character and extraordinary collection of Victorian architecture, leading to its designation as a National Historic Landmark in 1976. Benefiting from its proximity to major population centers in the Mid-Atlantic region (approximately 50 miles south of Atlantic City, 80 miles southeast of Philadelphia, 150 miles south of New York City, and 160 miles north of Baltimore), Cape May City has flourished as a seaside resort community since the 1800s.

Its historic sites, pedestrian-only Washington Street Mall, and beaches are among a myriad of popular attractions that continue to attract visitors today.

In addition to tourism, the U.S. Coast Guard (USCG) Training Center Cape May, the nation's only recruit training center, is a major element of the local economy. Located at the northeastern end of the City, the USCG facility includes over 350 personnel and their families, accounting for approximately 10% of the City's year-round population.

Today, the City is home to 3,576 (ACS 2014) year-round residents, which swells to approximately 47,747 residents and visitors on an average summer day (Cape May County estimate, 2013). The median age in Cape May City is 53.7 (ACS 2014), which is higher than that of both Cape May County (48.0) and New Jersey (39.3), and is typical for a seasonal community that attracts retirees as year-round residents.



Bike Walk Cape May

BICYCLE AND PEDESTRIAN PLAN FOR
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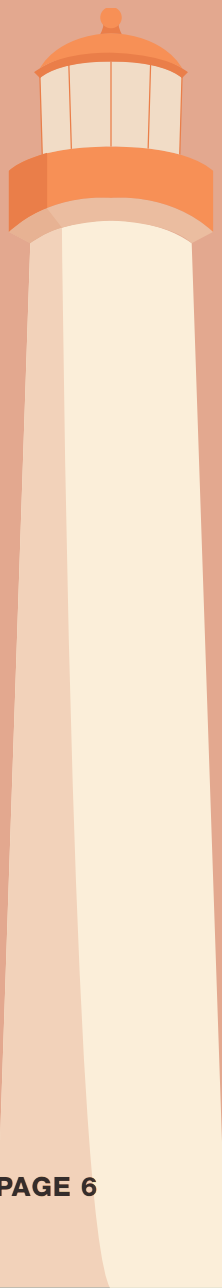
Map 01 - Location Map

Study Area

0 0.5 1 Miles

N



World renowned for:

- **Top Beaches in U.S.**
- **World-class Birdwatching**
- **National Historic Landmark**
- **Victorian Architecture**

Cape May is one of

America's Oldest Seaside Resorts

By contrast, Cape May Point is a quiet, residential resort community nestled into the southwestern corner of the island. The compact community covers 0.33 square miles and is surrounded primarily by the Atlantic Ocean and Cape May Point State Park. An attractive mix of single-family residences, open space, and recreational amenities complements and enhances the ambiance of a family-oriented seaside community.

The Borough of Cape May Point has a year-round population of 200 residents (ACS 2014), but grows to a peak of approximately 4,243 in the summer season (Cape May County estimate, 2013). The population of Cape May Point includes a significant concentration of seniors, with 89.5% of the population above 55 years of age and a median age of 68.5 (ACS 2014), indicative of retirees as the primary year-round residents.

The compact nature of each community, high population density (particularly in the summer months), and relatively close proximity between attractions and residences or lodging make the municipalities ideally suited to support walking and bicycling. Visitors can be encouraged to "park once" for the day and easily access most points of interest by foot or by bike.

Given the largely built-out and historic character of each community, as well as limited roadway capacity and limited parking near beaches and in the Historic District, improving conditions and encouraging bicycling and walking is essential for the City and Borough to effectively handle the influx of visitors. Continuing to enhance conditions for bicyclists and pedestrians will help further shift short trips to these modes, help mitigate seasonal traffic congestion issues, support tourism and the local economy, and enhance the overall quality of life in Cape May City and Cape May Point.


CITY OF CAPE MAY
INCORPORATED 1857
CITY
OF
CAPE MAY
National
Historic Landmark


COLUMBIA
HOUSE
GRAND VICTORIAN SUITES

2.2 Previous Studies

City of Cape May, Master Plan Reexamination, 2009

The City of Cape May Master Plan Reexamination was prepared in March 2009. The plan outlines the goals and vision for the future of the City, and includes elements related to land use, traffic and parking, housing, community facilities, historic preservation, and conservation. The objectives of the plan relevant to bicycle and pedestrian circulation are to:

- Encourage alternate circulation modes and networks to minimize and efficiently move auto traffic into and out of the City.
- Encourage restoration of railroad traffic and other high volume transportation modes as alternative means of accessing the City.
- Minimize the negative impact of bus traffic on the City's street system.
- Continue to explore the feasibility of centralized and satellite parking, and expanding parking supply.
- Study the feasibility of encouraging traffic to use alternate routes into Cape May City other than Lafayette Street.
- Study the feasibility of converting Lafayette and Washington Streets into a one-way couplet.
- Encourage the use of bicycles and walking as alternatives to the automobile.
- Create an open space and pedestrian network that connects points of interest and encourages non-vehicular means of transportation.

The plan includes recommendations for a variety of traffic signal upgrades with vehicle and pedestrian actuation, creating demand responsive systems to improve vehicular flow. Locations include the Beach Avenue, Lafayette Street, and Washington Street corridors.

The recommendations relevant to pedestrians in the plan include:

- Beach Avenue – Operating the seven traffic signals on Beach Avenue in a stop-and-go mode year around.
- Madison Avenue – The two signalized intersections of Madison Avenue and Lafayette Street, and Madison Avenue and Washington Street operate in a "fixed time" mode. To make these signals more responsive "semi-actuated" signals are recommended. Pedestrian push button are also recommended at these intersections.
- Washington Street and Ocean Street – Addition of exclusive pedestrian phase.

Bicycle Facilities Inventory and Analysis, Cape May County, 2008

Completed by Cross County Connection in 2008, the Cape May County Bicycle Facilities Inventory is a county-wide inventory of existing and proposed bicycle facilities. Phase I of the project inventoried existing and proposed facilities and phase II of the project used the inventory to identify gaps in the network. Cape May City has five on-road facilities (Beach Drive, Madison Avenue, New Jersey Avenue, Pennsylvania Avenue and Pittsburgh Avenue) with a total length of 4.0 miles. Cape May Point Borough has two existing on-road facilities on Cape Avenue and Lighthouse Avenue with a total length of 1.35 miles. Information in the inventory was based on surveys completed by the municipalities, the NJDOT State Plan, and NJDOT and SJTPO GIS data.

Creative Placemaking Plan, City of Cape May, 2014

The Creative Placemaking Plan was prepared by Temple University students in 2014. The objective of the plan was to create a comprehensive inventory of artistic, historic, cultural, social, environmental, education, and recreational programs

Figure 2.1: Lafayette Street Park Open Space Plan

and services within Cape May City. The following steps were undertaken to complete the plan:

- Research, inventory, and map all historic, cultural, ecological, and recreational places of interest.
- Identify issues, opportunities, constraints, and objectives that will influence design of a pedestrian trail.
- Create design concepts that emphasize sustainable design strategies, pedestrian and bicycle circulation, historical significance, bird habitat, and educational panels addressing the history, culture, and ecology of place.
- Develop a wayfinding system for the City that highlights cultural and natural resources and improves pedestrian, bicycle and vehicular circulation.

Lafayette Street Park Development

Lafayette Street Park is adjacent to Cape May Elementary School. This plan redesigns existing open space to become part of the Eco-Heritage Trail and creates recreational opportunities including playing fields, courts and seating around the trail. This trail will help in creating better access to Cape May Elementary School. A bikeway is proposed through Lafayette Street Park as shown in Figure2.1.

Rotary Park Improvements

The proposed improvements at Rotary Park include a large lawn for concerts, park events and other activities. The Park will include a sculpture and a gazebo for public activities. An ice skating rink will be installed in the lawn during the winter season. Around Rotary Park, bike racks will be installed for bike parking. The park design includes five crosswalk connections to improve access to the park: three linking the park to the Washington Street Mall and two across Lafayette Street, providing a connection to Cape May Stage. Construction is underway in spring 2016. The park is scheduled to open to in late July 2016.

The Temple University study also created a Wayfinding Plan for Cape May City. The plan is divided in six districts; West Beach, Rotary park, Museum, East Beach, Harbor and Eco Heritage Trail Districts. The signage is divided into four types: vehicular, wayfinding, ecological heritage, and trolley signs.

Borough of Cape May Point Master Plan, 2007

The Borough of Cape May Point Master Plan was prepared in March 2007 and includes typical master plan elements (land use, housing, conservation plan, recreation, historic preservation, economic, community facility, circulation and recycling). The plan defines the vision for Cape May Point's street system and pedestrian experience. The street pattern is a combination of a grid overlaid with radial streets and typically lacks a continuous sidewalk network. Rather than discouraging walking and bicycling in the community, the absence of sidewalks is intended to transform the streets into pathways and make the streets act as a living yard that overlaps with domestic yards, creating shared streets that bring together playing children, pedestrians and vehicles in a safe environment. The plan recommends low noise levels, low vehicular traffic volumes and speed limits, maintenance of parks and beaches, pedestrian friendly landscaping, better visibility at intersections, and eliminating centerlines currently placed.

Borough of West Cape May Local Bicycle and Pedestrian Assistance Study

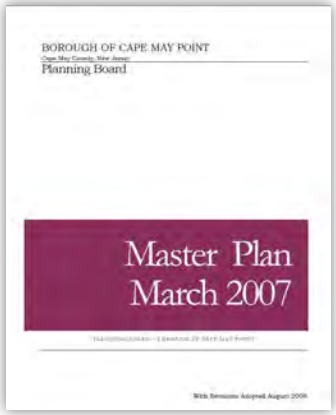
The Borough of West Cape May Local Bicycle and Pedestrian Assistance Study was completed using NJDOT's Local Assistance Program. The study provides information on data collection (sidewalks, bicycle facilities and intersections), conceptual improvements, and public outreach. The Borough of West Cape May lies between Cape May City and Cape May Point Borough and is a connector between the two municipalities, making existing and proposed facilities in West Cape May an important part of the regional bicycle and pedestrian network. The study outlines intersection improvements at Broadway and Sunset Boulevard and bike lane improvements on Sunset Boulevard. On Sunset Boulevard, 6-foot bike lanes in each direction are proposed. These recommendations can provide better connections between Cape May Point and Cape May City and better access to recreational areas in Cape May Point.

School Travel Plan, 2012

A school travel plan was prepared for Cape May Elementary School in 2012. The school is part of the Cape May City School District and includes Pre-K through sixth grade for students from both Cape May City and Cape May Point. The Cape May City Elementary School had 155 students in the 2010/2011 School Year. All of the students live within two miles of the school and 50 percent of the students use school buses to get to and from School. The majority of students (75 percent) are from families affiliated with the Coast Guard base. The objectives of the travel plan are to:

- Make travel to and from the school safer and more efficient
- Reduce traffic congestion around the school
- Encourage travel to school by means other than the car
- Encourage students to walk or ride a bike to school as a healthier option
- Incorporate travel safety, health, and environmental information into the school day
- Consider a Walking School Bus option
- Encourage bicycle safety
- Ensure accessibility to persons with disabilities

Improvements were proposed based on the needs of Cape May Elementary School, including improved pedestrian crossings, bicycle lanes, shared-lane markings, and filling in gaps in the sidewalk network along Delaware Avenue and Michigan Avenue.



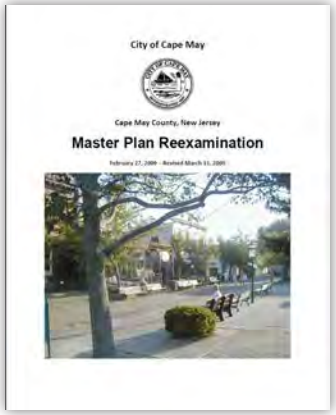


Figure 2.2: Cape May County Bicycle Facilities Inventory & Analysis, Borough of Cape May Point Master Plan, and City of Cape May Master Plan Reexamination

Safe Routes to School Grant, 2011

Cape May City has been active in pursuing Safe Routes to School grant funding to improve conditions for biking and walking around the Cape May Elementary School. The City has identified and sought funding for the following improvements:

Crosswalks, curb ramps, and/or signal upgrades at the intersections of:

- Lafayette Avenue and Elmira Avenue
- Washington Avenue and Madison Avenue
- Madison Avenue and Michigan Avenue
- Michigan Avenue and Illinois Avenue
- Pittsburgh Avenue and Pennsylvania Avenue
- Madison Avenue and Corgie Street
- Madison Avenue and Virginia Avenue
- Pennsylvania Avenue and Philadelphia Avenue
- Reading Avenue and Pennsylvania Avenue
- Trenton Avenue and Pennsylvania Avenue
- Pennsylvania Avenue and Pittsburgh Avenue

Pedestrian actuated beacon on Lafayette Street, mid-block between Madison Avenue and Cape May Elementary parking lot.

Shared lane markings on:

- Madison Avenue between Lafayette Street and Columbia Avenue
- Michigan Avenue between Madison Avenue and Pennsylvania Avenue

Safe Routes to School Grant, 2017

Cape May City was successful in obtaining grant funding for a bikeway network expansion project aimed at linking Cape May Elementary School with existing facilities, including Pittsburgh Avenue and the Coast Guard Base. This project is currently being designed and will likely be constructed in late 2018.

3 Public Involvement

Public involvement is a key component of any successful planning process. The goal of the public involvement process is to engage a broad and diverse group of residents, organizations and stakeholders to develop a plan that reflects the priorities and interests of both residents and visitors in the study area.

Through a variety of stakeholder meetings, public meetings, and online tools, the Bicycle and Pedestrian Plan for Cape May City and Cape May Point Borough gathered information and feedback on existing conditions for walking and bicycling; key issues, challenges, and constraints related to bicycle and pedestrian infrastructure; preferred routes; and feedback on the proposed bicycle network. The input from the stakeholders and the community was key to the development of recommendations for this plan.

3.1 Community Involvement Activities

The following sections summarize the various activities and tools used to gather input for the plan throughout the development of the Bicycle and Pedestrian Plan for Cape May City and Cape May Point Borough.

WikiMap

An online WikiMap was set up to allow members of the community and interested parties the ability to provide input and comment throughout the life of the planning process.

Study Advisory Committee (SAC)

The SAC included professional staff and elected officials from Cape May City and Cape May Point Borough and representatives from Cape May County, Cross County Connection Transportation Management Association (TMA), the New Jersey Department of Transportation (NJDOT), and South Jersey Transportation Planning Organization (SJTPO).

SAC Kick Off Meeting: January 22, 2016
The sub-group of the SAC met at Cape May Convention Hall to discuss goals and objectives of the study and to gather preliminary input on major walking and bicycling issues in the City and Borough.

SAC Meeting #1: June 28, 2016
The SAC met at Cape May Convention Hall to discuss the existing conditions of the study area. The project team presented their analysis of existing conditions and obtained feedback on data collection efforts, key bicycle and pedestrian generators, existing bicycle and pedestrian deficiencies, and other problem roadways and locations.

SAC Meeting #2: October 24, 2016
The SAC met at Cape May Convention Hall to discuss the recommendations for the study area. The project team presented the recommendations and gathered feedback on the proposed improvements.

Public Information Center / SAC Meeting #3: June 3, 2017

The project team held the final SAC meeting from 10:00 am – 11:00am, followed by a Public Information Center (PIC) from 11:00am to 1:00pm. The SAC meeting was an opportunity for members to review the recommendations and modifications since the previous SAC meeting. Attendees also discussed next steps and potential priority projects to move forward.

Candidate projects suggested for early advancement include:

- Sunset Boulevard bicycle lanes
- Pilot the closing of cross streets along the Washington Mall during peak summer weekends
- Intersection improvements and creation of a park around the War Memorial at the intersection of Columbia Street and Gurney Street
- Integrating recommendations along Lafayette Street into the County's upcoming corridor improvements project

Approximately 60 people attended the PIC. Feedback was generally positive. Suggested modifications or additions included:

- Several attendees expressed concern regarding proposed trail improvements through the State Park and South Cape May Meadows conservation areas connecting Cape May City and Cape May Point, particularly related to potential bicyclist activity. Concerns included:
  - Environmentally sensitive land and endangered species
  - Adverse impacts to birding, impacts to natural setting, and increased noise due to greater number of trail users
  - Walkers and bicyclists leaving the trail
  - Elements of the existing trail network are closed for large portions of the summer due to nesting birds
- Residents of West Cape May were in attendance and expressed interest in being included the study

- Several attendees suggested examining potential bicycle connections from Cape May City to the marinas and restaurants just north of the City along NJ 109. The area was noted as a major destination for locals
- Seagrove Avenue is technically in Lower Township, which should be indicated in the recommendations
- Bicyclists riding several abreast was noted as an issue along Sunset Boulevard

Planning Board Briefings

June 13, 2017 - Cape May City

June 20, 2017 - Cape May Point Borough

The project team provided a briefing to the Planning Board for each municipality and answered specific questions posed by members of each. Further, in Cape May Point, approximately 25 local residents attended and asked questions of the project team. Each briefing resulted in the adoption of this Plan as a guidance document for future investments.


DECATUR STREET
← Beaches-Promenade
→ Municipal Parking Lot
→ Rotary Park
→ Public Rest Room

4 Study Methodology

This chapter describes the methodology used to undertake the study. A data driven approach was used to map attractors and generators, evaluate crash data, and conduct a bicycle level of traffic stress analysis for the study area.

The study methodology has several components to better understand existing bicycle and pedestrian mobility in Cape May City and Cape May Point and to target more detailed field evaluation efforts. The project team gathered information on bicycle and pedestrian attractors and generators, crash history, key elements of the roadway network, and measured the roadway network's bicycle level of traffic stress. These components of the study were mapped to illustrate the existing bicycle and pedestrian network, to identify crash "hot spots" where bicycle and pedestrian crashes may be clustered, and to determine areas of confluence among the study components that might indicate specific constraints and deficiencies, inadequate facilities, or opportunities for improvements and advancement.

4.1 Attractors and Generators

Locations that could attract or produce a high number of pedestrian or bicycle trips were inventoried and mapped, as shown in Map 02. Attractors and generators were sorted into the following categories:

- School – Children (an age group considered most at-risk) walking or biking to school

WASHINGTON STREET MALL

A VIBRANT DOWNTOWN ENVIRONMENT

- Beaches and Parks – Many users bike or walk to recreational facilities and many users are children. Beach access points in particular have very high bicycle and pedestrian activity during the summer months
- Municipal Buildings – Library, Post Office, Convention Center, and other public facilities
- Transit – Many transit riders arrive at bus stops by foot or bike
- Commercial – Some shoppers arrive on foot or by bike, but many park and still have to access stores by foot. One of the most popular destination for tourists and local residents is the Washington Street Pedestrian Mall
- Historic District – Municipal asset and tourism destination where compact development patterns and mix of residential and commercial land use support walking and biking

As illustrated in Map 02, both Cape May City and Cape May Point are compact communities and have bicycle and pedestrian attractors throughout each municipality that are within walking or biking distance of residential neighborhoods. This development pattern supports and encourages walking and bicycling for short utilitarian trips as well as recreation. The concentration of bicycle and pedestrian attractors is highest in the historic district of Cape May City, which includes shops, restaurants, and lodging, as well as cultural and historic points of interest and private residences. The eastern part of Cape May City has the United States Coast Guard facility, whose personnel and their families contribute to bicycle and pedestrian trips into the historic district and to the Cape May Elementary School on Lafayette Street. Beach access points along Beach Avenue are another confluence of bicycle and pedestrian activity, with people drawn to the beach, promenade, commercial activity, and recreational and cultural resources.

Bike Walk Cape May

BICYCLE AND PEDESTRIAN PLAN FOR
CAPE MAY CITY AND CAPE MAY POINT BOROUGH

Map 02 - Points of Interest

- NJ Transit Bus Stop
- Nj Transit Bus Route
- School
- Park
- Commercial Area
- Points of Interest
- Bicycle Lane
- Promenade
- Walking Path

0 0.5 1 Miles

N

Clockwise from top-left (1) Cape May Harbor (2) Washington Street Mall (3) Cape May Welcome Center and transit station

Opposite page, clockwise from top-left (1) Recreational paths and birding in South Cape May Meadows (2) Cape May Point State Park (3) Cape May beaches and lighthouse


CAPE MAY POINT
STATE PARK
STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
305

4.2 Crash Locations

STUDY AREA BIKE/PED CRASHES (2009-2015)

PEDESTRIAN

16

BICYCLIST

38

The project team reviewed NJDOT crash data (via *Plan for Safety*) for the study area to identify the location of recent bicycle and pedestrian crashes and potential areas where repeated incidents or crash clusters exist. The analysis included data for 2009-2015 (inclusive), during which 16 crashes involving pedestrians (29.6% of total) and 38 crashes involving bicyclists (70.4% of total) were identified. This differs from the statewide average where pedestrian crashes account for approximately 72% of all bicycle/pedestrian crashes.

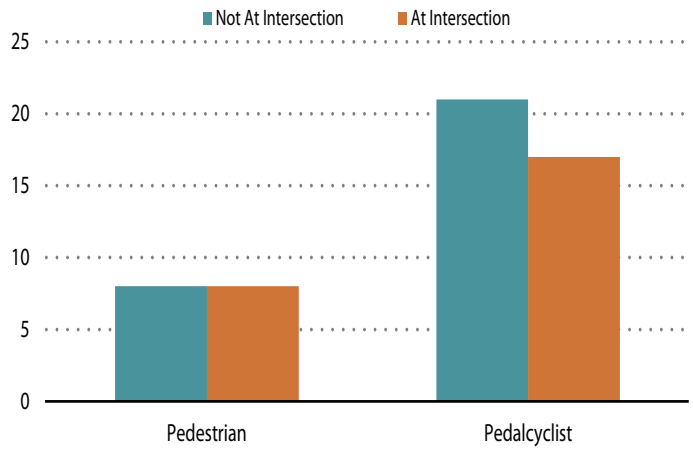
The crash locations are shown in Map 03, overlaid with the points of interest in the study area. The highest concentration of crashes occurred along Sunset Boulevard, Broadway Street, Jackson Street, Washington Street and Lafayette Street. A few bicycle and pedestrian crashes are also clustered around the commercial areas in Cape May City on Ocean Street and Jackson Street. There were no reported bicycle or pedestrian crashes in Cape May Point.

Two of the bicyclist crashes resulted in severe injury. There were no documented fatal crashes in the study area.

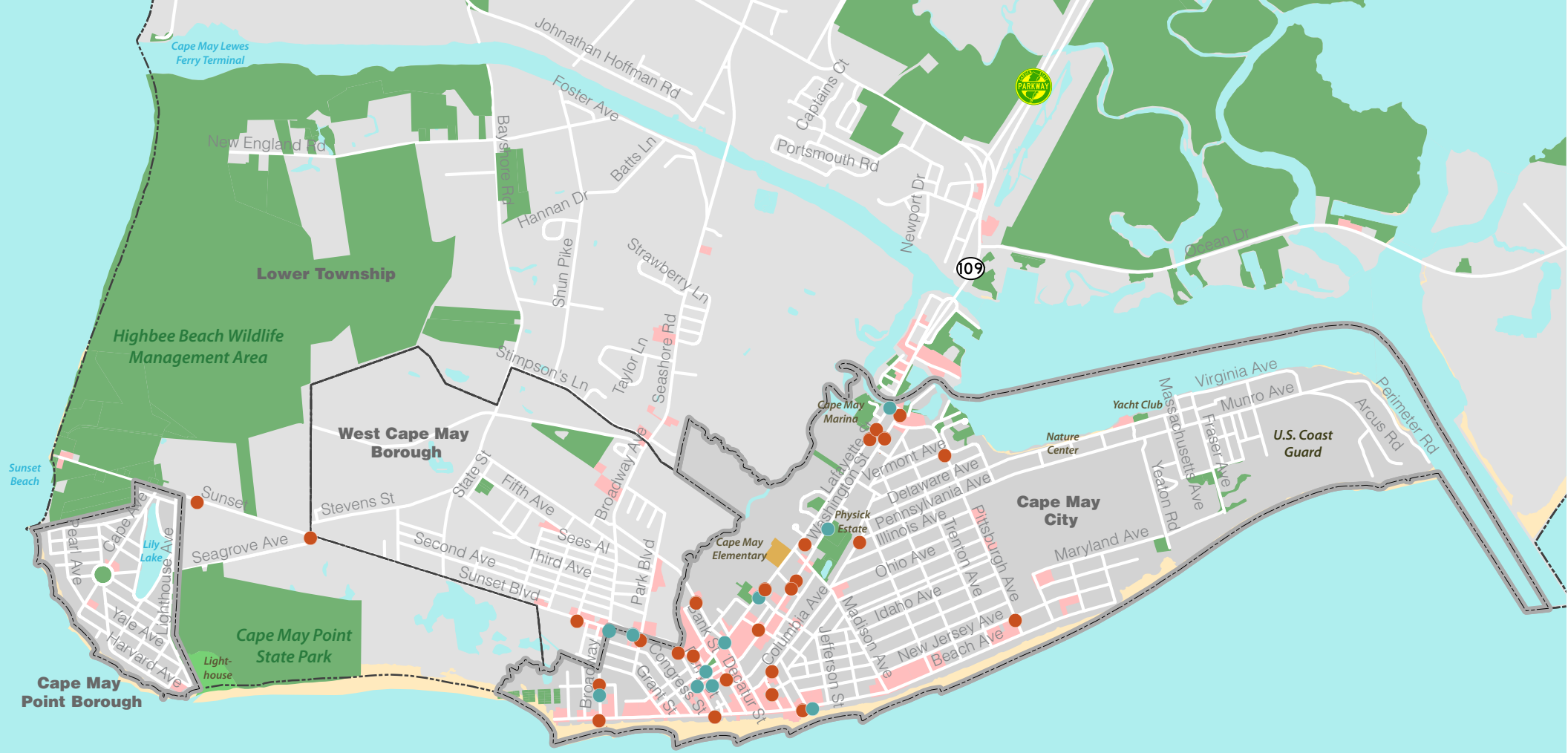
4.3 Crash Analysis

The project team also analyzed the study area bicycle and pedestrian crash data in order to identify any common roadway, environmental, behavioral, or demographic factors in the data. Trends revealed in this data could indicate areas where targeted engineering, enforcement, or educational strategies might improve pedestrian and bicyclist safety.

Chart 1: Crash Distribution by Location



As shown in Chart 1, 50% of pedestrian crashes (8 crashes) occurred at midblock locations, while the remaining 50% occurred at intersection locations. This is lower than the statewide trend during the same analysis period, where 58% of all pedestrian crashes occurred at midblock locations. The trend among bicyclist crashes was similar, with 55% (21 crashes) occurring at midblock locations, while 45% (17 crashes) occurred at intersections. This pattern is opposite from the statewide trend for all bicyclist crashes, where more than half typically occur at intersections (44% at midblock locations, 56% at intersection). This may be due to a variety of factors, including a dense, compact roadway network and active commercial area with many frequent turning movements and high turnover of on-street parking.



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CAPE MAY CITY AND CAPE MAY POINT BOROUGH

Map 03 - Crashes 2009 - 2015

- Pedestrian Crash
- Bicycle Crash
- Commercial
- Parks
- Beach

0 0.5 1 Miles

N

Chart 2: Crash Distribution by Lighting Condition

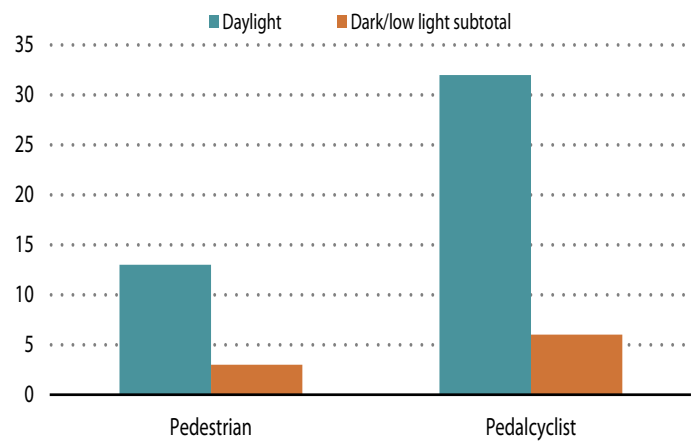
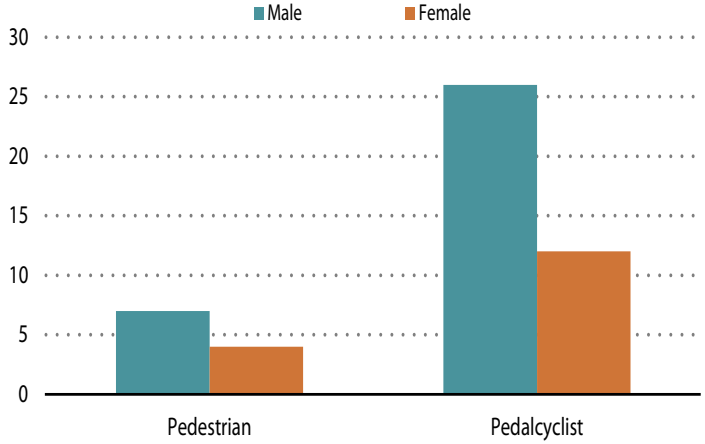


Chart 3: Crash Distribution by Gender



As shown in Chart 2, lighting was not a major factor in pedestrian crashes. Eighty-one percent (13 crashes) of the crashes occurred during daylight conditions. This is significantly different from the statewide trend, where 60% of all pedestrian crashes from 2009-2015 occurred during daylight conditions. Similarly, the majority of bicyclist crashes occurred during daylight (32 crashes, 84%), which is consistent with the statewide trend (76%). This may be because majority of walking and biking activity happens during the day in the study area.

