CONGESTION MANAGEMENT PROCESS
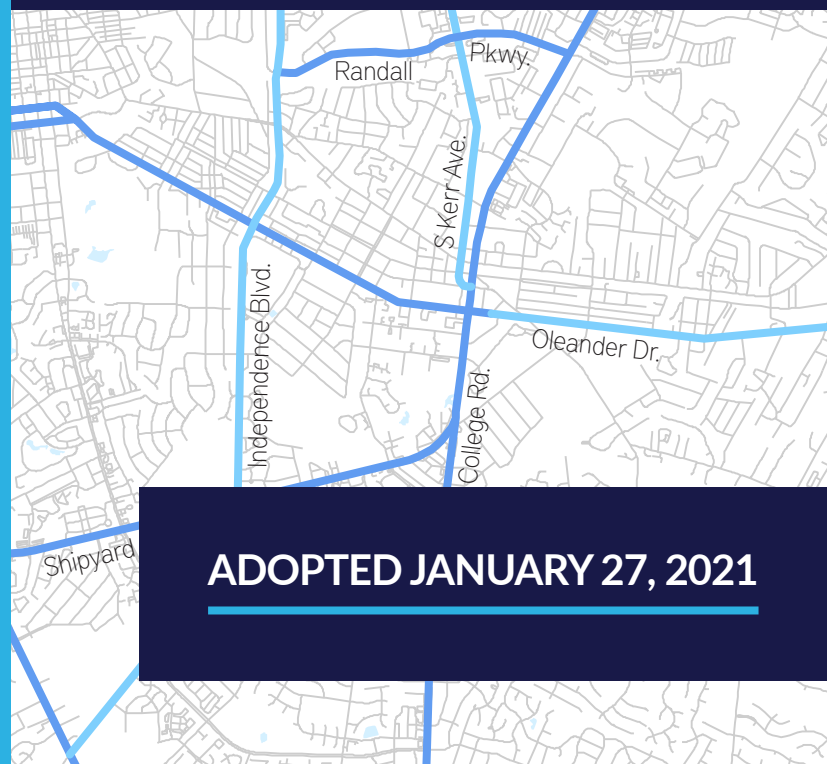
2020
BIENNIAL DATA REPORT

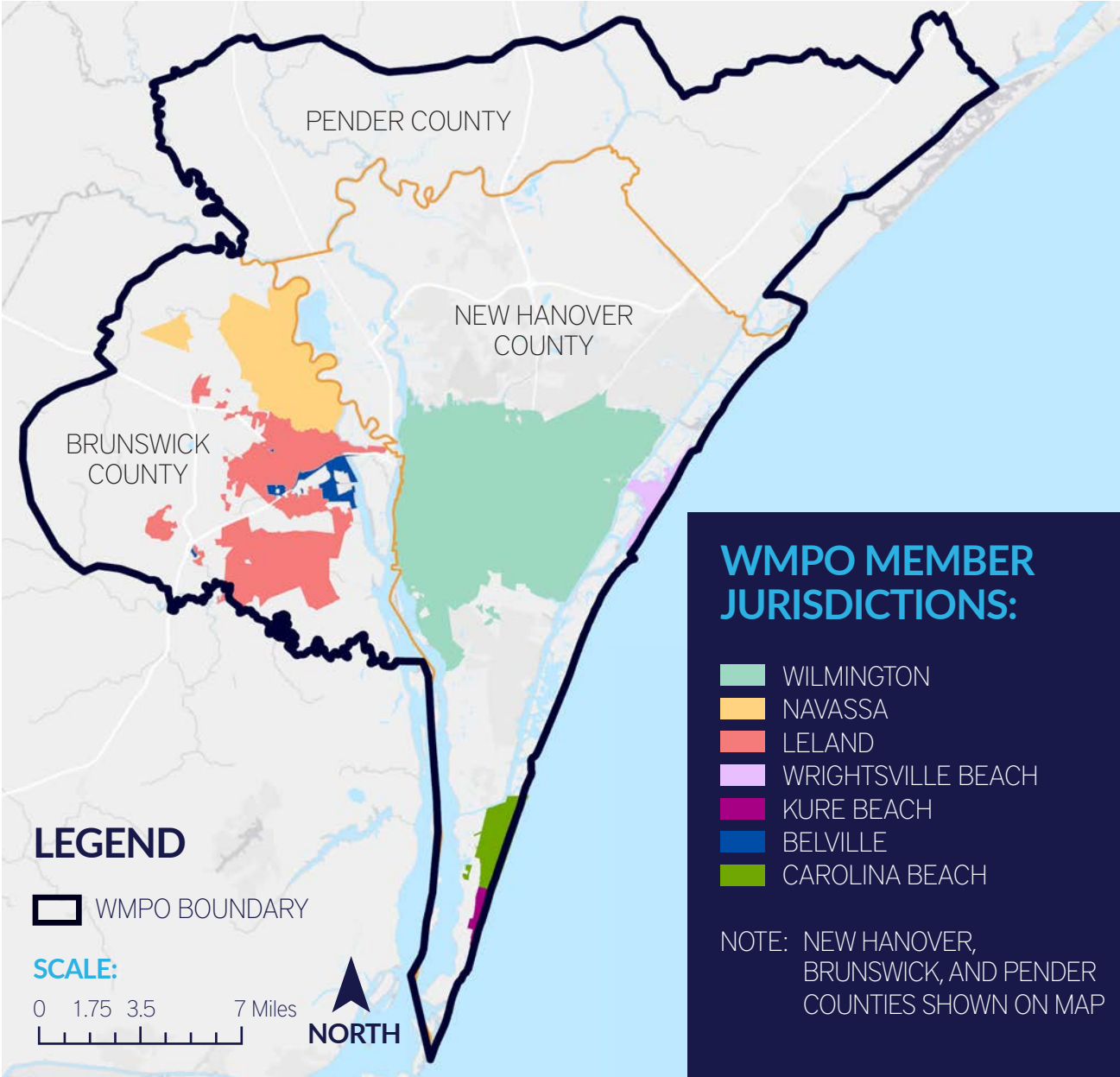## WILMINGTON URBAN AREA METROPOLITAN PLANNING ORGANIZATION

Wilmington | Carolina Beach | Wrightsville Beach | Kure Beach | New Hanover County | Leland | Belville | Navassa | Brunswick County | Pender County | CFPTA | NC Board of Transportation

WMPO

305 Chestnut Street
PO Box 1810
Wilmington, NC 28402
Phone: (910) 341-3258
Fax: (910) 341-7801
www.wmpo.org

ADOPTED JANUARY 27, 2021

ABOUT THE WMPO

LEGEND

☐ WMPO BOUNDARY

SCALE:

0   1.75 3.5   7 Miles

NORTH

WMPO MEMBER JURISDICTIONS:

- WILMINGTON
- NAVASSA
- LELAND
- WRIGHTSVILLE BEACH
- KURE BEACH
- BELVILLE
- CAROLINA BEACH

NOTE: NEW HANOVER, BRUNSWICK, AND PENDER COUNTIES SHOWN ON MAP

The Wilmington Urban Area Metropolitan Planning Organization (WMPO) was created in 1978 when the region's population exceeded 50,000. Federally-mandated in all urban areas of 50,000 or more, Metropolitan Planning Organizations (MPOs) are responsible for conducting regional transportation planning which serves as the basis for the expenditure of federal transportation funds. The WMPO is the MPO recognized by the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) for the Wilmington Urban Area and includes the following jurisdictions and organizations:

- City of Wilmington
- Town of Carolina Beach
- Town of Kure Beach
- Town of Wrightsville Beach
- New Hanover County
- Town of Belville
- Town of Leland
- Town of Navassa
- Brunswick County
- Pender County
- CFPTA/Wave Transit
- NC Board of Transportation

The WMPO planning boundary, shown in the map above, contains approximately 494 square miles and encompasses all of New Hanover County and portions of Brunswick and Pender counties. The current population of the area is estimated at 280,000.

TABLE OF CONTENTS
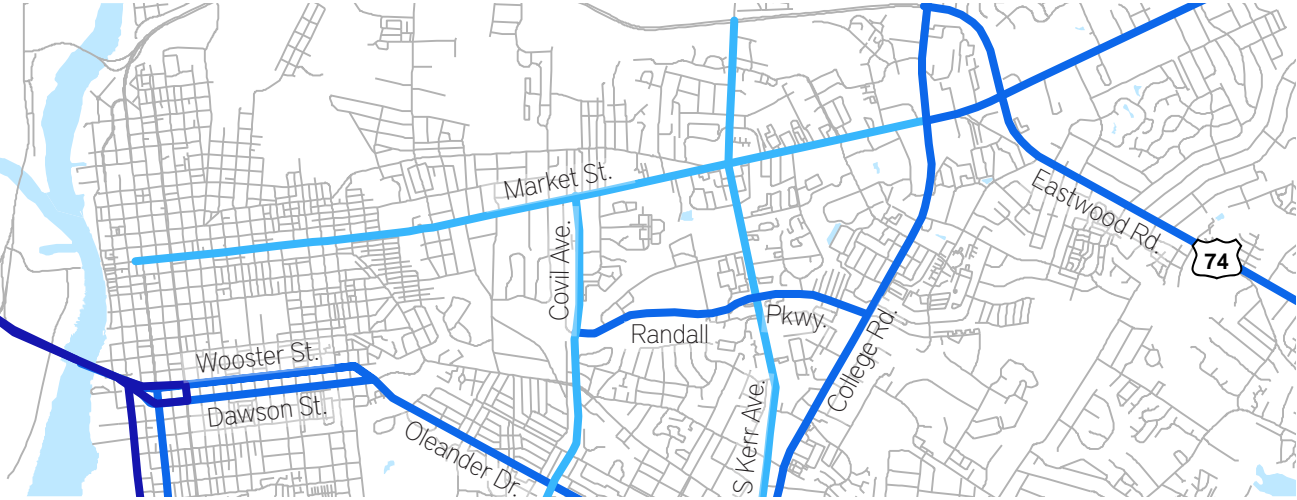
IN THIS SECTION:

1. WHAT IS A CMP?
2. HISTORY OF THE CMP
3. WHY IS A CMP USEFUL?
4. PROCESS MODEL

WHAT IS A CMP?

A congestion management process (CMP) is a methodical approach for monitoring and managing congestion in a region. The CMP measures congestion within the region and identifies strategies to aid in the efficient movement of people and goods throughout the region. The CMP also assists in the identification of future projects in the Metropolitan Transportation Plan (MTP). The objective of the CMP is to move the highest priority strategies to funding and implementation resources such as the State Transportation Improvement Program (STIP).

HISTORY OF THE CMP

The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 was the first law to address congestion management. This resulted in what was then known as the Congestion Management System (CMS). The concept of congestion management has continued to be included in federal legislation since. Under current legislation,

the Fixing America's Surface Transportation (FAST) Act, it is known as the Congestion Management Process (CMP).

Federal law requires all Transportation Management Areas (TMAs), which have populations greater than 200,000, to develop a CMP as an integrated part of the metropolitan transportation planning process. The Wilmington Urban Area Metropolitan Planning Organization (WMPO) was designated as a TMA by the Federal Highway Administration (FHWA) in 2012. As a TMA, the WMPO is required to develop and adopt a CMP. Federal regulation is not prescriptive in the methods used to implement a CMP. This flexibility allows each TMA to address congestion in the way that best suits their region. The WMPO developed its first CMP in 2014 and has prepared an updated biennial data report every other year since, in an effort to continually monitor and address current needs.

WHY IS A CMP USEFUL?

A successful CMP benefits the efficiency of a regional transportation system and supports community objectives such as transit use, livability, and land use. Benefits of a CMP include:

A STRUCTURED DATA-DRIVEN APPROACH

The CMP offers a consistent and coordinated method for continually monitoring and addressing congestion in the WMPO. It serves to both benefit from, and provide information to, other elements of the planning process including the MTP and STIP. By using a data-driven approach, the CMP can ensure that investment decisions are made based on observed and measured conditions. The recurring nature of the process also allows for analysis of the effectiveness of previously implemented strategies.

INCREASED COLLABORATION

The WMPO planning area is approximately 494 square miles, encompassing all of New Hanover County and parts of Brunswick and Pender counties. The planning area includes the City of Wilmington, Town of Carolina Beach, Town of Kure Beach, Town of Wrightsville Beach, Town of Leland, Town of Belville, and Town of Navassa. The CMP brings planning partners and stakeholders together to identify congestion management objectives for the region, share data, and develop strategies to improve the efficiency of the movement of people and

goods. Collaboration is a key element in a successful CMP as it allows the sharing of data and knowledge to provide context-sensitive solutions to corridors in the region.

MORE CONSTRUCTIVE RESOURCE ALLOCATIONS

As a fiscally constrained plan, the MTP recommends projects that are anticipated to have funding in the next 25 years. Similarly, the STIP is constrained to a 10-year period where projects scheduled in the first six years are committed for funding and projects in the remaining four years are programmed for funding. With these limited resources, it is important to make the most cost-effective decisions. The CMP provides a mechanism to identify strategies in the short, medium, and long term that will address congestion in the region. The multimodal element of the CMP allows for the inclusion of alternative transportation strategies when identifying solutions. Another benefit of the CMP is that, if properly developed, it will provide a strong starting point for purpose and need statements required during the National Environmental Policy Act (NEPA) process.

PROCESS MODEL

As previously stated, federal regulation is not prescriptive in the methods and strategies used in the CMP. Using the FHWA Congestion Management Process Guidebook as a reference, the WMPO has implemented the following steps to address congestion in the region:

DEFINE THE CMP NETWORK AND STAKEHOLDERS

DEVELOP OBJECTIVES FOR CONGESTION MANAGEMENT

COLLECT DATA THAT SERVES AS AN INDICATOR OF CONGESTION OR MULTIMODAL PERFORMANCE

ANALYZE THE EXTENT AND DURATION OF CONGESTION AND EFFECTIVENESS OF MULTIMODAL INFRASTRUCTURE AND SYSTEMS

IDENTIFY MULTIMODAL CONGESTION MANAGEMENT STRATEGIES

IMPLEMENT BY USING THE CMP AS A RESOURCE WHEN CONDUCTING TRANSPORTATION PLANNING

EVALUATE THE EFFECTIVENESS OF PREVIOUSLY IMPLEMENTED STRATEGIES

WMPO Planning Boundary

The first steps of developing the CMP involved identifying the corridors to be studied and the stakeholders involved.

IN THIS SECTION:

1. CMP NETWORK
2. STAKEHOLDERS
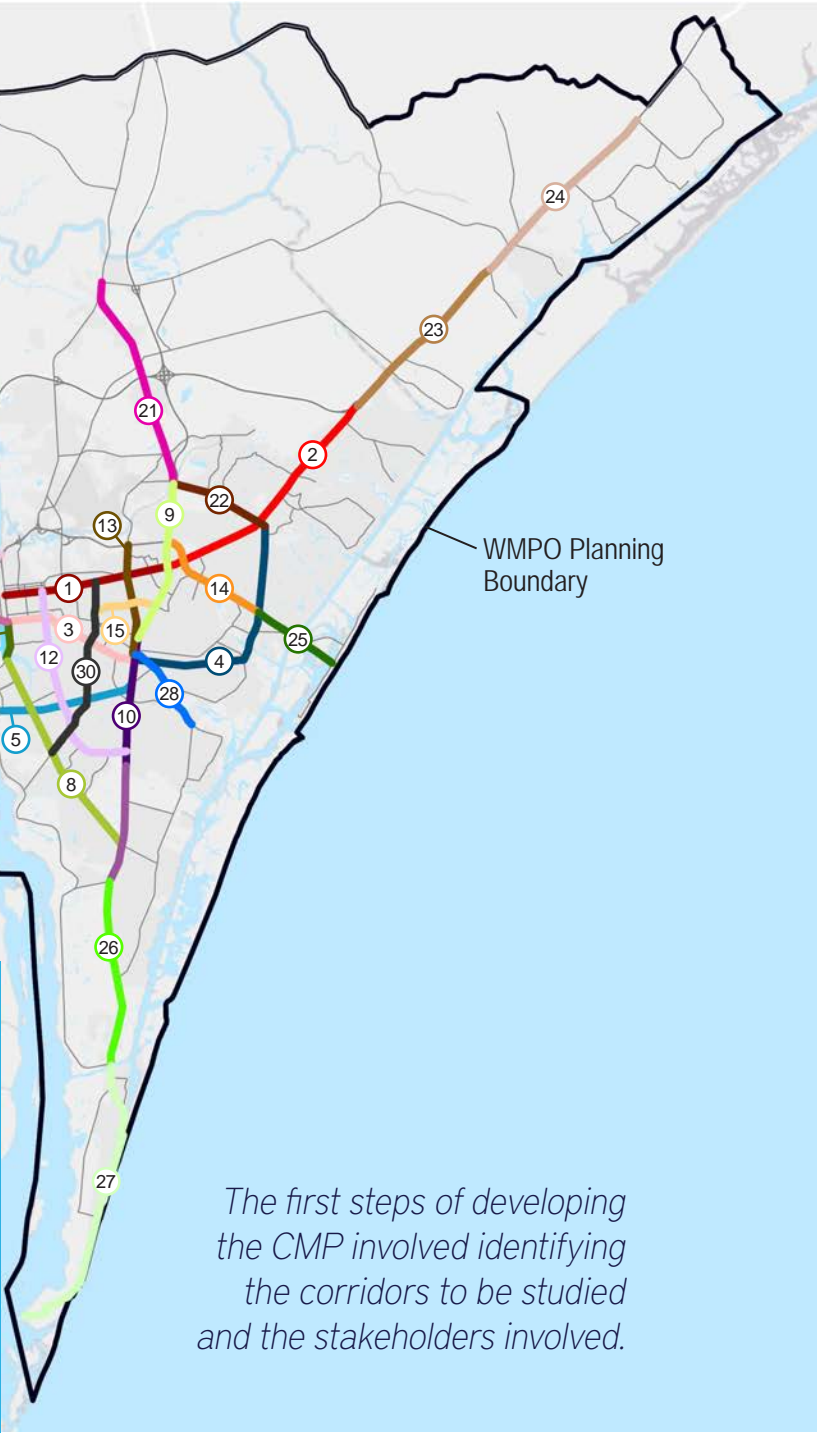
CMP NETWORK

Thirty corridors were identified for study, using the CMP corridors first identified in 2014 as a starting point. The use of the National Performance Management Research Data Set (NPMRDS) resulted in modifications to five of the 2014 corridors. The end result was 30 critical corridors in the region to be monitored and analyzed.

| SEGMENT	ROAD	FROM	TO	LENGTH (miles)
1	MARKET STREET	3rd Street	College Road	4.42
2	MARKET STREET	College Road	NC140	6.37
3	OLEANDER DRIVE	Cape Fear Memorial Bridge	Treadwell Street	4.89
4	OLEANDER DRIVE/ MILITARY CUTOFF ROAD	Treadwell Street	Gordon Road	6.51
5	SHIPYARD BLVD	River Road	College Road	3.67
6	FRONT STREET	W Lake Shore Drive	Cape Fear Memorial Bridge	1.03
7	3RD STREET	W Lake Shore Drive	Wooster Street	0.97
8	CAROLINA BEACH ROAD	W Lake Shore Drive	College Road	5.77
9	COLLEGE ROAD	Gordon Road	Wilshire Blvd	5.21
10	COLLEGE ROAD	Wilshire Blvd	Pinecliff Drive	3.99
11	COLLEGE ROAD/ CAROLINA BEACH ROAD	Pinecliff Drive	Sanders Road	4.78
12	17TH/16TH STREET	Market Street	College Road	5.53
13	KERR AVENUE	MLK Jr Pkwy	College Road	2.83
14	MLK JR PKWY/ EASTWOOD ROAD	College Road	Military Cutoff Road	3.20
15	RANDALL PKWY	Covil Avenue/ Independence Blvd	College Road	1.66
16	US74/76	Maco Road	US17/Ocean Hwy	8.86
17	US17/OCEAN HWY	Lanvale Road	Cape Fear Memorial Bridge	9.70
18	NC133/RIVER ROAD	US17/74/76	Rabon Way	4.87
19	US17/74/76	NC133 Split	5th Avenue	4.14
20	US421/NC133	US74 Split	3rd Street	1.60
21	US117/COLLEGE ROAD	Holly Shelter Road	Gordon Road	6.12
22	GORDON ROAD	I-40	Military Cutoff Road	2.74
23	US17/MARKET STREET	NC140	Washington Acres Road	5.82
24	US17/NC210	Washington Acres Road	Sloop Point Road	8.64
25	EASTWOOD ROAD/ US76/CAUSEWAY DRIVE	Military Cutoff Road	Lumina Avenue	2.45
26	US421/ CAROLINA BEACH ROAD	Sanders Road	Snow's Cut Bridge	2.90
27	US421/LAKE PARK BLVD	Snow's Cut Bridge	End of US421	6.99
28	PINE GROVE DRIVE	College Road	Masonboro Sound Road	2.49
29	VILLAGE ROAD	US17/74/76	Town Hall Drive	3.22
30	INDEPENDENCE BLVD	US421	Market Street	4.85

STAKEHOLDERS

Local stakeholders were identified to help develop goals and objectives, data, and scoring methods, and to recommend congestion management strategies. Local and regional knowledge is invaluable in determining the best solution for a congested corridor. The WMPO's Technical Coordinating Committee (TCC) was the primary source for these stakeholders, as it is comprised of planning and operations staff of member jurisdictions and planning partners who are most familiar with the local transportation network. Stakeholders from the TCC also proposed congestion management solutions to specifically target corridors within their respective jurisdictions.

THE STAKEHOLDERS IDENTIFIED TO ASSIST WITH THIS REPORT AND THE JURISDICTIONS THEY REPRESENT ARE LISTED BELOW ▼

NAME	JURISDICTION
Denys Vielkanowitz	City of Wilmington
Ed Parvin/Jerry Haire	Town of Carolina Beach
Mandy Sanders	Town of Kure Beach
Robert O'Quinn	Town of Wrightsville Beach
Rebekah Roth	New Hanover County Planning Department
Granseur Dick	Wilmington International Airport
Stephanie Ayers	North Carolina State Ports Authority
Athina Williams	Town of Belville
Ashli Barefoot	Town of Leland
Barnes Sutton	Town of Navassa
Helen Bunch	Brunswick County Planning Department
Travis Henley	Pender County Planning Department
Sam Shore	Pender County Planning Department
Caitlin Marks/Benjamin Hughes	Division of Highways, NCDOT
Nazia Sarder	Transportation Planning Branch, NCDOT
Megan Matheny	Cape Fear Public Transportation Authority/Wave Transit
Damiere Powell	City of Wilmington
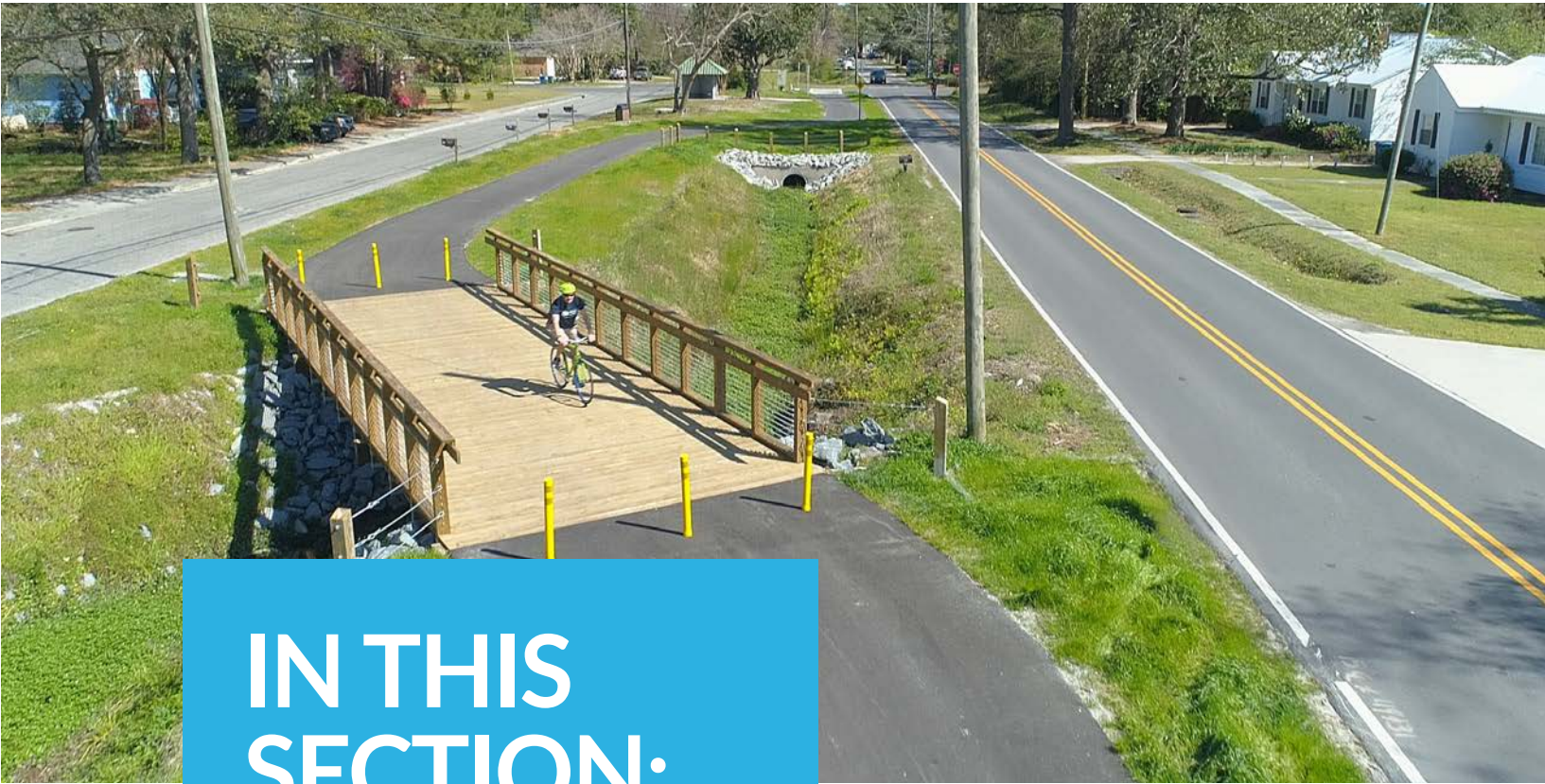
IN THIS SECTION:

1. REGIONAL OBJECTIVES
2. PERFORMANCE METRICS

The identification of data-driven goals and objectives is an important step in the development of the CMP. Data-driven goals are measurable, allowing the WMPO to determine if target numbers were met and, if not, how far off the actual numbers were and potentially why. Additionally, the WMPO is able to compare data-driven results year to year, which can lead to the identification of congestion trends in the region.

REGIONAL OBJECTIVES

Cape Fear Moving Forward 2045 is the WMPO's long range MTP. As part of the long range planning process, the Citizens Advisory Committee (CAC) developed the following vision for the plan:

"The 2045 MTP will plan for a safe, realistic, efficient, and reliable multimodal transportation network that embraces innovation and is environmentally and socially responsible."