The 54 pedestrian and bicyclist crashes reported during the analysis period involved 56 victims: the pedestrian crashes involved 15 pedestrians and the 38 bicyclist crashes involved 41 bicyclists.

Among pedestrian crashes, 27% involved females and 47% males. Among bicyclist crashes, 29% involved females and 63% males. This is generally consistent with statewide and national trends, where males tend to be more frequently involved in pedestrian and bicyclist crashes. The proportion of male pedestrian crashes and bicyclist crashes in the study area are different from the statewide proportion (47% vs. 52% and 63% vs. 81%, respectively). Chart 3 illustrates the distribution of crashes by gender.

Chart 4: Crash Distribution by Victim Age

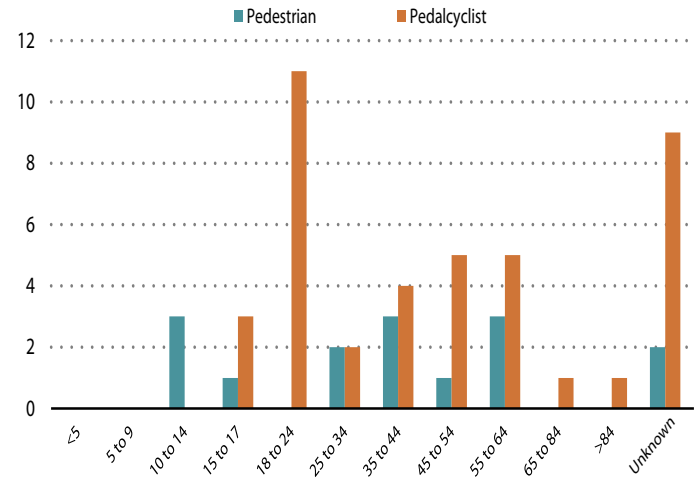
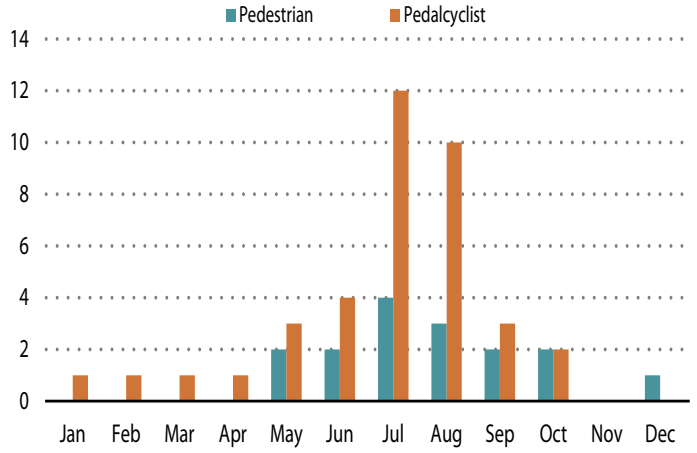


Chart 5: Crash Distribution by Month



Crashes were also reviewed by the age distribution of the pedestrian(s) or bicyclist(s) involved. Young people (ages 5-24) were involved in 27% of all pedestrian crashes (4 crashes), while 60% of pedestrian crashes involved the 25 to 64 age group, consistent with statewide averages. Seniors (65+) were not involved in any of the pedestrian crashes. Bicyclist crashes involved both young people and adults. Young people (ages 5-24) accounted for 34% of bike crashes. Other age groups with the largest number of crashes included ages 25-44 (6, 15%) and 45-64 (10, 24%), similar to statewide averages. The age distribution of crashes is illustrated in Chart 4.

An increase in crashes may be expected during the summer season (June-August) due to an increase in bicycle and pedestrian activity during the warmer weather and an influx of tourists and visitors to the study area. A review of the crash data indicates that 65% of crashes occurred during the summer season, higher than the statewide average for the same period. For pedestrian crashes, 56% (9 crashes) occurred during the summer season, compared to 22% statewide. In the study area, July had the highest number of bicycle crashes (12). Overall, 26 bicyclist crashes (68%) occurred during the summer season, significantly different from the 42% statewide. The monthly distribution of crashes is illustrated in Chart 5.

During the summer months, 37% of the crashes occurred at intersections and 63% at midblock locations, whereas 63% of crashes occurred at intersections and 37% at midblock locations during the rest of the year. This may indicate that the higher percentage of midblock crashes is related to greater roadway congestion and increased activity at major attractions, leading to more conflicts at midblock locations between vehicles, pedestrians, and bicyclists.

5 Existing Conditions Analysis

This chapter describes the key elements of the existing conditions analysis, including bicycle network analysis, identification of key corridors and intersections and associated deficiencies with each, and a review of existing bicycle parking.

Crash data, trip generators, a review of the local roadway network, previous studies and grant applications, and initial input from local stakeholders provided during the kick-off meeting were analyzed together to identify candidate focus areas within Cape May City and Cape May Point for a more detailed field analysis. A focus area could be based on the expected travel patterns given the roadway network and generator locations or could be a crash "hot spot" where multiple crashes involving pedestrians or bicyclists occurred during the study period. For example, a high number of pedestrian crashes near a large generator (like a school) might indicate a recurring problem.

Based on the analysis, the project team sought to gather more detailed information on existing pedestrian and bicycle network. Elements of the analysis included the following:

Bicycle Network Analysis

The project team evaluated the City and Borough's roadway network from the perspective of bicycle level of traffic stress (LTS). The LTS analysis accounts for various skill levels, travel purposes, ages, and experience of cyclists. It is reflective of how cyclists view and experience the roadway environment and how they choose routes based on the experience of comfort and stress level from exposure to vehicle speeds and volumes, as well as relative proximity to vehicular traffic.

The metric provides a snapshot of the suitability of each link in the roadway network for bicycling and identifies areas for potential improvements.

Priority Corridors and Intersections

The project team collected detailed information for several corridors and spot locations throughout the study area. The locations were identified as important links in the network due the proximity of bicycle and pedestrian attractions, crash history, and/or existing deficiencies. The corridors selected for further analysis are:

- Broadway
- Beach Avenue
- Perry Street
- Jackson Street
- Pittsburgh Avenue
- Washington Street
- Lafayette Street
- Sunset Boulevard
- Cape Avenue
- Lighthouse Avenue
- Seagrove Avenue

Following similar criteria, the project team also identified several intersections for field review:

- Gurney Street at Columbia Avenue
- Perry Street at Myrtle Avenue
- Jackson Street at Broad Street
- Lafayette Street at Jackson Street
- Queen Street at Washington Street
- Washington Street at Madison Avenue
- Lafayette Street at Madison Avenue

The corridor and intersection inventory included locations around the Cape May Elementary School to evaluate conditions for walking and bicycling to school.

Trails and Parks

Both Cape May Point and Cape May City have recreational facilities that are major attractors and support bicycle and pedestrian activity. The project team evaluated these facilities and how they fit into the larger bicycle and pedestrian network.

Bicycle Parking and Theft

Bicycle parking is a critical aspect of bicycle infrastructure and creating a bicycle friendly community. The project team conducted an inventory of existing bicycle parking and also obtained and analyzed recent bicycle theft data in order to identify existing capacity and bicycle security issues.

5.1 Bicycle Network Analysis

Bicycle facilities and infrastructure were inventoried in the study area. There are several existing on-street bike facilities in Cape May City, including Madison Avenue, New Jersey Avenue, Pittsburgh Avenue and Pennsylvania Avenue. The promenade alongside Beach Avenue can also be used by cyclists before 10:00 am. Elsewhere, bicyclists share the roadway with motorists.

Bicycle Level of Traffic Stress

Bicycle level of traffic stress (LTS) measures a cyclist's potential comfort level given the current conditions of the roadway. Different cyclists have different tolerances for stress created by the volume, speed, and proximity of automobile traffic. The LTS metric is based on the Dutch concept of low-stress bicycle facilities. 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 traffic, multi-lane roadways, and higher speeds or traffic volumes, a condition which is undesirable for the majority of cyclists. A detailed look at the criteria used to determine LTS can be found in Appendix A.

Based on an analysis of the criteria, the LTS for a given roadway segment is classified into one of four categories, as described in the box above.

The LTS was evaluated for all roads in the study area. The project team assessed major roadways and key minor roadways in the study area 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

Four Levels of Traffic Stress

The level of traffic stress analysis categorizes streets based on four levels. These level of stress categories, discussed below, were determined through significant research in the Netherlands, and adapted for the United States by researchers at Northeastern University.

1 | Most Users

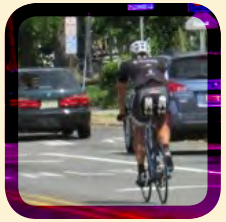
Suitable for almost all cyclists, including children. On LTS 1 links, cyclists are either physically separated from traffic, in an exclusive bicycling zone next to slow traffic, or on a shared-street with a low speed differential.

2 | Most Adults

Suitable for most adults, but demands more attention than might be expected from children. Similar cross sections to LTS 1 but with more likeliness for interaction with motor vehicles.

3 | Enthusiastic Riders

Welcoming level for many people currently riding bikes in this country. Cyclists either ride in an exclusive on-street lane next to moderate speed traffic or on shared lanes on non-multi-lane streets.



4 | Experienced Riders

Suitable only for the most experienced riders or not suitable for any riders. Roadway is characterizes by high travel speeds, multiple lanes, and/or are lacking in dedicated bicycle facilities.

assumptions were made for their typical characteristics.

Map 04 shows the bicycle level of traffic stress within and linking Cape May City and Cape May Point Borough. The majority of the streets in both municipalities are residential streets with low traffic speeds and volumes, making them LTS 1 roadways that are accessible for all users. LTS 2 roadways are typical in the commercial areas, which have higher traffic volumes and more frequent turning movements.

LTS 3 facilities are limited to Pennsylvania Avenue due to its higher traffic speeds (35 mph) alongside its bicycle lanes. Lafayette Street and Washington Street close to the Lafayette Street Bridge are also LTS 3 roadways due to their multi-lane, one-way cross-sections. Broadway is also a LTS 3 due to its higher speed limit of 30 mph. Sunset Boulevard, which has higher traffic speeds (35 mph), is the only LTS 4 roadway in the study area.

The complete LTS network is depicted in Map 04. Due to its low traffic and low speed residential streets, the vast majority of Cape May Point is a well-connected LTS 1 network, making it accessible to bicyclists of all ages and ability levels.

The roadway network within Cape May City is analyzed in more detail in Figures 5.1 and 5.2 to the right. These figures compare the complete roadway network (all LTS levels in Map 04) to the LTS 1-only network, which is accessible for bicyclists of all ability levels, and LTS 1 and 2-only network, which is accessible to the average adult bicyclist. While the majority of the network is LTS 1, the higher stress level segments create gaps in the low stress network. These gaps reduce network connectivity and make connections between the residential neighborhoods difficult, and create barriers for low stress rides between Cape May Point and Cape May City, and between residential neighborhoods and some destinations in downtown Cape May City.

Figure 5.1: Cape May City LTS 1 Only

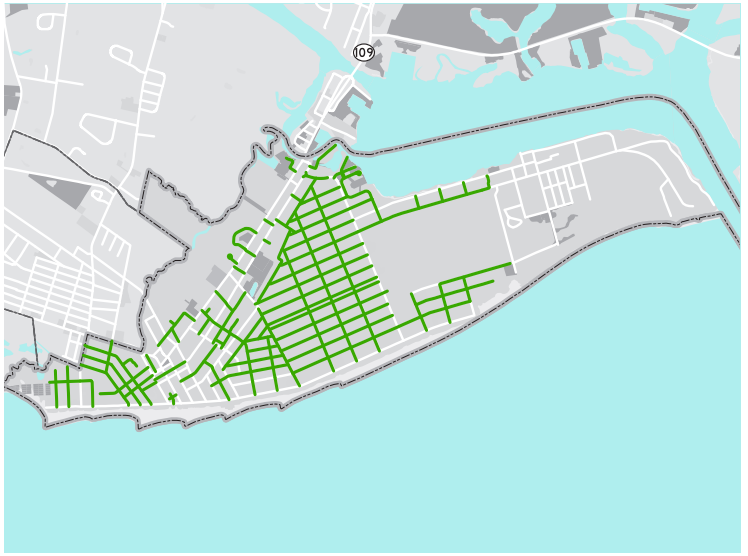
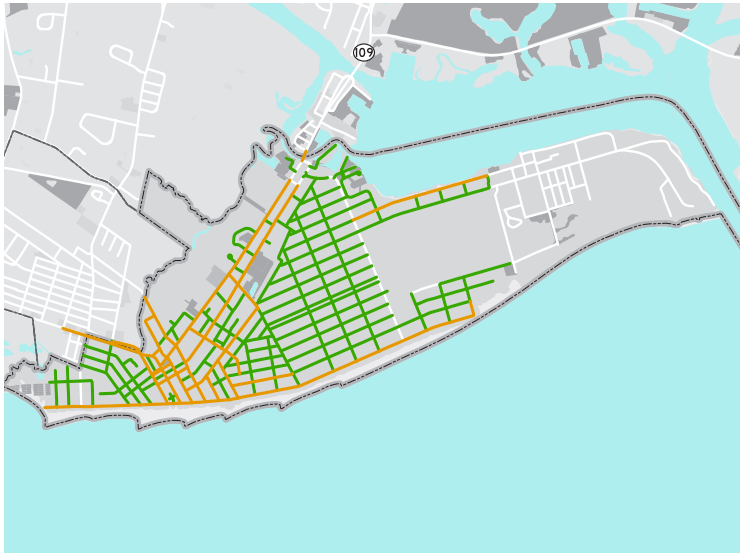


Figure 5.2: Cape May City LTS 1 and 2



Bike Walk Cape May

BICYCLE AND PEDESTRIAN PLAN FOR
CAPE MAY CITY AND CAPE MAY POINT BOROUGH

Map 04 - Bicycle Level of Traffic Stress

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

0 0.5 1 Miles

N

5.2 Priority Corridors

The following sections document the field inventory and assessment of existing conditions for each priority corridor within the study area. Map 05 on the opposite page illustrates the location of the corridors within the study area.

Broadway

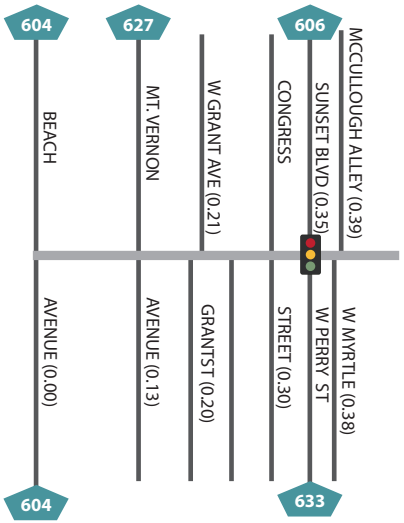
Broadway (CR 606) is a north-south roadway connecting Cape May City with West Cape May. The location of the roadway is marked in Map 05. The limits of Broadway within Cape May City are from Beach Avenue in the south to Sunset Boulevard in the north. This two-lane roadway has a posted speed limit of 30 mph and metered parking spots on both sides from Beach Avenue to Grant Street. The cartway width of this roadway is 38 feet. Motorists enter Broadway in Cape May City from West Cape May at the intersection of Sunset Boulevard/ West Perry Street. High vehicular volumes and travel speeds were observed at this intersection, which lacks pedestrian and bicycle accommodations.

The development along Broadway is largely residential with commercial land uses close to the beach. Broadway is a major access point for beach visitors. The sidewalk network along the roadway is complete. During field visits, significant pedestrian and bicycle activity was observed on the roadway.

From 2009-2015, 5 crashes (3 bicyclist, 2 pedestrian) involving pedestrians or bicyclists were reported. The bicycle level of traffic stress on this roadway is LTS 3.

Bicyclists on Broadway, looking south at Mt. Vernon Avenue

Straight Line Diagram | Broadway



Bike Walk Cape May

BICYCLE AND PEDESTRIAN PLAN FOR CAPE MAY CITY AND CAPE MAY POINT BOROUGH

Map 05 - Priority Corridors and Intersections

- Priority Corridor
- Priority Intersection
- Bicycle Lane
- Boardwalk
- Walking Path

0 0.5 1 Miles

N

Straight Line Diagram | Beach Avenue

Beach Avenue

Beach Avenue follows the shoreline along the southern side of the city. The location of the roadway is marked in Map 05. The roadway provides access to the beach and adjacent commercial areas and is heavily used by pedestrians, bicyclists, and motorists. This roadway has a 25 mph speed limit and its typical cross section consists of two travel lanes and metered parking on both sides. The cartway width of this roadway ranges from 40-60 feet. There are 24 intersections along its length, each of which provides a beach access point.

Development along Beach Avenue is mostly commercial with hotels and restaurants, and residential development east of Pittsburgh Avenue. There is significant bicycle and pedestrian activity on Beach Avenue due to the large number of attractions along the corridor. The sidewalk network along the roadway is complete, and section of the corridor west of Madison Street includes a broad promenade along the beach. The promenade is primarily a pedestrian facility, with bicyclists permitted before 10:00 AM. Pedestrian crossings to beach access points are long due to the broad typical cartway width of Beach Avenue. Curb extensions have been installed at several intersections to shorten the pedestrian crossing and calm traffic. Traffic volumes on Beach Avenue are moderate, with an average annual daily traffic (AADT) of 4,915 (July 2014) between Madison and Philadelphia Avenues and 5,545 (July 2010) between Patterson Avenue and Grant Street.

From 2009-2015, 5 crashes were reported involving bicyclists and pedestrians (4 bicyclist crashes and 1 pedestrian). As Beach Avenue is adjacent to the beach, significant bicycle and pedestrian activity was observed on this corridor; however, there is no existing dedicated bicycle facility along the corridor. The bicycle level of traffic stress on this roadway is LTS 2.

Clockwise from top-left (1) Pedestrians crossing at the Perry Street intersection, facing east (2) Beach Avenue Promenade, looking east (3) Bicyclists along Beach Avenue, looking west at Patterson Avenue

Perry Street looking north at Carpenters Lane

Perry Street looking south at Beach Avenue

Perry Street

Perry Street is a north-south roadway connecting Cape May City with West Cape May. The location of the roadway is marked in Map 05. The limits of Perry Street within Cape May City are from Beach Avenue in the south to Sunset Boulevard in the north. This two-lane roadway has a speed limit of 25 mph and metered parking on one side. The typical cartway width of this roadway is 28 feet.

The development along Perry Street is largely commercial with residential land uses towards the northern end. It is a direct connector between downtown Cape May City and the beach. The sidewalk network along the roadway is complete. From 2009-2015, 6 crashes (3 bicyclist, 3 pedestrian) involving pedestrians or cyclists were reported. The bicycle level of traffic stress on this roadway is LTS 2.

Straight Line Diagram | Perry Street

Jackson Street looking south at Beach Avenue

Jackson Street looking north at Carpenters Lane

Jackson Street

Jackson Street is a north-south roadway connecting Cape May City with West Cape May. The location of the roadway is marked in Map 05. The limits of Jackson Street within Cape May City are from Beach Avenue in the south to Perry Street in the north. This one-way road has a speed limit of 25 mph and metered parking on one side. The typical cartway width of this roadway is 24 feet.

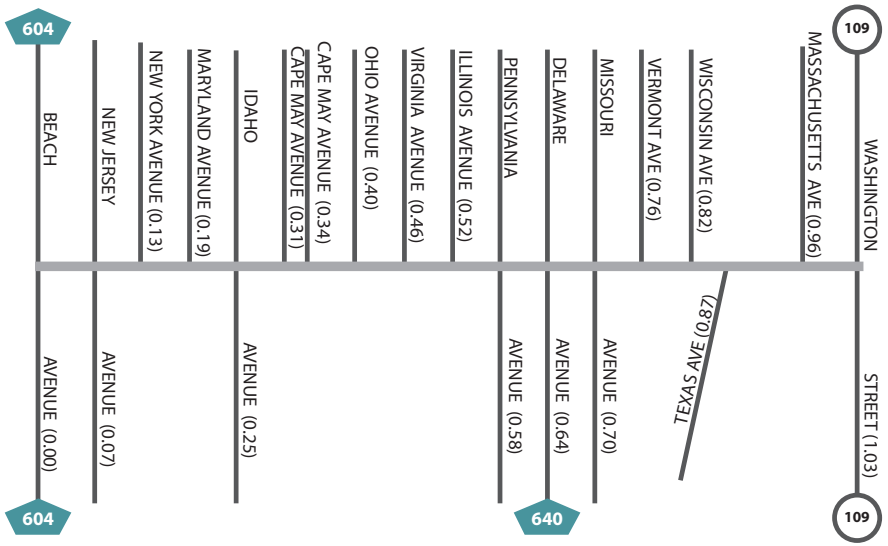
The development along Jackson Street is largely commercial. It is a direct connector between downtown Cape May City and the beach. The sidewalk network along the roadway is complete. From 2009-2015, 5 crashes (2 bicyclist, 3 pedestrian) involving pedestrians or cyclists were reported. The bicycle level of traffic stress on this roadway is LTS 2.

Straight Line Diagram | Jackson Street

Pittsburgh Avenue looking south at Beach Avenue

Pittsburgh Avenue looking north at New Jersey Avenue

Straight Line Diagram | Pittsburgh Avenue



Pittsburgh Avenue

Pittsburgh Avenue (CR 622) is a north- south roadway connecting Beach Avenue in the south to Washington Street in the north. The location of the roadway is marked in Map 05. The speed limit on this roadway is 35 mph. The typical cartway width is 60 feet, and includes one travel lane in each direction, bike lanes, and shoulders on both sides. The typical cartway width of this roadway is 60 feet.

The development along Pittsburgh Avenue is primarily residential, with commercial activity at the northern end. The sidewalk network along the roadway is complete. From 2009-2015, 2 bicyclist crashes were recorded. From 2009-2015, 2 crashes (2 bicyclist) involving cyclists were reported. The bicycle level of traffic stress on this roadway is LTS 3 due to the higher vehicular speeds.

Lafayette Street

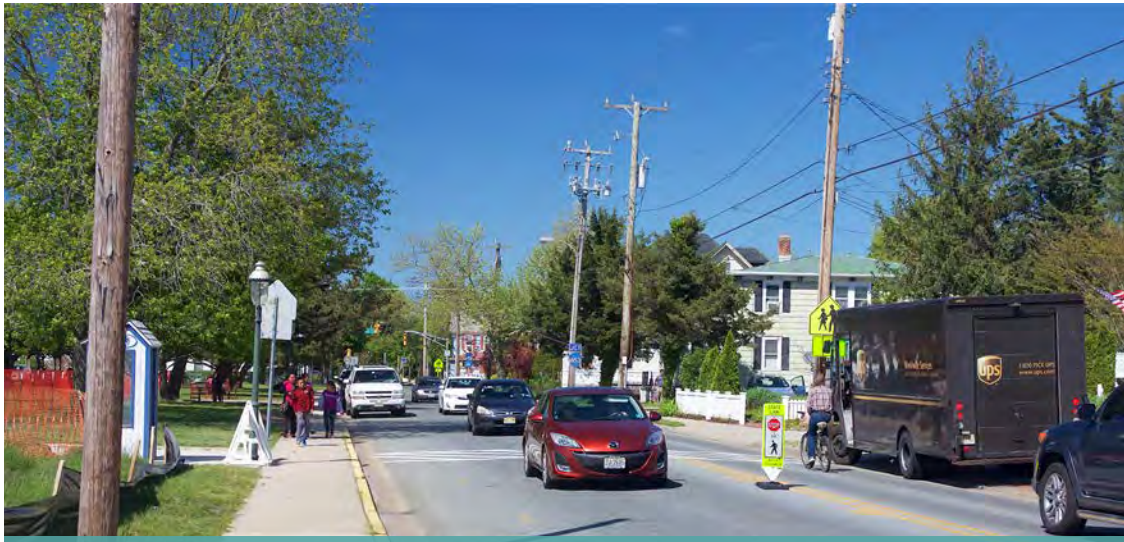
Lafayette Street is an east-west roadway connecting the northern end of Cape May City to the downtown and Historic District. With its direct connection to the Schellenger's Landing Bridge (NJ 109) over the Cape May Canal to the GSP and U.S. Route 9, Lafayette Street is the primary access point into and out of Cape May City.

Cape May Elementary School is located along Lafayette Street, making the corridor an important route for walking to and from school. The school is located north of Lafayette Street; therefore, most children who walk or bike to school must cross Lafayette Street twice every day. Other bicycle and pedestrian destinations along Lafayette Street include two parks: Lafayette Street Park next to the school and Rotary Park adjacent to the Washington Street Mall. This roadway was also identified by local stakeholders as an important corridor with pedestrian and traffic issues.

The location of the Lafayette Street is shown in Map 05. The two-lane roadway has a posted speed limit of 25 mph. The typical cartway width of this roadway is 26 feet. As a primary corridor in the City, relatively high traffic volumes were observed during field data collection. There was also significant bicycle and pedestrian activity, including four-wheeled bicycles.

Development along Lafayette Street is largely residential with commercial land uses closer to the downtown. The sidewalk network along the roadway is complete, and significant pedestrian and bicycle activity was observed during field visits.

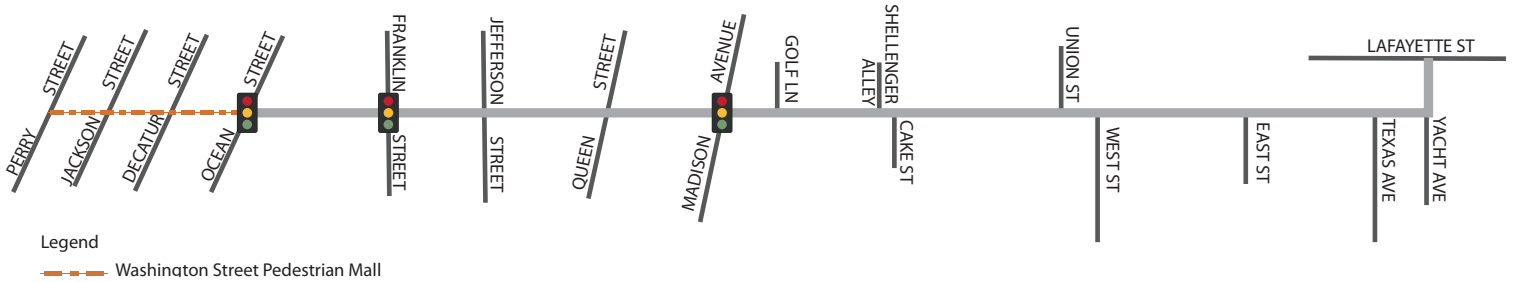
From 2009-2015, 6 crashes (4 bicyclist, 2 pedestrian) involving pedestrians or cyclists were reported. The bicycle level of traffic stress on this roadway is LTS 2.



Lafayette Street midblock crossing at Queen Street facing west

Straight Line Diagram | Lafayette Street

Straight Line Diagram | Washington Street



Washington Street

Washington Street is an east-west roadway connecting the eastern end of Cape May City to the pedestrian mall on Washington Street and the Historic District. Along with Lafayette Street, Washington Street is a major access point into Cape May City from Garden State Parkway (GSP)/NJ 109. Additionally, it is a key route to the elementary school for students coming from the eastern side of the City. This street was also identified by local stakeholders as an important roadway with pedestrian and traffic issues.

The location of the roadway is shown in Map 05. The limits of Broadway are from Lafayette Street to Perry Street. The two-lane roadway has a posted speed limit of 25 mph and parking on one side. The typical cartway width of this roadway is 30 feet. High vehicular volumes, pedestrians, bicyclists, and four wheeled bicycles were observed on Washington Street during field data collection.

Between Ocean Street and Perry Street, the roadway is a pedestrian-only mall. Lined with shops and restaurants, the vibrant public space is a major regional attraction and the center of the City's downtown commercial area.

The development along Washington Street is largely residential with commercial land uses in the pedestrian mall land and close to downtown.

The sidewalk network along the roadway is complete. The Washington Street Mall section of the corridor supports an active commercial area and local businesses in the downtown. Pedestrian-scale lighting, landscaping, wayfinding, and street furniture all create an inviting, vibrant public space. The Mall crosses motor-vehicle traffic at Decatur Street and Jackson Street. Both are one-way streets, which shortens and simplifies the pedestrian crossing, while a brick-textured crosswalk the full width of Washington Street enhance the visibility of the crossing. The pedestrian crossings at Jackson, Decatur, and Ocean Streets are the most heavily used crosswalks in the city.

From 2009-2015, 6 crashes (5 bicyclist, 1 pedestrian) involving pedestrians or cyclists were reported. The bicycle level of traffic stress on this roadway is LTS 2.

Clockwise from top-left (1) Washington Street, looking west (2) Washington Street Mall, looking west (3) Washington Street and Jackson Street intersection, looking east

Sunset Boulevard

Sunset Boulevard (CR 606) is an east-west roadway connecting Cape May City to Cape May Point Borough. Although it is located in West Cape May and Lower Township, it is a critical piece of the network to link the two municipalities as well as to provide access to Cape May State Park, South Cape May Meadows, Sunset Beach, and Cape May Lighthouse. This roadway was also identified by local stakeholders as an important corridor with pedestrian, bicyclist, and traffic issues.