In order to support the long range vision of the MTP, WMPO staff selected regional performance metrics for the 2020 CMP Biennial Data Report

using the goals of the 2045 MTP as a framework. The goals and performance metrics found below will serve as a baseline for comparison of future CMP updates.

CONGESTION MANAGEMENT OBJECTIVES			
GOAL	**OBJECTIVE**	**REGIONAL PERFORMANCE MEASURE**	**REGIONAL PERFORMANCE METRIC**
+ SAFE	Promotes transportation projects that increase the safety of all users by decreasing injury and increasing user awareness	Reduce the rate of crashes per 100 million vehicle miles	Brunswick: 213.32 New Hanover: 436.38 Pender: 225.73
EFFICIENT	Transportation network allows for time savings, interconnected across all modes of transport	Reduce the percent of corridors with Volume/ Capacity (V/C) over .8	23%
RELIABLE	Dependable travel times and connections	Reduce the percent of corridors with Level of Travel Time Reliability (LOTTR) > 1.2	25%
$ REALISTIC	Appropriately utilizes available funding resources and does not exceed the financial means of the region	Track progress of programmed and recommended strategies	STIP Projects: 38 MTP Projects: 150 Bond Projects: 7
MULTIMODAL	Alternative modes of transportation available for most trip types	Increase the average percentage of Multi-Use Path (MUP), Sidewalk, Crosswalk, and Bicycle Infrastructure per corridor by 2%	MUP: 11% Sidewalk: 46% Crosswalk: 3% Bicycle Infrastructure: 24%
ENVIRONMENTALLY AND SOCIALLY RESPONSIBLE	Accessible, sustainable, and equitable transportation solutions actively communicated to increase public awareness and collaboration	Increase Transit Ridership by 2%	2017/2018 Ridership: 1,306,099 2018/2019 Ridership: 1,199,245 (-8%)
INNOVATIVE	Responsible to changing concepts and technologies in both design and construction	Include additional analysis in future CMPs including seasonal, work zone, response time, and weather	NPMRDS Travel Time Data (2020)

PERFORMANCE METRICS

In addition to regional performance metrics, each corridor was given a Travel Time/Reliability score and a Multimodal score to assess the performance of the corridor.

For Travel Time/Reliability scores, the metrics used included volume/capacity (V/C), delay rate (AM and PM), travel time reliability (AM and PM), truck volumes, and crashes per mile. These metrics reveal the amount of recurring congestion, non-recurring congestion, and reliability of travel on the corridors. Each metric was worth 10 points. Points were assigned by creating a range for each metric using the high, low, and average score. Each corridor was then given a score of 1-10, which could be compared to the other corridors. The highest Travel Time/Reliability score possible was 70, with the highest scores representing the worst travel time reliability and worse congestion than lower scores.
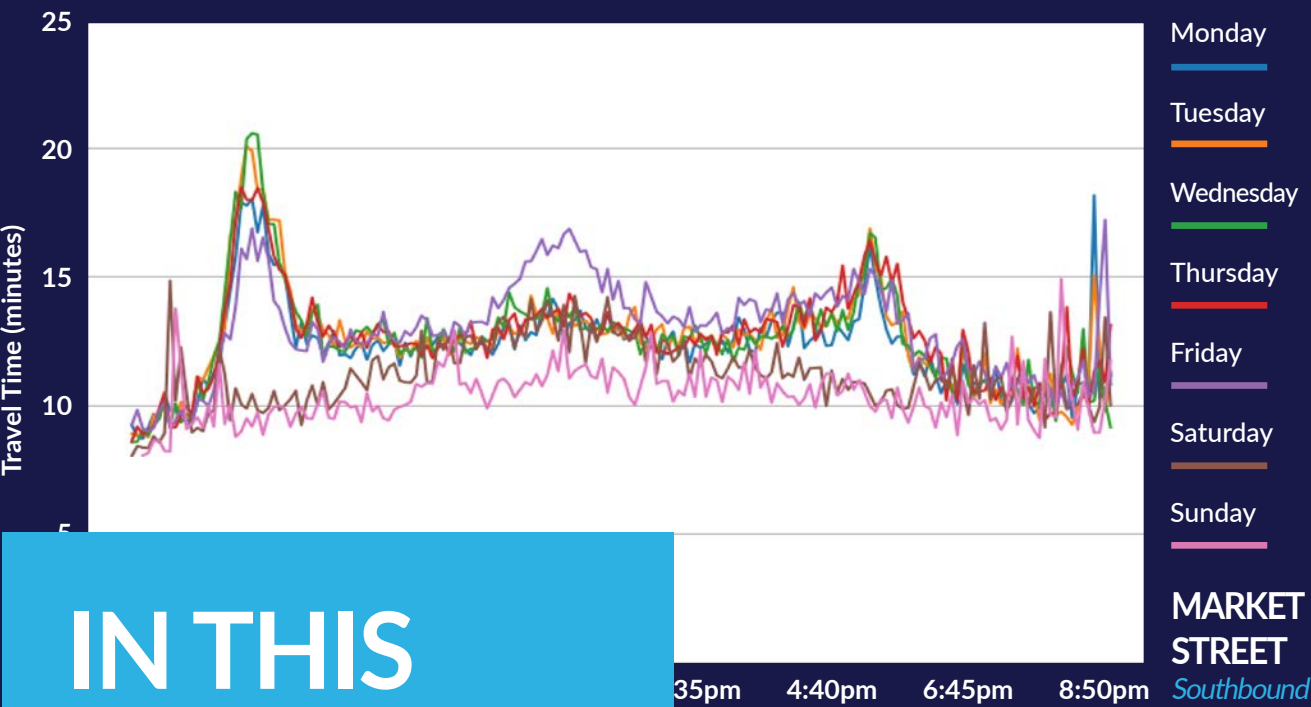
Metrics used for Multimodal scores included transit stops and ridership, bicycle suitability, pedestrian suitability, bicycle crash rates, and pedestrian crash rates. These metrics reveal which corridors are utilizing or have the current capacity to utilize various modes of travel. Each metric was worth 10 points. Points were assigned by creating a range for each metric using the high, low, and average score. Each corridor was then given a score of 1-10, which could be compared to the other corridors. The highest Multimodal score possible was 50, with the highest scores representing the corridors with the most multimodal facilities and the greatest suitability for multimodal travel.

Intersection performance was also included as a metric. Intersections were given a score of 1-6 based on a hot spot severity index. Intersections with a score of 6 were identified as hot spots in the segment snapshots and represent potential locations for further analysis.

	PERFORMANCE METRIC	**POINTS POSSIBLE**	**TOTAL**
TRAVEL TIME RELIABILITY	Volume/Capacity (V/C)	10	
	Delay Rate (minutes/mile) AM (2-hour window)	10	
	Delay Rate (minutes/mile) PM (2-hour window)	10	
	Travel Time Reliability (80th percentile/50th percentile) AM High TT[1]	10	**70**
	Travel Time Reliability (80th percentile/50th percentile) PM High TT	10	
	Crash Rate (crashes/mile)	10	
	Truck Volume (AADT[2])	10	
	THE **HIGHER** THE SCORE, THE **WORSE** THE TRAVEL TIME RELIABILITY AND CONGESTION (INDICATES A GREATER NEED FOR CONGESTION MANAGEMENT)		
MULTIMODAL	Transit Ridership (Stop Level, All Routes)	10	
	Bicycle Suitability	10	
	Pedestrian Suitability	10	**50**
	Bicycle Crashes	10	
	Pedestrian Crashes	10	
	THE **HIGHER** THE SCORE, THE **MORE** MULTIMODAL FACILITIES AND THE **BETTER** SUITED FOR TRAVEL BY ALTERNATIVE MODES		

[1]Travel Time   [2]Average Annual Daily Traffic

Travel Time (minutes)

25
20
15
10
5

Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Sunday

MARKET STREET *Southbound*

:35pm   4:40pm   6:45pm   8:50pm

IN THIS SECTION:

1. DATA COLLECTION EFFORTS
2. PERFORMANCE ANALYSIS
3. CORRIDOR SCORING

DATA COLLECTION EFFORTS

Many sources of data were used during the development of the CMP. One of the most innovative technologies implemented during the 2020 CMP is the inclusion of NPMRDS data provided by FHWA. NPMRDS is an archived speed and data set collected through probe data from fleet vehicles, connected cars, and mobile apps. This data was collected by a consultant which provided AM and PM travel times and delay rates for each corridor. Previously, travel time data was collected by making several trips along a given corridor in a vehicle and timing the trips. In addition to providing a significantly larger sample, this new data set reduces required equipment and man hours for collecting data. Future studies will also have the ability to begin looking at seasonal trends and the impact of large events on traffic. Other data sources include NCDOT, Wave Transit, and local municipalities as well as WMPO GIS data and studies. The table on the following page summarizes the data collected and sources.

DATA COLLECTION FOR THIS REPORT			
OBJECTIVE	**NEEDED DATA**	**AGENCY**	**COLLECTION METHOD**
Travel Time Reliability	Volume (V/C)	NCDOT	NCDOT Volumes
	Capacity (V/C)	NCDOT	NCDOT Transportation Demand Model
	Average Delay AM	Kittelson/City of Wilmington	NPMRDS
	Average Delay PM	Kittelson/City of Wilmington	NPMRDS
	Travel Time AM	Kittelson/City of Wilmington	NPMRDS
	Travel Time PM	Kittelson/City of Wilmington	NPMRDS
	Crash Rate	NCDOT	NCDOT Traffic Safety
	Truck Percentage	NCDOT	NCDOT Volumes
	Hot Spot Identification	Kittelson/City of Wilmington	NPMRDS
Multimodal	Transit Stops	Wave Transit	Wave Transit
	Transit Ridership	Wave Transit	Wave Transit
	Bicycle Suitability	WMPO	WMPO Study
	Bicycle Infrastructure	WMPO	WMPO GIS
	Pedestrian Infrastructure	WMPO	WMPO GIS
	Bicycle Crashes	NCDOT	NCDOT Traffic Safety
	Pedestrian Crashes	NCDOT	NCDOT Traffic Safety

PERFORMANCE ANALYSIS

By looking at regional and corridor performance results, planners can identify travel patterns and begin to discover the time, location, and causes of congestion. Regional maps and corridor level performance reports were created for each metric. Regional maps help to visualize travel patterns and multimodal accommodations at a network level, while corridor performance reports help to identify causes and potential solutions for congestion at a project level. A performance analysis was conducted on all 30 corridors using metrics for Travel Time Reliability as well as Multimodal metrics. Scoring the corridors makes it easier to determine which congestion management strategies are appropriate and helps stakeholders recommend context-sensitive solutions.
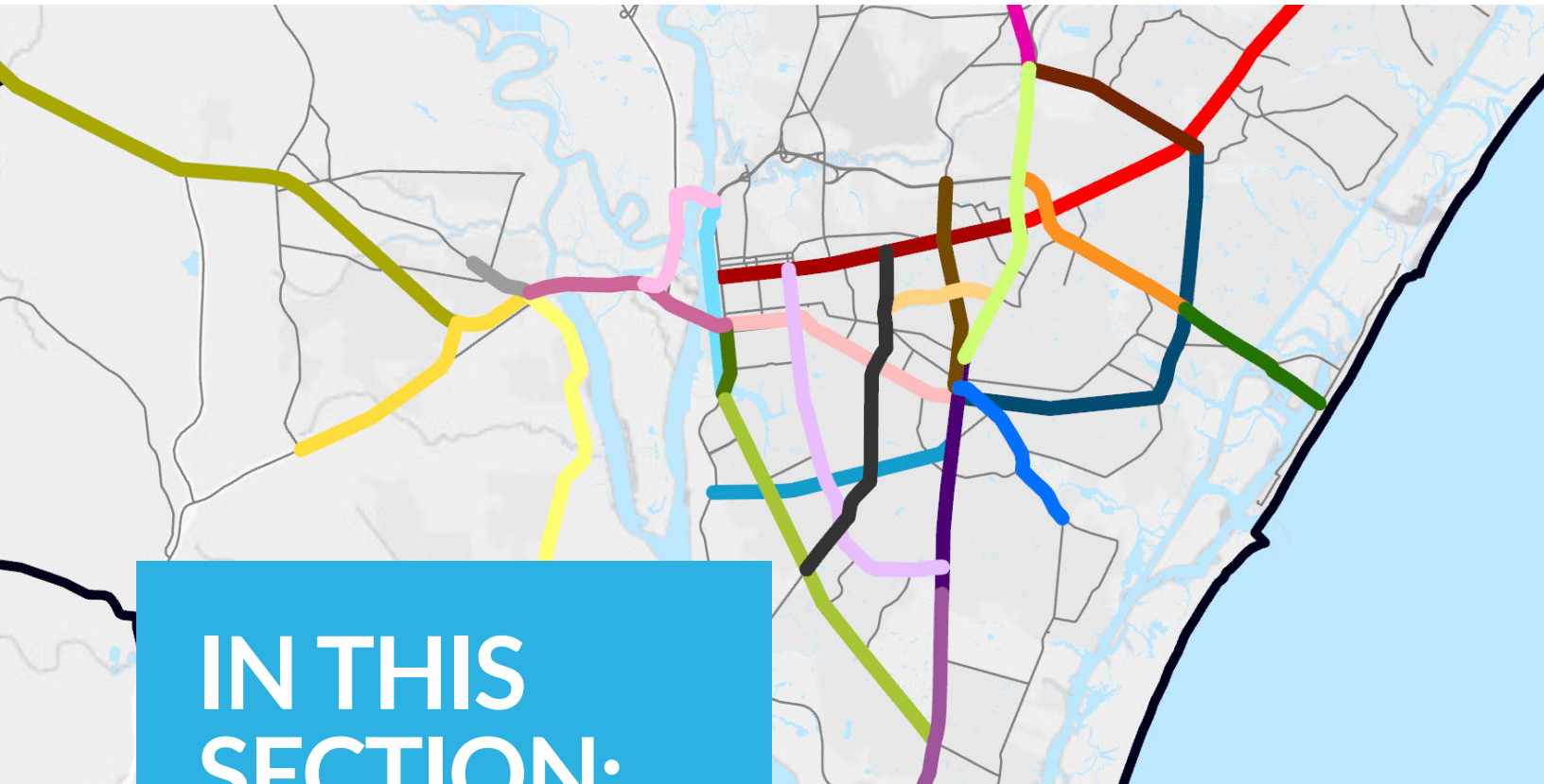
CORRIDOR SCORING

The following pages contain the scores for each corridor. Two total scores were given for each corridor: (1) Travel Time Reliability and (2) Multimodal. Each score reveals how a corridor compares to the other corridors in each respective metric.

CORRIDOR SCORING (CONTINUED)

ROAD *from/to*	MARKET STREET *from 3rd Street to College Road*	MARKET STREET *from College Road to NC 140*	OLEANDER DRIVE *from Cape Fear Memorial Bridge to Treadwell St*	OLEANDER DR/MILITARY CUTOFF RD *from Treadwell Street to Gordon Road*	SHIPYARD BLVD *from River Road to College Road*	FRONT STREET *from W Lake Shore Dr to Cape Fear Memorial Bridge*	3RD STREET *from W Lake Shore Dr to Wooster Street*	CAROLINA BEACH ROAD *from W Lake Shore Drive to College Road*	COLLEGE ROAD *from Gordon Road to Wilshire Blvd*	COLLEGE ROAD *from Wilshire Blvd to Pinecliff Drive*	COLLEGE RD/CAROLINA BEACH RD *from Pinecliff Drive to Sanders Road*	17th/16th STREET *from Market Street to College Road*
SEGMENT	1	2	3	4	5	6	7	8	9	10	11	12
Volume/Capacity (V/C)	4	9	4	7	1	10	2	6	8	7	7	5
Delay Rate (min/mile) AM 2-hour window (method 3)	5	8	6	4	7	4	10	6	7	10	4	5
Delay Rate (min/mile) PM 2-hour window (method 3)	7	7	9	8	7	5	10	6	10	7	3	5
Travel Time Reliability (80th/ 50th percentile) AM High TT (method 3)	2	7	3	2	3	8	6	6	3	7	10	7
Travel Time Reliability (80th/ 50th percentile) PM High TT (method 3)	3	9	7	6	4	9	10	6	8	6	8	7
Crash Rate (crashes/mile)	10	10	5	5	5	8	10	7	10	9	6	4
Truck Volume (AADT)	3	6	4	5	5	9	3	7	6	5	6	2
TOTAL *70 points possible*	**34**	**56**	**38**	**37**	**32**	**53**	**51**	**44**	**52**	**51**	**44**	**35**
Transit Ridership (Stop Level, All Routes)	10	0	6	5	8	6	3	9	8	5	3	8
Bicycle Suitability	4	4	4	7	6	5	4	4	4	4	4	8
Pedestrian Suitability	10	2	8	5	6	4	10	6	3	7	1	9
Bicycle Crashes	3	8	2	5	4	1	1	5	4	4	10	3
Pedestrian Crashes	1	6	3	7	5	10	10	5	5	4	5	3
TOTAL *50 points possible*	**28**	**20**	**23**	**29**	**29**	**26**	**28**	**29**	**24**	**24**	**23**	**31**

TRAVEL TIME RELIABILITY — 10 points/each possible
MULTIMODAL — 10 points/each possible

ROAD *from/to*	KERR AVENUE *from MLK Jr Pkwy to College Road*	MLK JR PKWY/EASTWOOD ROAD *from College Road to Military Cutoff Road*	RANDALL PKWY *from Covil Ave/Independence Blvd to College Rd*	US74/76 *from Maco Road to US17/Ocean Highway*	US17/OCEAN HIGHWAY *from Lanvale Rd to Cape Fear Memorial Bridge*	NC133/ RIVER ROAD *from US17/74/76 to Rabon Way*	US17/74/76 *from NC133 Split to 5th Avenue*	US421/NC 133 *from US74 Split to 3rd Street*	US117/COLLEGE ROAD *from Holly Shelter Road to Gordon Road*	GORDON ROAD *from I-40 to Military Cutoff Road*	US17/MARKET STREET *from NC140 to Washington Acres Road*	US17/NC210 *from Washington Acres Rd to Sloop Point Rd*	EASTWOOD RD/US76/CAUSEWAY DR *from Military Cutoff Road to Lumina Avenue*	US421/CAROLINA BEACH ROAD *from Sanders Road to Snow's Cut Bridge*	US421/LAKE PARK BLVD *from Snow's Cut Bridge to End of US421*	PINE GROVE DRIVE *from College Road to Masonboro Sound Rd*	VILLAGE ROAD *from US17/74/76 to Town Hall Drive*	INDEPENDENCE BLVD *from US421 to Market Street*
SEGMENT	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Volume/Capacity (V/C)	4	6	3	3	8	4	6	6	5	9	7	10	3	5	1	9	3	6
Delay Rate (min/mile) AM 2-hour window (method 3)	6	6	5	1	3	2	4	4	4	8	1	4	6	1	2	7	4	7
Delay Rate (min/mile) PM 2-hour window (method 3)	9	8	7	1	1	2	1	3	4	10	3	1	5	1	3	7	3	8
Travel Time Reliability (80th/ 50th percentile) AM High TT (method 3)	2	5	6	1	8	2	10	1	4	10	5	9	7	5	5	10	7	1
Travel Time Reliability (80th/ 50th percentile) PM High TT (method 3)	5	7	5	1	2	2	1	1	4	7	9	4	6	6	1	8	3	3
Crash Rate (crashes/mile)	8	6	6	2	2	1	1	4	3	6	3	4	4	6	1	3	2	4
Truck Volume (AADT)	1	4	1	8	10	4	9	9	4	1	7	8	3	6	3	1	1	1
TOTAL *70 points possible*	**35**	**42**	**33**	**17**	**34**	**17**	**32**	**28**	**28**	**51**	**35**	**40**	**34**	**30**	**16**	**45**	**23**	**30**
Transit Ridership (Stop Level, All Routes)	7	3	5	1	1	0	1	0	4	4	0	0	2	2	2	1	2	7
Bicycle Suitability	8	10	10	0	0	5	0	0	6	4	2	4	9	1	9	6	6	10
Pedestrian Suitability	8	9	10	0	0	1	0	0	1	1	1	1	8	1	7	2	5	7
Bicycle Crashes	3	1	1	10	10	10	10	10	10	10	10	10	10	3	10	10	6	7
Pedestrian Crashes	1	6	1	10	10	10	10	10	6	6	7	10	10	2	9	8	8	9
TOTAL *50 points possible*	**27**	**29**	**27**	**21**	**21**	**26**	**21**	**20**	**27**	**25**	**20**	**25**	**39**	**9**	**37**	**27**	**27**	**40**

IN THIS SECTION:

1. VOLUME/CAPACITY (V/C)
2. DELAY RATE (AM)
3. DELAY RATE (PM)
4. TRAVEL TIME RELIABILITY (AM)
5. TRAVEL TIME RELIABILITY (PM)
6. CRASH RATE
7. TRUCK VOLUME
8. TRANSIT RIDERSHIP
9. BICYCLE SUITABILITY
10. PEDESTRIAN SUITABILITY
11. BICYCLE CRASHES
12. PEDESTRIAN CRASHES

The following pages contain maps of the WMPO CMP network for each of the 12 performance metrics utilized in this report.

The purpose of the regional mapping is to show a side-by-side comparison of all 30 CMP corridors for each performance metric. For individual results of a specific corridor, refer to the segment snapshots on pages 31-90.

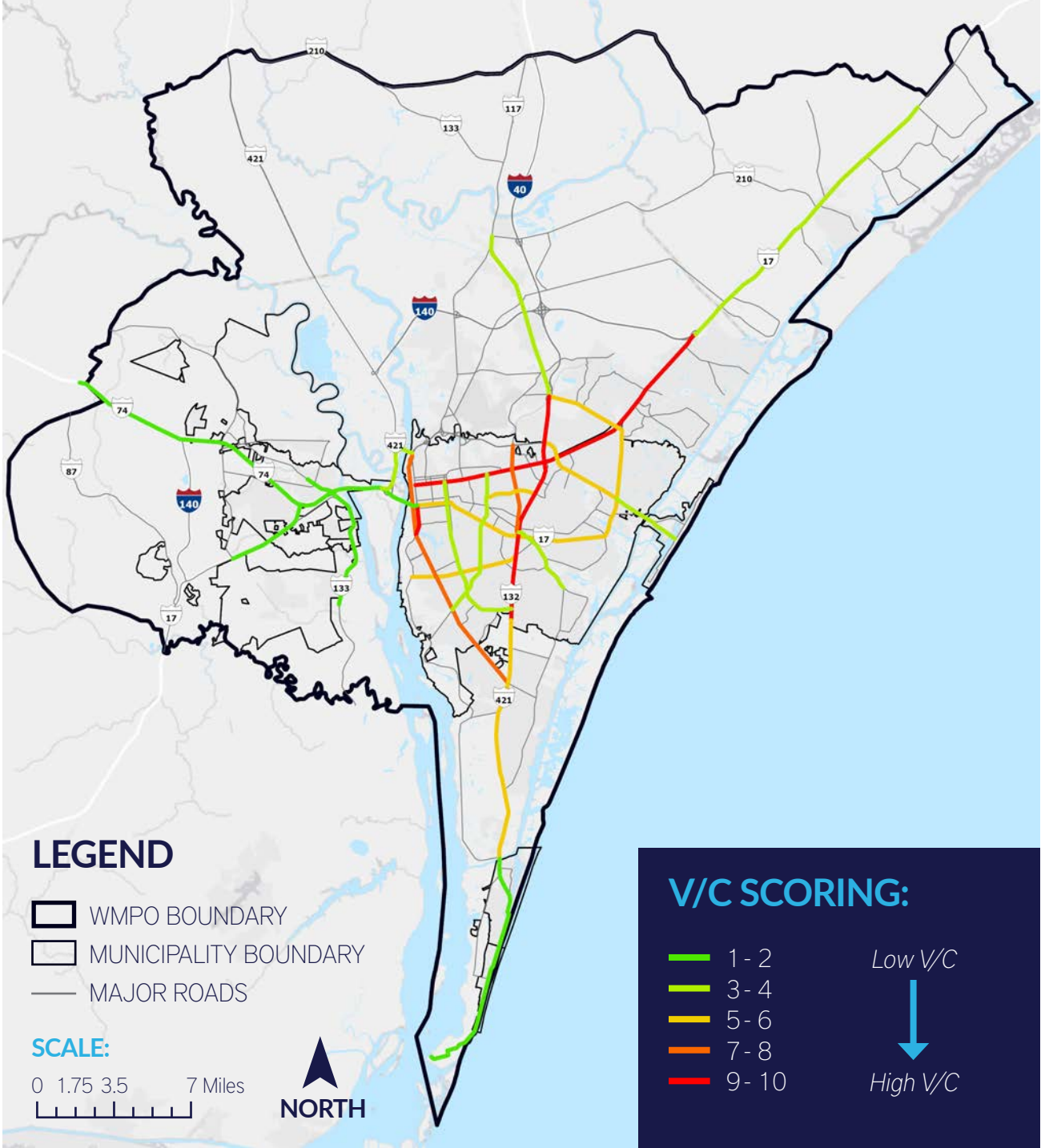**FIGURE 1:**

VOLUME/CAPACITY (V/C)

LEGEND

☐ WMPO BOUNDARY
☐ MUNICIPALITY BOUNDARY
— MAJOR ROADS

SCALE:
0   1.75   3.5   7 Miles

NORTH

V/C SCORING:

— 1 - 2   *Low V/C*
— 3 - 4
— 5 - 6
— 7 - 8
— 9 - 10   *High V/C*

FIGURE 2:
DELAY RATE (AM)

FIGURE 3:
DELAY RATE (PM)

LEGEND

- ▭ WMPO BOUNDARY
- ▭ MUNICIPALITY BOUNDARY
- — MAJOR ROADS

SCALE:
0   1.75 3.5   7 Miles

NORTH

DELAY RATE SCORING (AM):

- ▬ 1 - 2   *Low Average Delay*
- ▬ 3 - 4
- ▬ 5 - 6
- ▬ 7 - 8
- ▬ 9 - 10   *High Average Delay*

LEGEND

- ▭ WMPO BOUNDARY
- ▭ MUNICIPALITY BOUNDARY
- — MAJOR ROADS

SCALE:
0   1.75 3.5   7 Miles

NORTH

DELAY RATE SCORING (PM):

- ▬ 1 - 2   *Low Average Delay*
- ▬ 3 - 4
- ▬ 5 - 6
- ▬ 7 - 8
- ▬ 9 - 10   *High Average Delay*

FIGURE 4:

TRAVEL TIME RELIABILITY (AM)

LEGEND

☐ WMPO BOUNDARY
☐ MUNICIPALITY BOUNDARY
— MAJOR ROADS

SCALE:

0 1.75 3.5   7 Miles

NORTH

**TRAVEL TIME
RELIABILITY (AM):**

— 1 - 2   *High Reliability*
— 3 - 4
— 5 - 6
— 7 - 8
— 9 - 10   *Low Reliability*
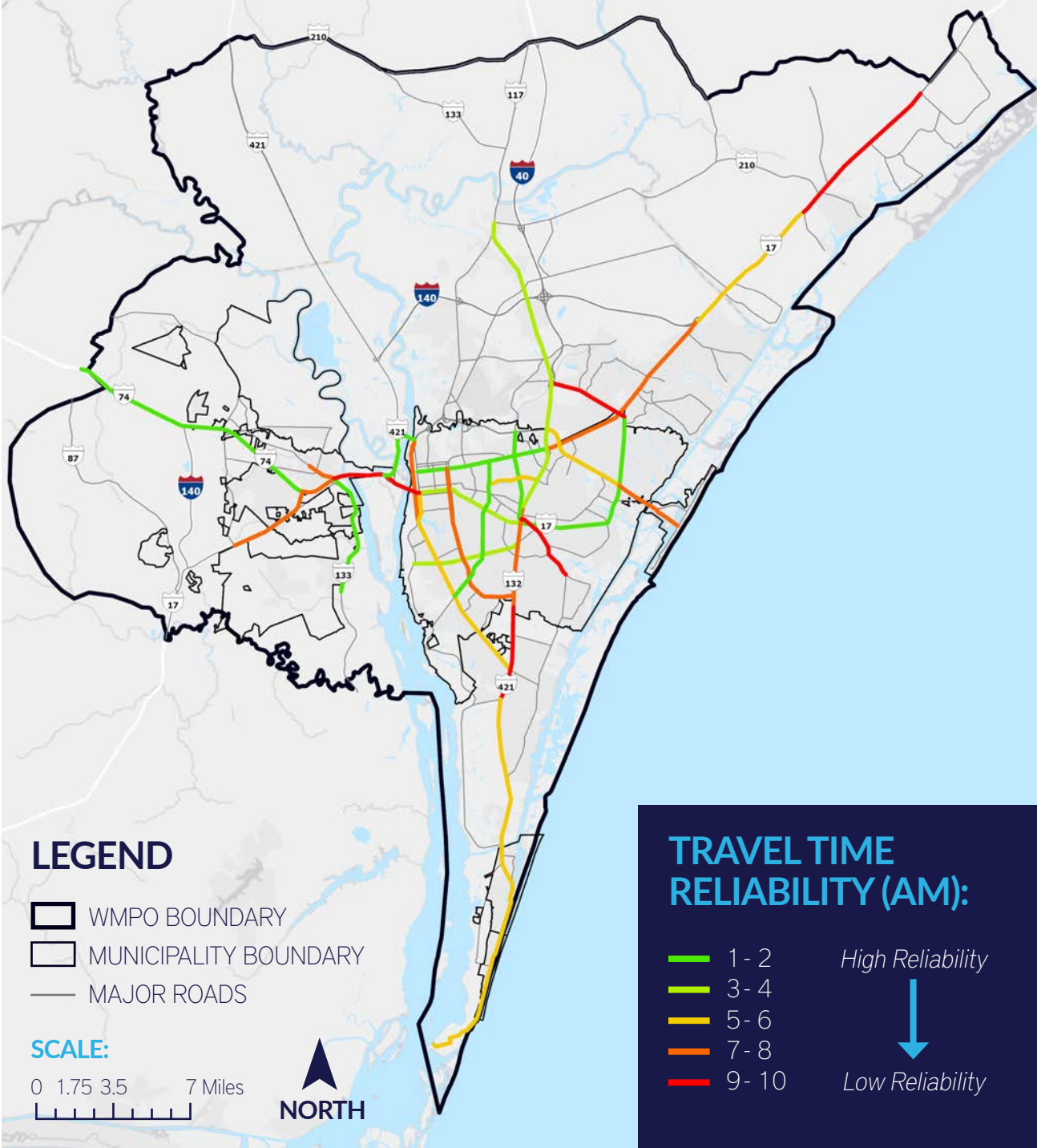
FIGURE 5:

TRAVEL TIME RELIABILITY (PM)

LEGEND

☐ WMPO BOUNDARY
☐ MUNICIPALITY BOUNDARY
— MAJOR ROADS

SCALE:

0 1.75 3.5   7 Miles

NORTH

**TRAVEL TIME
RELIABILITY (PM):**

— 1 - 2   *High Reliability*
— 3 - 4
— 5 - 6
— 7 - 8
— 9 - 10   *Low Reliability*
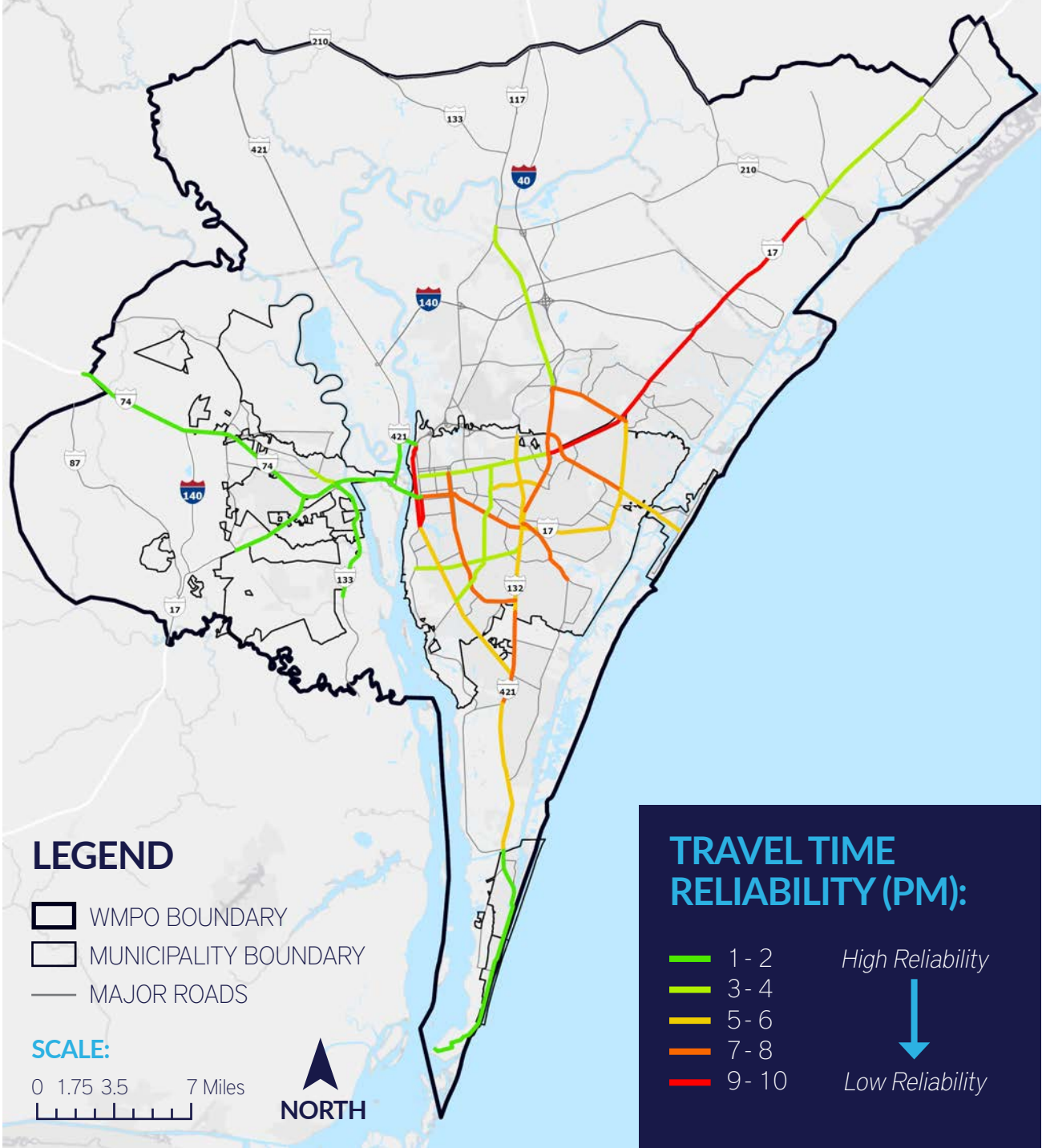
FIGURE 6:
CRASH RATE

FIGURE 7:
TRUCK VOLUME

LEGEND

☐ WMPO BOUNDARY
☐ MUNICIPALITY BOUNDARY
— MAJOR ROADS

SCALE:
0 1.75 3.5   7 Miles

NORTH

CRASH RATE SCORING:

— 1 - 2   *Low Crash Rate/Mile*
— 3 - 4
— 5 - 6
— 7 - 8
— 9 - 10   *High Crash Rate/Mile*

LEGEND

☐ WMPO BOUNDARY
☐ MUNICIPALITY BOUNDARY
— MAJOR ROADS

SCALE:
0 1.75 3.5   7 Miles

NORTH

TRUCK VOLUME SCORING:

— 1 - 2   *Low Truck Volume*
— 3 - 4
— 5 - 6
— 7 - 8
— 9 - 10   *High Truck Volume*

FIGURE 8:

TRANSIT RIDERSHIP

LEGEND

- ☐ WMPO BOUNDARY
- ☐ MUNICIPALITY BOUNDARY
- — MAJOR ROADS
- ∘ WAVE BUS STOPS
- ▬ ▬ WAVE BUS ROUTES

SCALE:

0 1.75 3.5   7 Miles

NORTH

TRANSIT SCORING:

- ▬ 0 - 2   *Low # of Stops/*
- ▬ 3 - 4   *Low Ridership*
- ▬ 5 - 6   ⬇
- ▬ 7 - 8   *High # of Stops/*
- ▬ 9 - 10   *High Ridership*
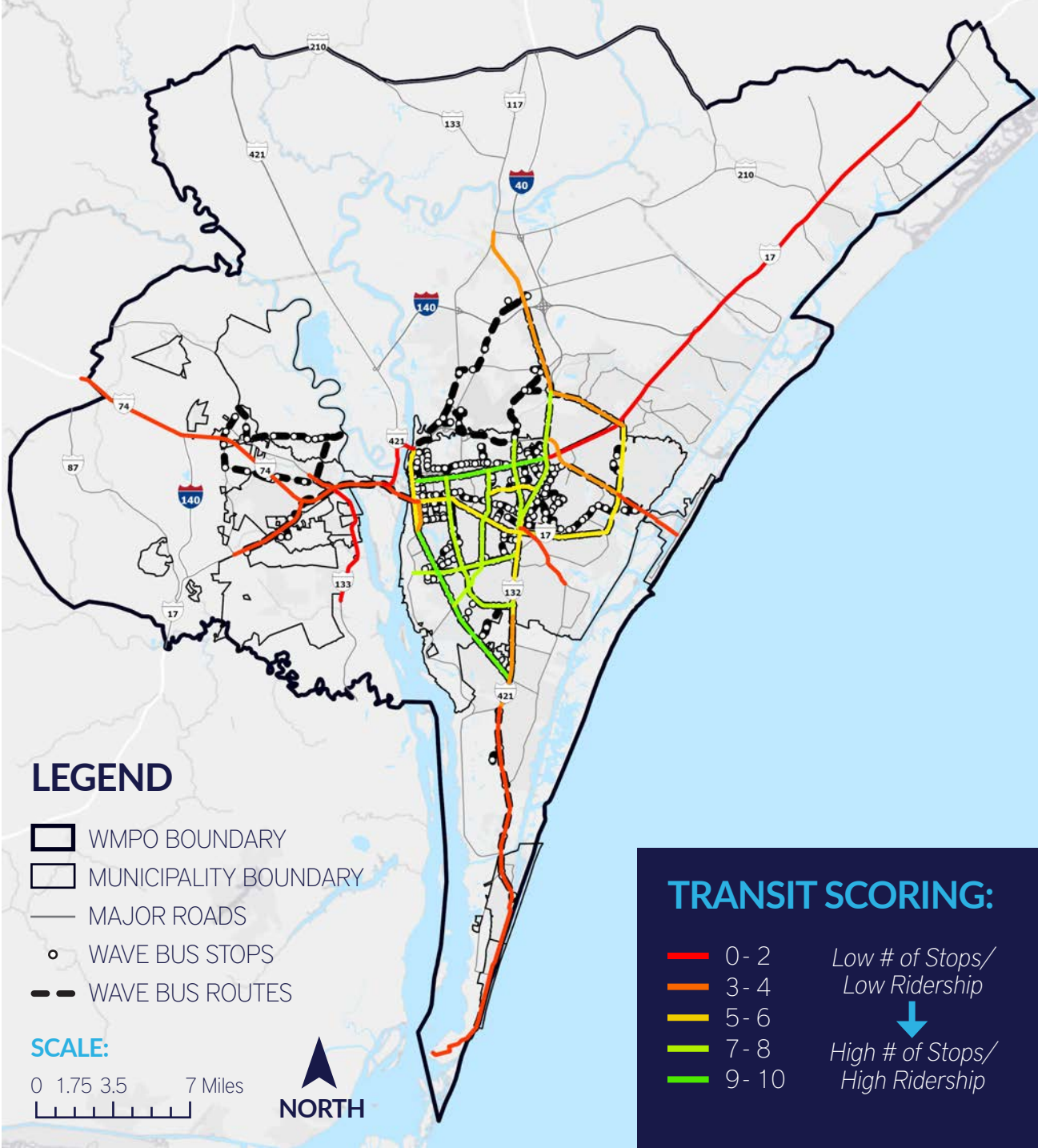
FIGURE 9:

BICYCLE SUITABILITY

LEGEND

- ☐ WMPO BOUNDARY
- ☐ MUNICIPALITY BOUNDARY
- — MAJOR ROADS

SCALE:

0 1.75 3.5   7 Miles

NORTH

BICYCLE SCORING:

- ▬ 1 - 2   *Low Suitability/*
- ▬ 3 - 4   *Less Infrastructure*
- ▬ 5 - 6
- ▬ 7 - 8   *High Suitability/*
- ▬ 9 - 10   *More Infrastructure*

Shading indicates relative
density of bicycle facilities
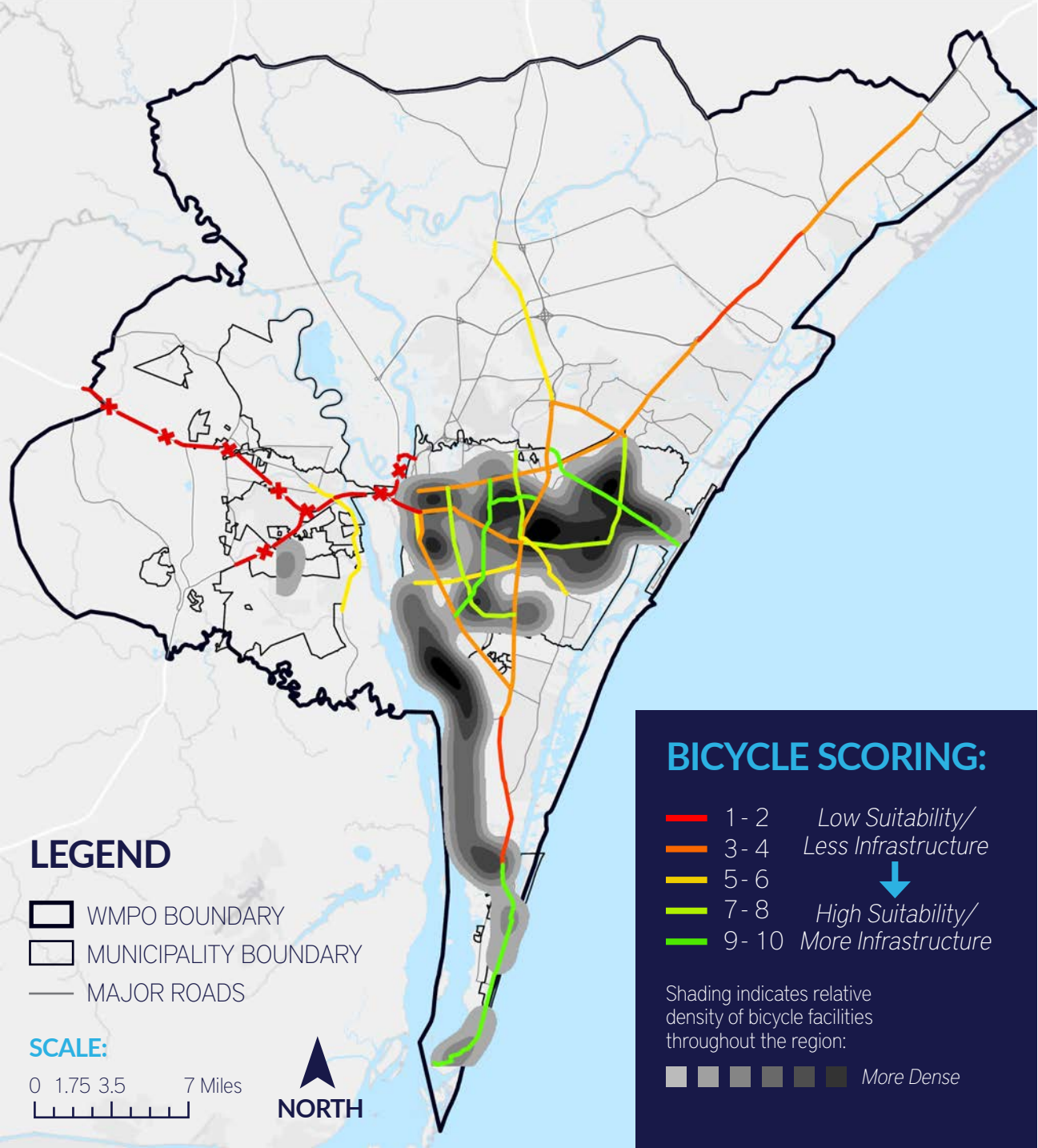throughout the region:

▪ ▪ ▪ ▪ ▪ ▪   *More Dense*

FIGURE 10:
PEDESTRIAN SUITABILITY
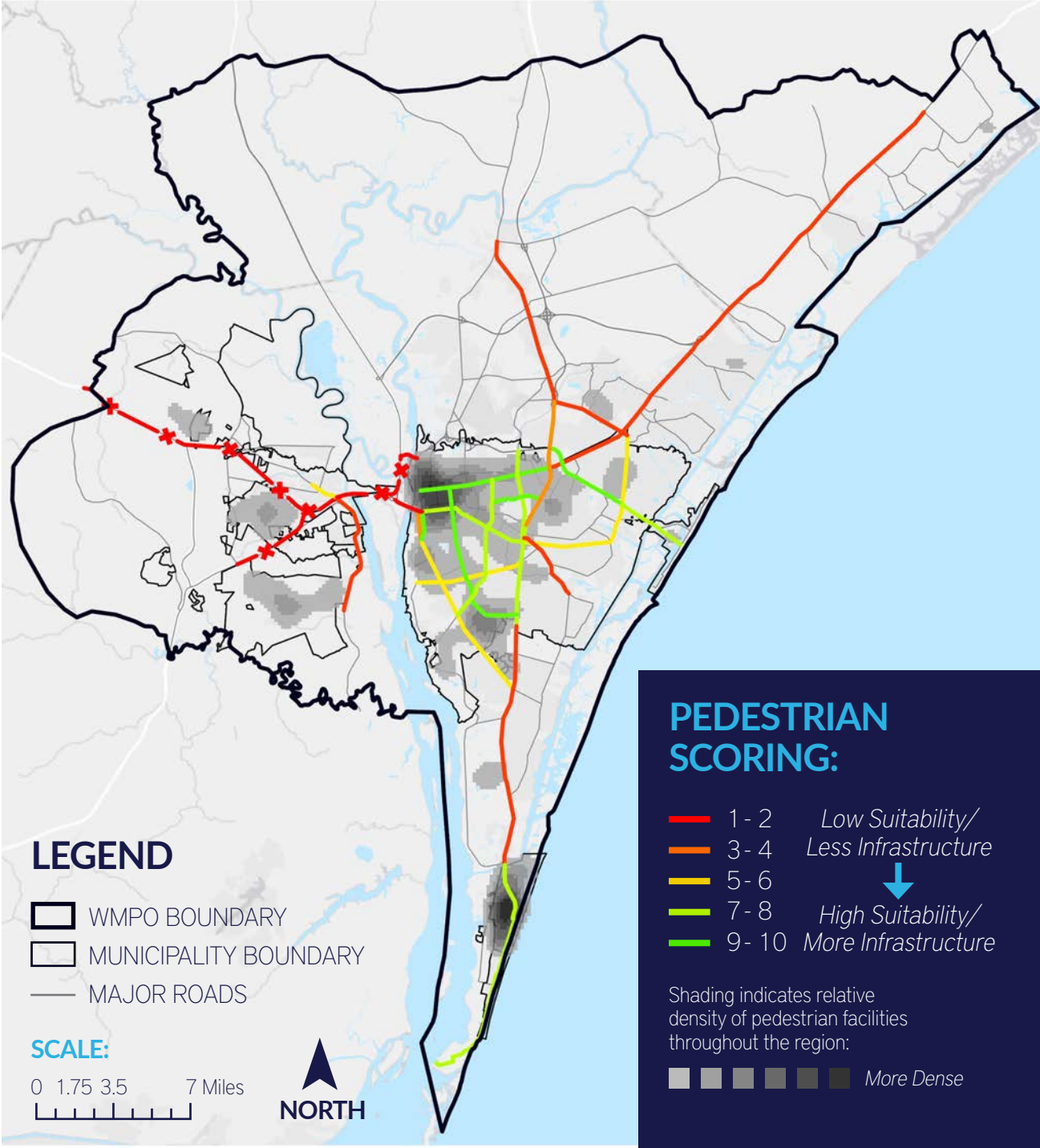
FIGURE 11:
BICYCLE CRASHES

LEGEND

☐ WMPO BOUNDARY
☐ MUNICIPALITY BOUNDARY
— MAJOR ROADS

SCALE:
0 1.75 3.5   7 Miles

NORTH

PEDESTRIAN SCORING:

— 1 - 2   *Low Suitability/*
— 3 - 4   *Less Infrastructure*
— 5 - 6
— 7 - 8   *High Suitability/*
— 9 - 10   *More Infrastructure*

Shading indicates relative density of pedestrian facilities throughout the region:

☐☐☐☐☐☐☐ *More Dense*

LEGEND

☐ WMPO BOUNDARY
☐ MUNICIPALITY BOUNDARY
— MAJOR ROADS

SCALE:
0 1.75 3.5   7 Miles

NORTH

BICYCLE CRASH SCORING:

— 1 - 2   *High Crash Rate/Mile*
— 3 - 4
— 5 - 6
— 7 - 8
— 9 - 10   *Low Crash Rate/Mile*

FIGURE 12:

PEDESTRIAN CRASHES

LEGEND

WMPO BOUNDARY

MUNICIPALITY BOUNDARY

MAJOR ROADS

SCALE:

0 1.75 3.5   7 Miles

NORTH

PEDESTRIAN CRASH SCORING:

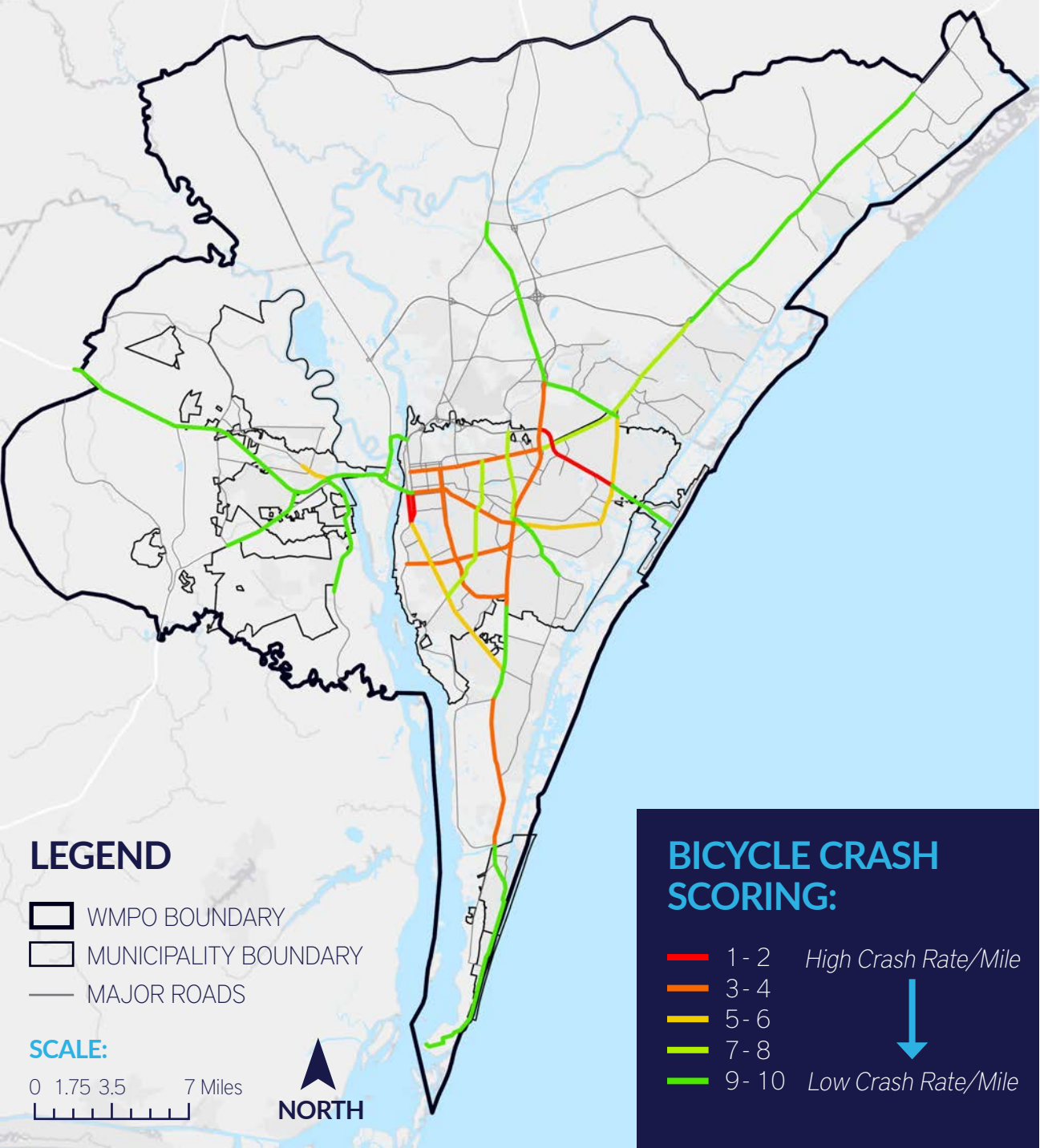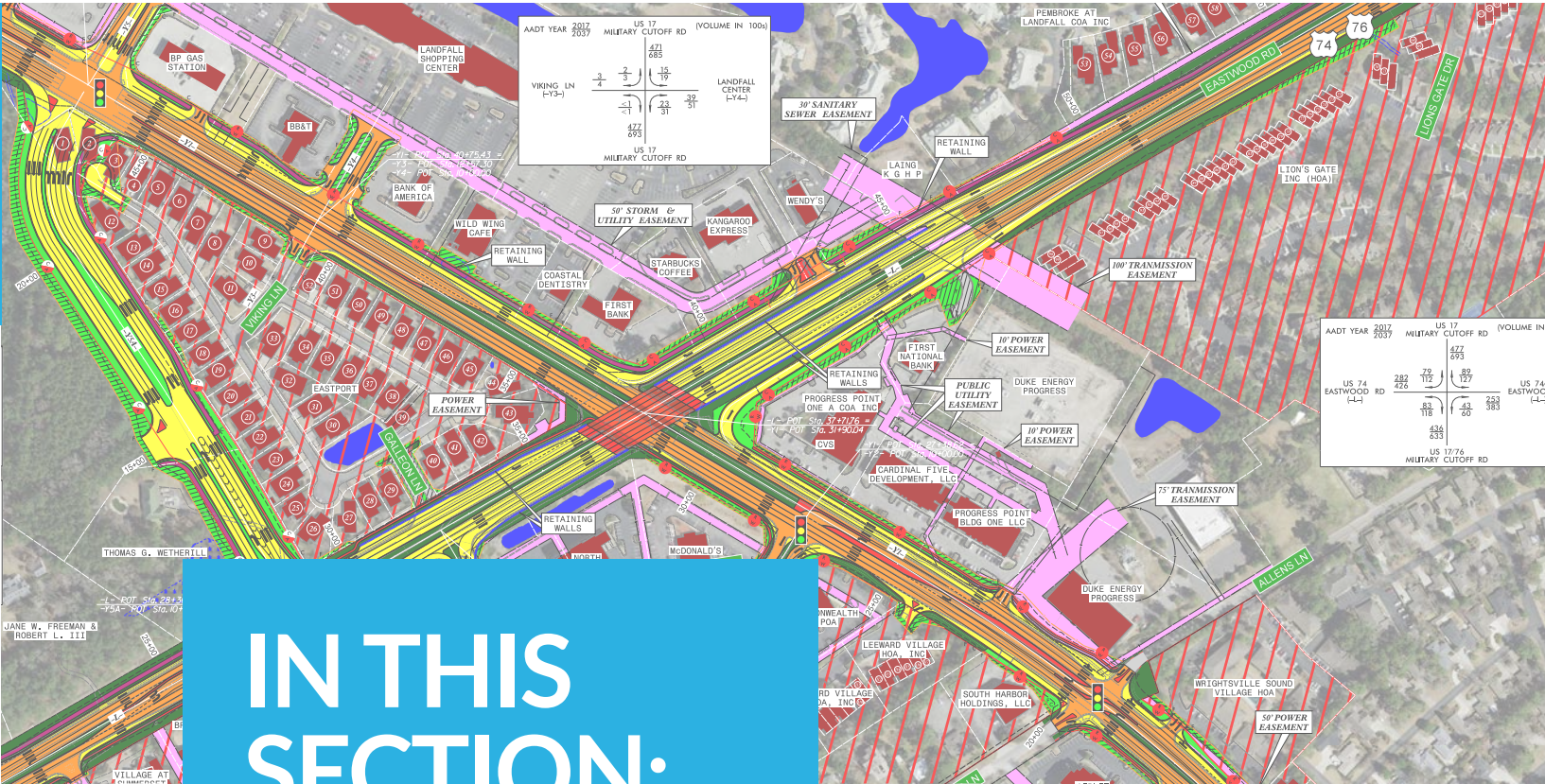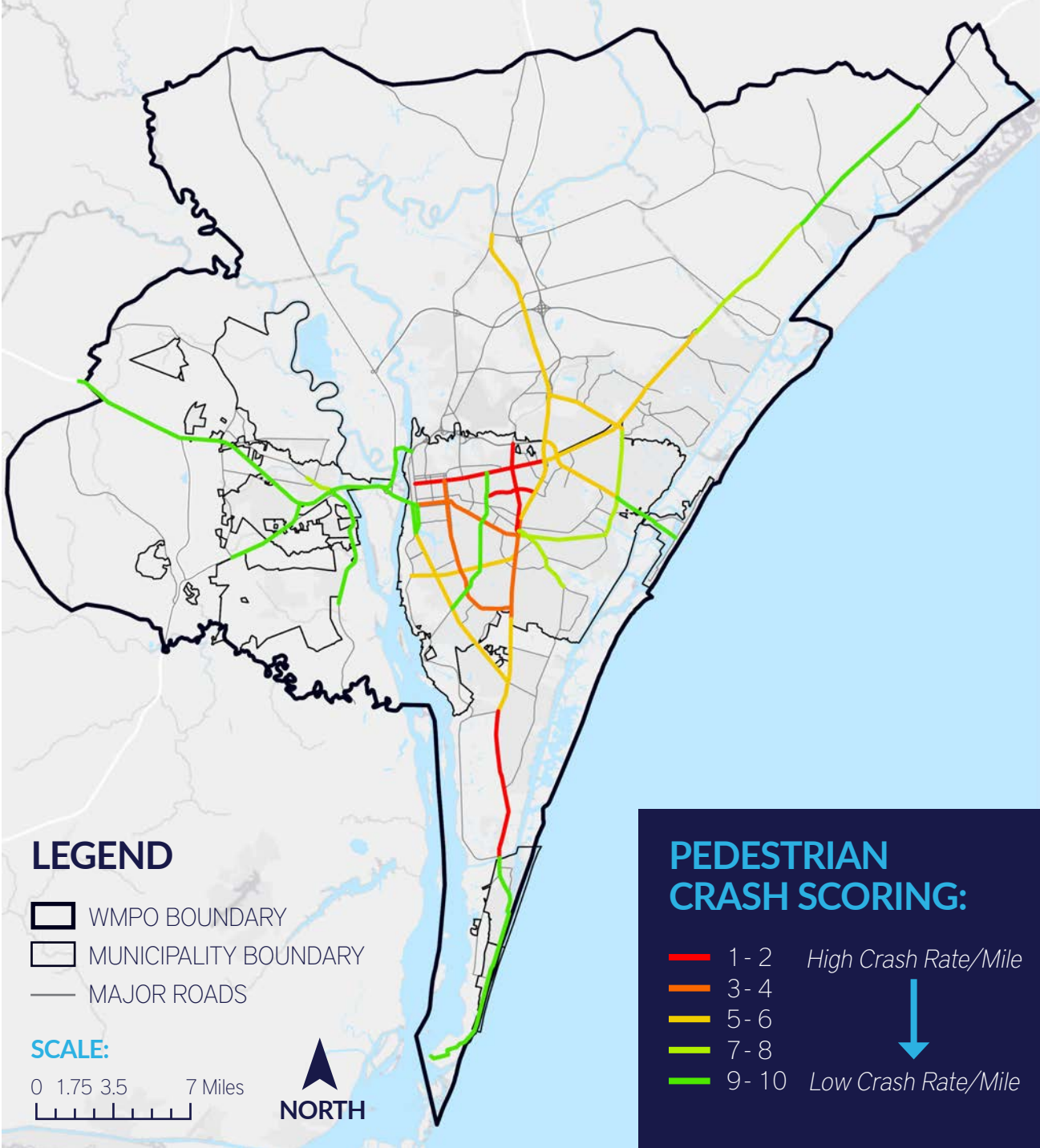1 - 2   *High Crash Rate/Mile*

3 - 4

5 - 6

7 - 8

9 - 10   *Low Crash Rate/Mile*

IN THIS SECTION:

1. CONGESTION MANAGEMENT STRATEGIES TOOLBOX

Once the corridors were analyzed, the results were presented to local stakeholders that are familiar with the local transportation network. A congestion management toolbox has been created that can be used to identify congestion management strategies that are applicable to different contexts. This 'toolbox' has been developed through several CMPs and collaboration with other Metropolitan Planning Organizations (MPOs).

CONGESTION MANAGEMENT STRATEGIES TOOLBOX

The following pages contain a summary of the congestion management strategies identified for different types of corridors.

CONGESTION MANAGEMENT STRATEGIES TOOLBOX (CONTINUED)

TECHNIQUE	DIFFICULTY
REDUCE DEMAND	
Alternative Work Schedules	Low
Carpools and Vanpools	Low
Carpool Parking Incentives	Low
Flexible Workweeks	Low
Employer Outreach	Low
Telecommuting Policy	Low
Employer Shuttles	Medium
Electronic Payment Systems	Medium
Alternative Roadways	High (Urban)/Medium (Suburban/Rural)
HOV Lanes	High
Roadway User Fees/HOT Lanes	High
Bridge Tolling	High
Variable Priced Lanes	High
Cordon Pricing	High
SHIFT MODE OF TRIP	
Improve Bicycle Storage	Low
Establish Park and Ride Lots	Low
Bicycle Sharing Program	Low
Bicycle/Pedestrian Education Program	Low
Safe Routes to School Initiatives	Low
Expand Bicycle and Pedestrian Network	Low (Urban)/Medium (Suburban/Rural)
Improve Multimodal Access at Intersections	Low (Urban)/Medium (Suburban/Rural)
Car Sharing	Medium
Carpool/Vanpool	Medium
Transit Stop Improvements (Shelter, Bike Rack, Bench)	Medium
Sidewalk Gap Closure Program	Medium
Improve Multi-Use Path (MUP) Connectivity	Medium
Bicycle and Pedestrian Corridor Safety Study	Medium
Light Rail	High
Transit Express Routes	High
Increase Transit Frequency	High
Bus Rapid Transit (BRT)	High
Transit Signal Priority	High

IMPROVE OPERATIONS	
Signal Retiming	Low
Signal Event/Holiday Timing Plans	Low
Improve Signage	Low
Dynamic Messaging	Low
Development Review	Low
Transit Information Systems	Low
Work Zone Management	Low
Emergency Management System	Low
Public Awareness Safety Campaign	Low
Freight Traffic Appointments	Medium
Freight Traffic Corridor Signal Timing	Medium
Advanced Transportation Technology	Medium
Service Patrol	Medium
Parking Management and Information Systems	Medium
511 Traveler Information	Medium
Spot Safety Improvements	Medium
Freeway Ramp Metering	Medium
Variable Speed Limits	Medium
Red-Light Camera Enforcement	Medium
Turn Lane Construction	Medium
Access Management	Medium (Suburban)/High (Urban)
Geometric Intersection Improvements	Medium (Suburban)/High (Urban)
Reversible Lanes	High
Traffic Management Center	High
INCREASE CAPACITY	
Add Turning Lanes	Medium
Bus Rapid Transit (BRT) Lanes	High
Add General Purpose Lanes	High
Convert Intersection or Grade Separation to Interchange	High
LAND USE	
Live-Work Proximity Incentives	Low
Require MPO Review for Regional Scale Developments	Low
Infill and Densification	Medium
Accommodate All Modes in New Development	Medium
Construct Supportive Accessways with New Development	Medium
Mixed Use Land Development	Medium
Growth Management Restrictions	Medium
Transit Oriented Land Development	High
Regional Activity Centers	High

MAP OF ROADWAY SEGMENT

SEGMENT #:

ROADWAY STUDIED

FROM: STARTING POINT
(CROSS STREET)

TO: END POINT
(CROSS STREET)

LENGTH: # MILES

HOT SPOTS: # OF INTERSECTIONS WITH AT LEAST ONE MOVEMENT APPROACHING CAPACITY

1. CROSS STREET A
2. CROSS STREET B
3. CROSS STREET C

ALTERNATE ROUTE(S):
ROADWAY X

TRAVEL TIME RELIABILITY DATA		SCORE
Volume/Capacity (V/C)	X	**#** *(Range: 0-10)*
Delay Rate (minutes/mile) AM	X	**#** *(Range: 0-10)*
Delay Rate (minutes/mile) PM	X	**#** *(Range: 0-10)*
Travel Time Reliability AM	X	**#** *(Range: 0-10)*
Travel Time Reliability PM	X	**#** *(Range: 0-10)*
Crash Rate (crashes/mile)	X	**#** *(Range: 0-10)*
Truck Volume (AADT)	X	**#** *(Range: 0-10)*

MULTIMODAL DATA		SCORE
Transit Ridership (stops	combined ridership)	X	Y	**#** *(Range: 0-10)*
Bicycle Suitability (suitability | % MUP | % bicycle infrastructure)	X	Y	Z	**#** *(Range: 0-10)*
Pedestrian Suitability (% sidewalk | % crosswalk | % MUP)	X	Y	Z	**#** *(Range: 0-10)*
Bicycle Crashes (crashes/mile)	X	**#** *(Range: 0-10)*
Pedestrian Crashes (crashes/mile)	X	**#** *(Range: 0-10)*

WMPO CONGESTION MANAGEMENT TECHNIQUES

This section outlines the congestion management strategies from the toolbox (pages 27-28) that are best suited to mitigate congestion along this particular roadway segment. The strategies are organized using the following categories:

REDUCE DEMAND:
• Strategy A (*if any*)

SHIFT MODE OF TRIP:
• Strategy B (*if any*)

IMPROVE OPERATIONS:
• Strategy C (*if any*)

INCREASE CAPACITY:
• Strategy D (*if any*)

LAND USE:
• Strategy E (*if any*)

MULTIMODAL SCORE: ##

RANGE: 0-50 *(Best possible score = 50)*

A roadway segment with a high multimodal score contains more multimodal facilities and/or is better suited for multimodal travel than a roadway segment with a low multimodal score.

TRAVEL TIME SCORE: ##

RANGE: 0-70 *(Best possible score = 0)*

A roadway segment with a high travel time score is less reliable in terms of travel time and more congested than a roadway segment with a low travel time score.

CURRENT PROJECTS AND PLANS

This section outlines any programmed or planned capital projects along this particular roadway segment.* The projects originate from the following plans/sources:

NOTES:
*Does not include bridge repair/maintenance or resurfacing projects
**2014 City of Wilmington Transportation Bond

2020-2029 STIP:
• Project 1 (*if any*)

CAPE FEAR MOVING FORWARD 2045:
• Project 2 (*if any*)

TRANSPORTATION BOND**:
• Project 3 (*if any*)

SEGMENT 1:

MARKET STREET

FROM: THIRD STREET
TO: COLLEGE ROAD

LENGTH: 4.42 MILES

HOT SPOTS: 6

1. 16th Street
2. 17th Street
3. Kerr Avenue
4. Wilmington Avenue
5. Lullwater Drive
6. New Centre Drive

ALTERNATE ROUTE(S):
MLK JR PKWY

WMPO CONGESTION MANAGEMENT TECHNIQUES

REDUCE DEMAND:
• Alternative Roadways

SHIFT MODE OF TRIP:
• Expand Bicycle and Pedestrian Network
• Improve Multimodal Access at Intersections
• Increase Transit Frequency
• Transit Stop Improvements

IMPROVE OPERATIONS:
• Access Management
• Geometric Intersection Improvements

LAND USE:
• Construct Supportive Accessways with New Development

TRAVEL TIME RELIABILITY DATA		SCORE
Volume/Capacity (V/C)	0.53	4
Delay Rate (minutes/mile) AM	0.83	5
Delay Rate (minutes/mile) PM	1.26	7
Travel Time Reliability AM	1.09	2
Travel Time Reliability PM	1.10	3
Crash Rate (crashes/mile)	157.69	10
Truck Volume (AADT)	690	3

MULTIMODAL DATA		SCORE
Transit Ridership (stops | combined ridership)	31 | 356,087	10
Bicycle Suitability (suitability | % MUP | % bicycle infrastructure)	2.55 | 0.00 | 0.00	4
Pedestrian Suitability (% sidewalk | % crosswalk | % MUP)	1.67 | 0.09 | 0.00	10
Bicycle Crashes (crashes/mile)	0.68	3
Pedestrian Crashes (crashes/mile)	2.71	1

MULTIMODAL SCORE: 28

TRAVEL TIME SCORE: 34

CURRENT PROJECTS AND PLANS

2020-2029 STIP:
• EB-6028 | Market St & 21st St HAWK Signal
• TD-5290 | Route 106 Amenity Upgrades
• TD-5298 | Route 101 Amenity Upgrades
• U-4902B | US17 BUS/Market St Access Management Improvements (CSX Railroad to Cinema Dr; Jacksonville St to north of College Rd)

CAPE FEAR MOVING FORWARD 2045:
• BP-639 | S 21st St & Market St Crosswalk Improvements
• BP-698 | Market St & Barclay Hills Dr Crosswalk Improvements

• BP-700 | Market St & Lullwater Dr Crosswalk Improvements
• PT-15 | Market St & Kerr Ave Amenity Upgrades
• PT-16 | Market St & Lullwater Dr Amenity Upgrades
• PT-47 | Market St & N 16th St Amenity Upgrades
• PT-147 | Rush Hour Service 8-11am & 3-5pm (105)
• PT-148 | Rush Hour Service 8-11am & 3-5pm (108)
• PT-151 | Earlier Weekday Service (105)
• PT-152 | Earlier Weekday Service (108)
• RW-219 | US17 BUS/Market St Road Diet (I of II)
• RW-220 | US17 BUS/Market St Road Diet (II of II)

TRANSPORTATION BOND:
(none)

SEGMENT 2:
MARKET STREET

FROM: COLLEGE ROAD
TO: NC 140

LENGTH: 6.37 MILES

HOT SPOTS: 8

1. MLK Jr Pkwy/Eastwood Road
2. Cardinal Drive
3. Green Meadows Drive
4. Gordon Road
5. Middle Sound Loop Road
6. Bayshore Drive
7. Porters Neck Road
8. Walmart Driveway

ALTERNATE ROUTE(S):
MILITARY CUTOFF ROAD EXT.
(FUTURE)

WMPO CONGESTION MANAGEMENT TECHNIQUES

REDUCE DEMAND:
- Alternative Roadways
- Carpool/Vanpool

SHIFT MODE OF TRIP:
- Expand Bicycle and Pedestrian Network
- Improve Multimodal Access at Intersections

IMPROVE OPERATIONS:
- Access Management
- Geometric Intersection Improvements

LAND USE:
- Transit-Oriented Land Development
- Require MPO Review for Regional Scale Developments
- Construct Supportive Accessways with New Development
- Mixed-Use Land Development
- Encourage Regional Activity Centers
- Infill and Densification

TRAVEL TIME RELIABILITY DATA		SCORE
Volume/Capacity (V/C)	0.91	9
Delay Rate (minutes/mile) AM	1.71	8
Delay Rate (minutes/mile) PM	1.33	7
Travel Time Reliability AM	1.17	7
Travel Time Reliability PM	1.27	9
Crash Rate (crashes/mile)	157.30	10
Truck Volume (AADT)	1305	6

MULTIMODAL DATA		SCORE
Transit Ridership (stops | combined ridership)	0 | 0	0
Bicycle Suitability (suitability | % MUP | % bicycle infrastructure)	2.00 | 0.00 | 0.00	4
Pedestrian Suitability (% sidewalk | % crosswalk | % MUP)	0.22 | 0.01 | 0.00	2
Bicycle Crashes (crashes/mile)	0.16	8
Pedestrian Crashes (crashes/mile)	0.63	6

MULTIMODAL SCORE: 20

**TRAVEL TIME SCORE: 56**

CURRENT PROJECTS AND PLANS

2020-2029 STIP:
- U-4902B | US17 BUS/Market St Access Management Improvements (CSX Railroad to Cinema Dr; Jacksonville St to north of College Rd)
- U-4902C | US17 BUS/Market St Access Management Improvements (North of College Rd to Station Rd, includes US74/MLK Jr Pkwy & Market St Interchange)
- U-4902D | US17 BUS/Market St Access Management Improvements (Middle Sound Loop Rd to Mendenhall Dr/ Marsh Oaks Dr)

CAPE FEAR MOVING FORWARD 2045:
- PT-8 | New Route to Porters Neck, Heavy Duty Bus
- PT-103 | Market St & Porters Neck Rd Park and Ride
- RW-186 | US17/17 BUS & NC140 Interchange Improvements

TRANSPORTATION BOND:
(none)
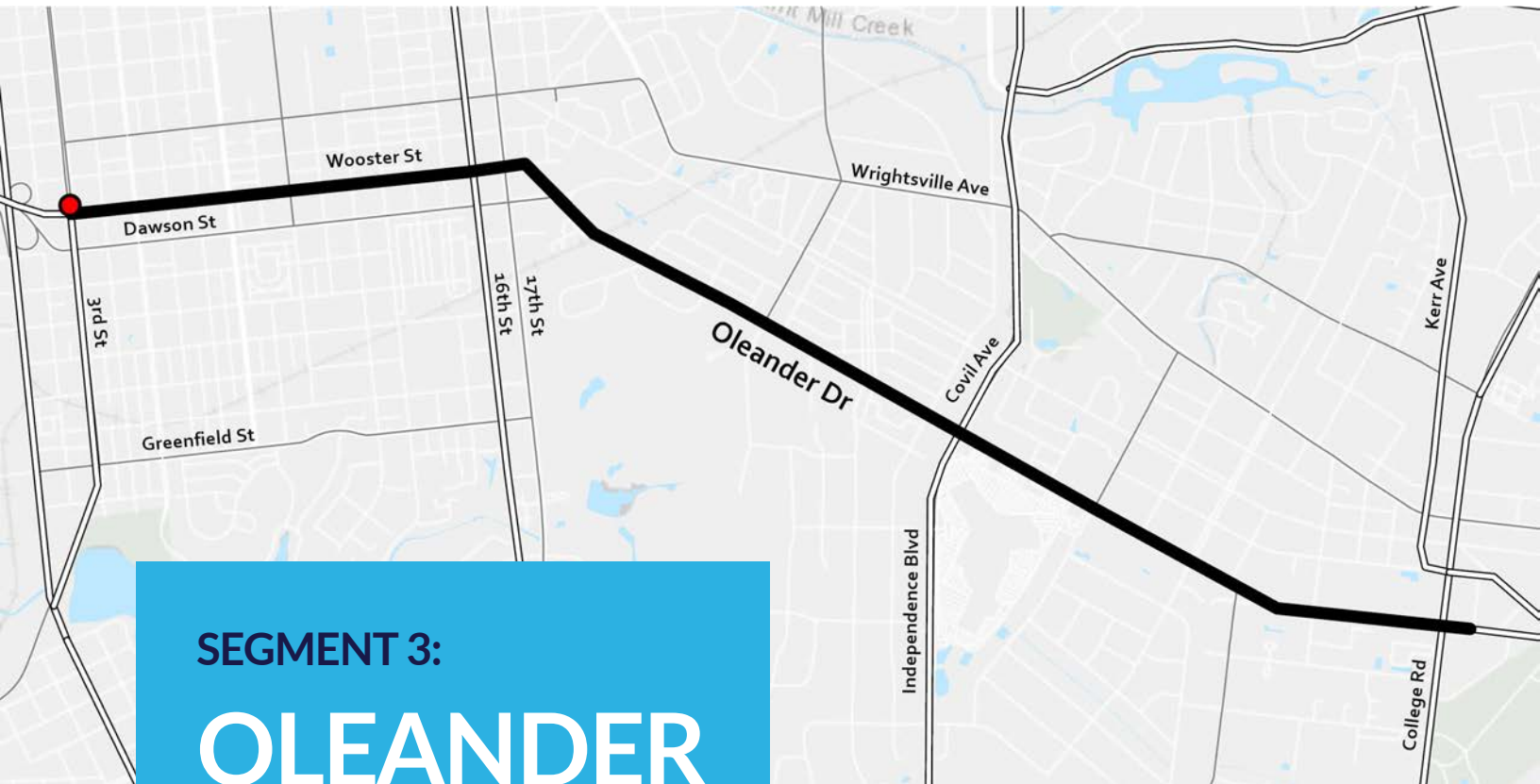
SEGMENT 3:

OLEANDER DRIVE

FROM: CAPE FEAR MEMORIAL BRIDGE

TO: TREADWELL STREET

LENGTH: 4.89 MILES

HOT SPOTS: 1

1. 3rd Street

ALTERNATE ROUTE(S):
WRIGHTSVILLE AVENUE

WMPO CONGESTION MANAGEMENT TECHNIQUES

REDUCE DEMAND:
• Carpool/Vanpool

SHIFT MODE OF TRIP:
• Transit Express Routes
• Expand Bicycle and Pedestrian Network
• Multimodal Access at Intersections
• Sidewalk Gap Closure Program

IMPROVE OPERATIONS:
• Improve Signage
• Advanced Transportation Technology

LAND USE:
• Transit-Oriented Land Development

TRAVEL TIME RELIABILITY DATA		SCORE
Volume/Capacity (V/C)	0.54	4
Delay Rate (minutes/mile) AM	1.11	6
Delay Rate (minutes/mile) PM	1.76	9
Travel Time Reliability AM	1.10	3
Travel Time Reliability PM	1.21	7
Crash Rate (crashes/mile)	69.73	5
Truck Volume (AADT)	837	4

MULTIMODAL DATA		SCORE
Transit Ridership (stops | combined ridership)	18 | 121,592	6
Bicycle Suitability (suitability | % MUP | % bicycle infrastructure)	2.53 | 0.00 | 0.02	4
Pedestrian Suitability (% sidewalk | % crosswalk | % MUP)	1.23 | 0.02 | 0.00	8
Bicycle Crashes (crashes/mile)	0.82	2
Pedestrian Crashes (crashes/mile)	1.84	3

MULTIMODAL SCORE: 23

TRAVEL TIME SCORE: 38

CURRENT PROJECTS AND PLANS

2020-2029 STIP:
• TD-5292 | Route 202 Amenity Upgrades
• U-5704 | US17/76/Oleander Dr & US117/NC132/ College Rd Interchange

CAPE FEAR MOVING FORWARD 2045:
• BP-52 | Oleander Dr Bike/Ped Improvements
• BP-681 | Oleander Dr & Dawson St Crosswalk Improvements
• BP-765 | 10th St & Wooster St Crosswalk Improvements

• PT-5 | New Route through Masonboro Loop Rd with Hourly Service, Heavy Duty Bus
• RW-17 | US17/76/Oleander Dr Access Management Improvements
• RW-93 | US17/76/Wooster St Streetscape Improvements