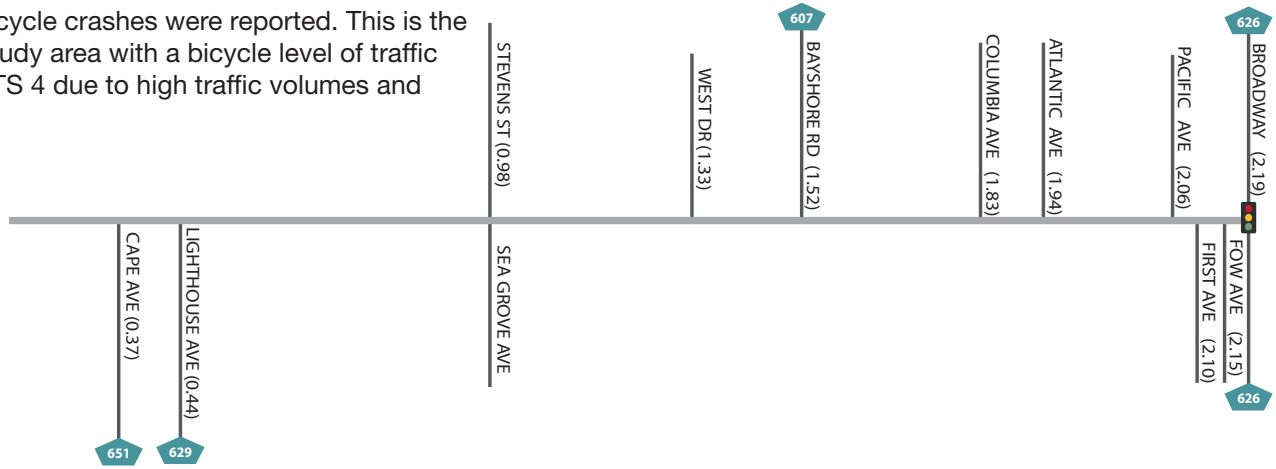
The location of the roadway is marked in Map 05. The limits of Sunset Boulevard are from Broadway to Sunset Beach. The two-lane roadway has shoulders on both sides and a posted speed limit of 25 mph at its eastern terminus, 35 mph between Pacific Avenue and Seagrove Avenue, and 40 mph west of Seagrove Avenue. The typical cartway width of this roadway is 35 feet.

Development along Sunset Boulevard is largely residential on the north side and wetlands preserved open space on the south. There is no sidewalk along this roadway. During field visits, significant bicycle activity was observed along the roadway, with the apparent primary destination being the Cape May Lighthouse and State Park.

From 2009-2015, 3 bicycle crashes were reported. This is the only roadway in the study area with a bicycle level of traffic stress of LTS 4. It is LTS 4 due to high traffic volumes and speeds.

Sunset Boulevard, looking west at West Drive

Straight Line Diagram | Sunset Boulevard



Cape Avenue looking south at Cape Avenue Circle

Cape Avenue looking north at Sunset Boulevard

Cape Avenue

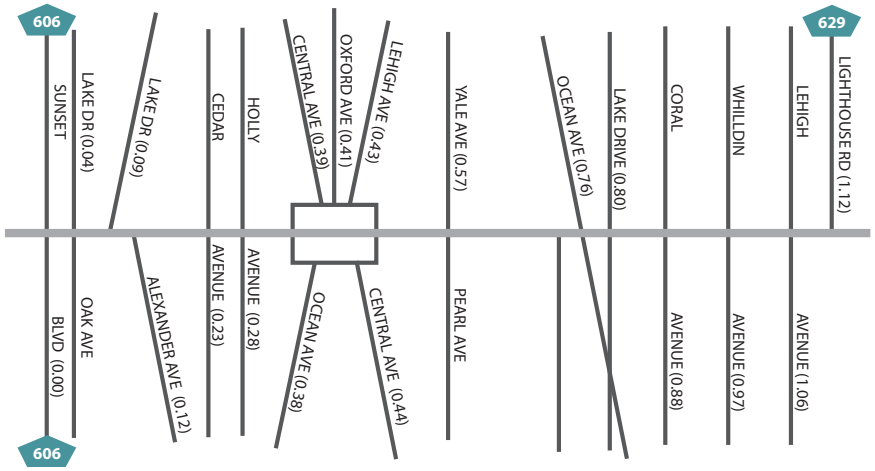
Cape Avenue is the central thoroughfare in Cape May Point Borough, bisecting the municipality. Cape Avenue is one of two primary entry points into Cape May Point. The location of the roadway is shown in Map 05.

Cape Avenue is a two-lane roadway with shoulders on both sides and a typical width of 31 feet. The speed limit on this roadway is 30 mph.

Development along the roadway is residential. The corridor provides access to the beach, as well as the Borough green/ park, church, and the restaurant/general store at the center of Cape May Point Borough.

There are disconnected sidewalk segments along this roadway. The bicycle level of traffic stress along the corridor is LTS 2. There were no reported bicycle or pedestrian crashes during the 2009-2015 analysis period.

Straight Line Diagram | Cape Avenue



Lighthouse Avenue at the Cape May State Park entrance, looking south

Lighthouse Avenue, looking north at Oxford Avenue

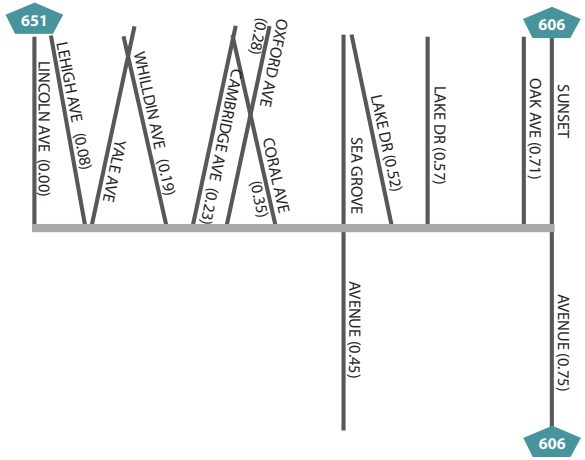
Lighthouse Avenue

Lighthouse Avenue (CR 629) traverses the eastern end of Cape May Point, as shown in Map 05. It is a two-lane roadway with shoulders on both sides and a typical cartway width of 34 feet. The posted speed limit is 25 mph south of Seagrove Avenue and 30 mph north of Seagrove Avenue.

Development along Lighthouse Avenue is residential, and it is adjacent to several recreational land uses including Cape May Point State Park and Lily Lake. This roadway is one of two entry points into Cape May Point Borough, and is the primary access route to the Cape May Lighthouse and Cape May State Park and its bird watching areas, walking trails, and beaches, making it an important roadway for local residents and tourists.

There are no sidewalks along the roadway. The bicycle level of traffic stress on this roadway is LTS 1 south of Seagrove Avenue and LTS 2 north of Seagrove Avenue (30 mph section). There were no reported bicycle or pedestrian crashes during the 2009-2015 analysis period.

Straight Line Diagram | Lighthouse Avenue



Seagrove Avenue, looking east at Sunset Boulevard and Stevens Street

Seagrove Avenue, looking east at Sunset Boulevard

Seagrove Avenue

Although Seagrove Avenue is within Lower Township, it is an important connector in the study area bicycle network. It provides an alternative to Sunset Boulevard and a more direct connection for bicyclists destined to/from Cape May Point Borough, the Cape May Lighthouse, and Cape May State Park, as shown on Map 05.

Seagrove Avenue is a two-lane roadway with a typical cartway width of 22 feet and a speed limit of 25 mph.

Development along this roadway is residential. It also abuts the north side of Cape May State Park and a trail access point to the park is located along the corridor.

There are no sidewalks along the roadway. Seagrove Avenue has low traffic volumes and speeds, creating a comfortable bicycling environment and an LTS 1 roadway. There were no reported bicycle or pedestrian crashes during the 2009-2015 analysis period.

Straight Line Diagram | Seagrove Avenue

5.3 Priority Intersections

Typical conditions at the priority intersections in the study area are summarized in the following sections. The location of each intersection within the study area is shown on Map 05 on page 33.

Beach Avenue at Ocean Street

This signalized intersection is typical of signalized crossings along Beach Avenue and provides access to the beach and leads to the commercial areas in downtown Cape May City.

Key pedestrian and bicycle issues are summarized below and illustrated in the figure to the left.

Crosswalk Striping

- Crosswalk is missing at the eastbound approach and the crossing at Beach Avenue is lengthened due to the skewed angle of the crosswalk striping

Curb Ramps

- ADA accessible curb ramps are provided at the three corners where a crosswalk exists

Pedestrian Signals and Push Buttons

- Pedestrian signals with countdown timers are provided at the three corners where a crosswalk exists

Sidewalk Network

- Sidewalk network is complete around this intersection

Lighting

- Intersection is lit by a single overhead lamp, but lacks pedestrian scale lighting

Clockwise from top-left (1) Beach Avenue and Ocean Street intersection, looking west (2) Beach Avenue and Ocean Street intersection, looking south. Crossing not permitted at eastbound approach (3) Example of a midblock crossing and curb extensions along Beach Avenue at the northern terminus of the promenade, looking west

Clockwise from top-left (1) Benton Avenue and Sewell Avenue intersection, looking east (2) Benton Avenue and Sewell Avenue intersection, looking west (3) Howard Street and Sewell Avenue intersection, looking south

Benton Avenue at Sewell Avenue, Howard Street at Sewell Avenue

These unsignalized intersections are located in the downtown core and historic district of Cape May City, connecting a residential area to commercial nodes.

Key pedestrian and bicycle issues are summarized below and illustrated in the figure to the right.

Crosswalk Striping

- Crosswalks are not installed at any approaches

Curb Ramps

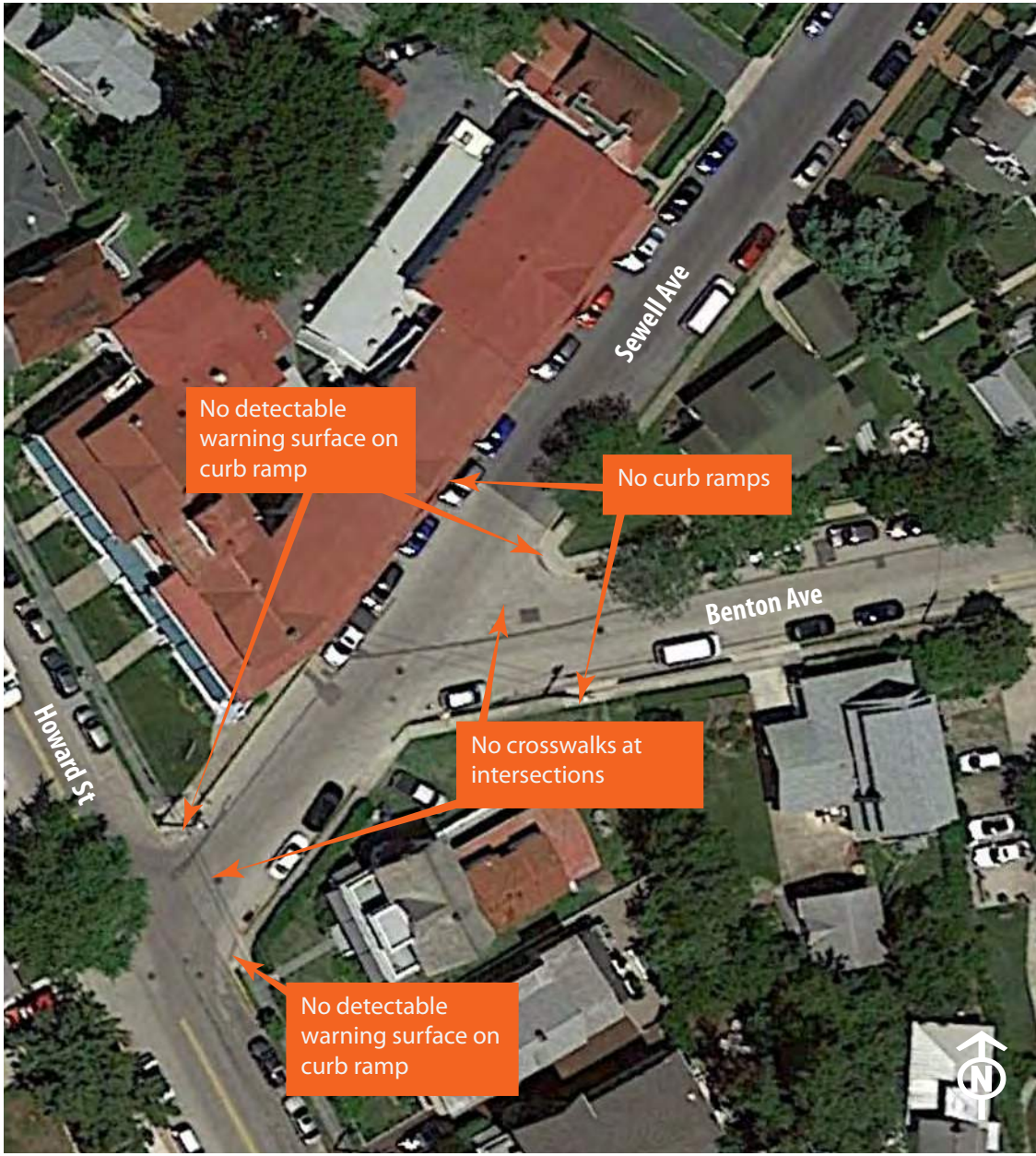
- ADA accessible curb ramps are not installed at several unmarked crossing locations at this intersection
- Detectable warning surfaces are not provided at existing curb ramps

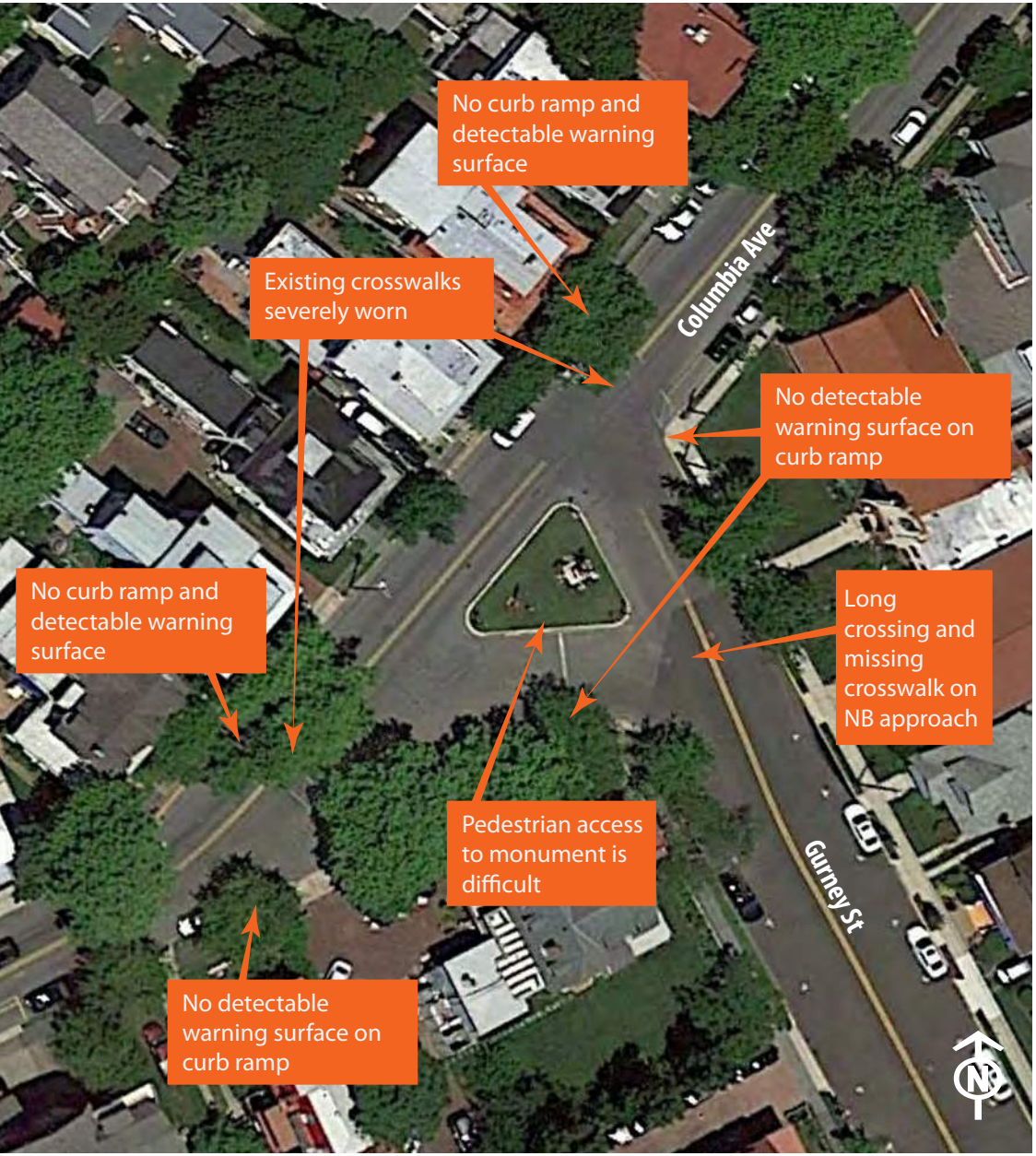
Sidewalk Network

- Sidewalk network is complete around this intersection

Lighting

- Benton Avenue intersection lacks lighting
- Howard Street intersection is lit by a single overhead lamp, but lacks pedestrian scale lighting





Gurney Street at Columbia Avenue

This unsignalized intersection is in downtown Cape May City and is surrounded by residential and commercial uses. The configuration of the intersection creates a small public green space at its center. However, the monument located at the center of the green is difficult to access due to the lack of marked crosswalks and curb ramps.

Key pedestrian and bicycle issues are summarized below and illustrated in the figure to the left.

Crosswalk Striping

- Crosswalks are installed along the Columbia Avenue approaches of the intersection; however, the existing striping is severely worn

Curb Ramps

- ADA accessible curb ramps are not installed at most crossing locations at this intersection
- The existing curb ramp at the SE corner lacks a detectable warning surface

Sidewalk Network

- Sidewalk network is complete around this intersection

Lighting

- Pedestrian scale lighting is installed at this intersection

Other Pedestrian Issues

- Pedestrian crossing of Gurney Street is long due to wide cartway width
- Monument located at the center of the green is difficult to access

Clockwise from top-left (1) Faded crosswalk at Columbia Avenue and Gurney Street, looking north (2) Bicyclists on Columbia Avenue, looking south (3) Monument at Gurney Street and Columbia Avenue, looking north

Clockwise from top-right (1) Long crossing and lack of marked crossings on Jackson Street, looking south (2) Lack of marked crossings on Broad Street, looking east (3) Pedestrian crossing on Jackson Street, looking east

Jackson Street at Broad Street

This unsignalized intersection is at the western end of Cape May City. It provides access to neighboring residential and commercial areas. The curvature of Jackson Street at the intersection creates a challenging environment for all roadway users.

Key pedestrian and bicycle issues are summarized below and illustrated in the figure to the right.

Crosswalk Striping

- No crosswalk striping is installed at this intersection

Curb Ramps

- No curb ramps are installed along Jackson Street
- Existing curb ramps at the NE and SE corners of Broad Street lack detectable warning surfaces

Sidewalk Network

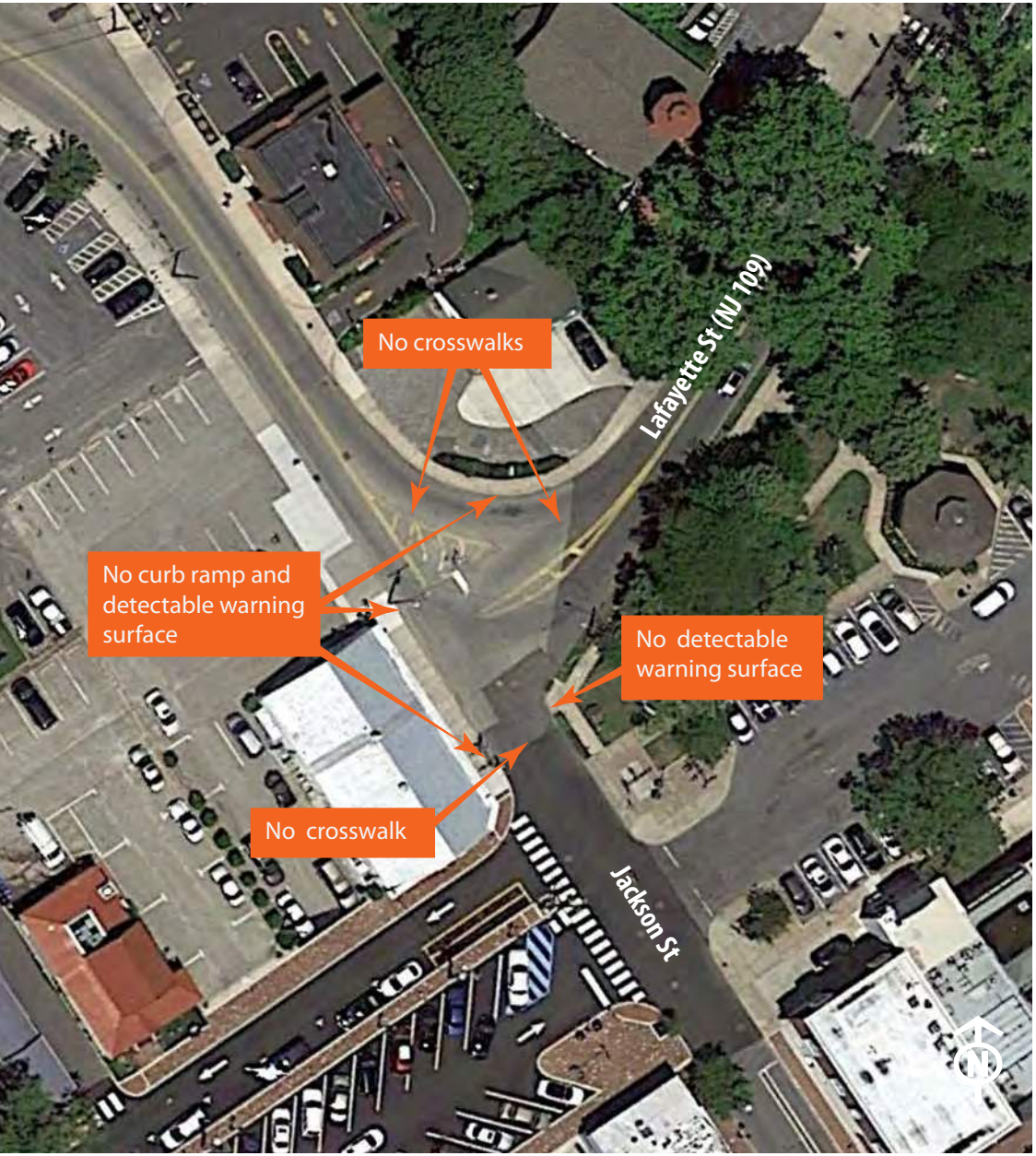
- Sidewalk network is complete around this intersection

Lighting

- The intersection is lit by a single overhead lamp, but lacks pedestrian scale lighting

Other Pedestrian Issues

- Complex geometry of the intersection creates long crossing distances and complicated turning movements for all modes



Lafayette Street at Jackson Street

This unsignalized intersection is an important access point to downtown Cape May City and other tourist attractions in the City. Major destinations surrounding the intersection include the Washington Street Mall, Rotary Park, and Cape May Stage. During field observations, heavy left turn movements from Lafayette Street to Jackson Street were observed.

Key pedestrian and bicycle issues are summarized below and illustrated in the figure to the left.

Crosswalk Striping

- No crosswalk striping is installed at the intersection

Curb Ramps

- ADA accessible curb ramps are present at the intersection but lack detectable warning surfaces

Sidewalk Network

- Sidewalk network is complete around this intersection

Lighting

- The intersection is lit by a single overhead lamp, but lacks pedestrian scale lighting

Clockwise from top (1) Lafayette Street and Jackson Street intersection, looking west at Jackson Street (2) Pedestrians crossing Lafayette Street and Jackson Street intersection, looking north (3) Lafayette Street and Jackson Street intersection, looking north at Jackson Street

Clockwise from top-left (1) Pedestrian crossing at Myrtle Avenue and Perry Street, looking south (2) Traffic signal control box on sidewalk on Perry Street, looking south (3) Intersection at Perry Street and Jackson Street, looking north

Myrtle Avenue and Jackson Street

This signalized intersection is located at the western end of Cape May City and provides a link between West Cape May and Cape May City. West of the intersection, West Perry Street becomes Sunset Boulevard, which is an important corridor in this study and provides access to Cape May Point Borough.

Key pedestrian and bicycle issues are summarized below and illustrated in the figure to the right.

Crosswalk Striping

- Crosswalk striping is severely worn at Jackson Street, Perry Street, and Myrtle Avenue crossings
- Skewed crosswalk at the eastbound approach on West Perry Street lengthens the pedestrian crossing

Curb Ramps

- No curb ramps are installed at the NE and SE corners of Jackson Street and SW corner of West Perry Street
- Existing curb ramps at NW and NE corners of Myrtle Street lack detectable warning surfaces

Pedestrian Signals and Push Buttons

- Intersection lacks pedestrian signal heads and pedestrian push buttons

Sidewalk Network

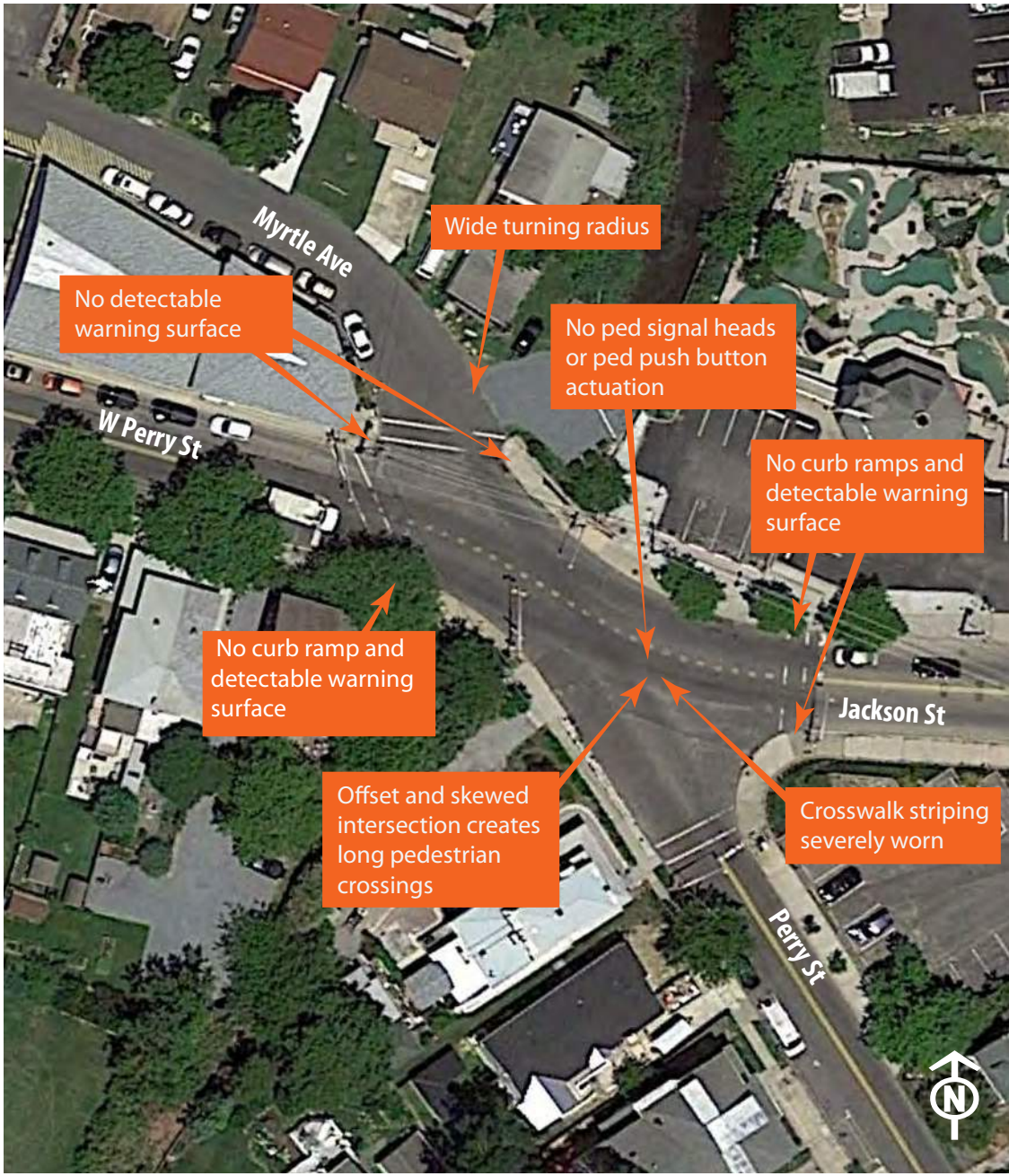
- Sidewalk network is complete around this intersection

Lighting

- The intersection has two overhead street lamps, but lacks pedestrian-scale lighting

Other Pedestrian Issues

- Wide turning radii for eastbound and westbound right turns encourages vehicles to take the turns at higher speeds, creating unsafe conditions for pedestrians and bicyclists
- Wide turning radii also limits visibility of crosswalks for vehicles turning right from W Perry Street eastbound and Jackson Street westbound



5.4 Bicycle Parking and Bicycle Theft

Bicycle parking facilities are needed to extend bicycle use from an opportunity for recreation to a feasible mode of transportation. As shown in Map 06, the majority of existing bike racks are located at beach access points along Beach Avenue in Cape May City. Bike parking is also available around the downtown and the Washington Street Mall. In general, bicycle parking is provided via aging racks with varying degrees of cleanliness and appeal. Most of the racks in Cape May City and Cape May Point Borough are “comb” style racks, an older design standard.

Providing adequate, secure bicycle parking is an important measure to accommodate and encourage cycling as an alternative travel mode. Proper parking facilities increase the convenience of cycling for commuting, utilitarian, or recreational purposes while also alleviating the threat of theft. 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. Based on guidelines from the Association of Pedestrian and Bicycle Professionals (APBP), a bicycle rack should meet the following requirements:

- 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
- Support bicycles without a diamond shaped frame and horizontal top tube (e.g. step-through frames)
- 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. Recommended racks include the “inverted U,” “A,” and “post and loop.” These rack types are illustrated in Figure 4.3. Bike racks should also be properly spaced to allow easy, independent access to each bike.

Bicycle Thefts

Bike thefts are more common in Cape May City than Cape May Point Borough. During 2014 through April 2016, there were 76 reported bike thefts in Cape May City and 3 in Cape May Point Borough, as shown in Map 06. Overlaid with the bike parking inventory data, the thefts often occurred where existing bike parking is unavailable. These numbers imply that there is a need for additional and more secure bike parking in each municipality, especially around the beaches and the downtown area.

Bike Walk Cape May

BICYCLE AND PEDESTRIAN PLAN FOR CAPE MAY CITY AND CAPE MAY POINT BOROUGH

Map 06 - Bike Racks and Thefts

- 5 - 20
- 21 - 35
- 36 - 50
- 51 - 65
- 66 - 80
- Bike Thefts (2014 - 2016)

0 0.5 1 Miles

N

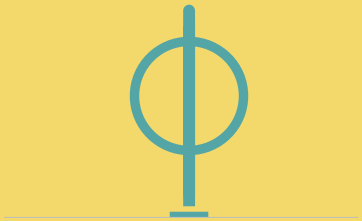
Recommended Bike Rack Designs

Preferred Design

Inverted U

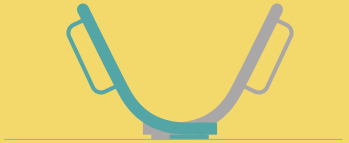
Common style appropriate for many uses; two points of ground contact. Can be installed in series on rails to create a free-standing parking area in variable quantities. Available in many variations.

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 and attachments than the two styles above.

Racks to Avoid

Wave

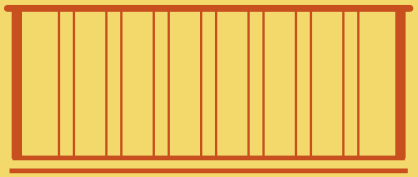
Not intuitive or user-friendly; real-world use of this style often falls short of expectations; supports bike frame at only one location when used as intended.

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

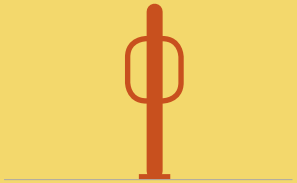
This style has a top bar that limits the types of bikes it can accommodate.

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*

Clockwise from top-left (1) Bicyclists on Beach Avenue, looking east (2) Bike rack on Carpenters Lane, looking east (3) Bicycle secured to a parking meter along Ocean Street (4) Bicycle parking at the intersection of Beach Avenue and Stockton Place

5.5 Trails and Parks

Cape May City and Cape May Point Borough are both active walking and bicycling communities. There are several off-road walking paths available near the lighthouse and Cape May State Park. These paths are popular locations for birding and provide access to the beach, State Park, and lighthouse. Although these trails are not in either Cape May City for Cape May Point, they are popular destinations for residents and tourists alike and have access points along the Sunset Boulevard corridor.

In Cape May City, the seawall provides the multi-use Cape May Promenade along the beach parallel to Beach Avenue between Second Avenue and Madison Avenue. Due to heavy use by pedestrians, it is only available to bicyclists until 10:00 AM during the summer months. In 2015, the U.S. Army Corps of Engineers completed a feasibility study to examine extending the seawall and promenade seven blocks (approximately 0.85 miles) to Wilmington Avenue.

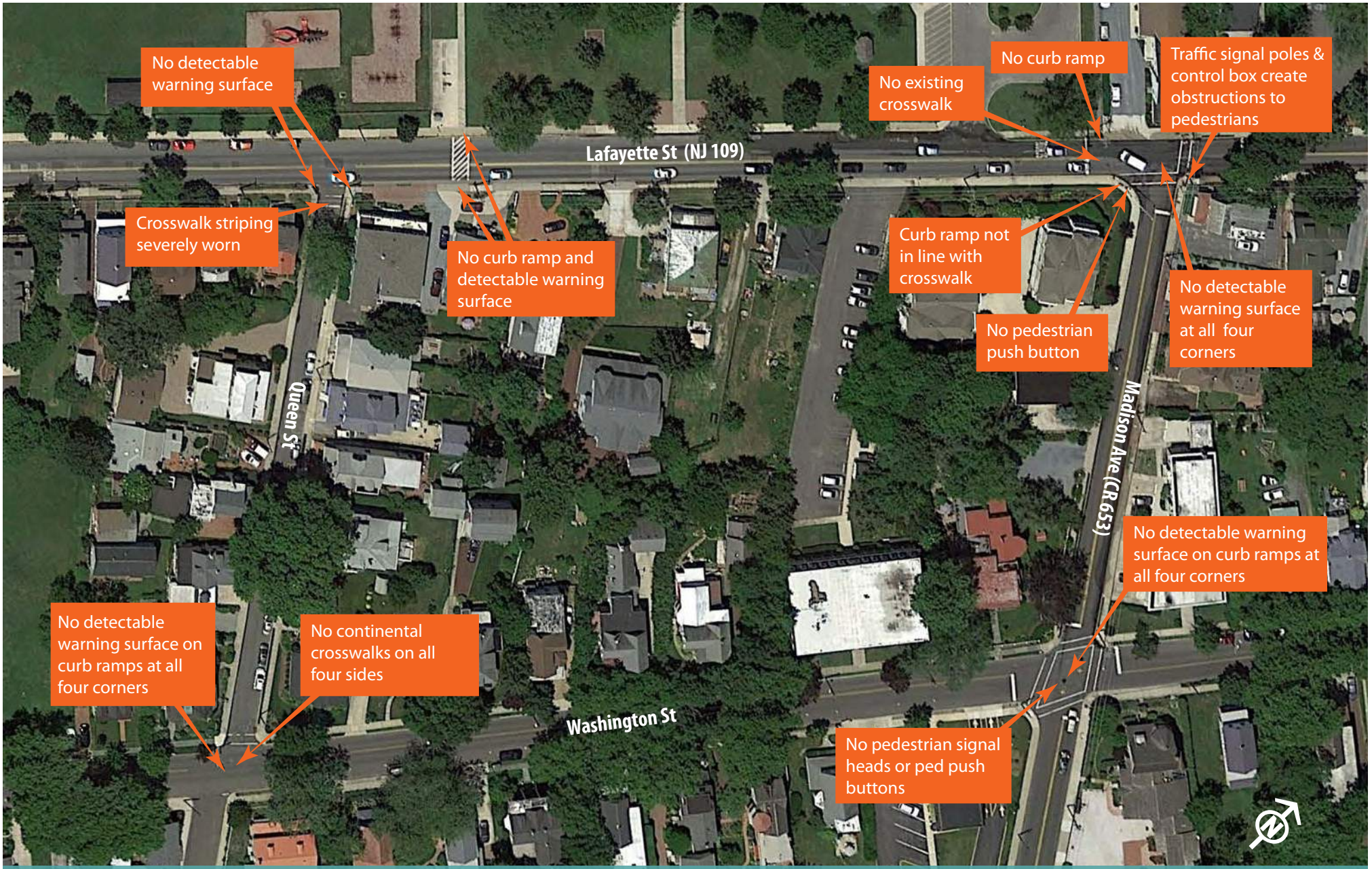
5.6 Access to Schools

Cape May Elementary School, located on Lafayette Street, is the only school within Cape May City. It serves students living in both Cape May City and Cape May Point.

As of the 2010/2011 school year, the Cape May City Elementary School had 155 students. All of the students lived within 2 miles of the school. Half of students use school buses to get to and from school. The majority of students (75%) live near the Coast Guard base located in the northeast part of the City. Therefore improvements should focus on improving routes to the school from that area of the City, as well as enhancing intersections close to the school to make walking and biking more accessible to students. Deficiencies at nearby intersections on Washington Street and Lafayette Street are illustrated in the figure on the opposite page.

To make walking and biking more accessible, several improvements have been proposed based on the needs of Cape May Elementary School through a Safe Routes to School grant, as discussed on page 11. The on-going improvement project to Lafayette Street Park includes a bikeway that will provide parallel path to Lafayette Street and provide a connection to Broad Street.

Other improvements proposed through Safe Routes to School grants include adding crosswalk and curb ramp improvements at the intersections of Washington Street and Madison Avenue, Madison Avenue and Michigan Avenue, Michigan Avenue and Illinois Avenue, and Pittsburgh Avenue and Pennsylvania Avenue.



Key intersections supporting safe routes to school: Queen St at Lafayette St, Lafayette St at Madison Ave, Madison Ave at Washington St, and Washington St at Queen St

5.6 Key Issues Summary

Based on the existing conditions analysis, the key issues, deficiencies, and trends related to bicycle and pedestrian mobility within Cape May City and Cape May Point are:

- Cape May City and Cape May Point Borough are both dense, compact municipalities with shops, restaurants, recreational areas, and cultural and historic attractions in close proximity, which supports walking and biking trips.
- Both municipalities are historic resort communities and popular tourist destinations. Tourism peaks in the summer months but is active year-round.
- There is an existing high demand for walking and biking among both residents and visitors throughout most of the year, especially in the summer months.
- NJ 109/Garden State Parkway via Schellenger's Landing bridge is the primary entry point into Cape May City (AADT 17,176), causing most vehicular traffic to be funneled to Lafayette and Washington Streets.
- Sunset Boulevard is the major connector between Cape May City and Cape May Point Borough. Sunset Boulevard is a relatively high speed road (35 mph). Given the local context and limited alternative routes, it experiences pedestrian and bicycle activity, but lacks sidewalks and is a LTS 4 roadway.
- The sidewalk network in Cape May City is generally complete and well-maintained. Per its Master Plan, Cape May Point Borough has few sidewalks in order to create a network of shared streets that are an extension of residents' front yards and to encourage slow vehicular speeds, create public space, and support a comfortable environment for pedestrians and bicyclists.
- The majority of bicycle and pedestrian crashes occurred on five streets: Sunset Boulevard, Jackson Street, Washington Street, Lafayette Street and Beach Avenue. These are important activity areas as they provide access to the beach, downtown, elementary school, and a connection between Cape May City and Cape May Point.
- Long pedestrian crossing distances are a typical issue along the Beach Avenue corridor. This is important as Beach Avenue must be crossed to access the beach, the promenade, and other destinations along the shore.
- The majority of the study area network is comprised of low stress level (LTS 1) local residential streets; however, gaps in connectivity exist within the LTS 1 network.
- Existing bicycle racks provide significant capacity on Beach Avenue and in the downtown of Cape May City, but there is unmet demand for additional parking. Bicycle thefts were reported in areas without bicycle parking and bicycle racks are needed in those areas.
- Existing on-street bicycle lanes on Madison Avenue, New Jersey Avenue, Pittsburgh Avenue, and Pennsylvania Avenue provide a foundation to build a bicycle network around and improve connectivity.
- Cape May City has existing wayfinding signage. Enhancements and an extension of the system can further improve the convenience of bicycling and walking.


OPEN
15

6 Recommendations

The following chapters summarize the recommendations developed by the project team to improve conditions for bicyclists and pedestrians in Cape May City and Cape May Point Borough.

These recommendations are based on the existing conditions analysis and input from the public involvement activities. The proposed improvement concepts focus on the "4 E's" – Engineering, Education, Enforcement, and Encouragement. Through this holistic approach, the education, encouragement, and enforcement recommendations focus on policy and program options to improve safety and foster bicycle and pedestrian travel throughout Cape May City and Cape May Point, while the engineering recommendations identify physical infrastructure improvements at priority locations. These recommendations seek to improve mobility and safety for all travelers and travel modes.

7 Programs and Policies

This chapter describes the programs and policies relevant to improving bicycle and pedestrian infrastructure and public spaces in Cape May City and Cape May Point Borough.

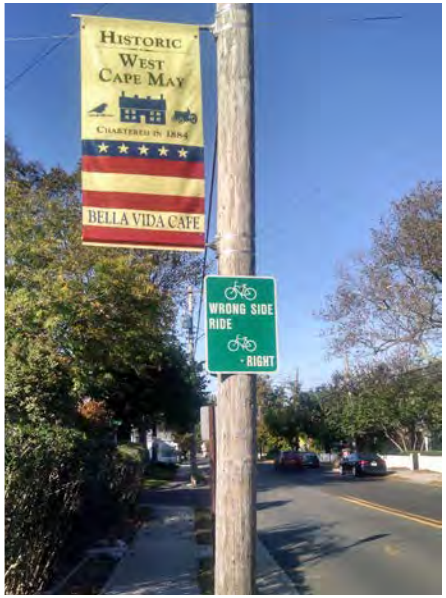
While proper design and physical infrastructure improvements are essential to creating a safe, comfortable, and convenient environment for biking and walking, they are only part of the process. Underlying policies and programs sponsored by the municipalities, as well as partnerships with non-governmental organizations or local businesses, can help create a successful and sustaining bicycle and pedestrian friendly community, support and promote higher rates of biking 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.

7.1 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:

- Continue efforts to 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 public library, municipal offices, the school, and/or at community events. PSAs may also be printed in the local newspaper or posted on the Cape May City and Cape May Point's websites or social media sites. Resources with safety information and brochures include the Cross County Connection Transportation Management Association (TMA); NJDOT's Biking in New Jersey and Pedestrian Safety websites; the Pedestrian and Bicycle Information Center, a national clearinghouse of information related to walking and biking 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 the large number of tourists and seasonal visitors to Cape May, many of whom bike or walk frequently while visiting or vacationing, but may not do so regularly in their hometown. To reach this target audience, brochures and displays related to safe bicycling tips, bicycle routes, and bicycle traffic law should be available at bike rental locations, the information kiosk on Washington Street, local hotels and bed and breakfasts, and where beach badges are sold.
- Work with other municipalities along the Jersey Shore and Cross County Connection to develop a brochure tailored to the unique needs of Shore communities as it relates to biking, walking, tourism, and informing seasonal visitors.
- Integrate bicycle and pedestrian educational programs into the school curriculum. The Cape May City Elementary School is located near the center of the City, making it within a comfortable walking or biking distance for the vast majority of students. To support and foster safe biking and walking to and from school, 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/pedestrian-safety/ and Grade 9-12 lesson plans at http://teensafedriving.bianj.org/submit-a-lesson-plan/.
  - Safe Routes to School (SRTS): Resources are available through SRTS, a Federal and state program designed to enable and encourage children to walk and bike to school. Education is a key element when developing a SRTS plan. Information is available through the NJDOT program office, the Federal Highway Administration, and the National Center for Safe Routes to School.
  - 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.



Education campaigns can address all roadway users, such as the above by the South Jersey Traffic Safety Alliance, or target specific issues, such as recent signage installed in West Cape May to address wrong-way cycling.

- Provide training for local officials, planners, engineers, and public works staff to support Complete Streets implementation. Cape May City's adoption of a Complete Streets policy 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.

  Cross County Connection TMA also provides technical expertise and educational resources to support local Complete Street initiatives, including:

  - Workshops on Complete Streets planning, design and implementation
  - Presentations to municipal and county staff on a variety of topics related to Complete Streets
  - "Lunch and Learn" seminars upon request that can be targeted to specific topics pertinent to a community, such as drafting a policy or selecting the best type of infrastructure improvements to meet user needs and fit the local context
  - Complete Streets policy examples and templates
  - Assistance in drafting a Complete Streets policy that considers the unique context of the municipality
  - Support in creating a Complete Streets Implementation Plan and Implementation Checklist according to NJDOT guidelines
  - Guidance and examples on best practices in Complete Streets design
  - Identification of funding sources for Complete Streets projects and assisting with grant applications

7.2 Encouragement

Encouraging active modes of transportation such as walking and biking 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 and Borough 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 biking a fun, social activity. Work with school staff, parent volunteers, and the police department to organize the events. Assistance is available through the Cross County Connection TMA.
- Utilize resources through SRTS and Cross County Connection 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 Cape May City and Cape May Point Borough's website, 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 Cape May City and Cape May Point Borough's bicycle facilities and best routes can encourage more people to try cycling.
- Resources include the bike network evaluated in this report, as well as the county-wide map developed by Cross County Connection TMA. Cross County Connection TMA also offers assistance in creating electronic and printable bike maps.

Bike trains are a fun way to promote biking to school, and provide supervision for younger children (Source: Center for Urban Transportation Research)

- 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.
- Promote and market Cape May's significant bicycling and walking assets, including its connections to the Washington Street Mall and other commercial areas, historical landmarks, ecological preserves, and beaches. Work with local businesses to publicize the communities' resources, promote tourism, and emphasize Cape May as a regional destination for biking and walking.

7.3 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). Study area-specific recommendations 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. Consistent with the proposed local speed limits (as discussed on page 102), Cape May City may implement a "Drive 25" campaign, while Cape May Point might employ a "20 is Plenty" campaign. A unified branding element for the campaign would also help reinforce Cape May City and Cape May Point's reputations as walkable and bikeable communities.

  A similar campaign was initiated by the Borough of Haddonfield in Camden County and has been emulated by other municipalities in New Jersey. "Keep Kids Alive – Drive 25" is a common slogan for the campaign. Promotion of a campaign may be timed to coincide with back to school activity in September or the summer tourism season. The campaign may include use of variable message signs (VMS) at gateways into the communities and main corridors, use of local websites and social media, posters and flyers at municipal buildings, mailings, and/or distribution of "Keep Kids Alive – Drive 25" or "20 is Plenty" stickers to residents, which may be posted to curbside garbage barrels or their vehicles as a reminder to motorists.

Hopewell, Pennington, and Titusville have collaborated on a community-oriented traffic calming campaign by distributing "Drive 25 Pace Car" stickers and car magnets to area residents.


STOP

8 Infrastructure Improvements

This chapter describes infrastructure improvements to enhance bicycling and walking in Cape May City and Cape May Point. Recommendations focus on key intersections and consider expanding the multi-modal network.

A primary outcome of this technical memorandum is the development of pedestrian and bicycle infrastructure improvements for targeted locations and corridors based upon the existing conditions analysis and input provided by the Study Advisory Committee. Building upon existing bicycle and pedestrian facilities, these improvements focus on improving safety, comfort, and circulation opportunities to and from major activity centers. Pedestrian recommendations enhance crossing locations, build upon and expand the existing sidewalk network, and seek to create a more pedestrian friendly environment. Recommended bicycle improvements are focused on creating a low-stress, study area-wide bicycle network linking recreational, commercial, and residential areas throughout Cape May City and Cape May Point Borough.

Improvement concepts are intended to be easily implementable and emphasize low-cost options, such as restriping of existing roadways or enhanced signage. Projects may be implemented over time as funding allows and incorporated into routine roadway maintenance at minimal additional cost. The list of recommended projects may be used to support grant applications, integrate bicycle and pedestrian projects into the capital improvement pipeline, and/or identify bicycle and pedestrian improvements as roadways are due for maintenance and resurfacing.

8.1 Intersection Improvements

Based on the results of several field visits, data analysis, and stakeholder input, as detailed in the existing conditions section, pedestrian improvement recommendations were developed for targeted intersections within the study area. The improvement concepts reflect state-of-the-practice guidance (i.e., 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 6 months), mid-term (6 months to 2 years), or long-term (more than 2 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 may be subject to availability of funding.

The following intersections are summarized in the following pages:

- Beach Avenue at Ocean Street
- Gurney Street at Columbia Avenue
- Benton Avenue at Sewell Avenue and Howard Street at Sewell Avenue
- Myrtle Avenue and Jackson Street
- Jackson Street at Broad Street
- Lafayette Street at Jackson Street
- Washington Street Pedestrian Mall

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. Where practical, general order-of-magnitude cost estimates are included for each improvement based on average material rates for sidewalks, crosswalks, striping, etc. These estimates are only intended to convey the level of investment that proposed concepts would require for implementation. The cost estimates are based on industry and NJDOT standards for per unit material costs, and do not include the cost of right-of-way acquisition, relocation of utilities that could be involved, or contingencies.

Beach Avenue at Ocean Street

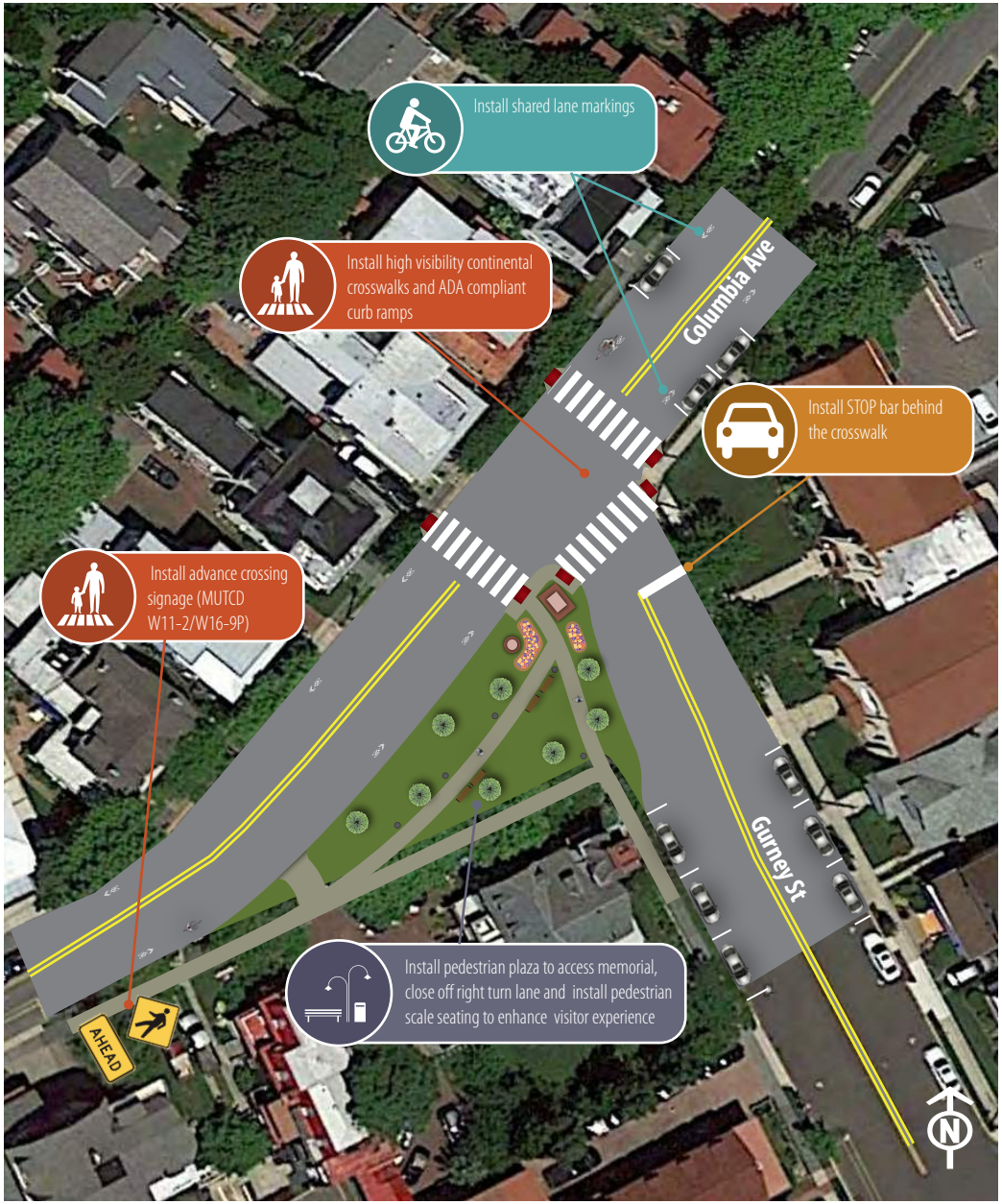
This signalized intersection is typical of signalized crossings along Beach Avenue and provides access to the beach and leads to the commercial areas in downtown Cape May City. Proposed recommendations, illustrated to the right, seek to minimize the pedestrian crossing distance and enhance visibility.

Short Term

- Install high visibility continental crosswalks at the intersection and straighten crosswalk at westbound approach
- Maintain (proposed page 91) dashed bicycle lane striping through the intersection along Beach Avenue
- Given observed travel patterns to the beach, a similar treatment approach would be applicable at most crossings of Beach Avenue where standard crosswalk markings are present

Cost Estimate

Short Term	*$2,900*
Mid-Term	-
Long Term	-



Gurney Street at Columbia Avenue

This unsignalized intersection is located in historic downtown Cape May City and is surrounded by residential and commercial uses. The existing configuration of the intersection creates wide pedestrian crossings and a small public green space at its center. However, the War Memorial located at the center of the island is underutilized and difficult to access due to the lack of marked crosswalks and curb ramps.

Proposed improvements, illustrated to the left and in the photo simulation on the opposite page, include place-making strategies to transform a portion of the intersection into a public park space focused around the War Memorial. The improvements will enhance the War Memorial by making it a more accessible public asset, increase green space in this section of the City, and tighten the intersection to improve pedestrian safety and circulation.

Short Term

- Install ADA-compliant curb ramps and high visibility continental crosswalk at the southbound approach

Long Term

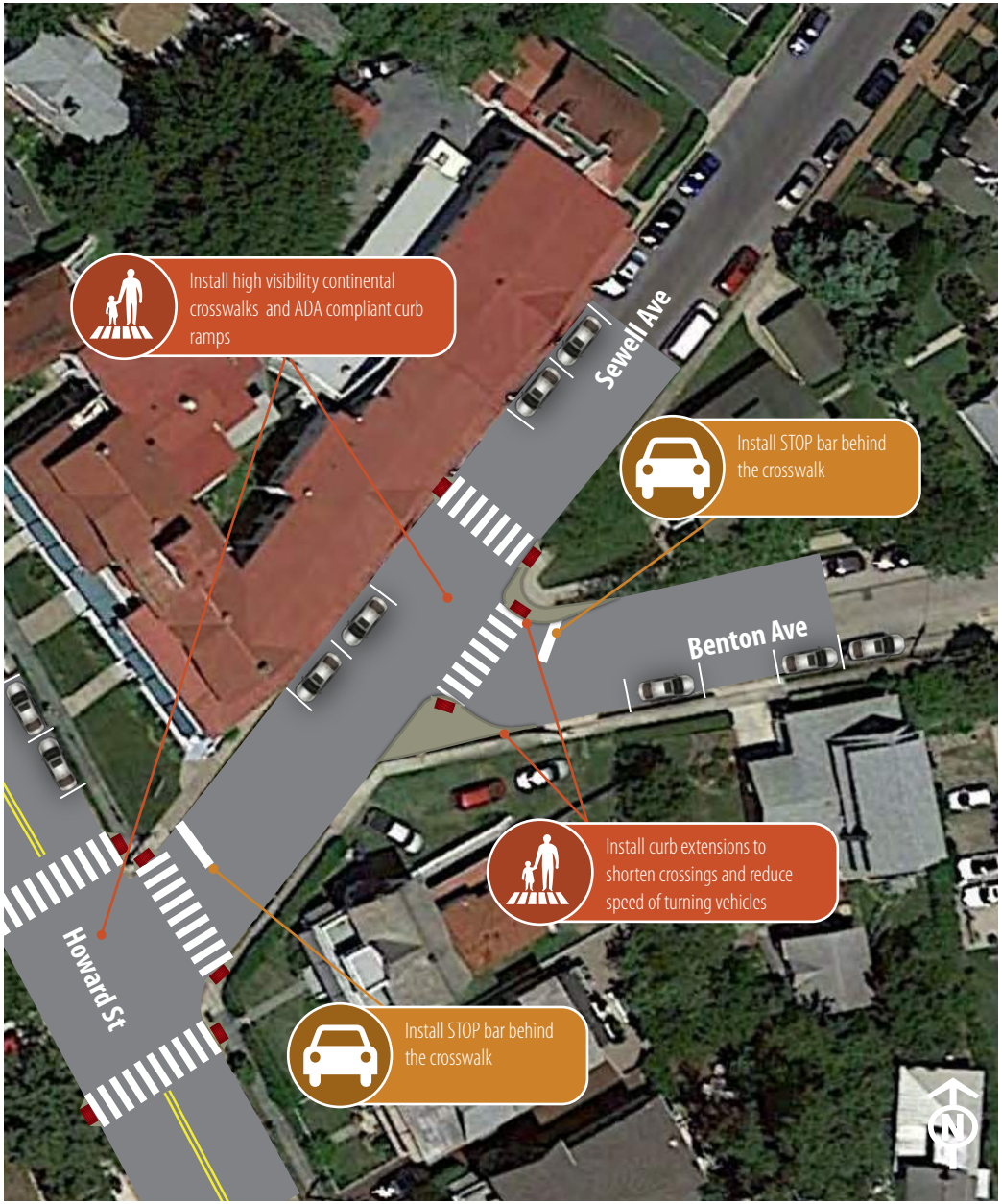
- Eliminate channelized right turn lane from Columbia Avenue to Gurney Street to tighten intersection
- Create small park around the war memorial, reflective of the historic character of the area with seating, sidewalk access, and plantings. This effort should be done in collaboration with American Legion Post 193 (Harvey Snyder) and VFW Post 386
- Install ADA-compliant curb ramps and high visibility continental crosswalk at the northbound and westbound approaches

Cost Estimate*

Short Term	*$1,100*
Mid-Term	*-*
Long Term	*$56,600*

**Does not include park design, plantings, lighting, benches, and other amenities*

Simulation of potential reconfiguration of the Gurney Street at Columbia Avenue intersection and enhanced War Memorial park



Benton Avenue at Sewell Avenue, Howard Street at Sewell Avenue

This unsignalized intersection is located in historic downtown Cape May City and is adjacent to a hotel and residential neighborhoods. Proposed improvements, illustrated to the left, seek to provide marked pedestrian crossings at key crossing locations.