TRANSPORTATION BOND:
• Oleander Drive Sidewalk Improvements
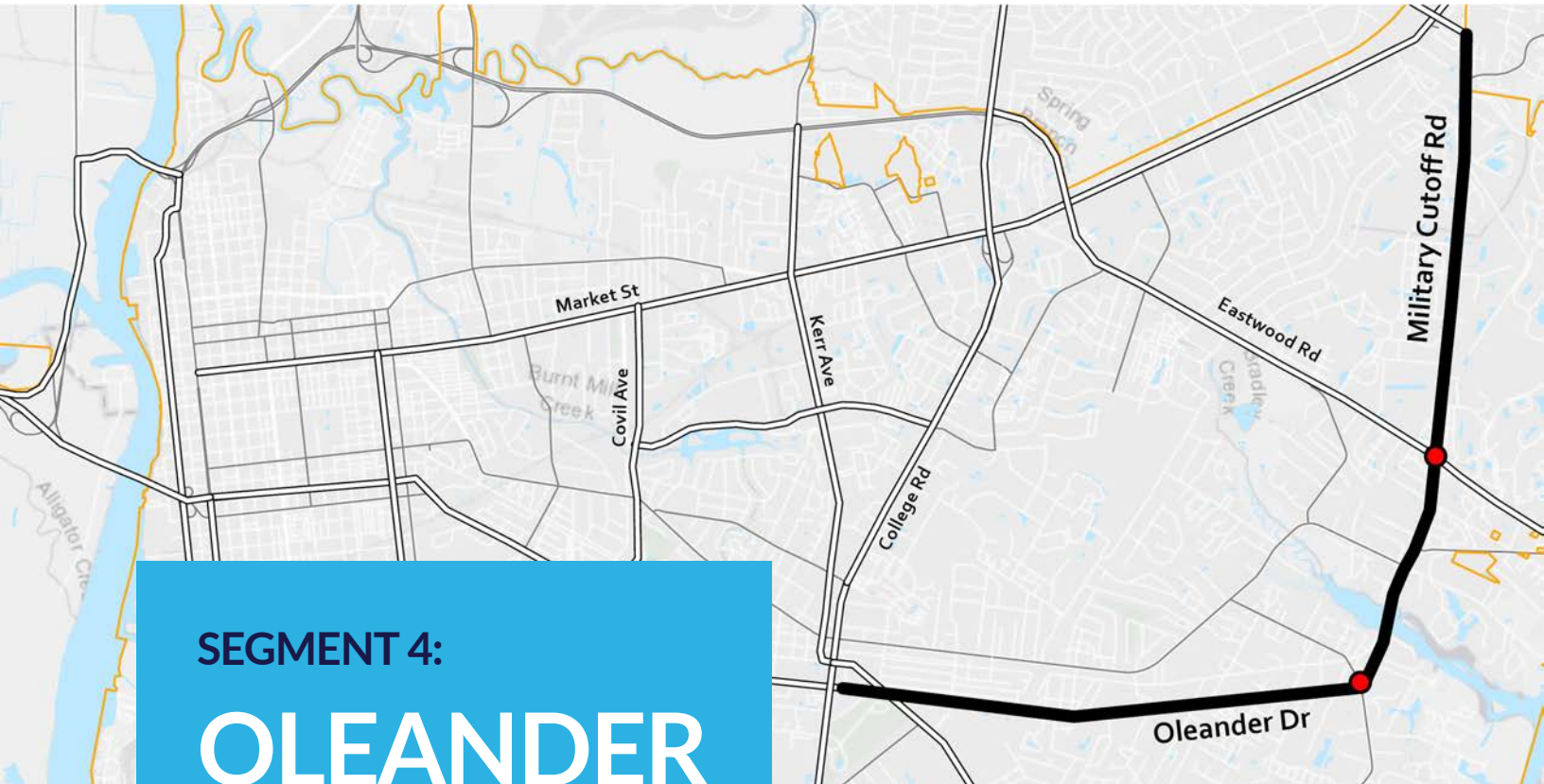
SEGMENT 4:

OLEANDER DRIVE/ MILITARY CUTOFF RD

FROM: TREADWELL STREET
TO: GORDON ROAD

LENGTH: 6.51 MILES

HOT SPOTS: 2

    1. Greenville Loop Road
    2. Eastwood Road

ALTERNATE ROUTE(S):
    NONE

WMPO CONGESTION MANAGEMENT TECHNIQUES

SHIFT MODE OF TRIP:
- Transit Express Routes
- Expand Bicycle and Pedestrian Network
- Multimodal Access at Intersections

IMPROVE OPERATIONS:
- Geometric Intersection Improvements

INCREASE CAPACITY:
- Add Turning Lanes
- Convert Intersection or Grade Separation to Interchange

LAND USE:
- Construct Supportive Accessways with New Development
- Growth Management Restrictions

TRAVEL TIME RELIABILITY DATA		SCORE
Volume/Capacity (V/C)	0.76	7
Delay Rate (minutes/mile) AM	0.68	4
Delay Rate (minutes/mile) PM	1.42	8
Travel Time Reliability AM	1.08	2
Travel Time Reliability PM	1.17	6
Crash Rate (crashes/mile)	60.22	5
Truck Volume (AADT)	1098	5

MULTIMODAL DATA		SCORE
Transit Ridership (stops	combined ridership)	15	59,232	5
Bicycle Suitability (suitability | % MUP | % bicycle infrastructure)	4.85	0.31	0.13	7
Pedestrian Suitability (% sidewalk | % crosswalk | % MUP)	0.21	0.01	0.31	5
Bicycle Crashes (crashes/mile)	0.46	5
Pedestrian Crashes (crashes/mile)	0.61	7

MULTIMODAL SCORE: 29

TRAVEL TIME SCORE: 37

## CURRENT PROJECTS AND PLANS

2020-2029 STIP:
- U-5710 | US74/Eastwood Rd & Military Cutoff Rd

CAPE FEAR MOVING FORWARD 2045:
- BP-579 | Military Cutoff Rd & Station Rd Crosswalk Improvements
- BP-590 | Military Cutoff Rd & Wrightsville Ave Crosswalk Improvements
- BP-591 | Greenville Loop Rd & Oleander Dr Crosswalk Improvements
- BP-633 | Military Cutoff Rd & Cayman Ct Pedestrian Signal
- BP-635 | Parker Farm Dr & Military Cutoff Rd Crosswalk Improvements and Pedestrian Signal
- BP-774 | Military Cutoff Rd & Sir Tyler Dr/Main St Crosswalk Improvements
- BP-775 | Military Cutoff Rd & Destiny Way/Fresco Dr Crosswalk Improvements
- PT-5 | New Route through Masonboro Loop Rd with Hourly Service, Heavy Duty Bus
- PT-9 | Route 104, 30 Minute Frequency
- PT-21 | Oleander Dr & Hawthorne Dr
- PT-22 | Oleander Dr & Giles Ave
- PT-33 | Military Cutoff Rd & Old MacCumber Station Rd
- PT-162 | Military Cutoff Rd High Density Local Route
- RW-17 | US17/76/Oleander Dr Access Management Improvements

TRANSPORTATION BOND:
(none)
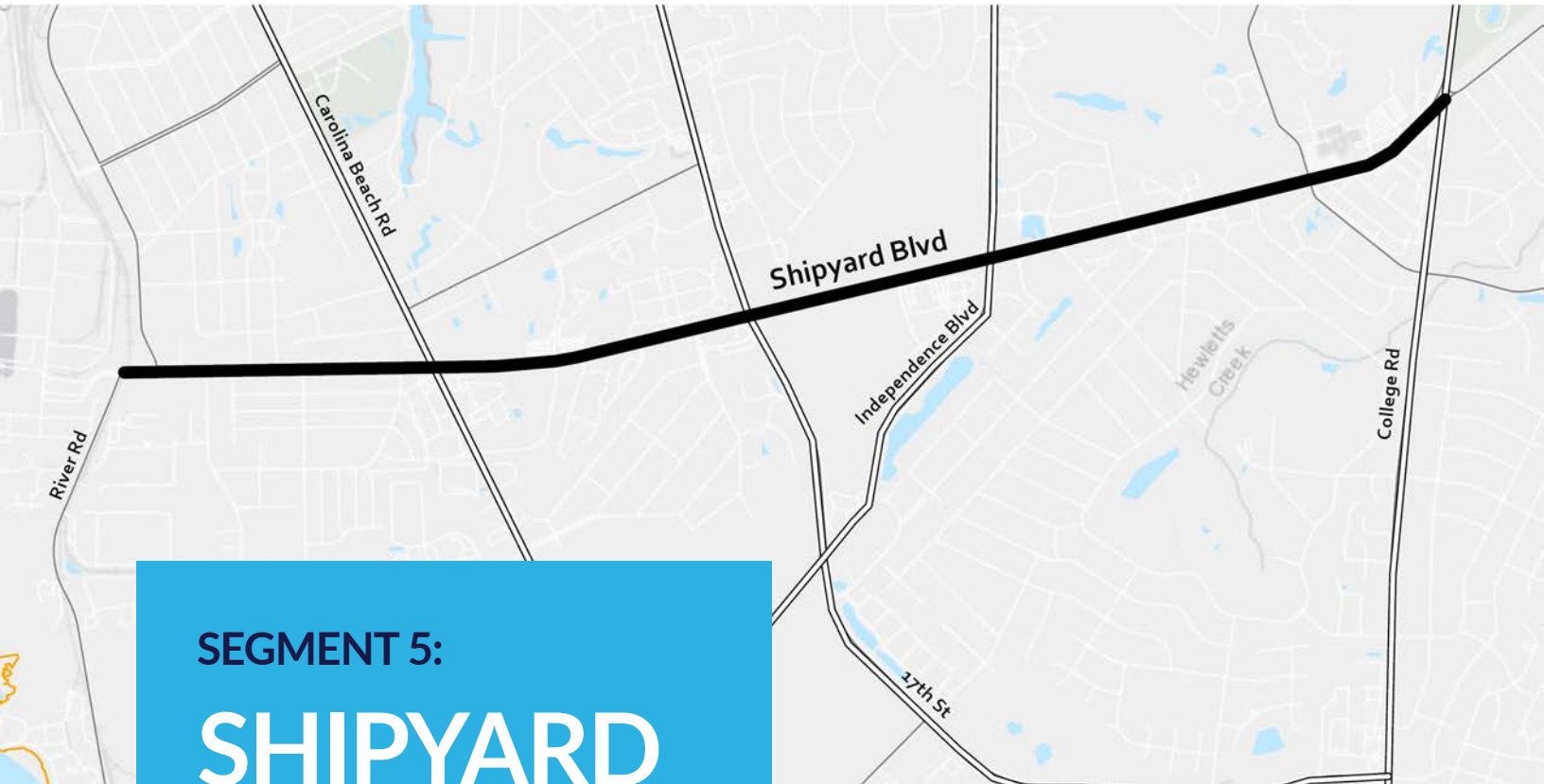
SEGMENT 5:

SHIPYARD BLVD

FROM: RIVER ROAD
TO: COLLEGE ROAD

LENGTH: 3.67 MILES

HOT SPOTS: 0

ALTERNATE ROUTE(S):
NONE

WMPO CONGESTION MANAGEMENT TECHNIQUES

SHIFT MODE OF TRIP:
- Transit Express Routes
- Expand Bicycle and Pedestrian Network

IMPROVE OPERATIONS:
- Access Management

LAND USE:
- Construct Supportive Accessways with New Development
- Transit-Oriented Land Development
- Mixed-Use Land Development

TRAVEL TIME RELIABILITY DATA		SCORE
Volume/Capacity (V/C)	0.31	1
Delay Rate (minutes/mile) AM	1.44	7
Delay Rate (minutes/mile) PM	1.37	7
Travel Time Reliability AM	1.10	3
Travel Time Reliability PM	1.13	4
Crash Rate (crashes/mile)	62.94	5
Truck Volume (AADT)	1149	5

MULTIMODAL DATA		SCORE
Transit Ridership (stops	combined ridership)	16	264,899	8
Bicycle Suitability (suitability | % MUP | % bicycle infrastructure)	3.47	0.00	0.00	6
Pedestrian Suitability (% sidewalk | % crosswalk | % MUP)	0.68	0.03	0.00	6
Bicycle Crashes (crashes/mile)	0.54	4
Pedestrian Crashes (crashes/mile)	1.09	5

MULTIMODAL SCORE: 29

TRAVEL TIME SCORE: 32

## CURRENT PROJECTS AND PLANS

2020-2029 STIP:
- TD-5290 | Route 106 Amenity Upgrades
- TD-5292 | Route 202 Amenity Upgrades

CAPE FEAR MOVING FORWARD 2045:
- BP-589 | Carolina Beach Rd & Shipyard Blvd Crosswalk Improvements
- PT-37 | Shipyard Blvd & Commons Dr
- PT-67 | Shipyard Blvd & S 41st St
- PT-147 | Rush Hour Service on High Ridership Routes 8-11am and 3-5pm (105)

- PT-151 | Earlier Weekday Service on High Ridership Routes (105)
- RW-124 | US117/Shipyard Blvd Speed Sensors & Warning System

TRANSPORTATION BOND:
(none)
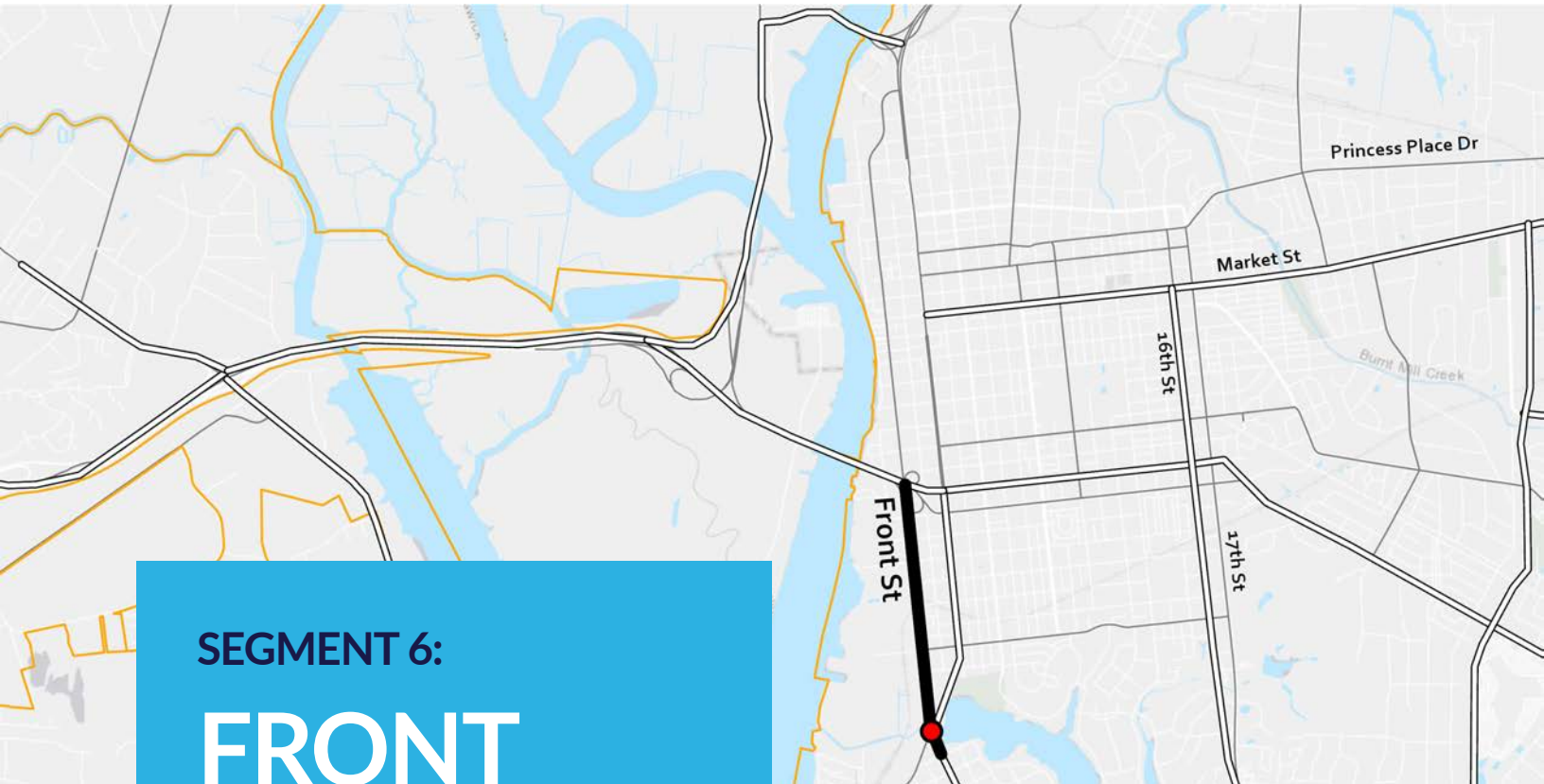
SEGMENT 6:

FRONT STREET

FROM: W LAKE SHORE DRIVE
TO: CAPE FEAR MEMORIAL BRIDGE

LENGTH: 1.03 MILES

HOT SPOTS: 1

1. Burnett Blvd

ALTERNATE ROUTE(S):
3RD STREET

WMPO CONGESTION MANAGEMENT TECHNIQUES

REDUCE DEMAND:
• Alternative Roadways

SHIFT MODE OF TRIP:
• Expand Bicycle and Pedestrian Network

IMPROVE OPERATIONS:
• Improve Signage
• Freight Traffic Appointments
• Freight Traffic Corridor Signal Timing

INCREASE CAPACITY:
• Add General Purpose Lanes

TRAVEL TIME RELIABILITY DATA		SCORE
Volume/Capacity (V/C)	1.01	10
Delay Rate (minutes/mile) AM	0.63	4
Delay Rate (minutes/mile) PM	0.85	5
Travel Time Reliability AM	1.21	8
Travel Time Reliability PM	1.26	9
Crash Rate (crashes/mile)	123.30	8
Truck Volume (AADT)	2770	9

MULTIMODAL DATA		SCORE
Transit Ridership (stops	combined ridership)	15	136,941	6
Bicycle Suitability (suitability | % MUP | % bicycle infrastructure)	2.00	0.00	1.10	5
Pedestrian Suitability (% sidewalk | % crosswalk | % MUP)	0.38	0.00	0.00	4
Bicycle Crashes (crashes/mile)	0.97	1
Pedestrian Crashes (crashes/mile)	0.00	10

MULTIMODAL SCORE: 26

TRAVEL TIME SCORE: 53

CURRENT PROJECTS AND PLANS

2020-2029 STIP:
• TG-6178 | Route 201 Upgrade Amenities and Bus Stops
• U-5734 | US421/Front St Widening

CAPE FEAR MOVING FORWARD 2045:
• BP-370 | Front St Sharrows (Phase 1)
• BP-471 | Front St Sharrows (Phase 2)
• FR-12 | Front St RR Crossings, Meares
• FR-13 | Front St RR Crossings, Marstellar
• FR-14 | Front St RR Crossings, Kidder
• PT-149 | Rush Hour Service on High Ridership Routes

8-11am and 3-5pm (201)
• PT-153 | Earlier Weekday Service on High Ridership Routes (201)
• PT-156 | Route 204 Extended Service to 9pm and Weekends

TRANSPORTATION BOND:
• North Front Street Streetscape

SEGMENT 7:

3RD STREET

FROM: W LAKE SHORE DRIVE
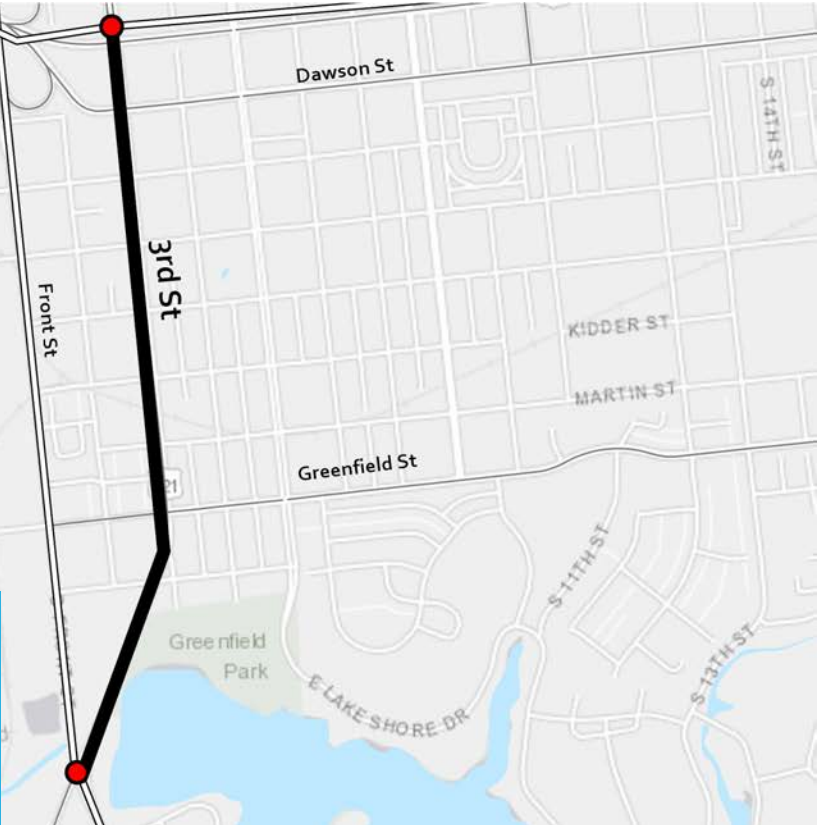**TO:** WOOSTER STREET

LENGTH: 0.97 MILES

HOT SPOTS: 2

1. Wooster Street
2. Front Street/Carolina Beach Road

ALTERNATE ROUTE(S):
FRONT STREET

WMPO CONGESTION MANAGEMENT TECHNIQUES

REDUCE DEMAND:
• Alternative Roadways

SHIFT MODE OF TRIP:
• Increase Transit Frequency
• Multimodal Access at Intersections

IMPROVE OPERATIONS:
• Improve Signage
• Access Management

TRAVEL TIME RELIABILITY DATA		SCORE
Volume/Capacity (V/C)	0.44	2
Delay Rate (minutes/mile) AM	4.13	10
Delay Rate (minutes/mile) PM	7.64	10
Travel Time Reliability AM	1.15	6
Travel Time Reliability PM	1.33	10
Crash Rate (crashes/mile)	171.13	10
Truck Volume (AADT)	688	3

MULTIMODAL DATA		SCORE
Transit Ridership (stops | combined ridership)	0 | 121,297	3
Bicycle Suitability (suitability | % MUP | % bicycle infrastructure)	2.00 | 0.00 | 0.00	4
Pedestrian Suitability (% sidewalk | % crosswalk | % MUP)	1.71 | 0.03 | 0.00	10
Bicycle Crashes (crashes/mile)	1.03	1
Pedestrian Crashes (crashes/mile)	0.00	10

MULTIMODAL SCORE: 28

TRAVEL TIME SCORE: 51

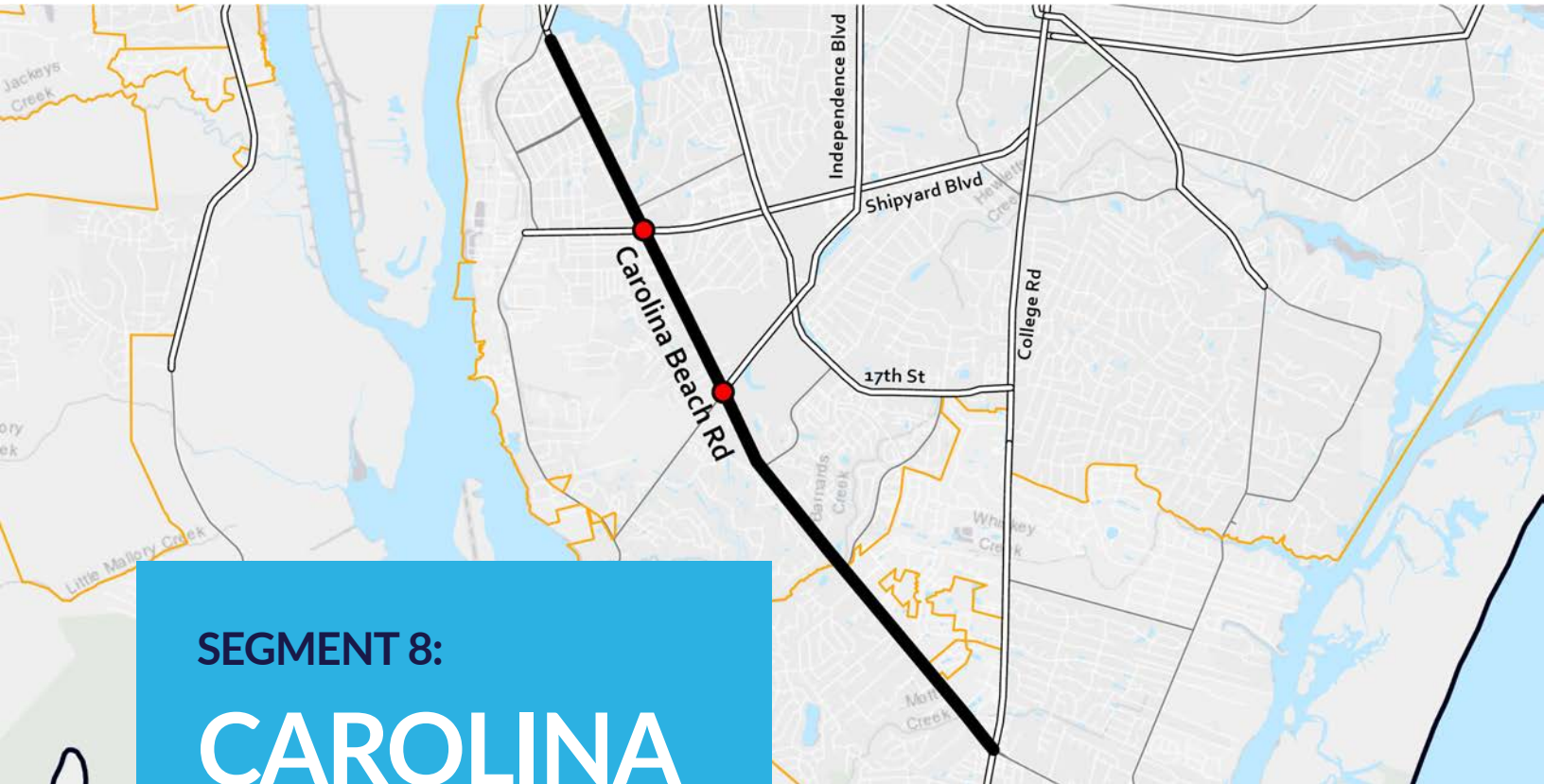## CURRENT PROJECTS AND PLANS

2020-2029 STIP:
(none)

TRANSPORTATION BOND:
(none)

CAPE FEAR MOVING FORWARD 2045:
• BP-669 | 3rd St & Dawson St Crosswalk Improvements
• PT-135 | Extend Trolley Service Frequency
• PT-156 | Route 204 Extended Service to 9pm and Weekends

SEGMENT 8:

CAROLINA BEACH ROAD

FROM: W LAKE SHORE DRIVE
TO: COLLEGE ROAD

LENGTH: 5.77 MILES

HOT SPOTS: 2

1. Independence Blvd
2. Shipyard Blvd

ALTERNATE ROUTE(S):
NONE

WMPO CONGESTION MANAGEMENT TECHNIQUES

SHIFT MODE OF TRIP:
- Increase Transit Frequency
- Expand Bicycle and Pedestrian Network
- Multimodal Access at Intersections
- Sidewalk Gap Closure Program
- Transit Stop Improvements