Short Term

- Install ADA-compliant curb ramps and high visibility continental crosswalk on all approaches at the intersection of Sewell Avenue and Howard Street

Long Term

- Install curb extensions at Benton Avenue to create a more traditional T-intersection and minimize vehicular turning speeds and pedestrian crossing distance
- Install ADA-compliant curb ramps and high visibility continental crosswalk at the southbound and westbound approaches of Sewell Avenue and Benton Avenue, respectively

Cost Estimate

Short Term	*$6,000*
Mid-Term	-
Long Term	*$28,300*

Myrtle Avenue and Jackson Street

This signalized intersection is located at the western end of Cape May City and provides a link between West Cape May and Cape May City. Proposed recommendations, illustrated to the right, seek to upgrade existing pedestrian crossing treatments and tighten the intersection to shorten pedestrian crossings, improve visibility, and slow vehicular traffic.

Short Term

- Install No Turn on Red Sign (MUTCD R10-11a) at Perry Street and Jackson Street corner

Long Term

- Install curb extensions on both sides of Myrtle Avenue, squaring off the approach and narrowing the roadway to a single lane
- Install curb extension at corner of Perry Street and West Perry Street to create more of a ninety-degree intersection
- Install ADA-compliant curb ramps at all crossings
- Install high visibility continental crosswalks at the four approaches

Cost Estimate

Short Term	*$100*
Mid-Term	*-*
Long Term	*$45,000*

Jackson Street at Broad Street

This unsignalized intersection is located at the western end of Cape May City. It provides access to neighboring residential and commercial areas. The curvature of Jackson Street at the intersection creates a challenging environment for all roadway users. Proposed recommendations include three different scenarios that seek to improve pedestrian circulation and safety for all modes by reducing the footprint of the intersection, slowing traffic speeds, and creating more predictable behavior between the different modes.

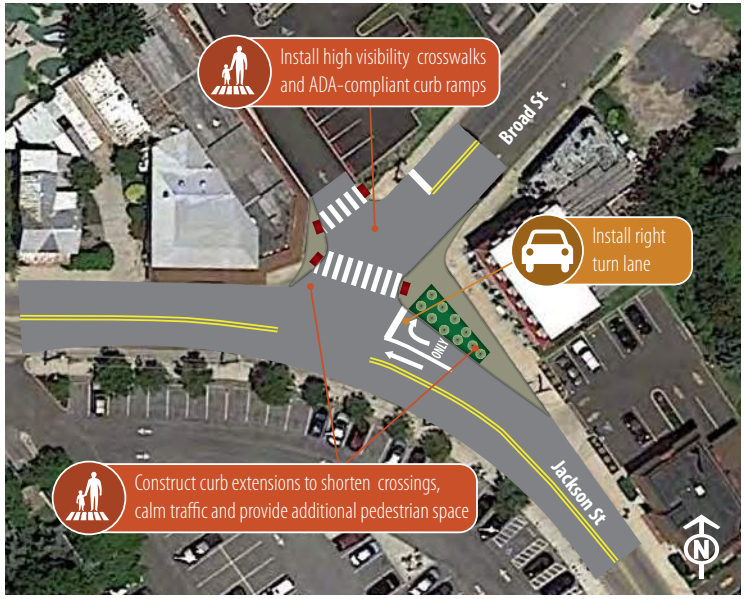
Table 3.1 | Comparison of Jackson Street at Broad Street Alternatives

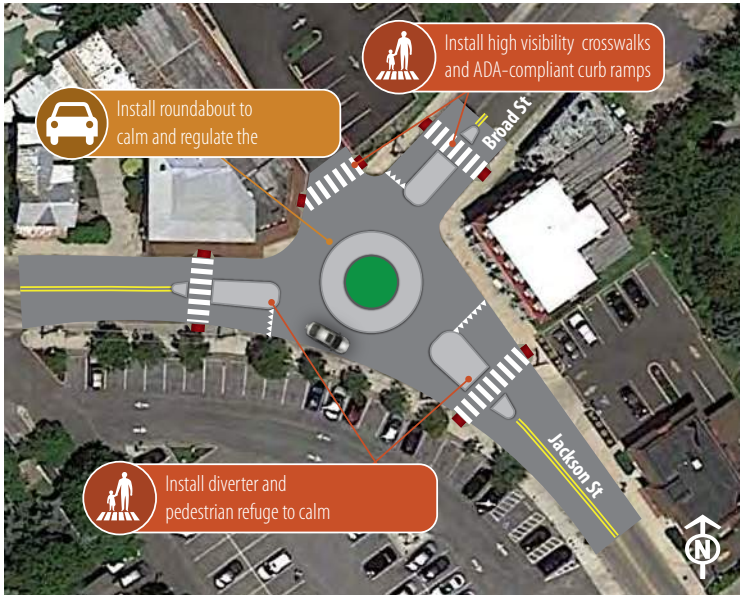
Option	Benefits	Concerns
Option 1 - Pedestrian Refuge Island	▪ Reduces pedestrian crossing distances ▪ Tightens intersection ▪ Facilitates more visible movements by all modes	▪ Does not address crossing of Jackson Street due to horizontal curvature and visibility issues
Option 2 - Curb Extension	▪ Reduces pedestrian crossing distances ▪ Tightens intersection ▪ Facilitates more visible movements by all modes ▪ Provides opportunity for additional public space and/or green stormwater treatment ▪ Eliminates channelized right-turn	▪ Does not address crossing of Jackson street due to horizontal curvature and visibility issues
Option 3 - Round -about	▪ Enables visible crossings at all intersection approaches ▪ Creates gateway approaching downtown	▪ Requires significant reconfiguration of intersection ▪ Substantially higher cost and design effort

Option 1 - Pedestrian Refuge Island

Option 1 seeks to upgrade the existing configuration of the intersection by replacing the striped channelized right-turn island with a curbed, raised island that can serve as a pedestrian refuge island. Combined with a curb extension at the northwest corner, this will tighten the intersection to create shorter, more visible pedestrian crossings.

- Install ADA-compliant curb ramps and high visibility continental crosswalks at hardware store entrance and crossing at Broad Street and Jackson Street
- Install permanent raised island to regulate separate traffic and provide a pedestrian crossing refuge at the intersection
- Install curb extension at Jackson Street and hardware store entrance corner to reduce turning radius





Cost Estimate

Option 1	*$24,700*
Option 2	*$28,400*
Option 3	*$258,500*

Option 2 - Curb Extension

Option 2 seeks to tighten the intersection by removing the channelized right-turn, replacing it with a large curb extension and standard right-turn lane.

- Install curb extension at the corner of Jackson Street and Broad Street. Utilize the additional space provided by the curb extension as an opportunity for green stormwater treatment
- Install curb extension at Jackson Street and hardware store entrance corner to reduce turning radius
- Install ADA-compliant curb ramps and high visibility continental crosswalks at hardware store entrance and crossing at Broad Street and Jackson Street

Option 3 - Roundabout

Option 3 reconfigures the three-way, stop-controlled intersection as a roundabout, providing a traffic calming gateway approaching downtown and allowing pedestrian crossings at all approaches to the intersection.

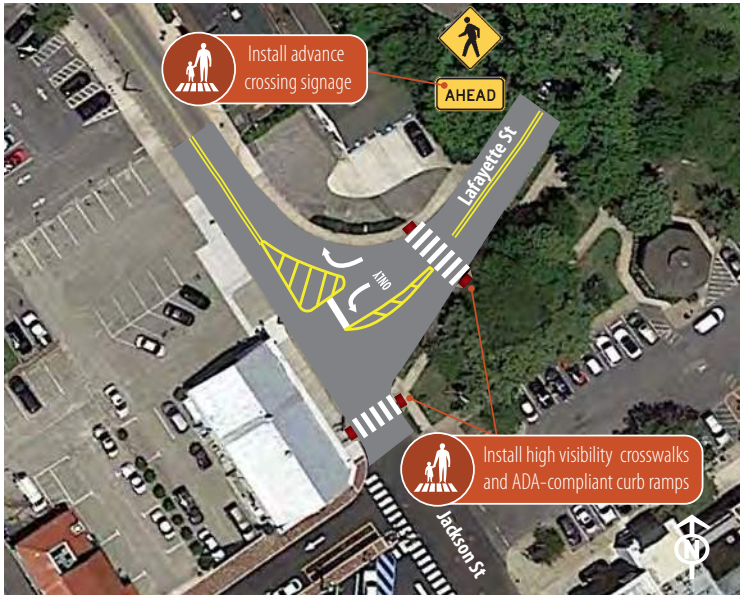
- Install a roundabout at the intersection
- Install ADA-compliant curb ramps and high visibility continental crosswalks at all approaches
- Install yield signs for lanes entering traffic circle

Lafayette Street at Jackson Street

This unsignalized intersection is an important access point to downtown Cape May City and other tourist attractions in the City. Major destinations surrounding the intersection include the Washington Street Mall, Rotary Park, and Cape May Stage. Proposed recommendations seek to provide a pedestrian crossing of Lafayette Street to improve pedestrian circulation and access to Rotary Park. The improvement options below would be in conjunction with on-going planning for improvements to the northeast corner. Potential changes to the curb radius at this corner should consider utilizing a mountable curb apron to better accommodate large vehicles while maintaining a tighter curb radius for most vehicles.

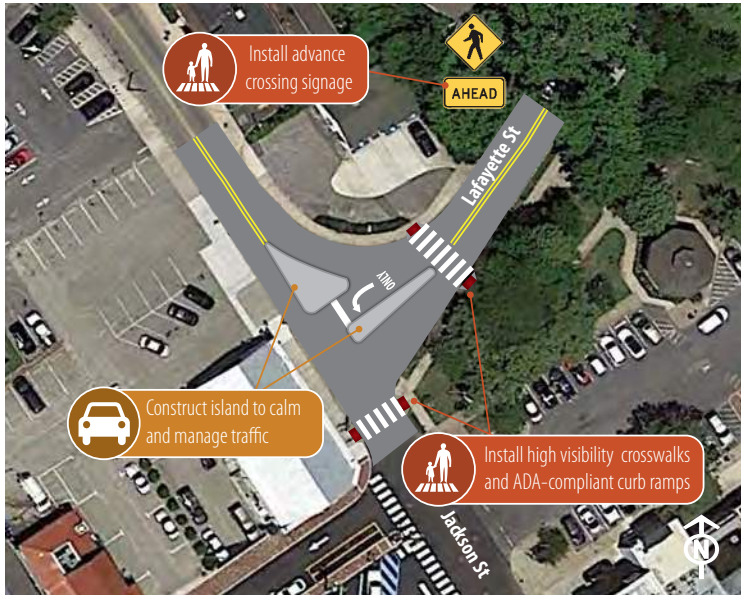
Table 3.2 | Comparison of Jackson Street at Lafayette Street Alternatives

Option	Benefits	Concerns
Short Term	▪ Provides crossing of Lafayette Street	▪ No traffic calming elements ▪ Lafayette Street crossing is offset from intersection
Long Term Option 1	▪ Provides crossing of Lafayette Street ▪ Provides traffic calming	▪ Lafayette Street crossing is offset from intersection
Long Term Option 2	▪ Provides crossing of Lafayette Street ▪ Provides traffic calming ▪ Shortens crossings ▪ Enhances visibility	▪ Potential impacts to turning movements for large vehicles



Short Term

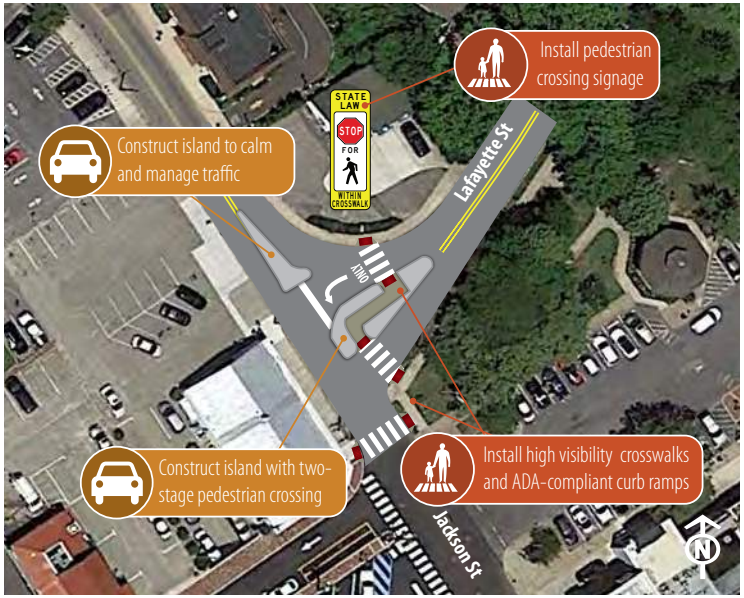
- Install high visibility continental crosswalk at Lafayette Street crossing, located slightly north of the intersection to improve pedestrian visibility and reduce crossing distance
- Install Pedestrian Crossing Ahead advanced warning sign (MUTCD W11-2/W16-9P) to alert vehicular traffic
- Install ADA-compliant curb ramps at all approaches



Long Term Option 1

Long term Option 1 would replace the existing striped median islands with raised islands in order to reinforce slow vehicle speeds.

- Install raised traffic islands at the location of the existing striped islands. Utilize a mountable curb or apron to accommodate truck and bus traffic



Long Term Option 2

Long term Option 2 would provide a two-stage, staggered crossing to minimize the crossing distance and exposure to vehicular traffic, while also providing the crossings at the most convenient and predictable locations.

- Install pedestrian refuge island at Lafayette Street, with a two-stage, staggered crossing. Utilize a mountable curb or apron to accommodate truck and bus traffic, as needed
- Install traffic island on Jackson Street to reinforce slow vehicular speeds
- Install “Stop for Pedestrians within Crosswalk” warning sign (MUTCD R1-6a) on the pedestrian island
- Install high visibility continental crosswalks at Lafayette Street
- Install ADA-compliant curb ramps at all approaches

Cost Estimate

Option 1	*$4,300*
Option 2	*$12,900*
Option 3	*$14,400*

Pedestrian Mall

seeks to further prioritize pedestrian movement over vehicular traffic and enhance the continuity of the Washington Street Mall

Washington Street Pedestrian Mall

The Washington Street Pedestrian Mall is a pedestrian-only commercial corridor from Ocean Street to Perry Street. This street experiences heavy pedestrian traffic, particularly during the summer. The proposed recommendations, as shown in sketch below, seek to prioritize foot traffic over vehicular traffic where the Mall intersects Jackson and Decatur Streets.

Mid-Term

- Install raised intersections with yield markings, providing a continuous, level walking surface of pedestrians and slowing vehicular traffic

Long Term

- Conduct a traffic study of the Washington Street Pedestrian Mall to understand traffic patterns, and explore the impacts of closing Jackson and Decatur Streets between Lyle Lane and Carpenter Lane to vehicular traffic during peak pedestrian periods (e.g., summer weekends)

Cost Estimate

Mid-Term	*$118,300*

Beach Avenue Promenade Extension

In Cape May City, the seawall provides a multi-use Cape May Promenade along the beach parallel to Beach Avenue between Second Avenue and Madison Avenue. Due to heavy use by pedestrians, it is only available to bicyclists until 10:00 AM during the summer months. The proposed recommendation for the Promenade includes:

Long Term

- Extend the existing seawall from Madison Avenue to Wilmington Avenue. This will provide further protection from storms and additional space for recreational use. This recommendation is in line with the 2015 U.S. Army Corps of Engineers feasibility study report to extend the seawall and promenade seven blocks (approximately 0.85 miles) to Wilmington Avenue

High Bicycle Usage

Bicycling is a popular form of transportation and recreation among residents and visitors alike in both Cape May City and Cape May Point

8.2 Bicycle Network

Cape May City and Cape May Point Borough are both compact communities whose roadways have a high degree of connectivity and several existing bicycle facilities. These characteristics provide a solid foundation to build upon. The proposed bicycle network outlined in this section aims to expand the existing bicycle facilities to create a more complete bicycle network that is comfortable for most users and conveniently connects key origins and destinations.

Development of the Network

Based on the analysis summarized in the Existing Conditions Technical Memorandum and input from the Study Advisory Committee, the project team identified network improvements guided by:

- Existing bicycle lanes: Building around existing facilities to enhance network connectivity and leverage existing infrastructure
- Major destinations: Seeking opportunities to provide convenient access to key destinations
- Inter-municipal linkages: Identifying opportunities to create a more comfortable bicycle connection between Cape May City and Cape May Point
- Bicycle level of traffic stress (LTS): Utilizing 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
- Roadway constraints: Prioritizing easily implementable improvements that can be constructed within existing roadway widths with minimal disruption to current roadway configurations and existing on-street parking
- Environmental constraints: Considering potential constraints and permitting requirements necessary to implement off-road trail facilities

Bicycle Improvements

The proposed bicycle improvements are shown in Map 07. As discussed in the following pages, the recommendations are divided into four categories: off-road trails, bicycle lanes, bicycle boulevards, and shared lane markings.

Bike Walk Cape May

BICYCLE AND PEDESTRIAN PLAN FOR
CAPE MAY CITY AND CAPE MAY POINT BOROUGH

Map 07 - Proposed Bicycle Improvements

- Proposed Bike Lane
- Proposed Bike Boulevard
- Proposed Shared Lane
- Proposed Multi-use Trail
- Proposed Unimproved Trail
- Existing Bike Lane
- Existing Promenade
- Existing Walking Path
- Proposed Promenade Extension

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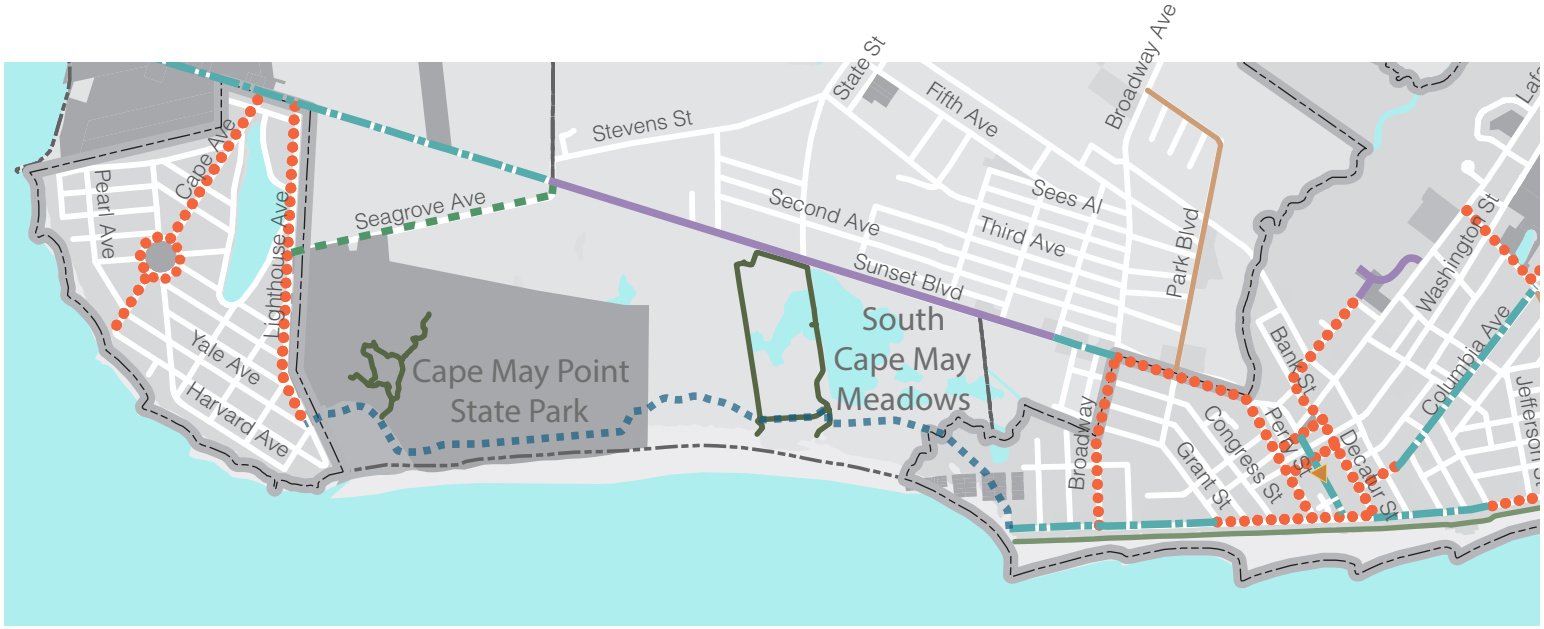


Off-Road Trails

To enhance connectivity between Cape May City and Cape May Point and provide an alternative route to Sunset Boulevard, a beach-side trail is proposed through the Cape May Point State Park and South Cape May Meadows. The “unimproved” trail would be compacted dirt and approximately 10 feet wide, consistent with the character of the main trails in the South Cape May Meadows area. It would follow the general alignment of existing narrow footpaths, linking the existing boardwalk and beach access point at Mount Vernon Avenue to the Cape May Lighthouse.

Completely separated from vehicular traffic, the proposed trail would provide a more comfortable and more direct route for both pedestrians and bicyclists than Sunset Boulevard. It would reduce the trip length between the Lighthouse and the Washington Street Mall from approximately 2.60 miles to 2.20 miles. The unimproved design of the trail would only make it suitable for low speed bicycle travel, such as beach cruisers or mountain bikes. The scenic path would enhance the connectivity of the existing trail network, provide additional opportunities for recreation and birding, and improve access to the Lighthouse, state park, and beaches.

Given the environmentally sensitive nature of the area, the unimproved trail would require extensive permitting and environmental review. Design options should mitigate potential impacts by using pervious materials, low impact design tools, and avoiding loss of habitat. While the constraints do not appear to preclude further feasibility analysis, they would include:

- Detailed mapping of beaches, dunes, and wetlands
- Cape May Migratory Bird Refuge, which is a New Jersey Natural Heritage Priority Site, Migratory Raptor Concentration Site and part of Cape May Point State Park
- Federally/state listed threatened and endangered species
- Cultural resources, including the Cape May Lighthouse, Battery 223, and the Cape May Historic District

Clockwise from top-left (1) Existing spur trail could be used for the alignment of the proposed trail (2) Proposed trail would be consistent with the existing "unimproved" trail system within the State Park and Preserve area (3) Proposed trail would enhance access to natural, recreational, and historic assets

Facility Type | Bicycle Lane

Bicycle lanes provide a dedicated space for bicyclists within the roadway through the use of striping, pavement markings, and/or signage. They enable bicyclists to ride at their preferred speed with minimal interference from vehicular traffic, and help facilitate predictable behavior between motorists and bicyclists.

Bicycle lanes should be a minimum of 5 feet wide, and motor vehicle lanes should typically be 10 – 11 feet wide. When there is additional roadway width available, the excess space can be used to stripe a buffer between the travel lane and bicycle lane. The buffer enhances bicyclist comfort by increasing separation from traffic and visually narrowing the travel lane to help reduce motor vehicle speeds. Additional design details can be found in NACTO's "Urban Bikeway Design Guide."

Bicycle lanes are recommended on the following roadways:

- Beach Avenue
- Sunset Boulevard
- Jackson Street
- Columbia Street
- Pennsylvania Avenue

Beach Avenue

On Beach Avenue, both bicycle lanes and shared lane markings have been proposed due to width constraints. The width on Beach Avenue varies from 39’ to 62’ along the corridor. Shared lane markings are proposed along the narrower sections that cannot adequately accommodate bicycle lanes (discussed in more detail on page 101). As shown in Map 07, sections that are wide enough to install bicycle lanes include the western end of Beach Avenue to Grant Street (55’-62’), Decatur Street to Howard Street (60’), and Madison Avenue to Wilmington Avenue (52’-58’).

The proposed cross section of bicycle lanes on Beach Avenue are illustrated below. The width of the buffer between the bicycle lane and travel lane may narrow or widen to accommodate the changes in cartway width. Where perpendicular on-street parking exists along the corridor (South Broadway to the western terminus), the parking can be reconfigured as reverse angle parking to improve safety for all roadway users and improve the visibility of all passing traffic to motorists leaving their parking spaces. Including bicycle lanes on Beach Avenue will reduce the stress level from 2 to 1 on this roadway.

Existing Condition

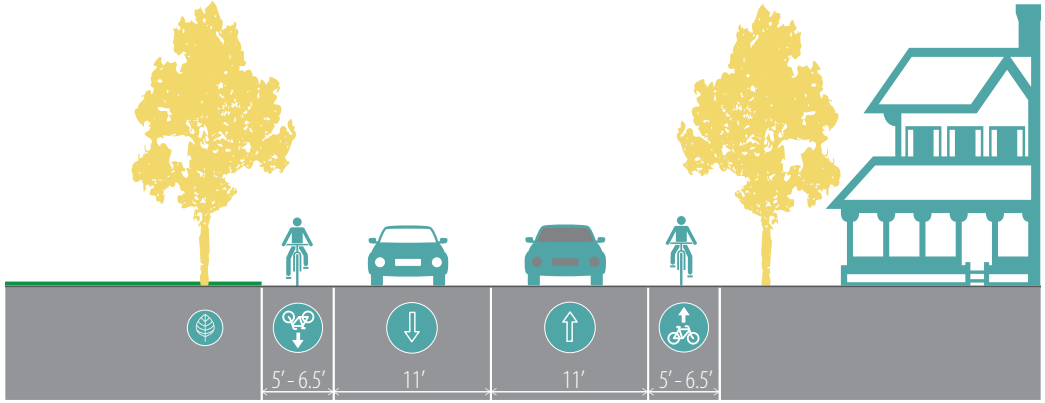
Simulation of proposed bicycle lanes on Sunset Boulevard

Sunset Boulevard

Short Term

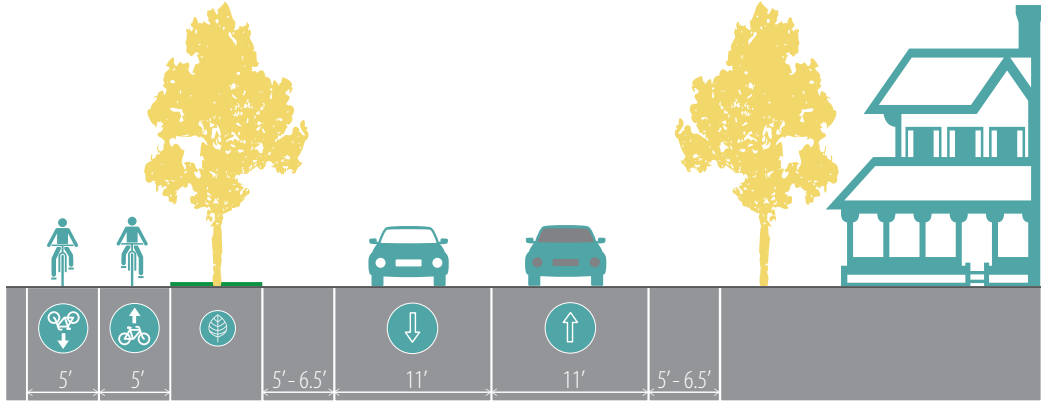
Striped bicycle lanes are proposed from Sunset Beach to Broadway by converting existing shoulders into bicycle lanes, which may require improvements or reconstruction of the shoulder area. As shown to the right in the proposed cross section, the existing shoulders on Sunset are converted to 5-foot bicycle lanes. The provision of designated bicycle lanes would reduce the LTS from 4 to 3 between Broadway and Seagrove Avenue, where the speed limit is 35 mph. It would remain LTS 4 west of Seagrove Avenue due to the higher speed limit (40 mph). Additionally, "Ride Single File" signage is proposed to deter cyclists from riding side-by-side and creating conflicts with motor vehicles.