IMPROVE OPERATIONS:
- Access Management

INCREASE CAPACITY:
- Convert Intersection or Grade Separation to Interchange

LAND USE:
- Transit-Oriented Land Development
- Require MPO Review for Regional Scale Developments
- Construct Supportive Accessways with New Development
- Mixed-Use Land Development
- Encourage Regional Activity Centers
- Infill and Densification

TRAVEL TIME RELIABILITY DATA		SCORE
Volume/Capacity (V/C)	0.66	6
Delay Rate (minutes/mile) AM	1.04	6
Delay Rate (minutes/mile) PM	1.04	6
Travel Time Reliability AM	1.15	6
Travel Time Reliability PM	1.19	6
Crash Rate (crashes/mile)	100.00	7
Truck Volume (AADT)	1714	7

MULTIMODAL DATA		SCORE
Transit Ridership (stops	combined ridership)	28	250,755	9
Bicycle Suitability (suitability | % MUP | % bicycle infrastructure)	2.00	0.00	0.00	4
Pedestrian Suitability (% sidewalk | % crosswalk | % MUP)	0.58	0.03	0.00	6
Bicycle Crashes (crashes/mile)	0.35	5
Pedestrian Crashes (crashes/mile)	1.04	5

MULTIMODAL SCORE: 29

TRAVEL TIME SCORE: 44

## CURRENT PROJECTS AND PLANS

2020-2029 STIP:
- TG-6178 | Route 201 Upgrade Amenities and Bus Stops
- U-5729 | US421/Carolina Beach Rd Upgrade

CAPE FEAR MOVING FORWARD 2045:
- BP-589 | Carolina Beach Rd & Shipyard Blvd Crosswalk Improvements
- BP-580 | Carolina Beach Rd & Mateo Dr Crosswalk Improvements
- BP-594 | Carolina Beach Rd & Independence Blvd Crosswalk Improvements
- BP-619 | Carolina Beach Rd & Antoinette Dr Crosswalk Improvements
- BP-855 | Echo Farms Blvd & Belfairs Dr Crosswalk Improvements
- PT-44 | Carolina Beach Rd at Roses
- PT-53 | Carolina Beach Rd & Tennessee Ave (BOA)
- PT-146 | Route 301 Hourly Frequency
- PT-149 | Rush Hour Service on High Ridership Routes 8-11am and 3-5pm (201)
- PT-153 | Earlier Weekday Service on High Ridership Routes (201)
- PT-155 | Upgrade Route 107 to Hourly to Align with Route 301

TRANSPORTATION BOND:
(none)
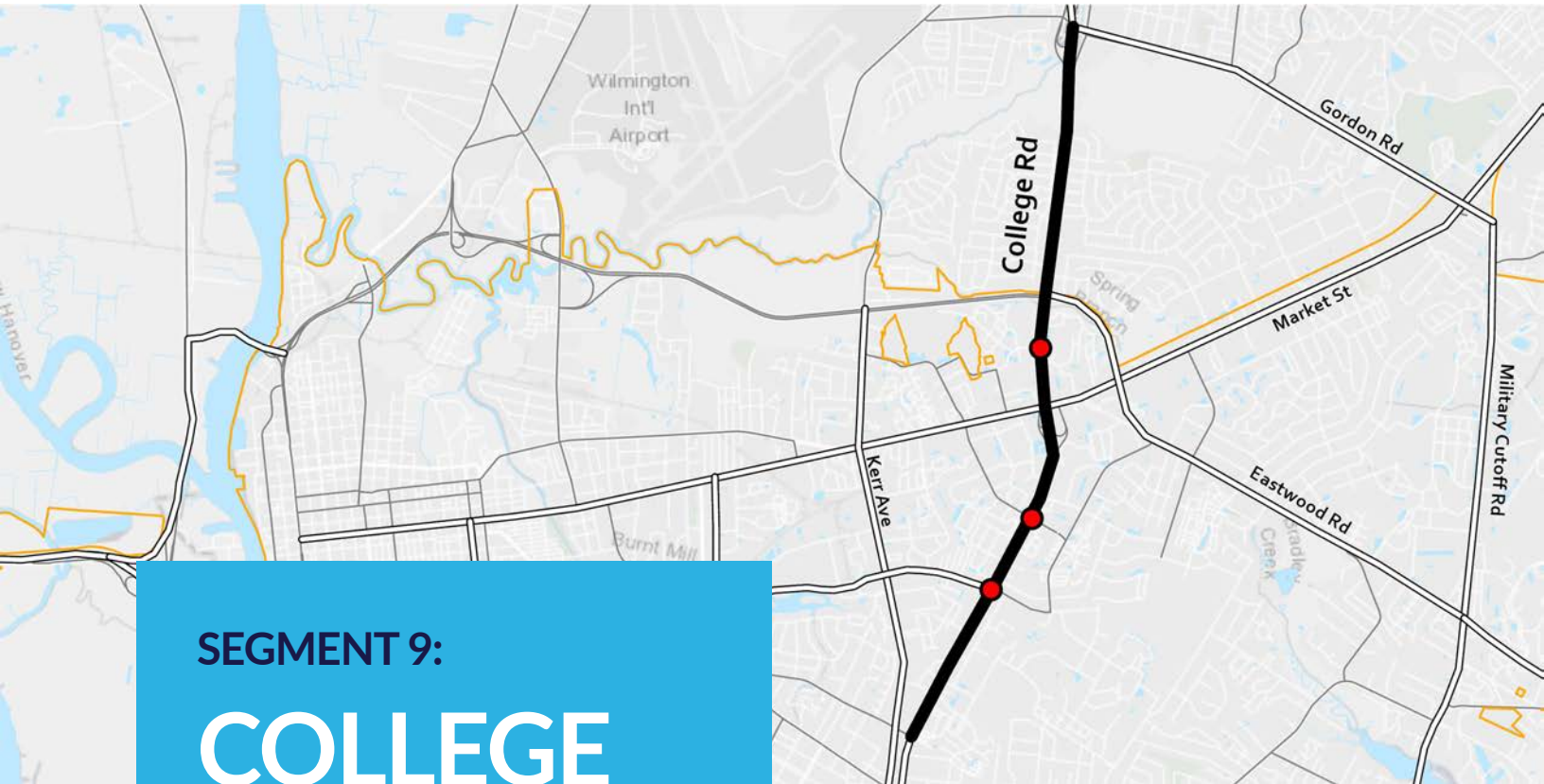
SEGMENT 9:

COLLEGE ROAD

FROM: GORDON ROAD
TO: WILSHIRE BLVD

LENGTH: 5.21 MILES

HOT SPOTS: 3

1. Randall Pkwy
2. New Centre Drive
3. Ringo Drive

ALTERNATE ROUTE(S):
KERR AVENUE

WMPO CONGESTION MANAGEMENT TECHNIQUES

SHIFT MODE OF TRIP:
- Transit Express Routes
- Multimodal Access at Intersections
- Expand Bicycle and Pedestrian Network

IMPROVE OPERATIONS:
- Geometric Intersection Improvements
- Access Management

INCREASE CAPACITY:
- Add Turning Lanes
- Convert Intersection or Grade Separation to Interchange

LAND USE:
- Growth Management Restrictions
- Construct Supportive Accessways with New Development

TRAVEL TIME RELIABILITY DATA		SCORE
Volume/Capacity (V/C)	0.85	8
Delay Rate (minutes/mile) AM	1.55	7
Delay Rate (minutes/mile) PM	2.06	10
Travel Time Reliability AM	1.10	3
Travel Time Reliability PM	1.23	8
Crash Rate (crashes/mile)	156.05	10
Truck Volume (AADT)	1614	6

MULTIMODAL DATA		SCORE
Transit Ridership (stops | combined ridership)	12 | 429,761	8
Bicycle Suitability (suitability | % MUP | % bicycle infrastructure)	2.00 | 0.00 | 0.00	4
Pedestrian Suitability (% sidewalk | % crosswalk | % MUP)	0.25 | 0.02 | 0.00	3
Bicycle Crashes (crashes/mile)	0.58	4
Pedestrian Crashes (crashes/mile)	1.15	5

MULTIMODAL SCORE: 24

TRAVEL TIME SCORE: 52

CURRENT PROJECTS AND PLANS

2020-2029 STIP:
- U-5702A | US117/NC132/College Rd Access Management (New Centre Dr to Shipyard Blvd)
- U-5792 | US74/MLK Jr Pkwy & US117/NC132/College Rd Intersection
- U-5881 | US117/NC132/College Rd Upgrade Roadway

CAPE FEAR MOVING FORWARD 2045:
- BP-35 | College Rd MUP (Phase 1)
- BP-36 | College Rd MUP (Phase 2)
- BP-432 | South Smith Creek Trail MUP
- BP-546 | Central College Rd Trail MUP
- BP-636 | University Dr & S College Rd Crosswalk Improvements
- BP-649 | New Centre Dr & N College Rd Pedestrian Signal
- BP-661 | College Rd & Randall Pkwy Crosswalk Improvements
- PT-155 | Upgrade Route 107 to Hourly to Align with Route 301
- PT-18 | S College Rd (SB) at University Dr
- PT-19 | S College Rd & Wilshire Blvd
- PT-25 | S College Rd (NB) at University Dr
- PT-27 | S College Rd & Randall Pkwy
- PT-148 | Rush Hour Service on High Ridership Routes 8-11am and 3-5pm (108)
- PT-152 | Earlier Weekday Service on High Ridership Routes (108)

TRANSPORTATION BOND:
(none)
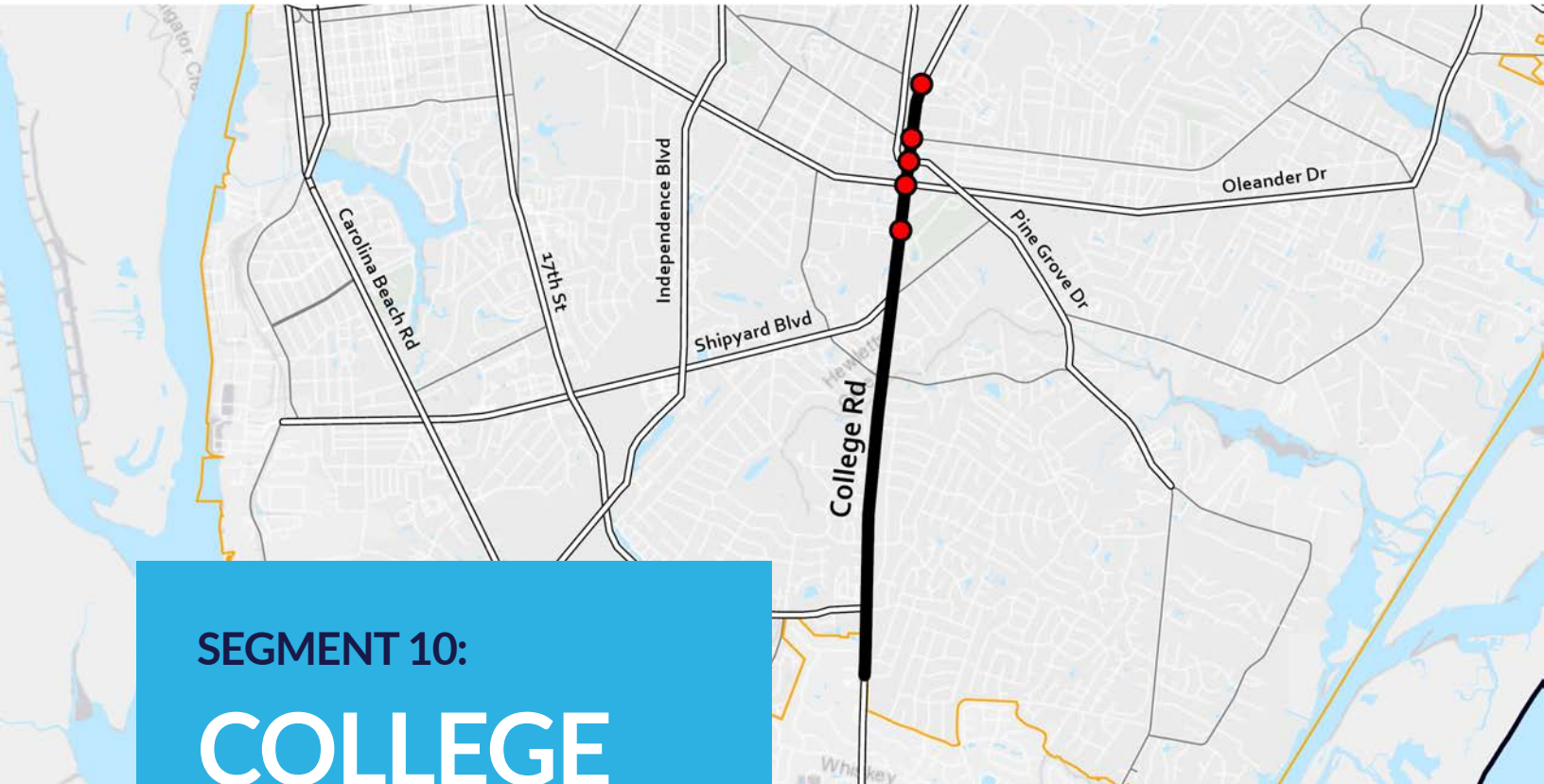
SEGMENT 10:

COLLEGE ROAD

FROM: WILSHIRE BLVD
TO: PINECLIFF DRIVE

LENGTH: 3.99 MILES

HOT SPOTS: 5

1. Lake Avenue
2. Oleander Drive
3. Kerr Avenue
4. Wrightsville Avenue
5. Wilshire Blvd

ALTERNATE ROUTE(S):
INDEPENDENCE BLVD

WMPO CONGESTION MANAGEMENT TECHNIQUES

REDUCE DEMAND:
• Alternative Roadways

SHIFT MODE OF TRIP:
• Expand Bicycle and Pedestrian Network
• Multimodal Access at Intersections

IMPROVE OPERATIONS:
• Access Management

INCREASE CAPACITY:
• Convert Intersection or Grade Separation to Interchange

LAND USE:
• Construct Supportive Accessways with New Development

TRAVEL TIME RELIABILITY DATA		SCORE
Volume/Capacity (V/C)	0.72	7
Delay Rate (minutes/mile) AM	2.63	10
Delay Rate (minutes/mile) PM	1.37	7
Travel Time Reliability AM	1.19	7
Travel Time Reliability PM	1.19	6
Crash Rate (crashes/mile)	137.34	9
Truck Volume (AADT)	1132	5

MULTIMODAL DATA		SCORE
Transit Ridership (stops | combined ridership)	8 | 143,380	5
Bicycle Suitability (suitability | % MUP | % bicycle infrastructure)	2.00 | 0.32 | 0.00	4
Pedestrian Suitability (% sidewalk | % crosswalk | % MUP)	0.49 | 0.03 | 0.32	7
Bicycle Crashes (crashes/mile)	0.50	4
Pedestrian Crashes (crashes/mile)	1.25	4

MULTIMODAL SCORE: 24

TRAVEL TIME SCORE: 51

CURRENT PROJECTS AND PLANS

2020-2029 STIP:
• TD-5292 | Route 202 Amenity Upgrades
• U-5702A | US117/NC132/College Rd Access Management (New Centre Dr to Shipyard Blvd)
• U-5702B | US117/NC132/College Rd Access Management (Shipyard Blvd to US421/Carolina Beach Rd)
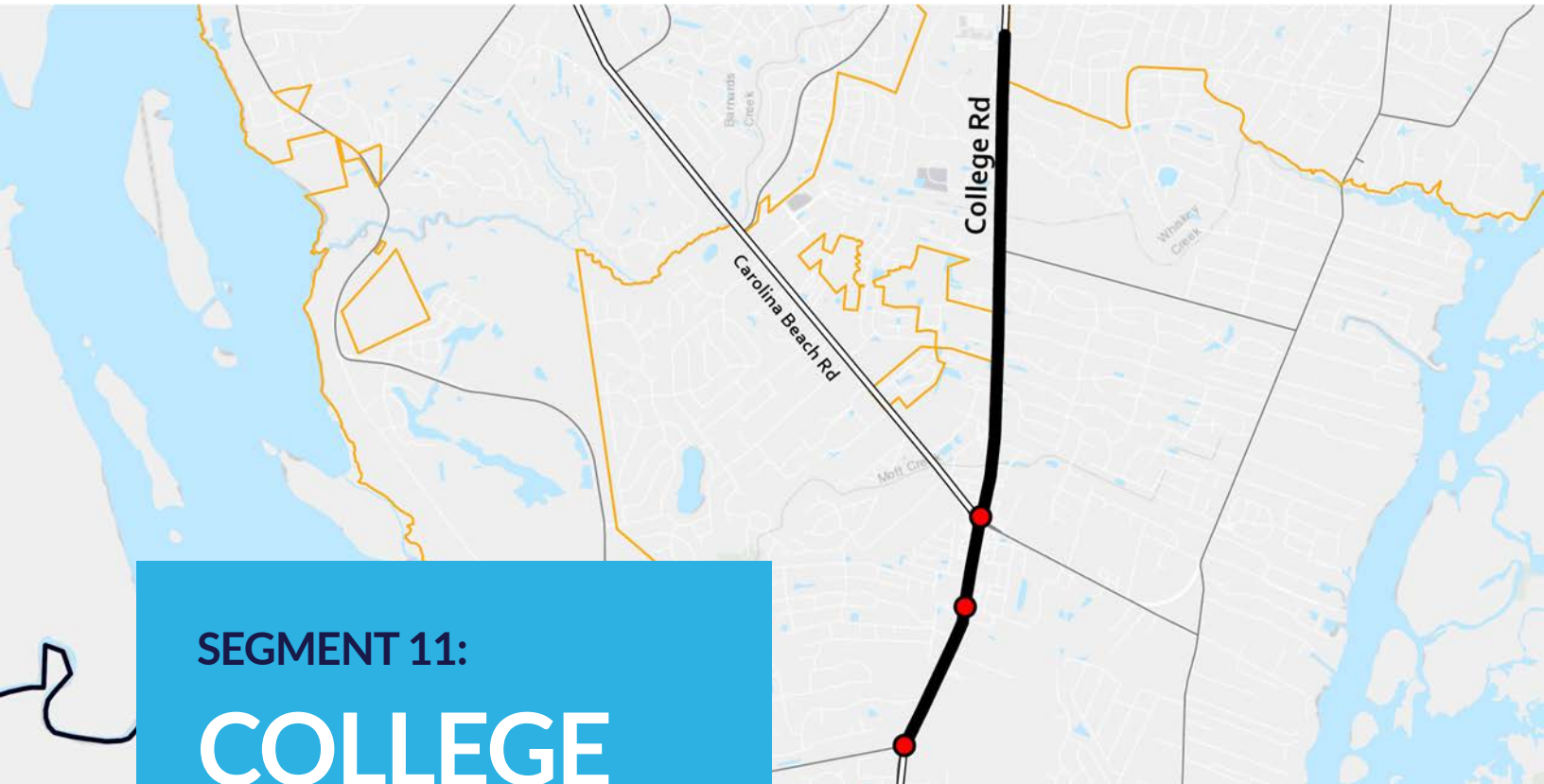• U-5704 | US17/76/Oleander Dr & US117/NC132/College Rd Interchange

CAPE FEAR MOVING FORWARD 2045:
• PT-5 | New Route through Masonboro Loop Rd with Hourly Service, Heavy Duty Bus

• PT-19 | S College Rd & Wilshire Blvd
• PT-66 | Lake Ave & S College Rd

TRANSPORTATION BOND:
• Central College Trail

SEGMENT 11:

COLLEGE ROAD/ CAROLINA BEACH RD

FROM: PINECLIFF DRIVE
TO: SANDERS ROAD

LENGTH: 4.78 MILES

HOT SPOTS: 3

1. Sanders Road
2. Frontage Road
3. US421

ALTERNATE ROUTE(S):
RIVER ROAD

WMPO CONGESTION MANAGEMENT TECHNIQUES

REDUCE DEMAND:
• Carpool/Vanpool

SHIFT MODE OF TRIP:
• Increase Transit Frequency
• Multimodal Access at Intersections
• Establish Park and Ride Lots

IMPROVE OPERATIONS:
• Access Management   • Improve Signage

INCREASE CAPACITY:
• Convert Intersection/Grade Separation to Interchange
• Add General Purpose Lanes

LAND USE:
• Growth Management Restrictions
• Transit-Oriented Land Development
• Require MPO Review for Regional Scale Developments
• Construct Supportive Accessways with New Development
• Mixed-Use Land Development
• Encourage Regional Activity Centers
• Infill and Densification

TRAVEL TIME RELIABILITY DATA		SCORE
Volume/Capacity (V/C)	0.75	7
Delay Rate (minutes/mile) AM	0.69	4
Delay Rate (minutes/mile) PM	0.46	3
Travel Time Reliability AM	1.25	10
Travel Time Reliability PM	1.23	8
Crash Rate (crashes/mile)	73.43	6
Truck Volume (AADT)	1267	6

MULTIMODAL DATA		SCORE
Transit Ridership (stops	combined ridership)	6	30,296	3
Bicycle Suitability (suitability | % MUP | % bicycle infrastructure)	2.00	0.00	0.00	4
Pedestrian Suitability (% sidewalk | % crosswalk | % MUP)	0.02	0.00	0.00	1
Bicycle Crashes (crashes/mile)	0.00	10
Pedestrian Crashes (crashes/mile)	0.84	5

MULTIMODAL SCORE: 23

TRAVEL TIME SCORE: 44

CURRENT PROJECTS AND PLANS

2020-2029 STIP:
• TG-6178 | Route 201 Upgrade Amenities and Bus Stops
• U-5702B | US117/NC132/College Rd Access Management (Shipyard Blvd to US421/Carolina Beach Rd)
• U-5790 | US421/Carolina Beach Rd Widening & Intersection Improvements
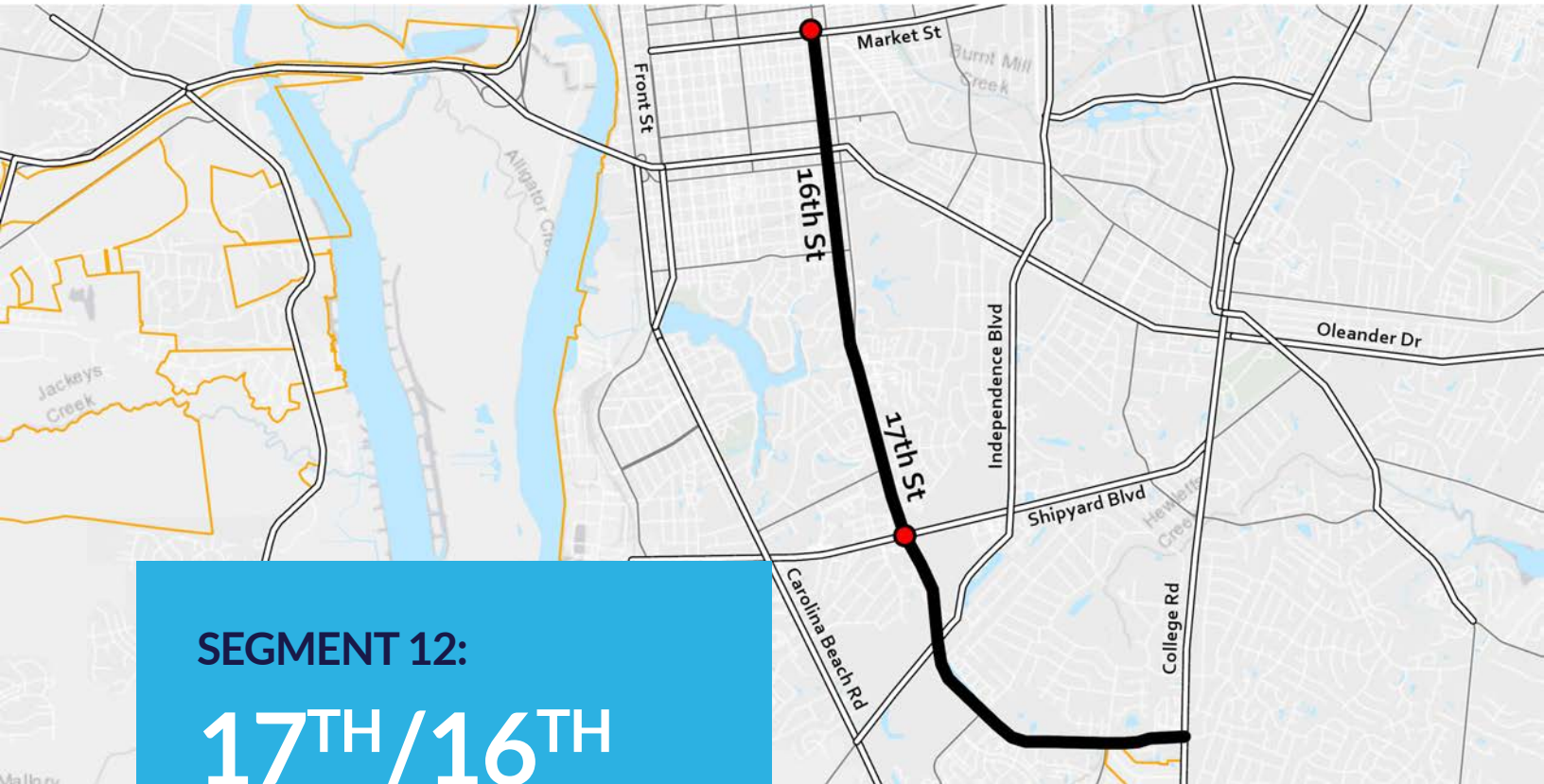
• PT-153 | Earlier Weekday Service on High Ridership Routes (201)

CAPE FEAR MOVING FORWARD 2045:
• BP-584 | Carolina Beach Rd & Independence Blvd Crosswalk Improvements
• PT-149 | Rush Hour Service on High Ridership Routes 8-11am and 3-5pm (201)

TRANSPORTATION BOND:
(none)

SEGMENT 12:

17TH/16TH STREET

FROM: MARKET STREET
TO: COLLEGE ROAD

LENGTH: 5.53 MILES

HOT SPOTS: 2

1. Market Street
2. Shipyard Blvd

ALTERNATE ROUTE(S):
CAROLINA BEACH ROAD
INDEPENDENCE BLVD

WMPO CONGESTION MANAGEMENT TECHNIQUES

REDUCE DEMAND:
- Alternative Work Schedules
- Carpool/Vanpool
- Employer Shuttles

SHIFT MODE OF TRIP:
- Increase Transit Frequency
- Improve Bicycle Storage
- Expand Bicycle and Pedestrian Network
- Multimodal Access at Intersections
- Sidewalk Gap Closure Program

TRAVEL TIME RELIABILITY DATA		SCORE
Volume/Capacity (V/C)	0.60	5
Delay Rate (minutes/mile) AM	0.82	5
Delay Rate (minutes/mile) PM	0.89	5
Travel Time Reliability AM	1.19	7
Travel Time Reliability PM	1.20	7
Crash Rate (crashes/mile)	52.80	4
Truck Volume (AADT)	305	2