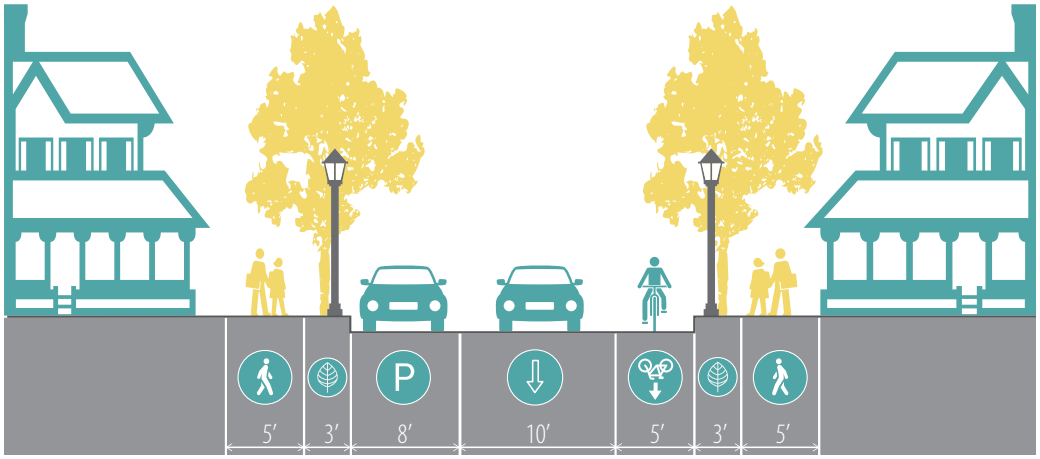
Another lower stress alternative to Sunset Boulevard from Cape May City to Cape May Point is through West Cape May. From Cape May City, the route follows existing bicycle lanes on Broadway (CR 626) to Fourth Avenue (CR 635) to Stevens Street (CR 607), and then continuing either on Seagrove Avenue or Sunset Boulevard to Cape May Point.



Long Term

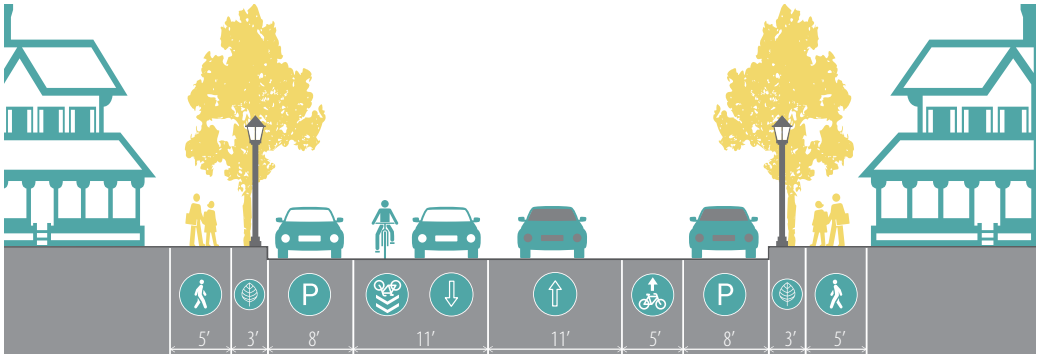
On Sunset Boulevard there is land available on the southern side of the roadway to create a two-way separated bicycle lanes or a multi-use path parallel to the roadway from Broadway to Seagrove Avenue. The cross section for the proposed off-road facility is shown to the right. The off-road facility would reduce traffic stress from 4 to 1 and provide a more comfortable option for bicyclists of all ages and abilities. This concept would require outreach and coordination with NJDEP and the Nature Conservancy given the sensitive nature of the proposed development area.





Jackson Street

A one-way southbound bicycle lane on Jackson Street provides an important bike connection from downtown Cape May City and the Washington Street Pedestrian Mall to the beach. The travel lane is reduced from 15’ to 10’ in order to accommodate a 5-foot bicycle lane. The bicycle lane is located on the left side of the street to reduce conflicts with parked vehicles and enhance visibility to drivers. The addition of the bicycle lane reduces the traffic stress level from 2 to 1 on this roadway.



Columbia Avenue

The width of Columbia Avenue is approximately 43 feet, which is too narrow to provide a bicycle lane in both directions of travel. Therefore, a hybrid approach is proposed, with a 5-foot bicycle lane in the westbound direction and a shared-lane in the eastbound direction. Columbia Avenue is an important east/west link, combining with Pennsylvania Avenue and Michigan Avenue to link the USCG facility and surrounding neighborhood to the downtown, as well as connecting with the existing north/south bicycle lane on Madison Avenue.

Pennsylvania Avenue

There are existing bicycle lanes on Pennsylvania Avenue east of Pittsburgh Avenue. The cartway width of Pennsylvania Avenue from Pittsburgh Avenue to Michigan Avenue is 54 feet, which can accommodate 5-foot bicycle lanes with 3-foot striped buffers in each direction. The proposed lanes extend the existing Pennsylvania Avenue bicycle lanes from Pittsburgh Avenue to Michigan Avenue, providing a connection from the USCG facility and surrounding neighborhood to the downtown commercial area, school, and other destinations.

Texas Avenue

While there are existing bicycle lanes on Pittsburgh Avenue, they currently terminate when the roadway becomes Texas Avenue. The improvements proposed below seek to extend the bicycle lanes from Pittsburgh Avenue to Washington Street, improving connections to the commercial area along Texas Avenue and linkages to the marinas and restaurants north of the Lafayette Street bridge.

Short Term

The cartway width of Texas Avenue from Pittsburgh Avenue to Washington Street is approximately 54 feet, which can accommodate 5-foot bicycle lanes with 3-foot striped buffers in each direction. This modification would repurpose the existing shoulders, and require eliminating parking in the shoulder on the eastbound/southbound side.

To connect north to the Lafayette Street bridge via Washington Street, experienced bicyclists may share the roadway with motorists, while less experienced bicyclists may opt to use the sidewalk. "Walk Your Bike" signs are proposed on the bridge to mitigate potential bicycle and pedestrian sidewalk conflicts. The bridge cartway width is insufficient to accommodate bicycle lanes.

Long Term

Buffered bicycle lanes are proposed on Texas Avenue, as described above.

Along Washington Street, incorporate wide sidewalks or a multiuse path when redeveloping the parcel between Texas Avenue and Yacht Avenue. During future rehabilitation or replacement of the Lafayette Street bridge and Washington Street approach, incorporate bicycle improvements (such as extending the proposed multiuse path) to provide a two-way bicycle facility linking the Texas/Pittsburgh Avenue corridor north to the marinas and restaurants.

Existing bicycle lane on Pittsburgh Avenue

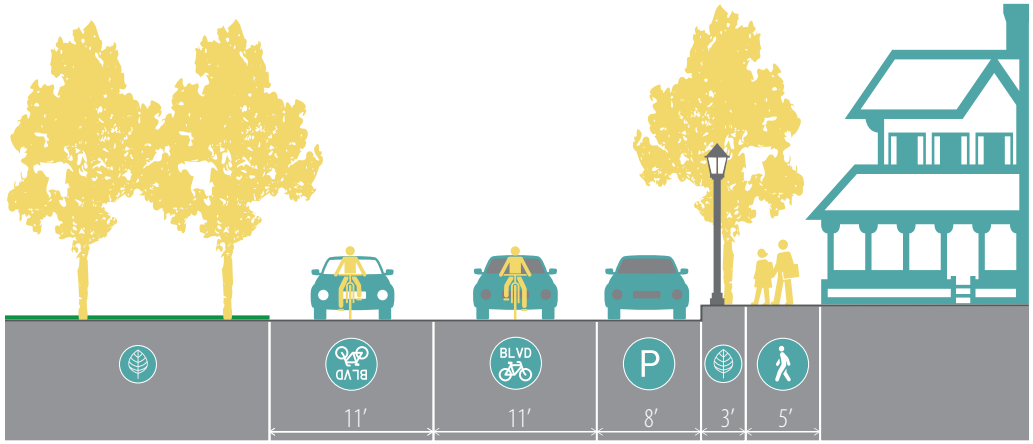
Facility Type | Bicycle Boulevard

Bicycle boulevards are traffic calmed streets that prioritize bicycle travel and create a more comfortable bicycling environment. Many low speed, low volume residential streets provide the basic components of a bicycle boulevard. The preferred speed limit of a bicycle boulevard is 20 mph. 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. Pavement markings and wayfinding signage are also key elements, highlighting the corridor as a priority route for bicyclists and that the roadway is intended as a shared, slow street. Additional design details can be found in ***NACTO's "Urban Bikeway Design Guide."***

Bicycle boulevards are recommended on the following roadways:

- Seagrove Avenue
- Cape May Avenue

Seagrove Avenue
Seagrove Avenue is a low speed, low volume corridor between Sunset Boulevard and Lighthouse Avenue. It is an entry point into Cape May Point Borough, an alternative to the higher speed Sunset Boulevard, and provides access to the Cape May Lighthouse and Cape May Point State Park via Lighthouse Avenue. A bicycle boulevard is proposed on this corridor to prioritize travel for bicyclists and improve access to these destinations. Improvements would include context-sensitive traffic calming elements, pavement markings, and wayfinding signage. This roadway is under Lower Township's jurisdiction.



Cape May Avenue

Cape May Avenue provides an east/west connection through residential neighborhoods in the eastern part of Cape May City, linking existing north/south bicycle lanes on Pittsburgh Avenue and Madison Avenue. Cape May Avenue is a low speed, low volume residential corridor. The corridor consists of a pair of two-way streets separated by approximately 100 feet of open space. Two concepts are proposed:

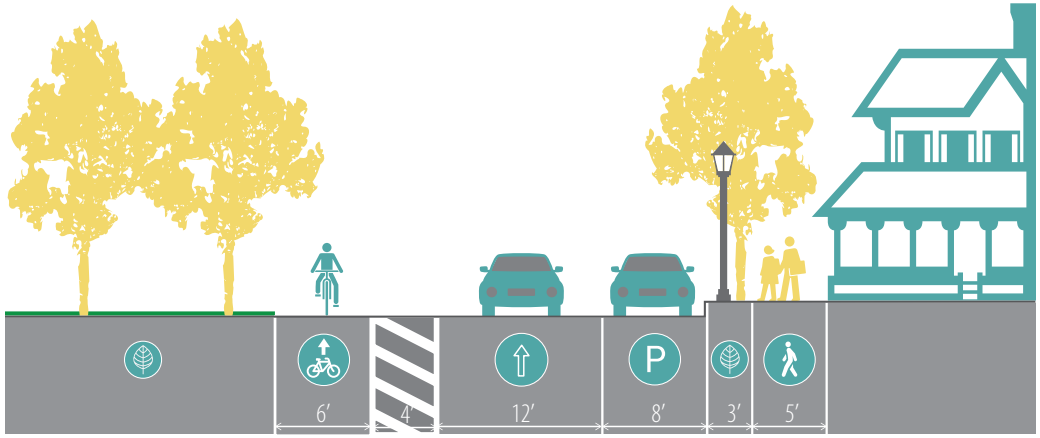
Option 1: Bicycle Boulevard

A bicycle boulevard is proposed along this corridor, as illustrated below and in the cross section to the left. The proposed improvements would require no changes to roadway circulation or on-street parking. Improvements would include context-sensitive traffic calming elements, pavement markings, and wayfinding signage.

Simulation of proposed bicycle boulevard on Cape May Avenue

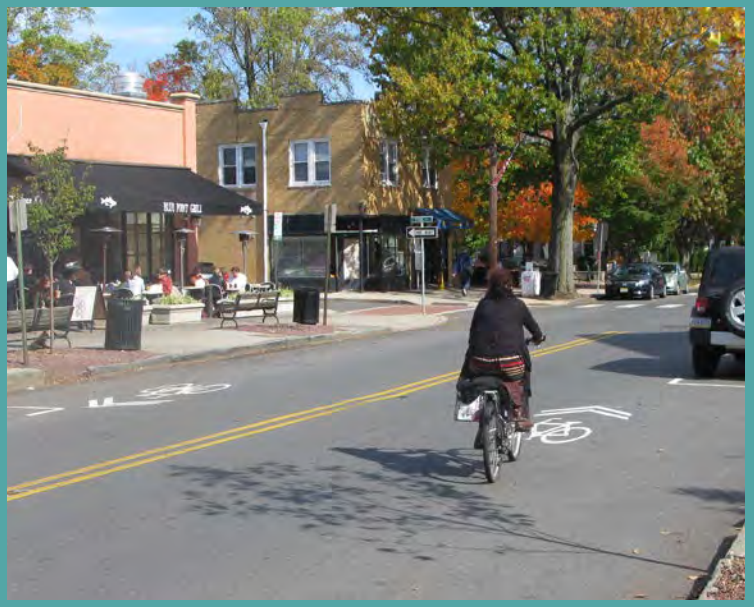
Option 2: Separated Bicycle Lanes and One-way Conversion

An alternative concept for Cape May Avenue is to implement separated bicycle lanes, as shown in below and to the right. This would require converting Cape May Avenue to a one-way pair, with the north side of the park accommodating westbound travel and the south side accommodating eastbound travel. Bicycle lanes would run adjacent to the park, separated from traffic by a buffer and curbing or other vertical separator. On-street parking would remain adjacent to the residential side of the street.



Simulation of proposed separated bicycle lane on Cape May Avenue

Facility Type | Shared-Lane Marking



To complete the bicycle network and provide vital connections to major destinations in the study area, shared-lane markings are proposed on roadways with cartway width limitations. While shared-lane markings alone do not reduce bicycle level of traffic stress, the markings help increase motorist awareness of bicyclists on the roadway, assert the legitimacy of bicyclists on the roadway, help bicyclists properly position themselves in the lane, and provide directional and wayfinding guidance.

Shared-lane markings typically consist of a bicycle and chevron symbol (photo above left). 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 above. This “enhanced” shared-lane marking is particularly useful on streets with higher traffic volumes and more activity. Additional design details can be found in NACTO’s “Urban Bikeway Design Guide.”

Recommendations for shared-lane marking are described on the following page.

Beach Avenue (Enhanced Shared-Lane Markings)
Enhanced shared-lane markings are proposed on two sections of Beach Avenue: from Grant Street to Decatur Street, and from Howard Street and Madison Avenue. As discussed on page 100, shared lanes are proposed for these sections because cartway width limitations preclude dedicated bicycle lanes without impacting on-street parking. Because the Beach Avenue corridor alternates between bicycle lanes and shared-lane markings and has significant bicycle, pedestrian, and vehicle traffic, enhanced shared-lane markings with a green background are recommended to enhance visibility.

Michigan Avenue
Shared-lane markings are proposed from Pennsylvania Avenue to Pittsburgh Avenue. The corridor provides an important bike connection from the USCG facility to the elementary school on Lafayette Street and to downtown via Columbia Avenue.

Columbia Avenue
Shared-lane markings are proposed from Decatur Street to Gurney Street, and in the eastbound direction from Gurney Street to Madison Avenue as part of the bicycle lane/shared-lane marking hybrid design. This is an important east-west bicycle connection for the downtown, elementary school and USCG facility.

Decatur Street
Shared-lane markings are proposed from Lafayette Street to Beach Avenue, as it provides a connection to the beach, downtown, Rotary Park and Lafayette Street Park bike trail via Bank and Broad Streets.

Broadway
Shared-lane markings are proposed from Beach Avenue to Sunset Boulevard, providing an important connection from Beach Avenue to the bicycle lanes on Sunset Boulevard.

Perry Street and West Perry Street
Shared-lane markings are proposed on West Perry Street from Broadway to Perry Street, and on Perry Street from West Perry Street to Beach Avenue. This shared-lane connection will help bicyclists avoid the conflicts with vehicular traffic at Jackson Street and Lafayette Street and easily access downtown and the beach.

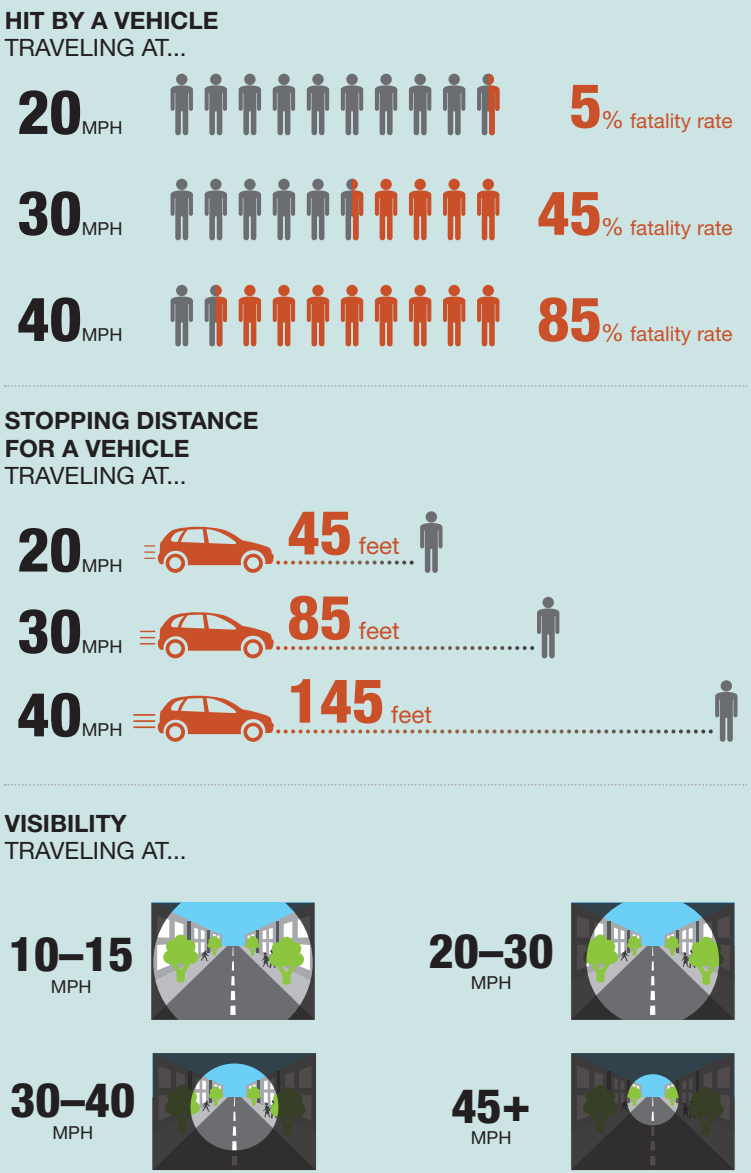
Lyle Lane and Carpenter Lane
One-way eastbound shared-lane markings are proposed on Lyle Lane from Perry Street to Decatur Street and one-way westbound on Carpenter Lane from Decatur Street to Perry Street. These are important bicycle connections in the downtown, providing parallel routes the pedestrian-only section of Washington Street, and connecting the north/south Decatur and Perry Street corridors.

Wilmington Avenue
Shared-lane markings are proposed from New Jersey Avenue to Beach Avenue, connecting the eastern termini of the bicycle lanes on New Jersey and Beach Avenues.

Cape Avenue
Shared-lane markings are proposed from Sunset Boulevard to Lincoln Avenue in Cape May Point Borough. Cape Avenue is one of the primary roadway corridors in the Borough, and provides access to Sunset Boulevard, the Borough green, and the beach.

Lighthouse Avenue
Shared-lane markings are proposed from Sunset Boulevard to Yale Avenue. Lighthouse Avenue is also an entry point to Cape May Point Borough and provides access to the lighthouse and Cape May Point State Park.

Speed vs. Safety



Source: NACTO's "Urban Bikeway Design Guide

Speed Limit Change

Vehicle speed is a critical determinant in crash severity, as illustrated in the sidebar to the left. To maintain consistent driver expectations and behaviors throughout the two communities, standard City-wide and Borough-wide speed limits are proposed.

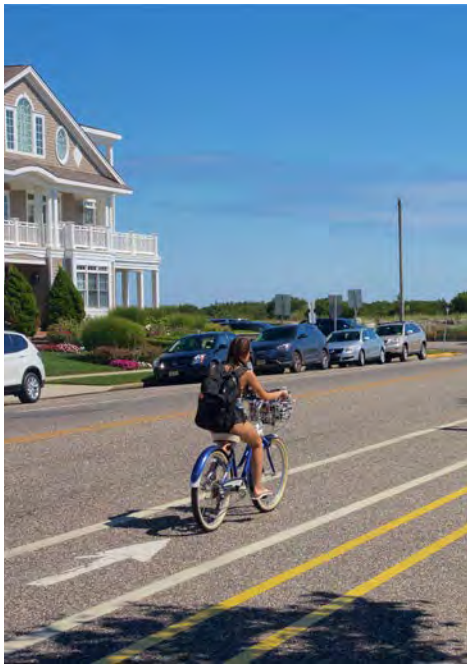
In Cape May Point, a speed limit of 20 mph is proposed on local streets throughout the community, and a speed limit reduction from 30 mph to 25 mph on county roadways (Cape Avenue and Lighthouse Avenue). This is consistent with the Borough's dense, village development pattern and reflective of goals of the Borough Master Plan's Circulation Element, which encourages a "pedestrian oriented community with the streets part of the 'life' of the village. The streets of the Borough are part of our 'living yard'." A low speed limit supports this shared-street concept, where pedestrians, bicyclists, and motorists share the street to balance transportation, recreation, and community life needs. The unique location and street network within the Borough also means traffic volumes are low and that there is essentially no "cut through" traffic, and all trips are either made by local residents or visitors.

In Cape May City, a consistent speed limit of 25 mph should be applied (with the exception of 20 mph on bicycle boulevards), which is consistent with the urban character and relatively dense residential neighborhoods through the City. The City may also consider further lowering the speed limit to 15 mph on city streets west of Madison Avenue during the peak tourist season, when there is additional bicycle, surrey, horse-drawn carriage, and vehicle traffic sharing the streets.

The vast majority of the City's streets are already 25 mph, and the proposed change would only impact the following streets:

Broadway
Proposed speed limit reduction from 30 mph to 25 mph, reducing the LTS from 3 to 2. This residential street is a major connector to the beach for both bicyclists and pedestrians.

Clockwise from top-left (1) Cape May Point's streets function as a shared space for pedestrians, bicyclists, and motorists (2) Broadway is a major connector within the bicycle network (3) Bicyclist on Pittsburgh Avenue



Pittsburgh Avenue
Proposed speed limit reduction from 35 mph to 25 mph. Given the wide roadway width, targeted enforcement and traffic calming elements such as curb extensions should also be considered to support the lower speed limit.

Summary

The proposed improvements described in the previous section are intended to provide 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 comprehensive bicycle network for Cape May City and Cape May Point. As shown in Map 07, the proposed network builds upon existing bicycle facilities, connects major destinations for residents and tourists, and improves linkages between Cape May City and Cape May Point.

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 08 shows the revised LTS analysis with all the recommended bicycle improvements implemented. The result is a network composed almost entirely of stress level 1 or 2 roadways. The percentage change in the LTS 1 and LTS 2 roadway network is 6.1 percent, which is significant. While part Sunset Boulevard would remain an LTS 3 and LTS 4 due to the higher speed limit, the proposed beach trail provides a new alternative route. Further, long-term improvements to construct a multi-use path from Seagrove Avenue to Pacific Avenue adjacent to Sunset Boulevard would create an LTS 1 facility and fill this gap in the low stress network.

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 importantly, it increases the livability of the communities by prioritizing and accommodating an active, healthy, and fun transportation mode for residents and tourists alike.

Facility Type	Length (lane miles)	Cost
Separated Bicycle Lane	1.2	$79,300
Buffered Bicycle Lane	4.1	$50,100
Bicycle Lane	5.1	$42,800
Bicycle Boulevard	2.3	$13,800*
Enhanced Shared Lane Markings	1.3	$13,000
Shared-Lane Markings	7.5	$47,600
Multi-Use Path	1.1	$619,400
Unimproved Trail	1.7	n/a
Total	**24.3**	**$866,000****

**does not include cost of traffic calming and signage elements*

*** does not include cost of unimproved trail*

Note: Where multiple alternatives are proposed for a corridor (e.g., Cape May Avenue), both alternatives are included in the length and cost estimates

Bike Walk Cape May

BICYCLE AND PEDESTRIAN PLAN FOR
CAPE MAY CITY AND CAPE MAY POINT BOROUGH

Map 08 - Proposed Bicycle Level of Traffic Stress

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

0 0.5 1 Miles

N

Bicycle Facilities

Bicycle Parking

The City and Borough have an ample amount of bicycle parking. However, as noted in the Existing Conditions Technical Memorandum, many bicycle racks are still over-capacity during the summer months, and bicycle theft data indicated a correlation between thefts and lack of secure bicycle parking. To help meet high demand, the City should continue efforts to provide additional bicycle parking throughout downtown Cape May City and at beach access points along Beach Avenue. Cape May Point should continue to expand capacity at beach access points within the Borough.

Most existing bicycle racks are an obsolete “wave” or “comb style.” These rack designs do not adequately support the bike frame, have poor spacing, and are frequently used incorrectly. As the existing racks approach the end of their life cycle, they should be replaced with racks that meet current standards, such as the inverted-U, “A”, or post and loop designs more commonly installed today. New bicycle parking at the recently renovated Rotary Park features inverted-U style racks. (Recommended bike rack designs can be found on page 60).

The Borough and City should also encourage businesses and require new development to provide bicycle parking to further expand parking capacity and improve the convenience of bicycling. Finally, Cape May City should explore opportunities to for bicycle corrals in key commercial nodes, such as along Beach Avenue and at the Washington Street Pedestrian Mall intersections with Jackson Street, Decatur Street and Perry Street.

Wayfinding

Wayfinding is yet another method for improving the convenience and attractiveness of walking and biking. It serves as a navigational aid for both residents and visitors, indicating the location and direction of key destinations. By providing distance and time estimates, wayfinding can also overcome people’s tendency to over-estimate distances, thereby making walking or biking options more appealing and encouraging people to make more trips by foot or by bike.

The wayfinding system can also be used to designate and promote bicycle routes in the network. This will help direct bicyclists to the preferred routes and steer bicyclists away from high traffic areas such as Lafayette and Washington Streets.

The wayfinding signs should be developed based on the guidance provided by the Placemaking Study conducted by Temple University. The study is described in the Existing Conditions Technical Memorandum.

Clockwise from top-left (1) Older style "comb" rack at Cape May Point State Park (2) Over-capacity racks along Beach Avenue (3) New "inverted-U" racks at Rotary Park

9 Summary and Next Steps

The recommendations in this plan provide a roadmap for improving conditions for bicycling and walking in Cape May City and Cape May Point.

The proposed recommendations outline a range of engineering, education, enforcement, and encouragement concepts and strategies to enhance bicycle and pedestrian mobility throughout the two communities. Prioritized and implemented over time, as funding is available, they will foster higher levels of walking and bicycling activity, spur economic activity along the commercial corridors, support tourism, and create a more robust network to link residents and tourists with the places they want to go.

Cape May City and Cape May Point Borough should work with Cape May County, the South Jersey Transportation Planning Organization (SJTPO), and NJDOT to advance the proposed improvements. A variety of funding sources are available to support local bicycle and pedestrian improvements and programs. The New Jersey Bicycle and Pedestrian Resource Center has compiled a summary of available resources and is online (http://njbikeped.org/funding-2/)

As planning concepts advance to engineering, projects should reflect current best practices in bicycle and pedestrian design, such as guidelines from:

- NACTO's *Urban Bikeway Design Guide*
- NACTO's *Urban Street Design Guide*
- FHWA's *Small Town and Rural Multimodal Networks*
- NJDOT's *New Jersey Complete Streets Design Guide*


Dock Street
Seafood
HINO

A Appendix | Bicycle Level of Traffic Stress

Analysis Criteria

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

B Appendix | Implementation Matrix

Location	Type of Improve-ment	Category	Improvement	Approx Material Cost	Imple-mentation Term	Lead Agency	Supporting Agency/ Agencies
Gurney St at Columbia Ave	Pedestrian	Intersection Spot Improvement	Regulatory Sign (one)	$100.00	Long-Term	Cape May City	Cape May County /NJDOT
			Sidewalk	$5,555.56	Long-Term		
			ADA compliant ramp (one)	$1,050.00	Short-Term		
			ADA compliant ramp (four)	$2,800.00	Long-Term		
Myrtle Avenue at Jackson St	Pedestrian	Intersection Spot Improvement	Pedestrian Refuge Island	$20,000.00	Long-Term	Cape May City	Cape May County /NJDOT
			Stop Bar (one)	$113.00	Long-Term		
			Continental Crosswalks (four)	$3,254.40	Long-Term		
			Regulatory Sign (one)	$100.00	Short-Term		
			ADA compliant ramp (eight)	$5,600.00	Long-Term		
			Curb Extensions (three)	$36,000.00	Long-Term		
Benton Ave at Sewell Ave	Pedestrian	Intersection Spot Improvement	Stop Bar (three)	$170.00	Long-Term	Cape May City	Cape May County /NJDOT
			Continental Crosswalks (three)	$2,440.80	Short-Term		
			Continental Crosswalks (two)	$1,446.40	Long-Term		
			ADA compliant ramp (four)	$3,500.00	Short-Term		

Location	Type of Improve-ment	Category	Improvement	Approx Material Cost	Imple-mentation Term	Lead Agency	Supporting Agency/ Agencies
Benton Ave at Sewell Ave	Pedestrian	Intersection Spot Improvement	ADA compliant ramp (four)	$2,800.00	Long-Term	Cape May City	Cape May County /NJDOT
			Curb Extensions (two)	$24,000.00	Long-Term		
			Stop Bar (one)	$68.00	Short-Term		
Beach Ave at Ocean St	Pedestrian	Pedestrian	Stop Bar (one)	$57.00	Long-Term	Cape May City	Cape May County /NJDOT
			Continental Crosswalks (two)	$2,169.60	Short-Term		
			ADA compliant ramp (one)	$700.00	Short-Term		
Washington St at Jackson St (Ped Mall 2 crossings)	Pedestrian	Intersection Spot Improvement	Raised Intersection (two)	$118,320.00	Long-Term	Cape May City	Cape May County /NJDOT
			Continental Crosswalks (three)	$1,898.40	Long-Term		
Jackson St at Broad St, Alt 1	Pedestrian	Intersection Spot Improvement	ADA Compliant ramps (six)	$4,200.00	Long-Term	Cape May City	Cape May County /NJDOT
			Pedestrian Refuge Island	$6,444.44	Long-Term		
			Curb extensions	$136.00	Long-Term		
Jackson St at Broad St, Alt 2	Pedestrian	Intersection Spot Improvement	Stop Bar (two)	$12,000.00	Long-Term	Cape May City	Cape May County /NJDOT
			Continental Crosswalks (two)	$1,446.40	Long-Term		
			ADA compliant ramp (four)	$2,800.00	Long-Term		

Location	Type of Improve-ment	Category	Improvement	Approx Material Cost	Imple-mentation Term	Lead Agency	Supporting Agency/ Agencies
Jackson St at Broad St, Alt 2	Pedestrian	Intersection Spot Improvement	Curb Extensions (two)	$24,000.00	Long-Term	Cape May City	Cape May County /NJDOT
			Stop Bar (two)	$136.00	Long-Term		
Jackson St at Broad St, Alt 3	Pedestrian	Intersection Spot Improvement	Continental Crosswalks (four)	$2,892.80	Long-Term	Cape May City	Cape May County /NJDOT
			ADA Compliant Ramps (eight)	$5,600.00	Long-Term		
			Install Roundabout	$250,000.00	Long-Term		
Jackson St at Lafayette St, Alt 1	Pedestrian	Intersection Spot Improvement	Continental Crosswalks (two)	$1,265.60	Short-Term	Cape May City	Cape May County /NJDOT
			Regulatory Signs (two)	$200.00	Short-Term		
			ADA Compliant Ramps (four)	$2,800.00	Short-Term		
Jackson St at Lafayette St, Alt 2	Pedestrian	Intersection Spot Improvement	Continental Crosswalks (two)	$1,265.60	Short-Term	Cape May City	Cape May County /NJDOT
			Regulatory Signs (two)	$200.00	Short-Term		
			ADA Compliant Ramps (four)	$2,800.00	Short-Term		
			Pedestrian Refuge Island (curbing)	$4,800.00	Long-Term		
Jackson St at Lafayette St, Alt 3	Pedestrian	Intersection Spot Improvement	Pedestrian Refuge Island	$3,750.00	Long-Term	Cape May City	Cape May County /NJDOT
			Continental Crosswalks (two)	$542.40	Long-Term		

Location	Type of Improve-ment	Category	Improvement	Approx Material Cost	Imple-mentation Term	Lead Agency	Supporting Agency/ Agencies
Jackson St at Lafayette St, Alt 3	Pedestrian	Intersection Spot Improvement	Standard Crosswalks (one)	$165.73	Short-Term	Cape May City	Cape May County /NJDOT
			Regulatory Signs (one)	$100.00	Long-Term		
			ADA Compliant Ramps (two)	$1,400.00	Short-Term		
			ADA Compliant Ramps (four)	$2,800.00	Long-Term		
			Pedestrian Refuge Island (curbing)	$4,500.00	Long-Term		
			Pedestrian Refuge Island	$4,900.00	Long-Term		
Cape Avenue	Bicycle	Corridor	Install Shared Lane Markings from Sunset Boulevard to Lincoln Avenue	$7,400.00	Short-Term	Cape May County	Cape May County /NJDOT
Lighthouse Avenue	Bicycle	Corridor	Install Shared Lane Markings from Sunset Boulevard to Yale Avenue	$7,900.00	Short-Term	Cape May County	Cape May County /NJDOT
Seagrove Avenue	Bicycle	Corridor	Install Bicycle Boulevard from Sunset Boulevard to Lighthouse Avenue	$6,900.00	Mid-Term	West Cape May	Cape May County /NJDOT
Sunset Boulevard	Bicycle	Corridor	Install Bike Lane from Sunset Point Beach to Broadway	$36,100.00	Mid-Term	Cape May County	Cape May County /NJDOT
Sunset Boulevard	Bicycle	Corridor	Install Multi-Use Path from Seagrove Avenue to Pacific Avenue	$619,400.00	Long-Term	Cape May County	Cape May County /NJDOT
Broadway	Bicycle	Corridor	Install Shared Lane Markings from Beach Avenue to Sunset Boulevard	$4,200.00	Short-Term	Cape May County	Cape May County /NJDOT

Location	Type of Improve-ment	Category	Improvement	Approx Material Cost	Imple-mentation Term	Lead Agency	Supporting Agency/ Agencies
Beach Avenue	Bicycle	Corridor	Install Buffered Bike Lane from (end of Beach Avenue to Grant Street, Decatur Street to Howard Street and Madison Avenue to Wilmington Street)	$39,200.00	Long-Term	Cape May County	Cape May County /NJDOT
Beach Avenue (Shared)	Bicycle	Corridor	Install Enhanced Shared Lane from Grant Street to Decatur Street and Howard Street to Madison Avenue	$13,000.00	Short-Term	Cape May County	Cape May County /NJDOT
Sunset Boulevard Beach Trail	Bicycle	Corridor	Install Multi-Use Path from end of Beach Avenue to Lighthouse Avenue	$-	Long-Term	Cape May County	Cape May County /NJDOT
Jackson St	Bicycle	Corridor	Install Bike Lane from Lyle Lane to Beach Avenue	$2,200.00	Mid-Term	Cape May City	Cape May County /NJDOT
Perry St & W Perry St	Bicycle	Corridor	Install Shared Lane Markings from Broadway to Beach Avenue	$6,400.00	Short-Term	Cape May City	Cape May County /NJDOT
Decatur St	Bicycle	Corridor	Install Shared Lane Markings from Beach Avenue to Lafayette Street	$3,200.00	Short-Term	Cape May City	Cape May County /NJDOT
Lyle Ln (One Way Shared)	Bicycle	Corridor	Install Shared Lane Markings from Perry Street to Decatur Street	$1,200.00	Short-Term	Cape May City	Cape May County /NJDOT
Carpenters Ln	Bicycle	Corridor	Install Shared Lane Markings from Decatur Street to Perry Street	$1,200.00	Short-Term	Cape May City	Cape May County /NJDOT
Bank St	Bicycle	Corridor	Install Shared Lane Markings from Lafayette Street to Broad Street	$1,200.00	Short-Term	Cape May City	Cape May County /NJDOT
Broad St	Bicycle	Corridor	Install Shared Lane Markings from Bank Street to St Johns St	$2,700.00	Short-Term	Cape May City	Cape May County /NJDOT

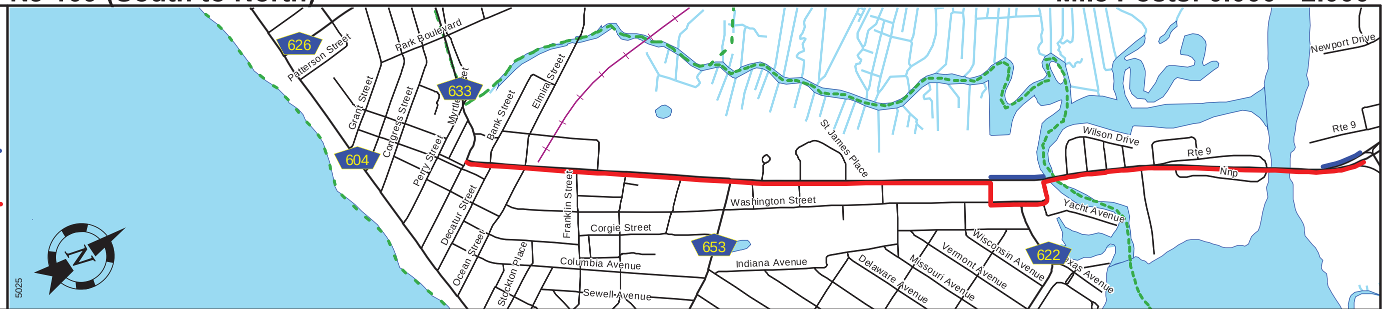
Location	Type of Improve-ment	Category	Improvement	Approx Material Cost	Imple-mentation Term	Lead Agency	Supporting Agency/ Agencies
Madison Ave	Bicycle	Corridor	Install Shared Lane Markings from Columbia Avenue to Lafayette Street	$2,700.00	Short-Term	Cape May County	Cape May County /NJDOT
Michigan Ave	Bicycle	Corridor	Install Shared Lane Markings from Pennsylvania Avenue to Columbia Avenue	$2,700.00	Short-Term	Cape May City	Cape May County /NJDOT
Pennsylvania Ave	Bicycle	Corridor	Install Buffered Bike Lane from Pittsburgh Avenue to Michigan Avenue	$10,900.00	Mid-Term	Cape May City	Cape May County /NJDOT
Cape May Ave (Bike blvd)	Bicycle	Corridor	Install Bicycle Boulevard from Pittsburgh Avenue to Madison Avenue	$6,900.00	Mid-Term	Cape May City	Cape May County /NJDOT
Cape May Ave (sep bike lane)	Bicycle	Corridor	Install Separated Bike Lane from Pittsburgh Avenue to Madison Avenue	$39,700.00	Long-Term	Cape May City	Cape May County /NJDOT
Cape May Ave (sep bike lane)	Bicycle	Corridor	Install Separated Bike Lane from Madison Avenue to Pittsburgh Avenue	$39,600.00	Long-Term	Cape May City	Cape May County /NJDOT
Wilmington Ave	Bicycle	Corridor	Install Shared Lane Markings from Beach Avenue to New Jersey Avenue	$1,200.00	Short-Term	Cape May City	Cape May County /NJDOT
Columbia Ave (Hybrid Lane)	Bicycle	Corridor	Install Bike Lane from Ocean Street to Madison Avenue	$4,500.00	Mid-Term	Cape May City	Cape May County /NJDOT
Columbia Ave (Hybrid Shared)	Bicycle	Corridor	Install Shared Lane Markings from Ocean Street to Madison Avenue	$3,200.00	Short-Term	Cape May City	Cape May County /NJDOT
Columbia Ave (Shared)	Bicycle	Corridor	Install Shared Lane Markings from Decatur Street to Ocean Street	$1,200.00	Short-Term	Cape May City	Cape May County /NJDOT
Cape Avenue (One Way Shared)	Bicycle	Corridor	Install Shared Lane Markings from Cape Avenue to Cape Avenue	$1,200.00	Short-Term	Cape May County	Cape May County /NJDOT


BIKE LANE
RIGHT LANE
ONLY
SPEED LIMIT
35

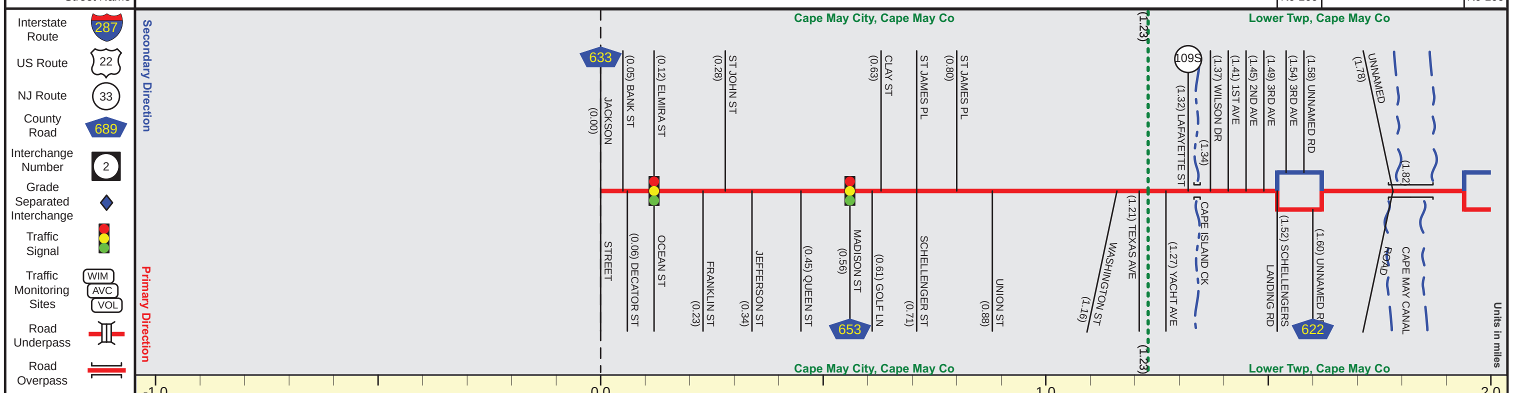
C Appendix | Straight Line Diagrams

NJ 109 (South to North)

Mile Posts: 0.000 - 2.000



Pavement	24	26
Shoulder	0	0
Number of Lanes	2	2
Speed Limit	45	45
Street Name	NJ 109	NJ 109



Begin NJ 109 MP=0.00

Street Name	Lafayette Street; Sydney Avenue; Washington Avenue; NJ 109
Jurisdiction	County; N.J.D.O.T.
Functional Class	Urban Minor Arterial
Federal Aid - NHS Sy	STP
Control Section	0500; 0501
Speed Limit	25; 30; 45
Number of Lanes	2; 4; 2
Med. Type	None; Curbed; None; Unprotected
Med. Width	0; VAR; 0; VAR
Pavement	26; 33; 26; 40; 26; 24; 40; 26
Shoulder	0; 5; 0
Traffic Volume	8,298 (2005); 9,186 (2008); 19,391 (2009)
Traffic Sta. ID	8-4-320; 8-4-325; 8-4-326
Structure No.	N/A; 0501150
Enlarged Views	

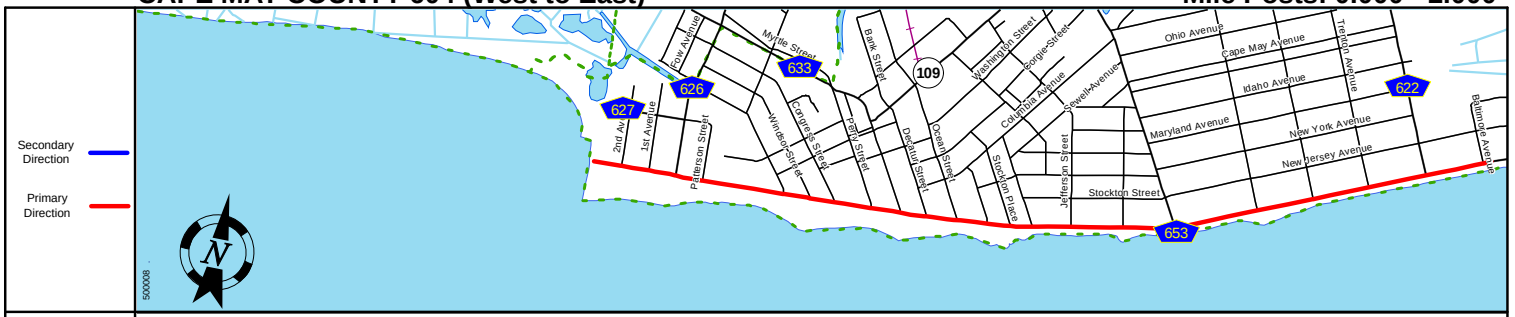
SRI = 00000109__

Date last inventoried: May 2013

Page Created: October, 2014

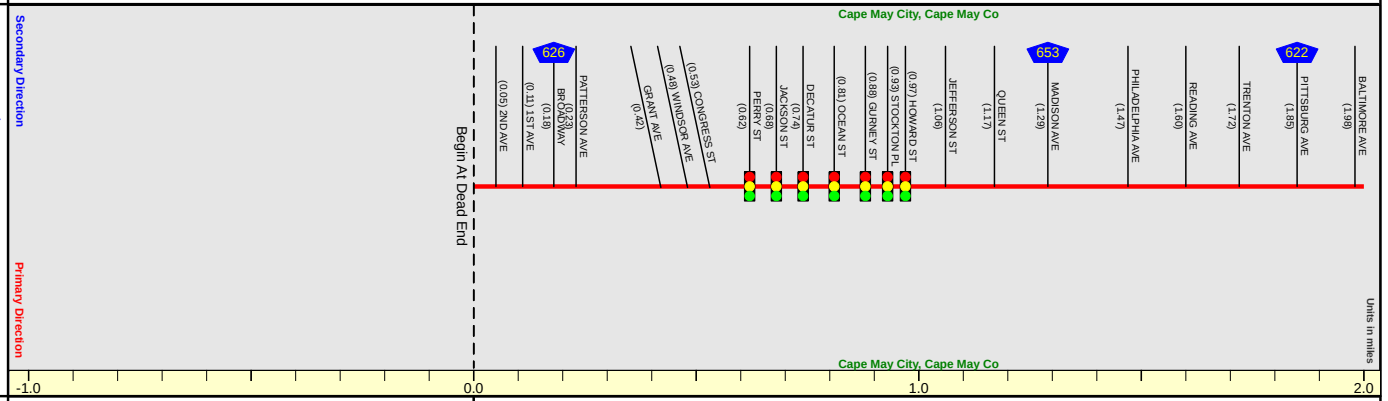
CAPE MAY COUNTY 604 (West to East)

Mile Posts: 0.000 - 2.000



Pavement	
Shoulder	
Number of Lanes	
Speed Limit	
Street Name	

Interstate Route 287 | US Route 22 | NJ Route 33 | County Road 689 | Interchange Number 2 | Grade Separated Interchange | Traffic Signal | Traffic Monitoring Sites WIM AVC VOL | Road Underpass | Road Overpass



Street Name	Beach Avenue
Jurisdiction	County
Functional Class	Urban Major Collector / Urban Loca
Federal Aid - NHS Sy	STP / Non-Federal Aid
Control Section	
Speed Limit	25
Number of Lanes	2
Med. Type	None
Med. Width	0
Pavement	60 / 40 / 48
Shoulder	0
Traffic Volume	4,555 (2006) / 4,183 (2008)
Traffic Sta. ID	8-5-514 / 8-5-515
Structure No.	
Enlarged Views	

Begin Cape May County 604 MP=0.00

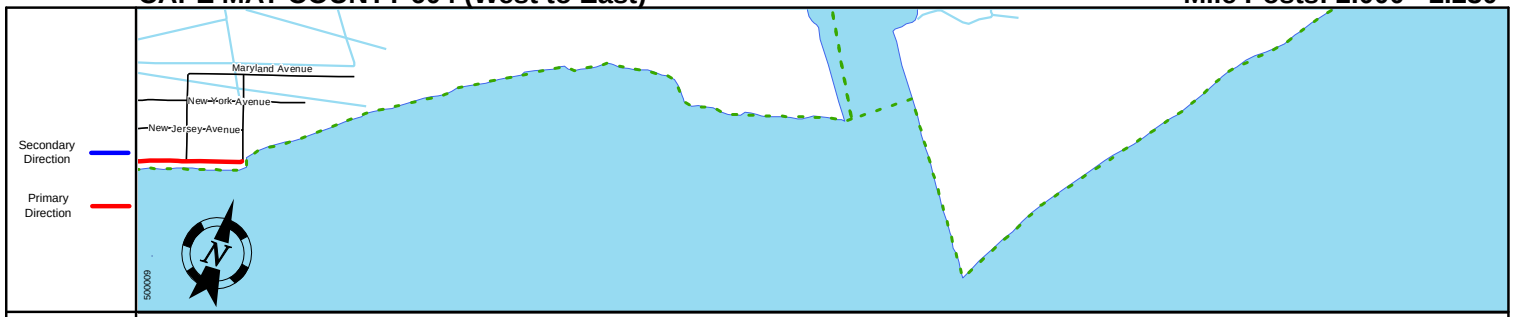
Page Created: October, 2014

SRI = 05000604__

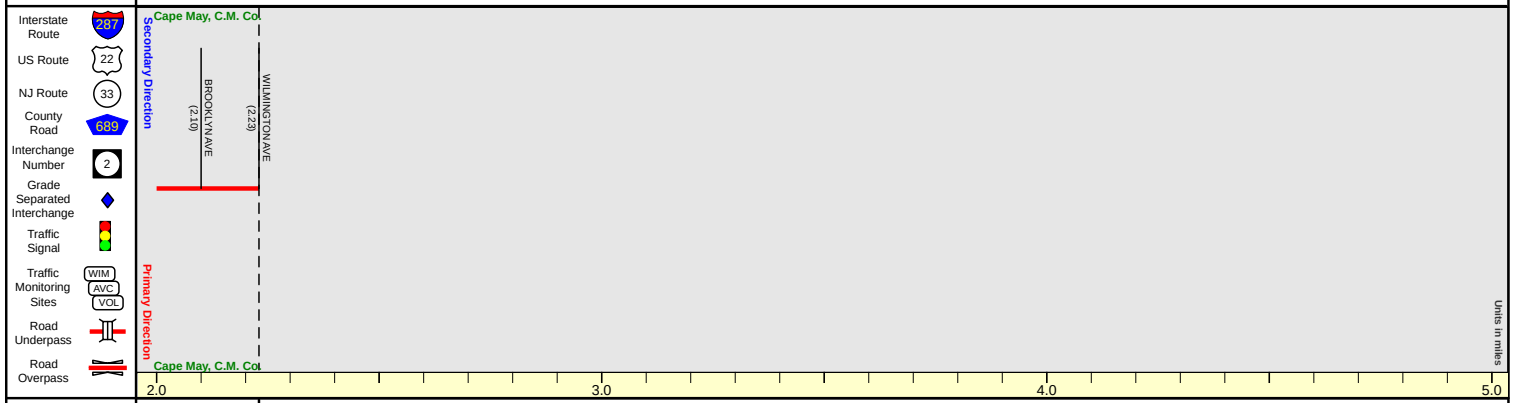
Date last inventoried: July 2011

CAPE MAY COUNTY 604 (West to East)

Mile Posts: 2.000 - 2.230



Pavement	
Shoulder	
Number of Lanes	
Speed Limit	
Street Name	



Street Name	Beach Avenue
Jurisdiction	County
Functional Class	Urban Local
Federal Aid - NHS Sy	Non-Federal Aid
Control Section	
Speed Limit	25
Number of Lanes	2
Med. Type	None
Med. Width	0
Pavement	48
Shoulder	0
Traffic Volume	
Traffic Sta. ID	
Structure No.	
Enlarged Views	

End Cape May County 604 MP=2.23

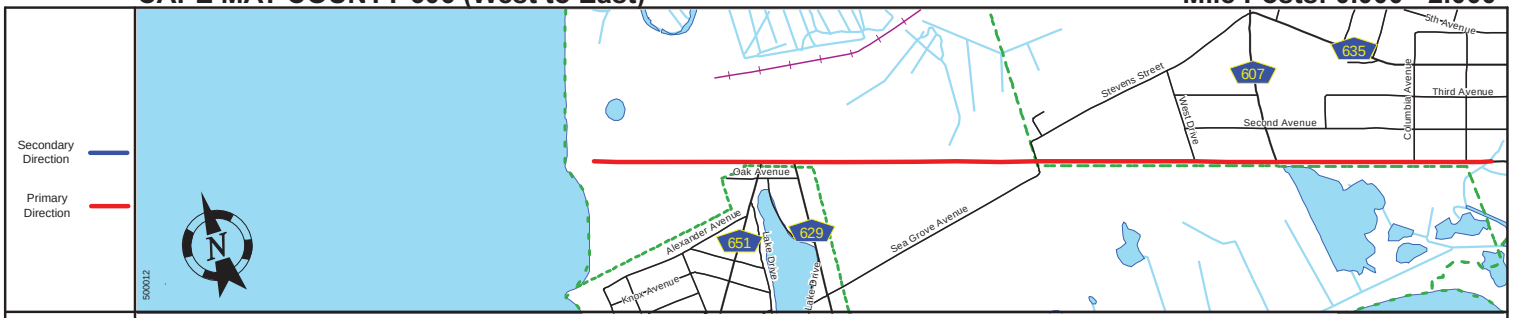
SRI = 05000604__

Date last inventoried: July 2011

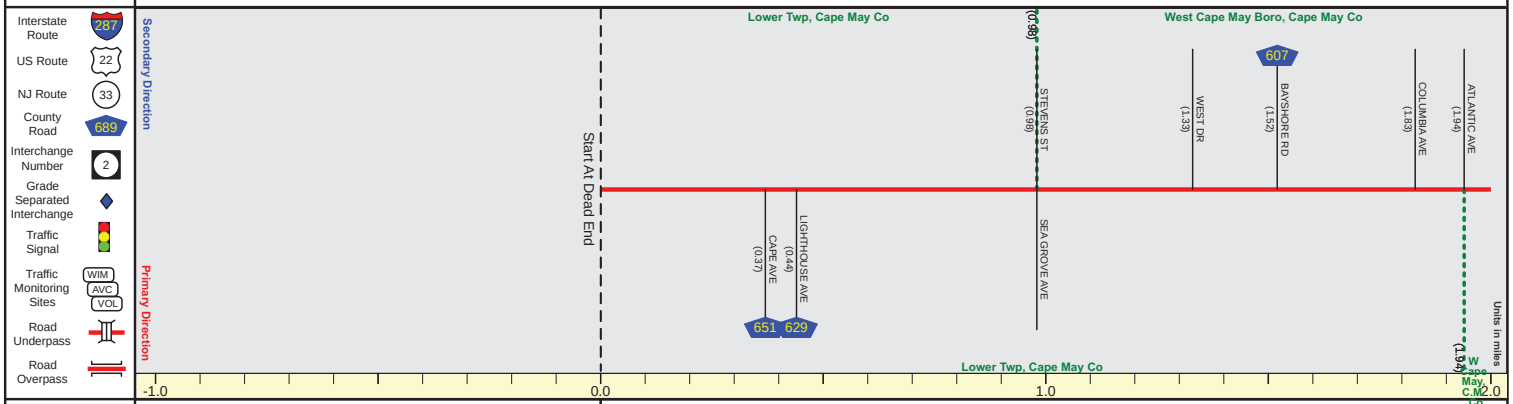
Page Created: October, 2014

CAPE MAY COUNTY 606 (West to East)

Mile Posts: 0.000 - 2.000



Pavement	
Shoulder	
Number of Lanes	
Speed Limit	
Street Name	



Street Name		Sunset Boulevard
Jurisdiction		County
Functional Class		Urban Major Collector
Federal Aid - NHS Sy		STP
Control Section		
Speed Limit	40	35
Number of Lanes		2
Med. Type		None
Med. Width		0
Pavement		24
Shoulder		6
Traffic Volume		6,187 (2009) 2,322 (2006)
Traffic Sta. ID		8-8-761 8-8-761
Structure No.		
Enlarged Views		

Begin Cape May County 606 MP=0.00

Page Created: October, 2014

SRI = 05000606__

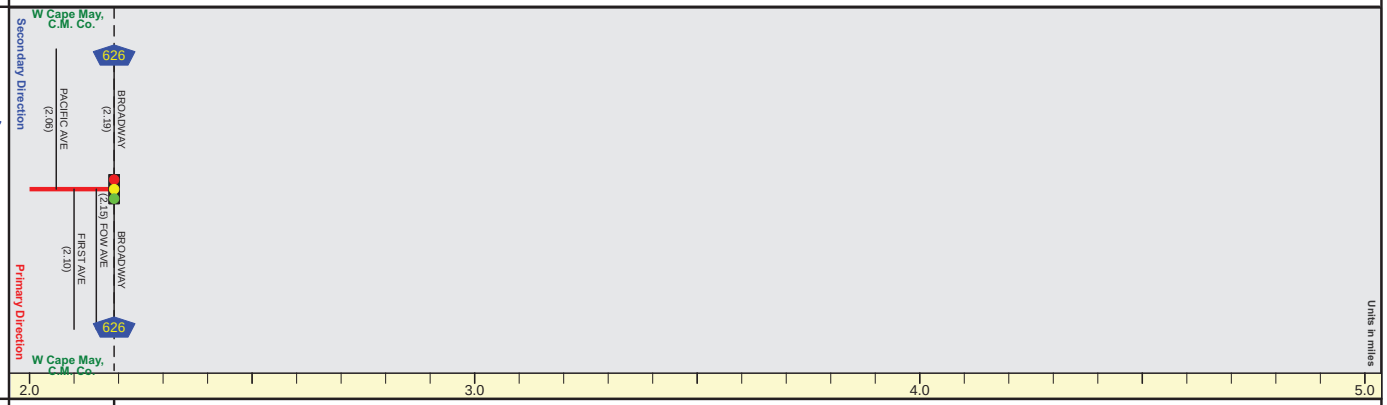
Date last inventoried: July 2011

CAPE MAY COUNTY 606 (West to East)

Mile Posts: 2.000 - 2.190

Pavement	
Shoulder	
Number of Lanes	
Speed Limit	
Street Name	

Interstate Route 287
US Route 22
NJ Route 33
County Road 689
Interchange Number 2
Grade Separated Interchange
Traffic Signal
Traffic Monitoring Sites WIM AVC VOL
Road Underpass
Road Overpass



Street Name	Sunset Boulevard
Jurisdiction	County
Functional Class	Urban Major Collector
Federal Aid - NHS Sy	STP
Control Section	
Speed Limit	35 / 25
Number of Lanes	2
Med. Type	None
Med. Width	0
Pavement	24
Shoulder	6
Traffic Volume	
Traffic Sta. ID	
Structure No.	
Enlarged Views	

End Cape May County 606 MP=2.19

SRI = 05000606__

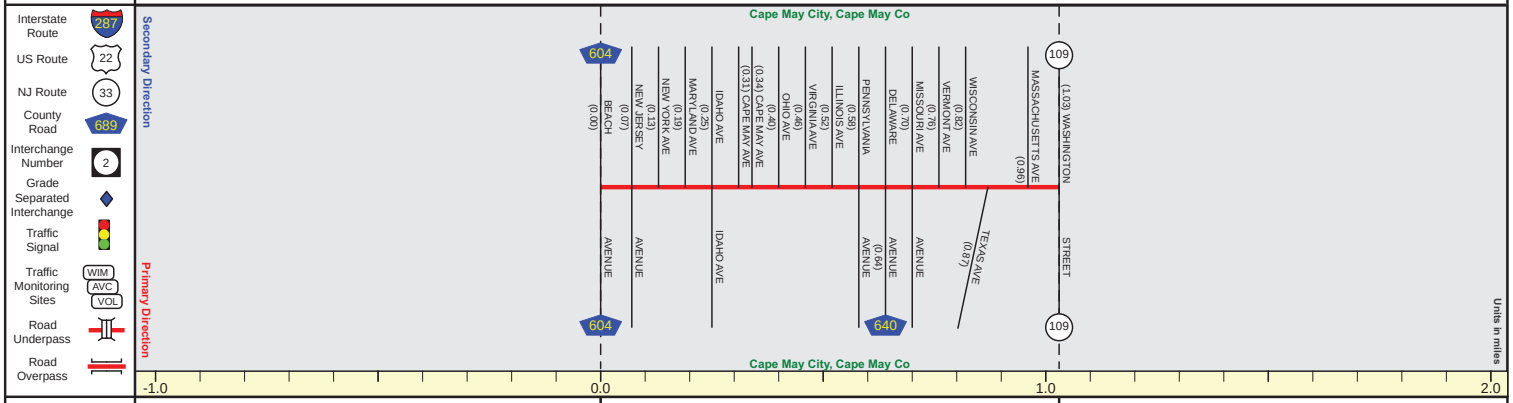
Date last inventoried: July 2011

Page Created: October, 2014

CAPE MAY COUNTY 622 (South to North)

Mile Posts: 0.000 - 1.030

Pavement	
Shoulder	
Number of Lanes	
Speed Limit	
Street Name	



Street Name	Pittsburgh Avenue
Jurisdiction	County
Functional Class	Urban Major Collector
Federal Aid - NHS Sy	STP
Control Section	
Speed Limit	25
Number of Lanes	2
Med. Type	None
Med. Width	0
Pavement	24 | 28 | 36
Shoulder	14 | 10 | 14 | 8
Traffic Volume	
Traffic Sta. ID	
Structure No.	
Enlarged Views	

Begin Cape May County 622 MP=0.00

End Cape May County 622 MP=1.03

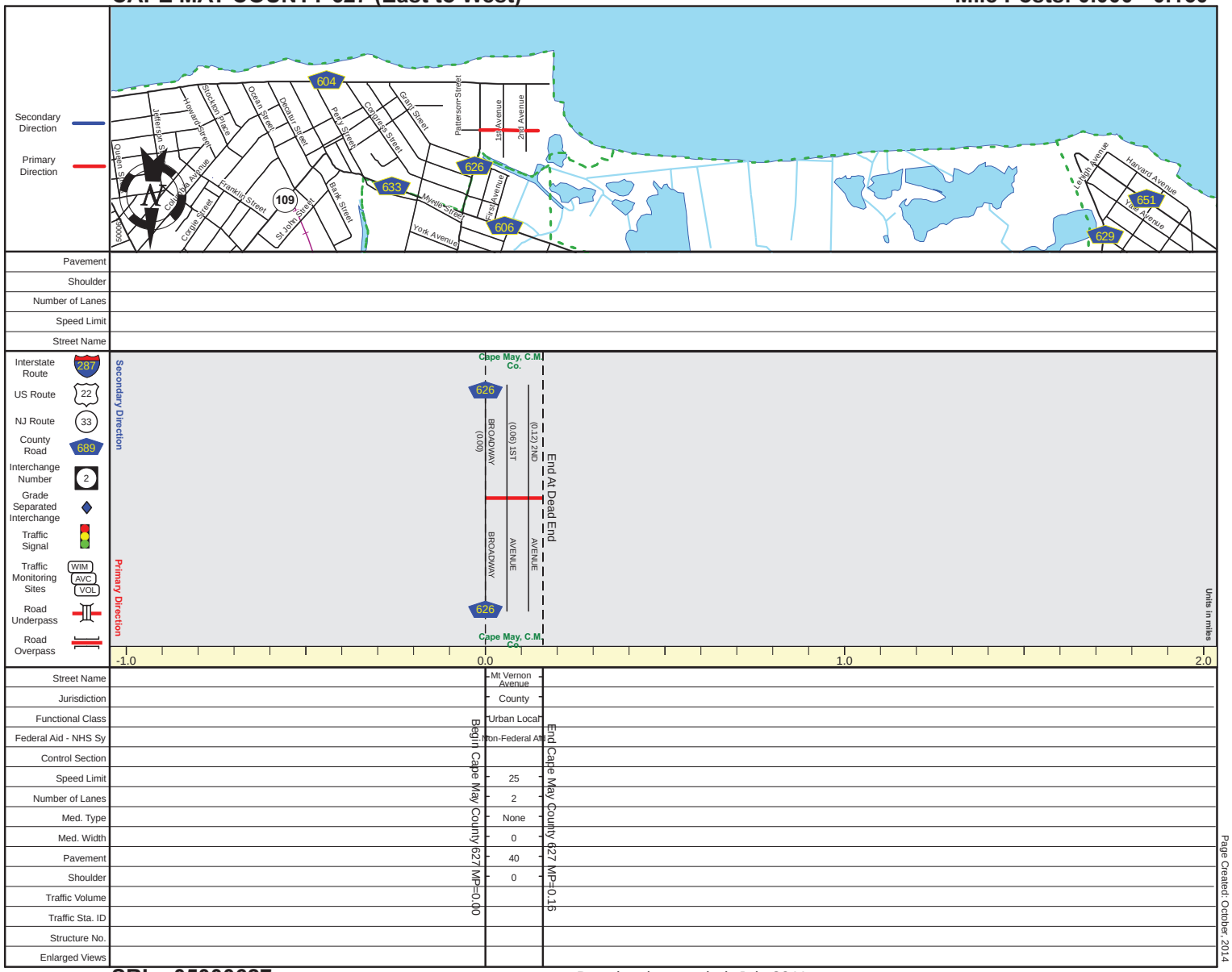
Page Created: October, 2014

SRI = 05000622__

Date last inventoried: July 2011

CAPE MAY COUNTY 627 (East to West)

Mile Posts: 0.000 - 0.160



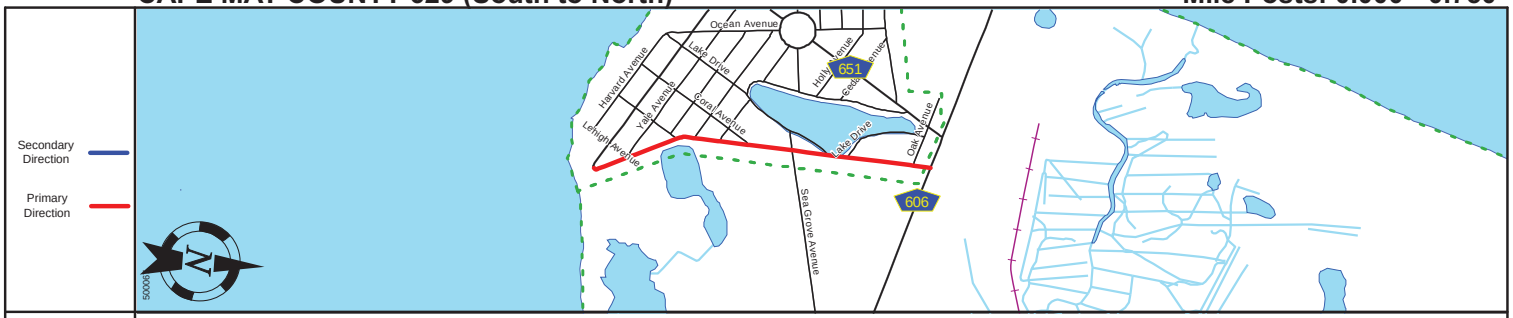
SRI = 05000627__

Date last inventoried: July 2011

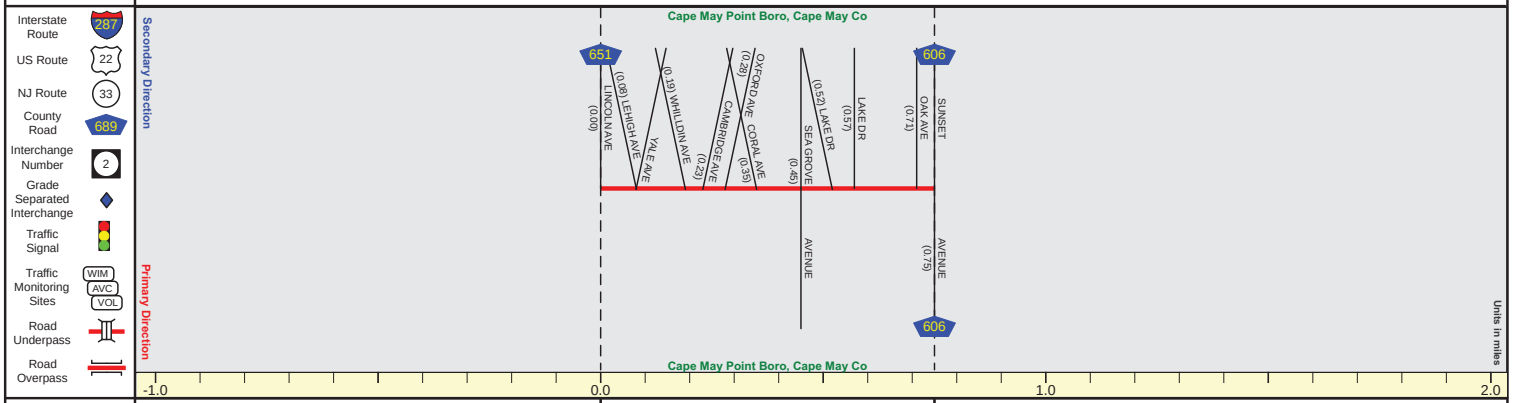
Page Created: October, 2014

CAPE MAY COUNTY 629 (South to North)

Mile Posts: 0.000 - 0.750



Pavement	
Shoulder	
Number of Lanes	
Speed Limit	
Street Name	



	Begin Cape May County 629 MP=0.00		End Cape May County 629 MP=0.75
Street Name		Lighthouse Avenue	
Jurisdiction		County	
Functional Class		Urban Major Collector	
Federal Aid - NHS Sy		STP	
Control Section			
Speed Limit		25 | 30	
Number of Lanes		2	
Med. Type		None	
Med. Width		0	
Pavement		22	
Shoulder		4	
Traffic Volume		2,216 (2009) 1,757 (2006)	
Traffic Sta. ID		8-8-733 8-8-733	
Structure No.			
Enlarged Views			

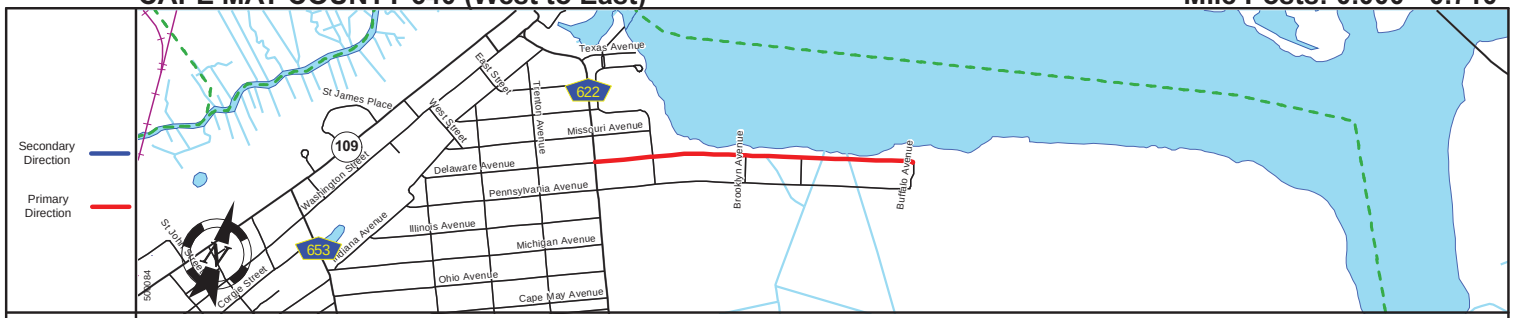
Page Created: October, 2014

SRI = 05000629__

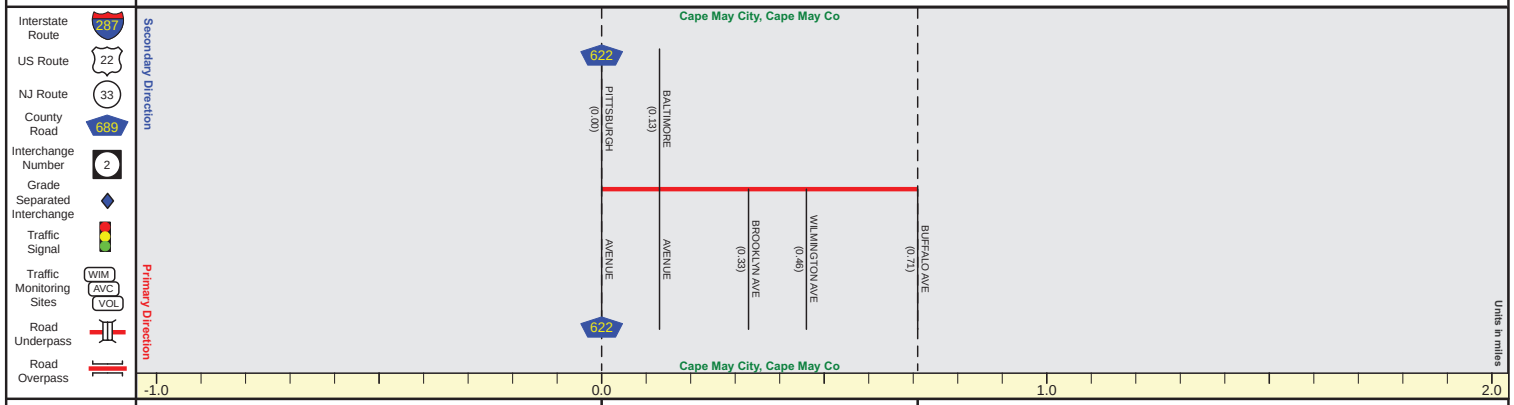
Date last inventoried: July 2011

CAPE MAY COUNTY 640 (West to East)

Mile Posts: 0.000 - 0.710



Pavement	
Shoulder	
Number of Lanes	
Speed Limit	
Street Name	



Street Name	Delaware Avenue
Jurisdiction	County
Functional Class	Urban Local
Federal Aid - NHS Sy	Non-Federal Aid
Control Section	
Speed Limit	25 / 30
Number of Lanes	2
Med. Type	None
Med. Width	0
Pavement	40 / 30
Shoulder	0
Traffic Volume	1,083 (2009) 1,024 (2006)
Traffic Sta. ID	8-8-728 8-8-728
Structure No.	
Enlarged Views	

Begin Cape May County 640 MP=0.00

End Cape May County 640 MP=0.71

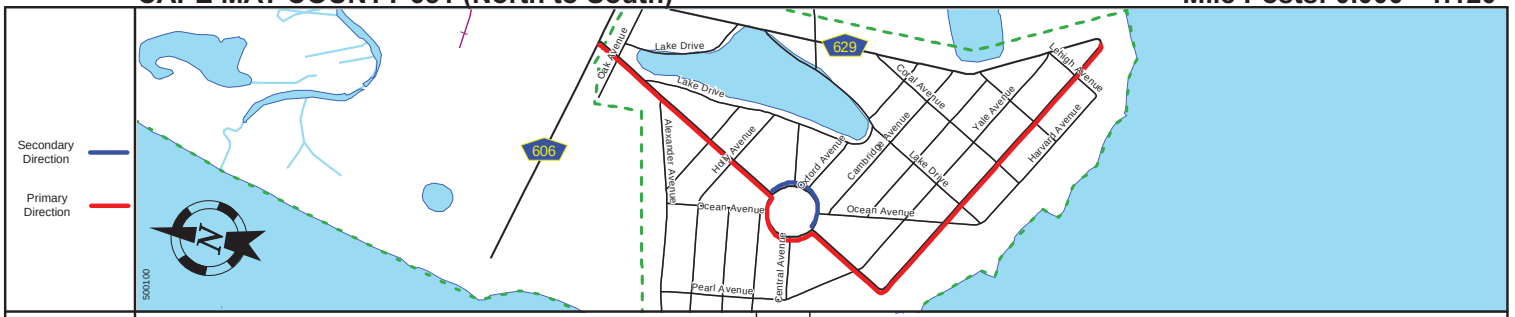
SRI = 05000640__

Date last inventoried: July 2011

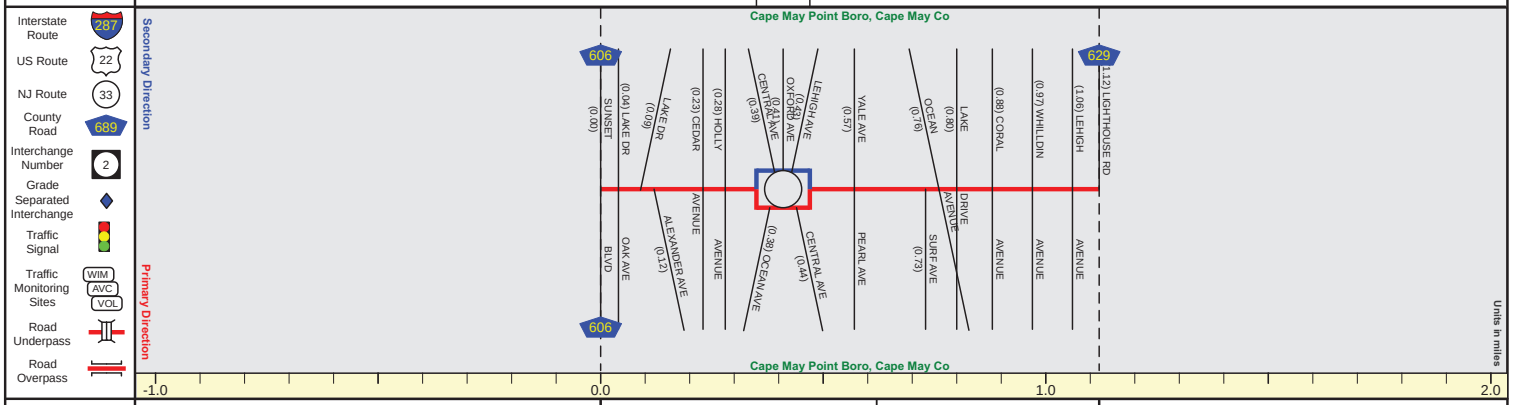
Page Created: October, 2014

CAPE MAY COUNTY 651 (North to South)

Mile Posts: 0.000 - 1.120



Pavement		0			
Shoulder		4			
Number of Lanes		0			
Speed Limit		30			
Street Name		Cape Avenue			



Street Name	Cape Avenue		Lincoln Avenue		
Jurisdiction	County				
Functional Class	Urban Local				
Federal Aid - NHS Sy	Non-Federal Aid				
Control Section					
Speed Limit	30		25		
Number of Lanes	2				
Med. Type	None				
Med. Width	0				
Pavement	22		20		30
Shoulder	4		0		
Traffic Volume	1,198 (2009)				
Traffic Sta. ID	8-8-732				
Structure No.					
Enlarged Views					

Begin Cape May County 651 MP=0.00

End Cape May County 651 MP=1.12

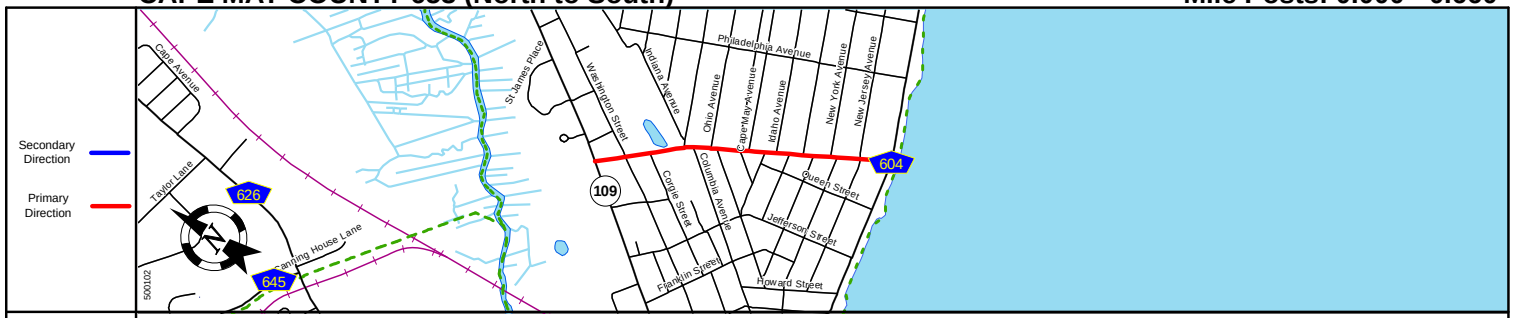
Page Created: October, 2014

SRI = 05000651__

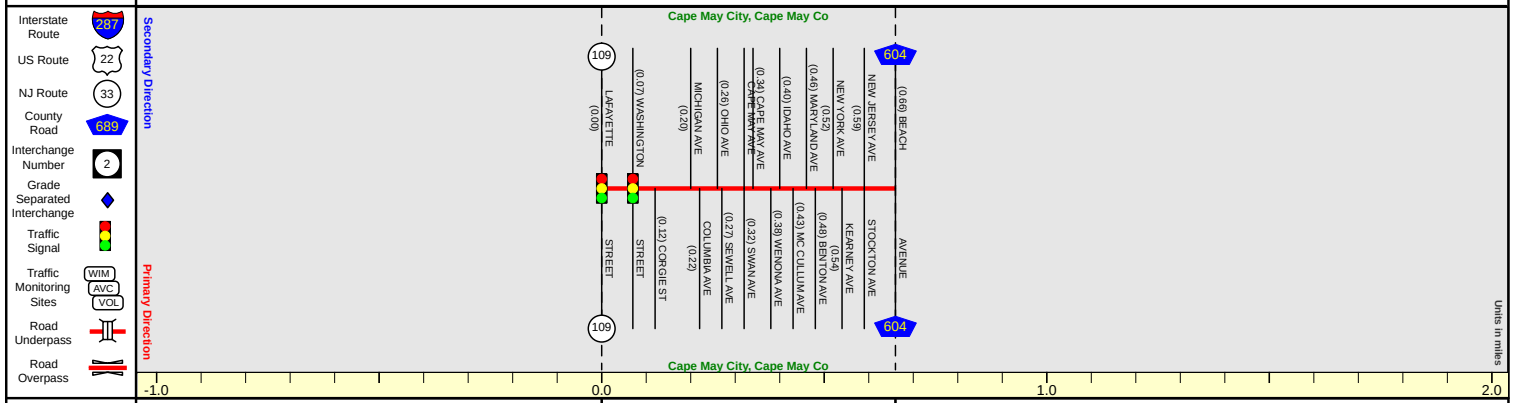
Date last inventoried: July 2011

CAPE MAY COUNTY 653 (North to South)

Mile Posts: 0.000 - 0.660



Pavement	
Shoulder	
Number of Lanes	
Speed Limit	
Street Name	



Street Name	Madison Avenue
Jurisdiction	County
Functional Class	Urban Major Collector
Federal Aid - NHS Sy	STP
Control Section	
Speed Limit	25
Number of Lanes	2
Med. Type	None
Med. Width	0
Pavement	22 | 24
Shoulder	0 | 14
Traffic Volume	3,726 (2009)
Traffic Sta. ID	8-8-729
Structure No.	
Enlarged Views	

Begin Cape May County 653 MP=0.00

End Cape May County 653 MP=0.66

Page Created: October, 2014

SRI = 05000653__

Date last inventoried: July 2011


EXIT
CAPE MAY

D Appendix | Public Involvement

Steering Committee #1

June 28, 2016

Bike Walk Cape May

BICYCLE AND PEDESTRIAN PLAN FOR CAPE MAY CITY AND CAPE MAY POINT BOROUGH

Sign-In Sheet
Steering Committee #1
June 28, 2016

Name	Representing	Email
DR. EDWARD J. MAHANEY, JR	MAYOR, CITY OF CAPE MAY	emahaney@capemaycity.com
RUCHI SRIVASTAVA	WSP | PB	
William Riviere	NJDOT	william.riviere@dot.njgov
Patrick Farley	Cross County Connection	farley@drivekcc.com
Steve O'Connor	Cape May Point	
Alice Gibson	Cape May Point	
JIM RUTALA	RUTALA ASSOCIATES	
BOB Mullock	CAPE MAY POINT	
Reed Sibley	WSP | PB	
Alan Huff	SJTPO	
Leslie Gimeno		
TOM THORNTON	MATT MACDONALD (CITY ENGINEER)	

Steering Committee #2

October 24, 2016

Bike Walk Cape May

BICYCLE AND PEDESTRIAN PLAN FOR CAPE MAY CITY AND CAPE MAY POINT BOROUGH

Sign-In Sheet
Steering Committee #2
October 24, 2016

Name	Representing	Email
Shawn Carr		
Alan Huff	SJTPO	
JIM RUTALA	RUTALA ASSOC.	
	WSP | PB	
Steve O'Connor	Cape May Point	
Patrick Farley		
HARLEY SHULER	CAPE MAY PLANNING BD	
William Riviere	NJDOT	
Reed Sibley	WSP | PB	
RUCHI SRIVASTAVA	WSP | PB	
ED MAHANEY	MAYOR, CITY OF CAPE MAY	emahaney@capemaycity.com
BRUCE MACLEOD	CITY MGR, CITY OF CAPE MAY	brucem@capemaycity.com
BOB Mullock	Cape May Point	
Alice Gibson	Cape May County Engineering	

Public Meeting

June 3, 2017

Bike Walk
Cape May
BICYCLE AND PEDESTRIAN PLAN FOR CAPE MAY CITY AND CAPE MAY POINT BOROUGH

Sign-In Sheet
Public Information Center
June 3, 2017

Name	Representing	Email
William Riviere	NJDOT	william.riviere@dot.nj.gov
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Dan Shustack	Cape May City	
Bev Yanich		Bevyanich@aol.com
Linda Wolf		wolf[illegible]@comcast.net
Kathleen Wyatt	CAPE MAY	KCWYATT@AOL.com
Jules Ravner	C.M.	
Brian Noll	Cape May Point	briannoll1942@gmail.com
Herb Heffner	" " "	chuckntheh@aol.com
Beatrice [illegible]	Cape May	bebeanne@comcast.net
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Jan Dwyer	West Cape May	jdwyer43@comcast.net
EVELYN LOVITZ	CAPE MAY	EVELYN@LOVITZ-MCCABE.NET
Bill Myers	Self + CMP	Billyboxbows@aol.com
Tom Scygiel	" " & AMI Bike Safety Chair	tscygiel@att.net
Brad Lacey	self + family	"
Mike Nehry	CMP	NEHRYEMK@Yahoo.com
Bill Brady	Homeowner	WJBRADYIII@COMCAST.NET
Nancy Brady	Homeowner	nbradyiii@comcast.net

Bike Walk
Cape May
BICYCLE AND PEDESTRIAN PLAN FOR CAPE MAY CITY AND CAPE MAY POINT BOROUGH

Sign-In Sheet
Public Information Center
June 3, 2017

Name	Representing	Email
Carol Sabo	West Cape May	csabo@westcapemay.us
Isabelle Neary	CMP	
Peter, Rylee, Brooke Hardy	CM (USCG)	peter.william.hardy@gmail.com
James - Jay Hill	CM Pointe	[illegible] 609 884 8977
Harley Shuler	Cape May	—
Jack Currier	self / Cape May	jackcurrier@gmail.com
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John Van de Vaarst	CM	vandevj@comcast.net
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HARRY C. BELLANGY	CAPE MAY	MIDMEN455@GMAIL
PATRICIA GRAY HENDRICKS	CAPE MAY CITY	

Bike Walk Cape May

Bicycle and Pedestrian Plan for
Cape May City and Cape May Point Borough