MULTIMODAL DATA		SCORE
Transit Ridership (stops	combined ridership)	30	142,160	8
Bicycle Suitability (suitability | % MUP | % bicycle infrastructure)	5.07	0.34	0.00	8
Pedestrian Suitability (% sidewalk | % crosswalk | % MUP)	1.07	0.08	0.34	9
Bicycle Crashes (crashes/mile)	0.72	3
Pedestrian Crashes (crashes/mile)	1.63	3

MULTIMODAL SCORE: 31

TRAVEL TIME SCORE: 35

CURRENT PROJECTS AND PLANS

2020-2029 STIP:
- TD-5296 | Route 205 Amenity Upgrades

CAPE FEAR MOVING FORWARD 2045:
- BP-556 | 17th St NHC Library Connection MUP
- BP-597 | 17th St & Glen Meade Rd Crosswalk Improvements
- PT-47 | Market St & N 16th St
- PT-90 | Wellington Ave & 17th St
- PT-94 | 17th St at Food Lion Plaza
- PT-147 | Rush Hour Service on High Ridership Routes 8-11am and 3-5pm (105)
- PT-150 | Rush Hour Service on High Ridership Routes 8-11am and 3-5pm (205)
- PT-151 | Earlier Weekday Service on High Ridership Routes (105)
- PT-154 | Earlier Weekday Service on High Ridership Routes (205)

TRANSPORTATION BOND:
(none)
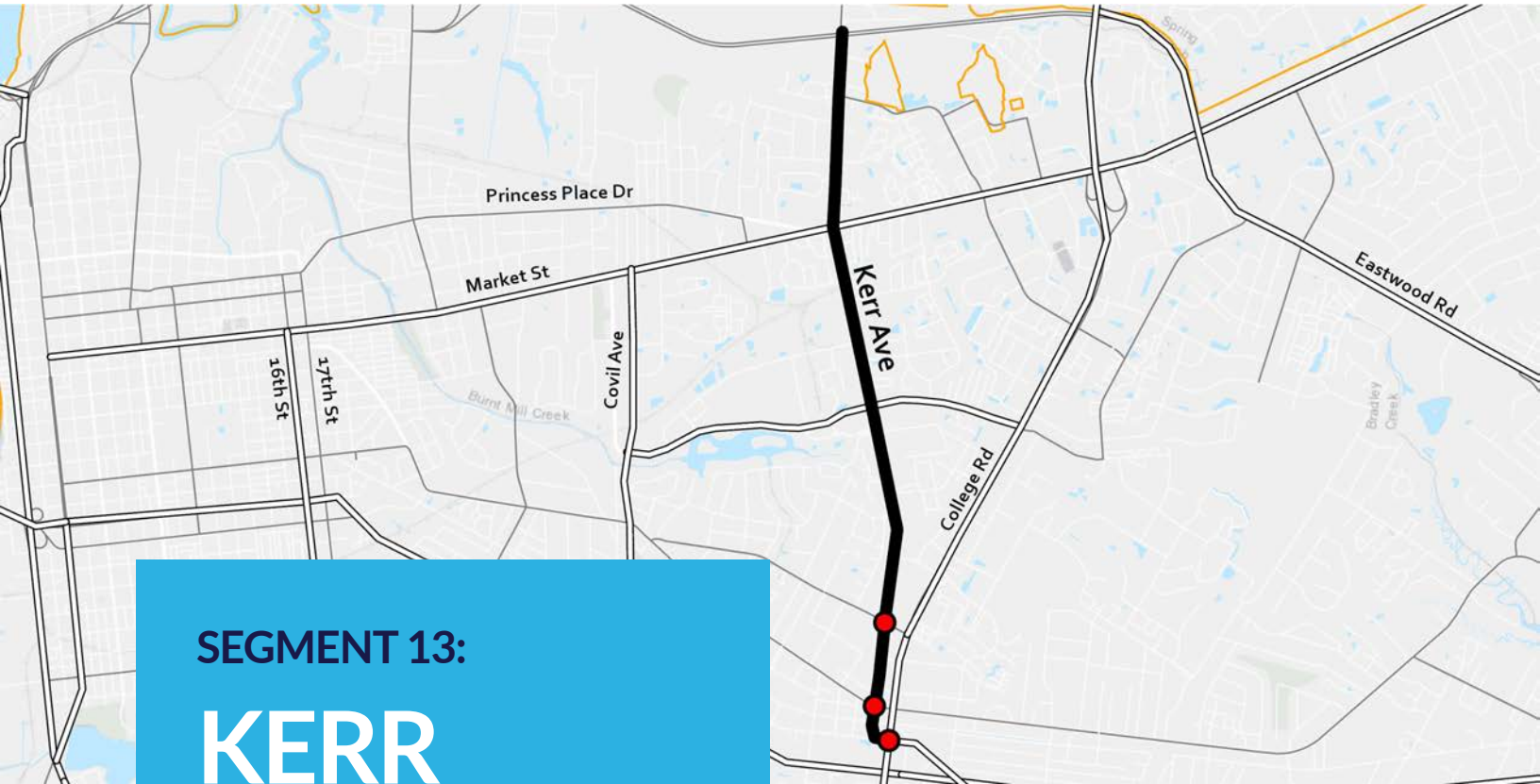
SEGMENT 13:

KERR AVENUE

FROM: MLK JR PKWY
TO: COLLEGE ROAD

LENGTH: 2.83 MILES

HOT SPOTS: 3

1. College Road
2. Wrightsville Avenue
3. Wilshire Blvd

ALTERNATE ROUTE(S):
COLLEGE ROAD

WMPO CONGESTION MANAGEMENT TECHNIQUES

REDUCE DEMAND:
• Alternative Roadways

SHIFT MODE OF TRIP:
• Increase Transit Frequency
• Expand Bicycle and Pedestrian Network
• Multimodal Access at Intersections

IMPROVE OPERATIONS:
• Geometric Intersection Improvements

INCREASE CAPACITY:
• Convert Intersection or Grade Separation to Interchange

LAND USE:
• Transit-Oriented Land Development

TRAVEL TIME RELIABILITY DATA		SCORE
Volume/Capacity (V/C)	0.53	4
Delay Rate (minutes/mile) AM	1.22	6
Delay Rate (minutes/mile) PM	1.78	9
Travel Time Reliability AM	1.09	2
Travel Time Reliability PM	1.15	5
Crash Rate (crashes/mile)	124.03	8
Truck Volume (AADT)	0	1

MULTIMODAL DATA		SCORE
Transit Ridership (stops | combined ridership)	12 | 230,672	7
Bicycle Suitability (suitability | % MUP | % bicycle infrastructure)	5.29| 0.03 | 0.03	8
Pedestrian Suitability (% sidewalk | % crosswalk | % MUP)	1.05 | 0.09 | 0.03	8
Bicycle Crashes (crashes/mile)	0.71	3
Pedestrian Crashes (crashes/mile)	2.47	1

MULTIMODAL SCORE: 27

TRAVEL TIME SCORE: 35

## CURRENT PROJECTS AND PLANS

2020-2029 STIP:
• U-3338 | Kerr Ave & MLK Jr Pkwy Interchange
• U-6080 | Kerr Ave Widening

CAPE FEAR MOVING FORWARD 2045:
• BP-49 | Peachtree Ave MUP
• PT-15 | Market St & Kerr Ave
• PT-147 | Rush Hour Service on High Ridership Routes 8-11am and 3-5pm (105)
• PT-151 | Earlier Weekday Service on High Ridership Routes (105)

TRANSPORTATION BOND:
• Kerr Avenue Trail and Intersection Improvements
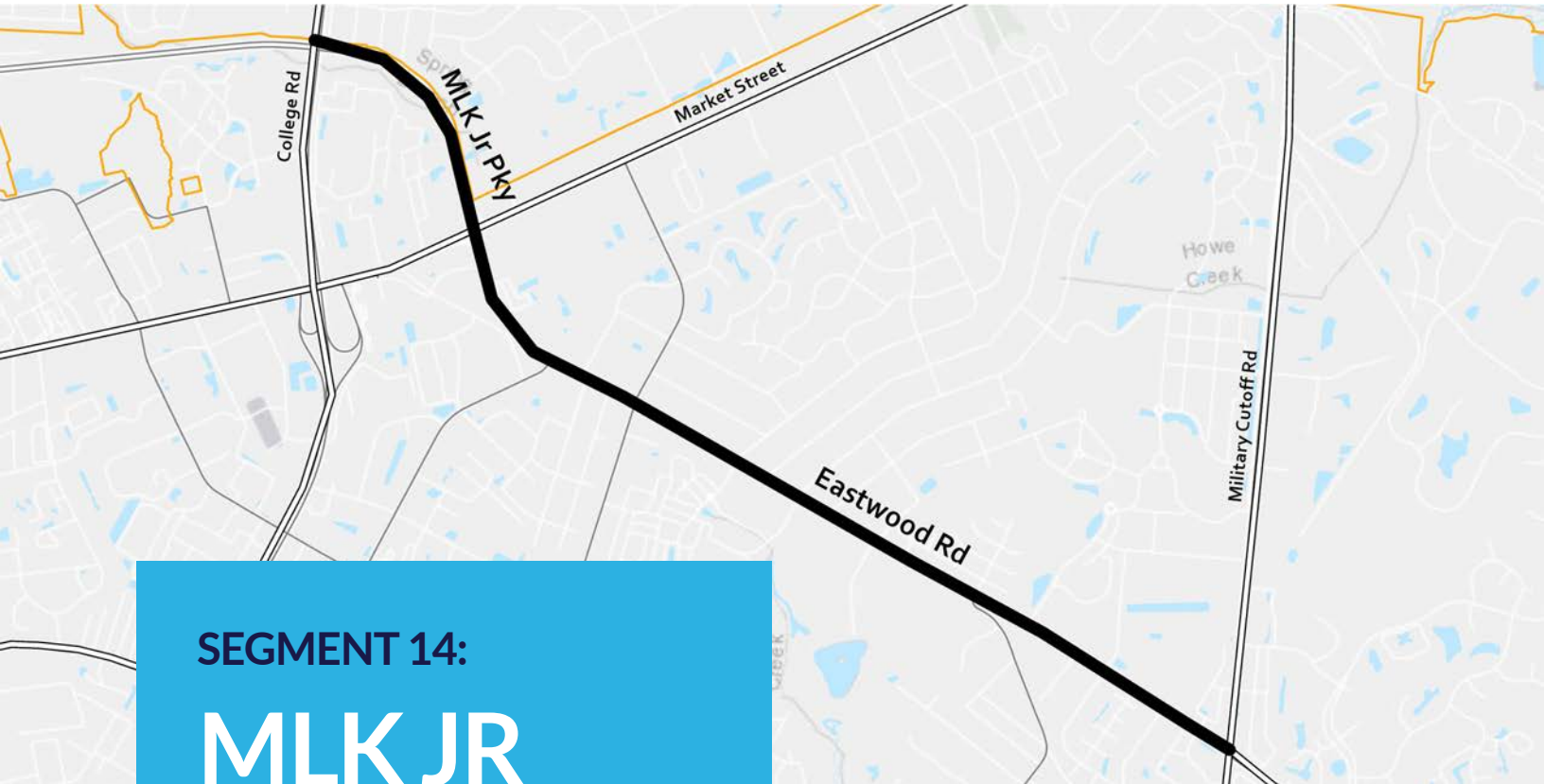
SEGMENT 14:

MLK JR PKWY/ EASTWOOD ROAD

FROM: COLLEGE ROAD
TO: MILITARY CUTOFF ROAD

LENGTH: 3.20 MILES

HOT SPOTS: 0

ALTERNATE ROUTE(S):
MARKET STREET

WMPO CONGESTION MANAGEMENT TECHNIQUES

REDUCE DEMAND:
• Alternative Roadways

SHIFT MODE OF TRIP:
• Increase Transit Frequency
• Transit Express Routes
• Multimodal Access at Intersections

IMPROVE OPERATIONS:
• Geometric Intersection Improvements

INCREASE CAPACITY:
• Convert Intersection or Grade Separation to Interchange

TRAVEL TIME RELIABILITY DATA		SCORE
Volume/Capacity (V/C)	0.68	6
Delay Rate (minutes/mile) AM	1.12	6
Delay Rate (minutes/mile) PM	1.50	8
Travel Time Reliability AM	1.14	5
Travel Time Reliability PM	1.20	7
Crash Rate (crashes/mile)	73.75	6
Truck Volume (AADT)	936	4

| MULTIMODAL DATA		SCORE
Transit Ridership (stops	combined ridership)	5	54,922	3
Bicycle Suitability (suitability | % MUP | % bicycle infrastructure)	6.44	0.61	0.00	10
Pedestrian Suitability (% sidewalk | % crosswalk | % MUP)	0.70	0.02	0.61	9
Bicycle Crashes (crashes/mile)	0.94	1
Pedestrian Crashes (crashes/mile)	0.63	6

MULTIMODAL SCORE: 29

TRAVEL TIME SCORE: 42

CURRENT PROJECTS AND PLANS

2020-2029 STIP:
• U-5710 | US74/Eastwood Rd & Military Cutoff Rd
• U-5792 | US74/MLK Jr Pkwy & US117/NC132/ College Rd Intersection

TRANSPORTATION BOND:
• Eastwood Road Median and Traffic Signals

CAPE FEAR MOVING FORWARD 2045:
• BP-642 | Eastwood Rd & Bay Creek Dr Crosswalk Improvements
• PT-31 | Eastwood Rd & Rogersville Rd
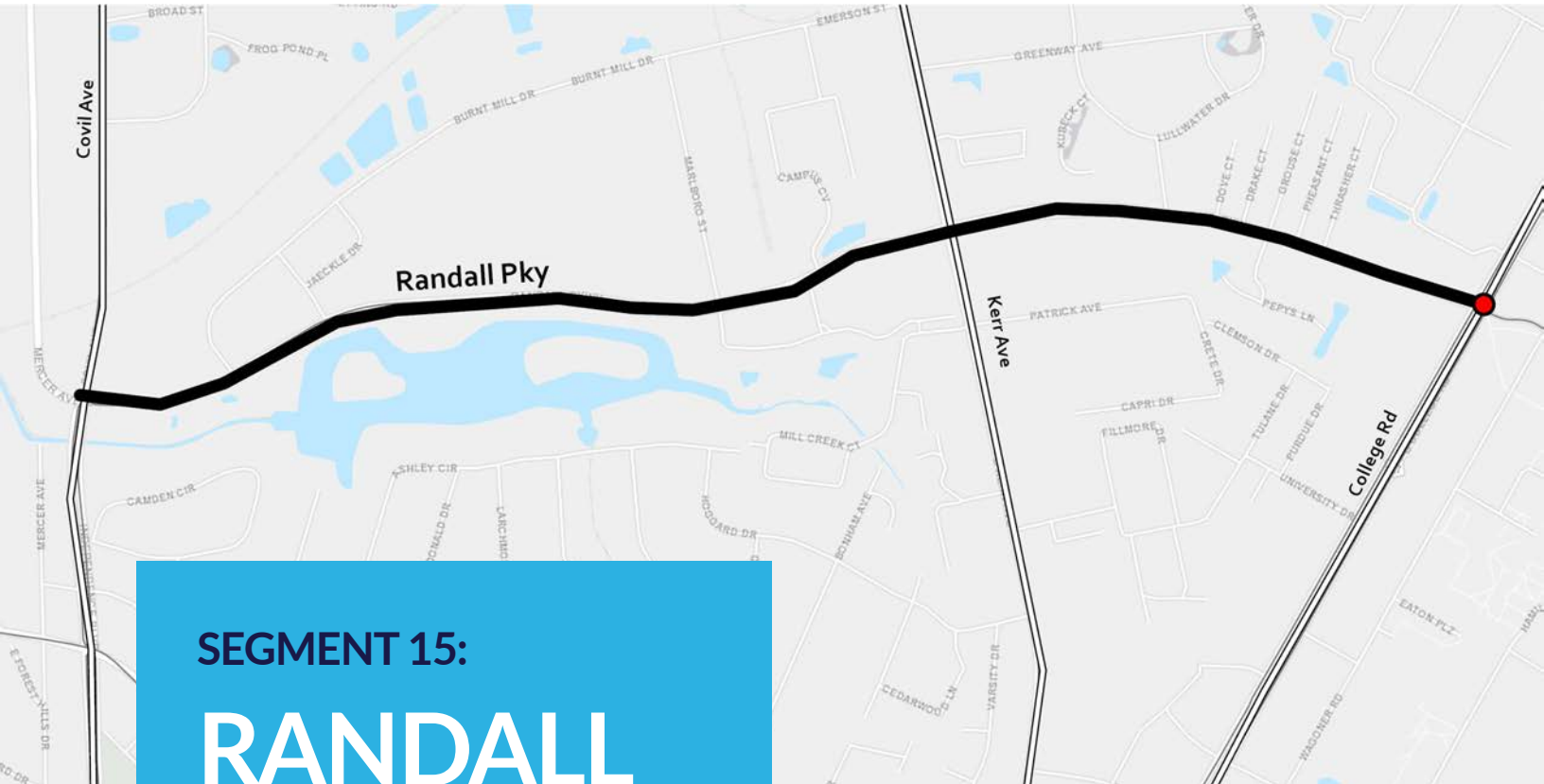
SEGMENT 15:
RANDALL PKWY

FROM: COVIL AVENUE/
INDEPENDENCE BLVD
TO: COLLEGE ROAD

LENGTH: 1.66 MILES

HOT SPOTS: 1

1. College Road

ALTERNATE ROUTE(S):
WRIGHTSVILLE AVENUE

WMPO CONGESTION MANAGEMENT TECHNIQUES

SHIFT MODE OF TRIP:
- Increase Transit Frequency
- Improve Bicycle Storage
- Multimodal Access at Intersections

IMPROVE OPERATIONS:
- Geometric Intersection Improvements

LAND USE:
- Construct Supportive Accessways with New Development

TRAVEL TIME RELIABILITY DATA		SCORE
Volume/Capacity (V/C)	0.48	3
Delay Rate (minutes/mile) AM	0.87	5
Delay Rate (minutes/mile) PM	1.26	7
Travel Time Reliability AM	1.15	6
Travel Time Reliability PM	1.15	5
Crash Rate (crashes/mile)	87.35	6
Truck Volume (AADT)	0	1

MULTIMODAL DATA		SCORE
Transit Ridership (stops	combined ridership)	4	197,551	5
Bicycle Suitability (suitability | % MUP | % bicycle infrastructure)	10.00	0.72	1.70	10
Pedestrian Suitability (% sidewalk | % crosswalk | % MUP)	0.81	0.16	0.72	10
Bicycle Crashes (crashes/mile)	4.22	1
Pedestrian Crashes (crashes/mile)	2.41	1

MULTIMODAL SCORE: 27

TRAVEL TIME SCORE: 33

CURRENT PROJECTS AND PLANS

2020-2029 STIP:
(none)

TRANSPORTATION BOND:
(none)

CAPE FEAR MOVING FORWARD 2045:
- BP-559 | Cross City Trail MUP
- BP-661 | College Rd & Randall Pkwy Crosswalk Improvements
- PT-28 | Randall Pkwy & Brailsford Dr
- PT-148 | Rush Hour Service on High Ridership Routes 8-11am and 3-5pm (108)
- PT-152 | Earlier Weekday Service on High Ridership Routes (108)
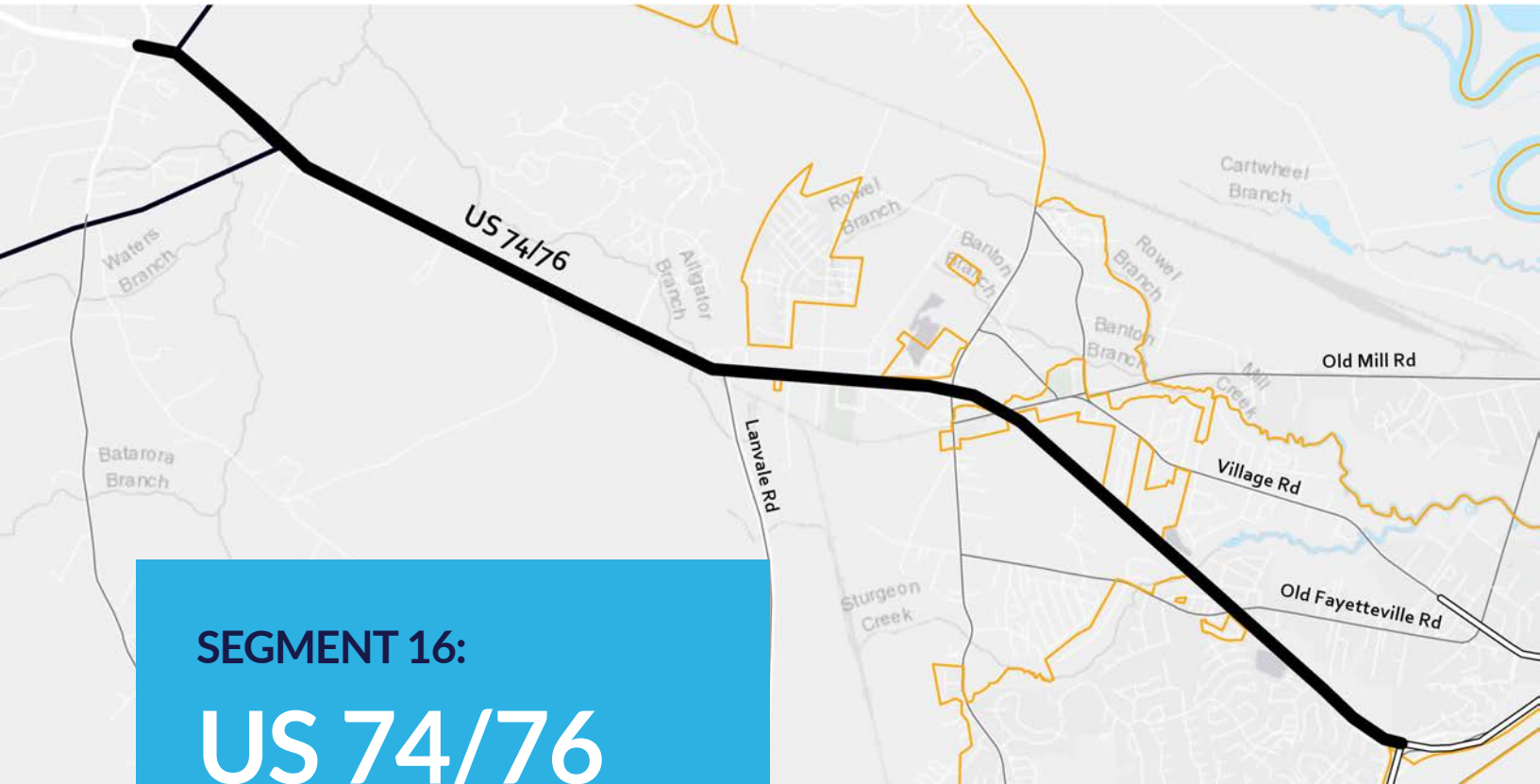
SEGMENT 16:

US 74/76

FROM: MACO ROAD
TO: US17/OCEAN HWY

LENGTH: 8.86 MILES

HOT SPOTS: 0

ALTERNATE ROUTE(S):
I-140/WILMINGTON BYPASS

WMPO CONGESTION MANAGEMENT TECHNIQUES

REDUCE DEMAND:
• Alternative Roadways

IMPROVE OPERATIONS:
• Access Management

INCREASE CAPACITY:
• Convert Intersection or Grade Separation to Interchange

TRAVEL TIME RELIABILITY DATA		SCORE
Volume/Capacity (V/C)	0.45	3
Delay Rate (minutes/mile) AM	0.00	1
Delay Rate (minutes/mile) PM	0.00	1
Travel Time Reliability AM	1.06	1
Travel Time Reliability PM	1.05	1
Crash Rate (crashes/mile)	23.02	2
Truck Volume (AADT)	2503	8

| MULTIMODAL DATA		SCORE
Transit Ridership (stops | combined ridership)	0 | 18,499	1
Bicycle Suitability (suitability | % MUP | % bicycle infrastructure)	1.17 | 0.00 | 0.00	0
Pedestrian Suitability (% sidewalk | % crosswalk | % MUP)	0.00 | 0.00 | 0.00	0
Bicycle Crashes (crashes/mile)	0.00	10
Pedestrian Crashes (crashes/mile)	0.00	10

MULTIMODAL SCORE: 21

TRAVEL TIME SCORE: 17

CURRENT PROJECTS AND PLANS

2020-2029 STIP:
(none)

CAPE FEAR MOVING FORWARD 2045:
• RW-176 \| US74/76/Andrew Jackson Hwy & Old Fayetteville Rd Interchange

TRANSPORTATION BOND:
(none)
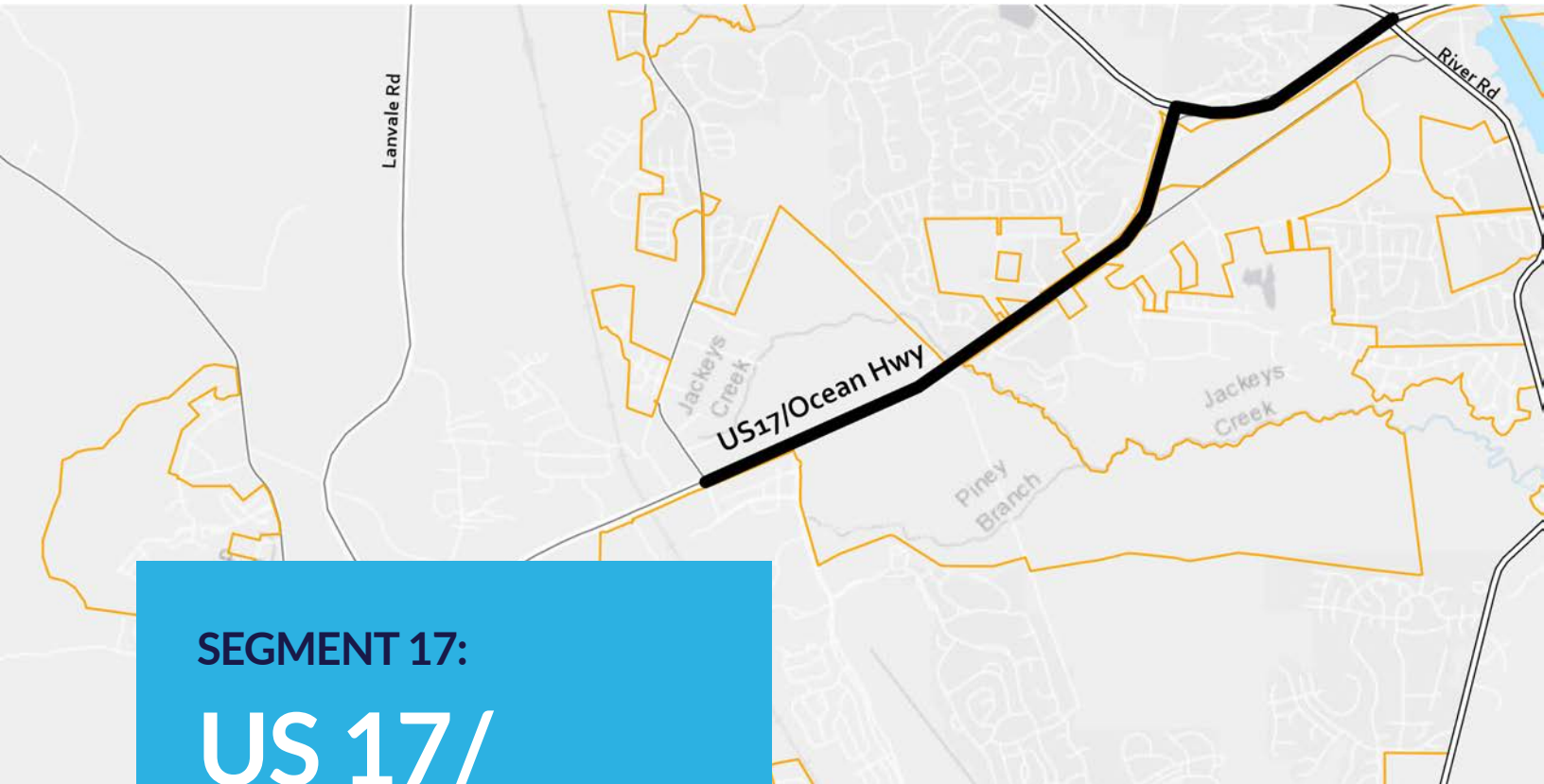
SEGMENT 17:

US 17/ OCEAN HWY

FROM: LANVALE ROAD NE
TO: CAPE FEAR MEMORIAL BRIDGE

LENGTH: 9.70 MILES

HOT SPOTS: 0

ALTERNATE ROUTE(S):
I-140/WILMINGTON BYPASS

WMPO CONGESTION MANAGEMENT TECHNIQUES

REDUCE DEMAND:
• Alternative Roadways

SHIFT MODE OF TRIP:
• Increase Transit Frequency
• Expand Bicycle and Pedestrian Network
• Multimodal Access at Intersections

LAND USE:
• Construct Supportive Accessways with New Development

TRAVEL TIME RELIABILITY DATA		SCORE
Volume/Capacity (V/C)	0.82	8
Delay Rate (minutes/mile) AM	0.42	3
Delay Rate (minutes/mile) PM	0.14	1
Travel Time Reliability AM	1.20	8
Travel Time Reliability PM	1.06	2
Crash Rate (crashes/mile)	23.20	2
Truck Volume (AADT)	3393	10

MULTIMODAL DATA		SCORE
Transit Ridership (stops	combined ridership)	0	18,499	1
Bicycle Suitability (suitability | % MUP | % bicycle infrastructure)	0.56	0.00	0.00	0
Pedestrian Suitability (% sidewalk | % crosswalk | % MUP)	0.00	0.00	0.00	0
Bicycle Crashes (crashes/mile)	0.00	10
Pedestrian Crashes (crashes/mile)	0.10	10

**MULTIMODAL SCORE: 21**

TRAVEL TIME SCORE: 34

CURRENT PROJECTS AND PLANS

2020-2029 STIP:
(none)

TRANSPORTATION BOND:
(none)

CAPE FEAR MOVING FORWARD 2045:
• BP-838 | US17 & Olde Waterford Way/Ploof Rd SE Crosswalk Improvements
• BP-839 | US17 & W Gate Dr/Grandiflora Dr Crosswalk Improvements
• PT-156 | Route 204 Extended Service to 9pm and Weekends
• RW-20 | US17/74/76/Causeway Improvements (Phase 2)
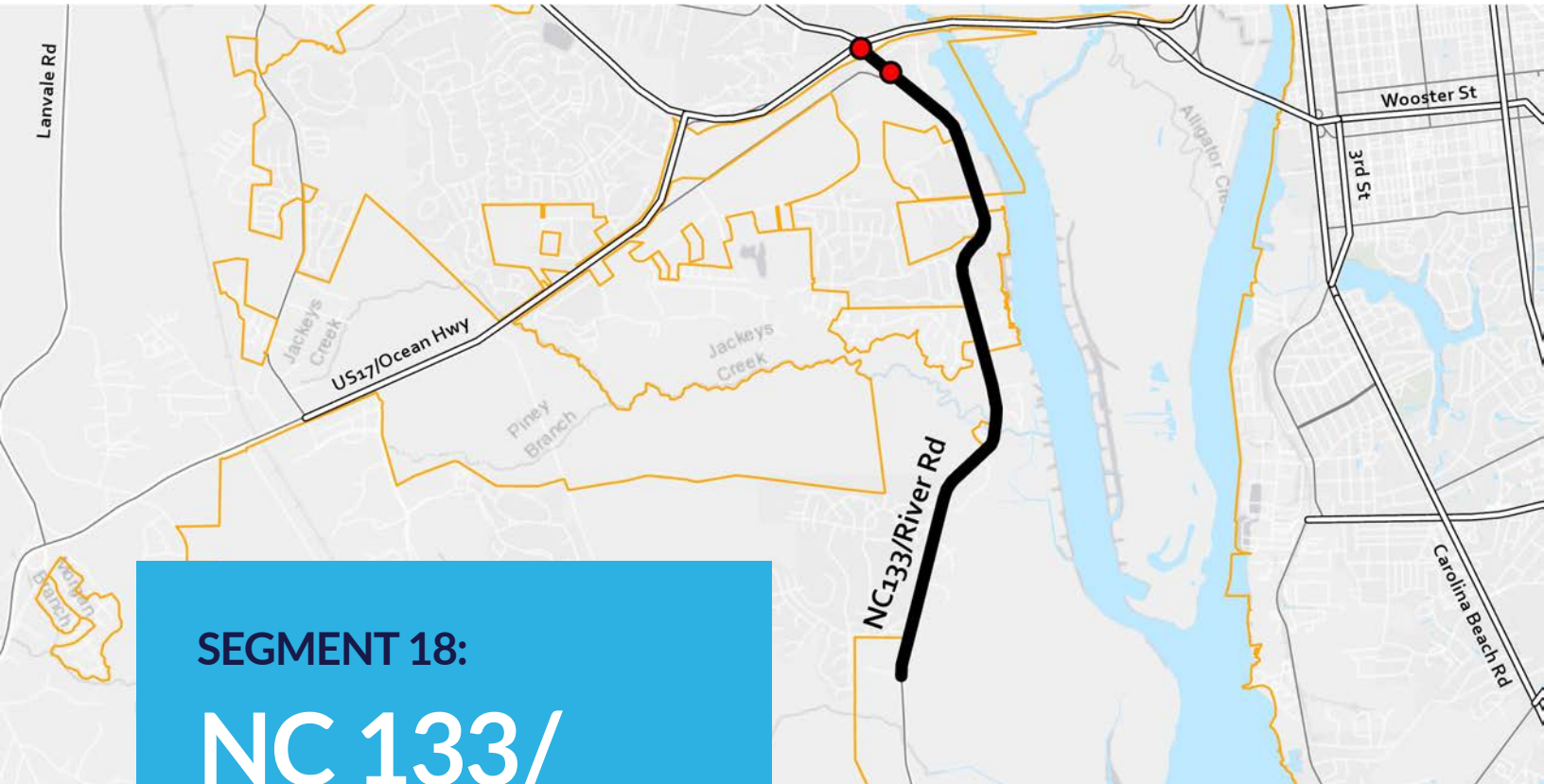
SEGMENT 18:

NC 133/ RIVER ROAD

FROM: US17/74/76
TO: RABON WAY

LENGTH: 4.87 MILES

HOT SPOTS: 2

1. US74
2. Blackwell Road

ALTERNATE ROUTE(S):
   NONE

WMPO CONGESTION MANAGEMENT TECHNIQUES

REDUCE DEMAND:
• Alternative Roadways

SHIFT MODE OF TRIP:
• Increase Transit Frequency
• Expand Bicycle and Pedestrian Network
• Multimodal Access at Intersections

INCREASE CAPACITY:
• Add General Purpose Lanes

LAND USE:
• Construct Supportive Accessways with New Development
• Transit-Oriented Land Development
• Mixed-Use Land Development

TRAVEL TIME RELIABILITY DATA		SCORE
Volume/Capacity (V/C)	0.55	4
Delay Rate (minutes/mile) AM	0.27	2
Delay Rate (minutes/mile) PM	0.22	2
Travel Time Reliability AM	1.09	2
Travel Time Reliability PM	1.07	2
Crash Rate (crashes/mile)	16.63	1
Truck Volume (AADT)	893	4

MULTIMODAL DATA		SCORE
Transit Ridership (stops	combined ridership)	0	0	0
Bicycle Suitability (suitability | % MUP | % bicycle infrastructure)	2.79	0.00	0.00	5
Pedestrian Suitability (% sidewalk | % crosswalk | % MUP)	0.00	0.00	0.00	1
Bicycle Crashes (crashes/mile)	0.00	10
Pedestrian Crashes (crashes/mile)	0.00	10

MULTIMODAL SCORE: 26

TRAVEL TIME SCORE: 17

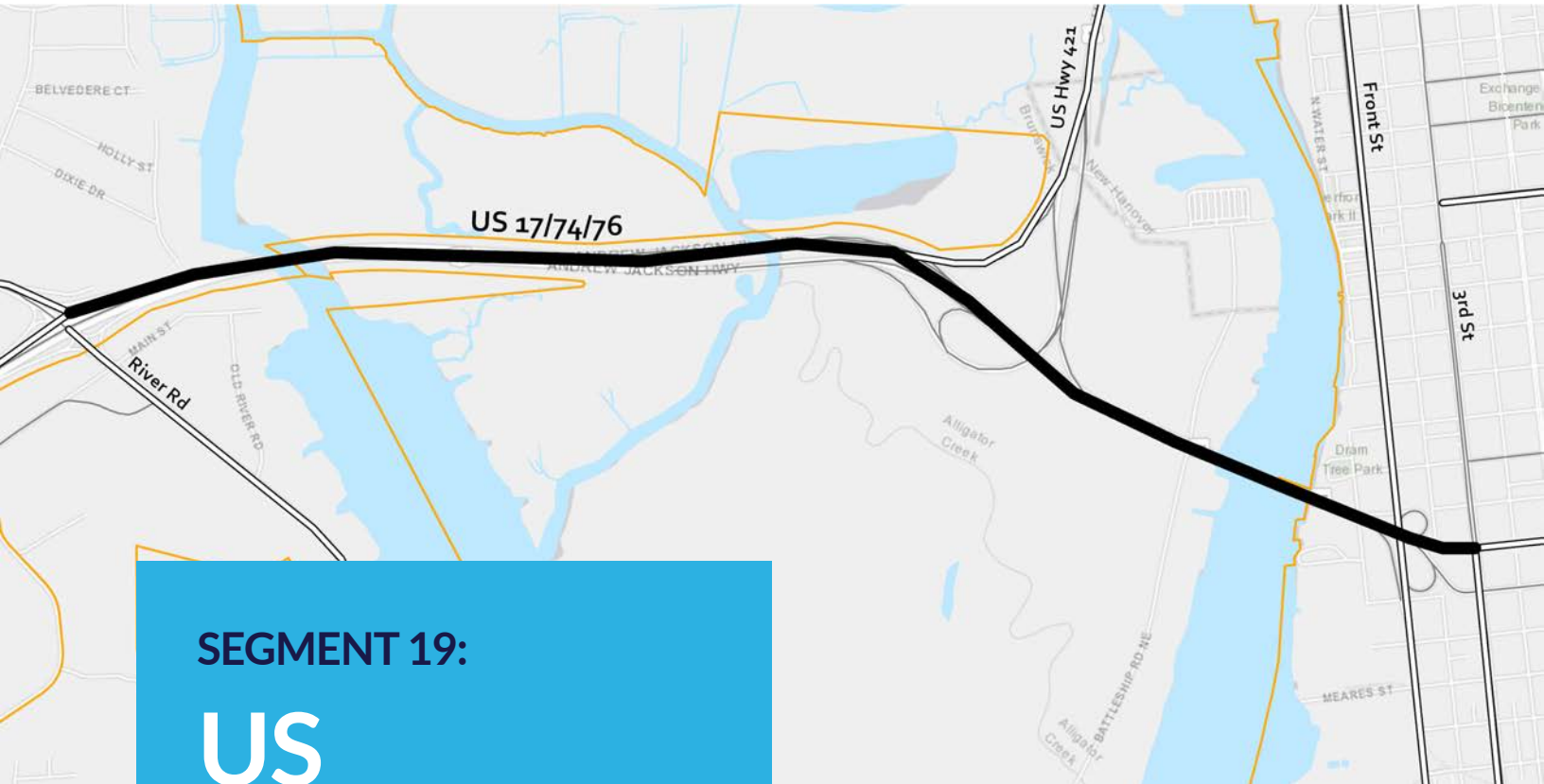## CURRENT PROJECTS AND PLANS

2020-2029 STIP:
• U-5914 | NC133/River Rd SE Modernize Roadway

CAPE FEAR MOVING FORWARD 2045:
• BP-298 | Chappell Loop Shoulder Bike Lanes & Sharrows
• RW-5 | NC133/River Rd SE Widening

TRANSPORTATION BOND:
(none)

US 17/74/76

SEGMENT 19:

US 17/74/76

FROM: NC133 SPLIT
TO: 5TH AVENUE

LENGTH: 4.14 MILES

HOT SPOTS: 0

ALTERNATE ROUTE(S):
I-140/WILMINGTON BYPASS

WMPO CONGESTION MANAGEMENT TECHNIQUES

REDUCE DEMAND:
- Alternative Roadways
- Alternative Work Schedules
- Carpool/Vanpool
- Employer Shuttles

SHIFT MODE OF TRIP:
- Increase Transit Frequency
- Establish Park and Ride Lots
- Expand Bicycle and Pedestrian Network

IMPROVE OPERATIONS:
- Freeway Ramp Metering

TRAVEL TIME RELIABILITY DATA		SCORE
Volume/Capacity (V/C)	0.69	6
Delay Rate (minutes/mile) AM	0.71	4
Delay Rate (minutes/mile) PM	0.10	1
Travel Time Reliability AM	1.27	10
Travel Time Reliability PM	1.05	1
Crash Rate (crashes/mile)	5.31	1
Truck Volume (AADT)	2773	9

| MULTIMODAL DATA		SCORE
Transit Ridership (stops	combined ridership)	0	18,499	1
Bicycle Suitability (suitability | % MUP | % bicycle infrastructure)	0.00	0.00	0.00	0
Pedestrian Suitability (% sidewalk | % crosswalk | % MUP)	0.00	0.00	0.00	0
Bicycle Crashes (crashes/mile)	0.00	10
Pedestrian Crashes (crashes/mile)	0.00	10

MULTIMODAL SCORE: 21

TRAVEL TIME SCORE: 32

CURRENT PROJECTS AND PLANS

2020-2029 STIP:
(none)

TRANSPORTATION BOND:
(none)

CAPE FEAR MOVING FORWARD 2045:
- PT-156 | Route 204 Extended Service to 9pm and Weekends
- RW-20 | US17/74/76/Causeway Improvements (Phase 2)
- RW-127 | US76/421/17/17 BUS/Cape Fear Memorial Bridge Replacement
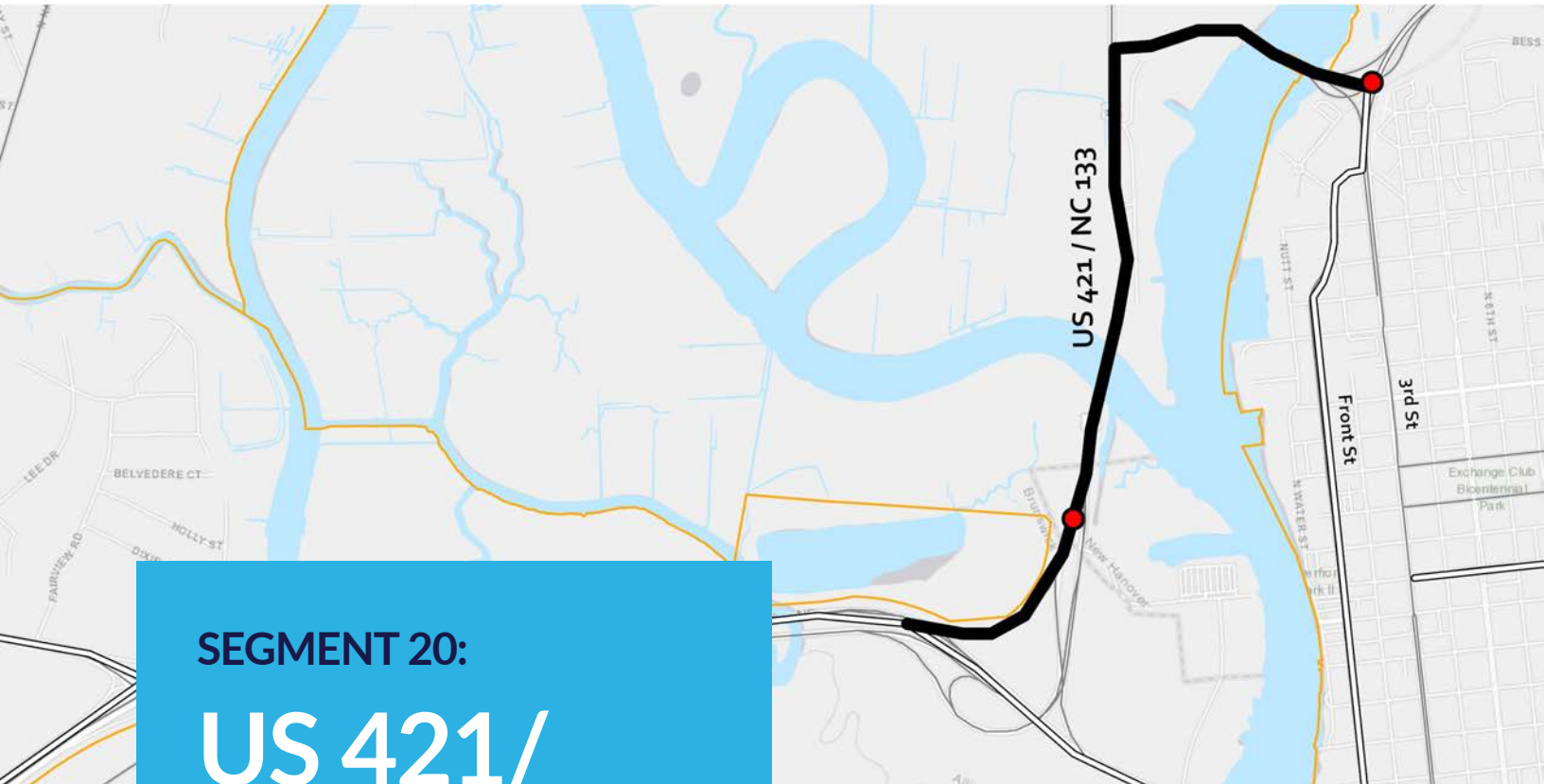
SEGMENT 20:

US 421/ NC 133

FROM: US74 SPLIT
TO: 3RD STREET

LENGTH: 1.60 MILES

HOT SPOTS: 2

1. 3rd Street
2. US421

ALTERNATE ROUTE(S):
I-140/WILMINGTON BYPASS

WMPO CONGESTION MANAGEMENT TECHNIQUES

REDUCE DEMAND:
- Alternative Roadways
- Alternative Work Schedules
- Carpool/Vanpool
- Employer Shuttles

IMPROVE OPERATIONS:
- Geometric Intersection Improvements

INCREASE CAPACITY:
- Convert Intersection or Grade Separation to Interchange

TRAVEL TIME RELIABILITY DATA		SCORE
Volume/Capacity (V/C)	0.66	6
Delay Rate (minutes/mile) AM	0.63	4
Delay Rate (minutes/mile) PM	0.53	3
Travel Time Reliability AM	1.06	1
Travel Time Reliability PM	1.05	1
Crash Rate (crashes/mile)	48.75	4
Truck Volume (AADT)	2540	9

MULTIMODAL DATA		SCORE
Transit Ridership (stops | combined ridership)	0 | 0	0
Bicycle Suitability (suitability | % MUP | % bicycle infrastructure)	2.00 | 0.00 | 0.00	0
Pedestrian Suitability (% sidewalk | % crosswalk | % MUP)	0.00 | 0.00 | 0.00	0
Bicycle Crashes (crashes/mile)	0.00	10
Pedestrian Crashes (crashes/mile)	0.00	10

MULTIMODAL SCORE: 20
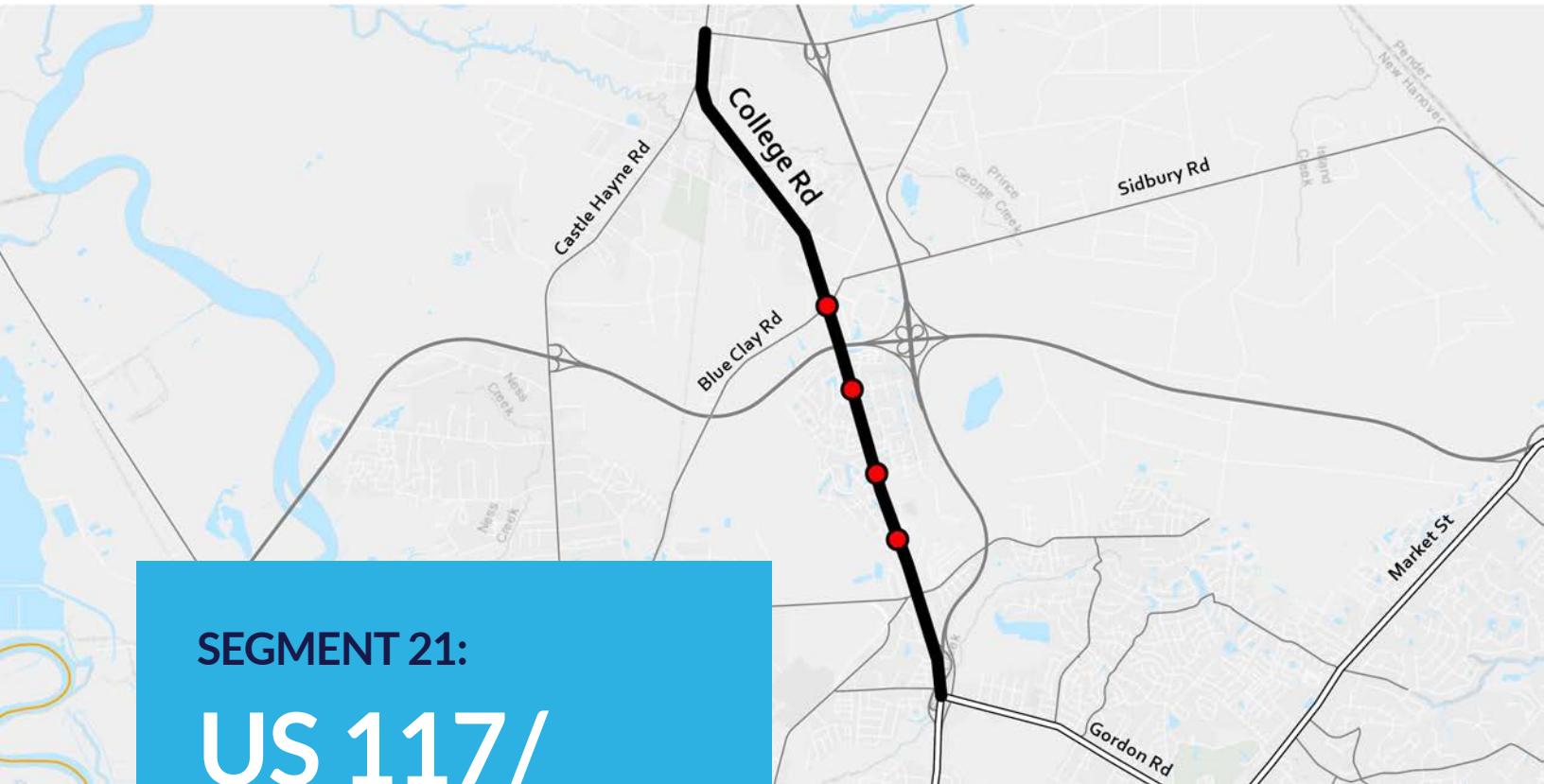
TRAVEL TIME SCORE: 28

CURRENT PROJECTS AND PLANS

2020-2029 STIP:
(none)

TRANSPORTATION BOND:
(none)

CAPE FEAR MOVING FORWARD 2045:
- BP-572 | US421 & Isabel Holmes Bridge Crosswalk Improvements
- RW-20 | US17/74/76/Causeway Improvements (Phase 2)
- RW-226 | US421/74/NC133 & US17/76 Merge Lane Addition

College Rd
Castle Hayne Rd
Blue Clay Rd
Sidbury Rd
Market St
Gordon Rd

SEGMENT 21:

US 117/ COLLEGE ROAD

FROM: HOLLY SHELTER ROAD
TO: GORDON ROAD

LENGTH: 6.12 MILES

HOT SPOTS: 4

1. Danny Pence Drive
2. Northchase Pkwy SE
3. Northchase Pkwy W
4. Blue Clay Road

ALTERNATE ROUTE(S):
CASTLE HAYNE ROAD
I-40

WMPO CONGESTION MANAGEMENT TECHNIQUES

SHIFT MODE OF TRIP:
- Increase Transit Frequency
- Expand Bicycle and Pedestrian Network
- Multimodal Access at Intersections

IMPROVE OPERATIONS:
- Access Management

INCREASE CAPACITY:
- Convert Intersection or Grade Separation to Interchange

LAND USE:
- Transit-Oriented Land Development
- Require MPO Review for Regional Scale Developments
- Construct Supportive Accessways with New Development
- Mixed-Use Land Development
- Encourage Regional Activity Centers
- Infill and Densification

TRAVEL TIME RELIABILITY DATA		SCORE
Volume/Capacity (V/C)	0.63	5
Delay Rate (minutes/mile) AM	0.69	4
Delay Rate (minutes/mile) PM	0.62	4
Travel Time Reliability AM	1.11	4
Travel Time Reliability PM	1.12	4
Crash Rate (crashes/mile)	44.12	3
Truck Volume (AADT)	910	4

MULTIMODAL DATA		SCORE
Transit Ridership (stops	combined ridership)	7	85,929	4
Bicycle Suitability (suitability | % MUP | % bicycle infrastructure)	4.00	0.00	0.00	6
Pedestrian Suitability (% sidewalk | % crosswalk | % MUP)	0.00	0.00	0.00	1
Bicycle Crashes (crashes/mile)	0.00	10
Pedestrian Crashes (crashes/mile)	0.65	6

MULTIMODAL SCORE: 27
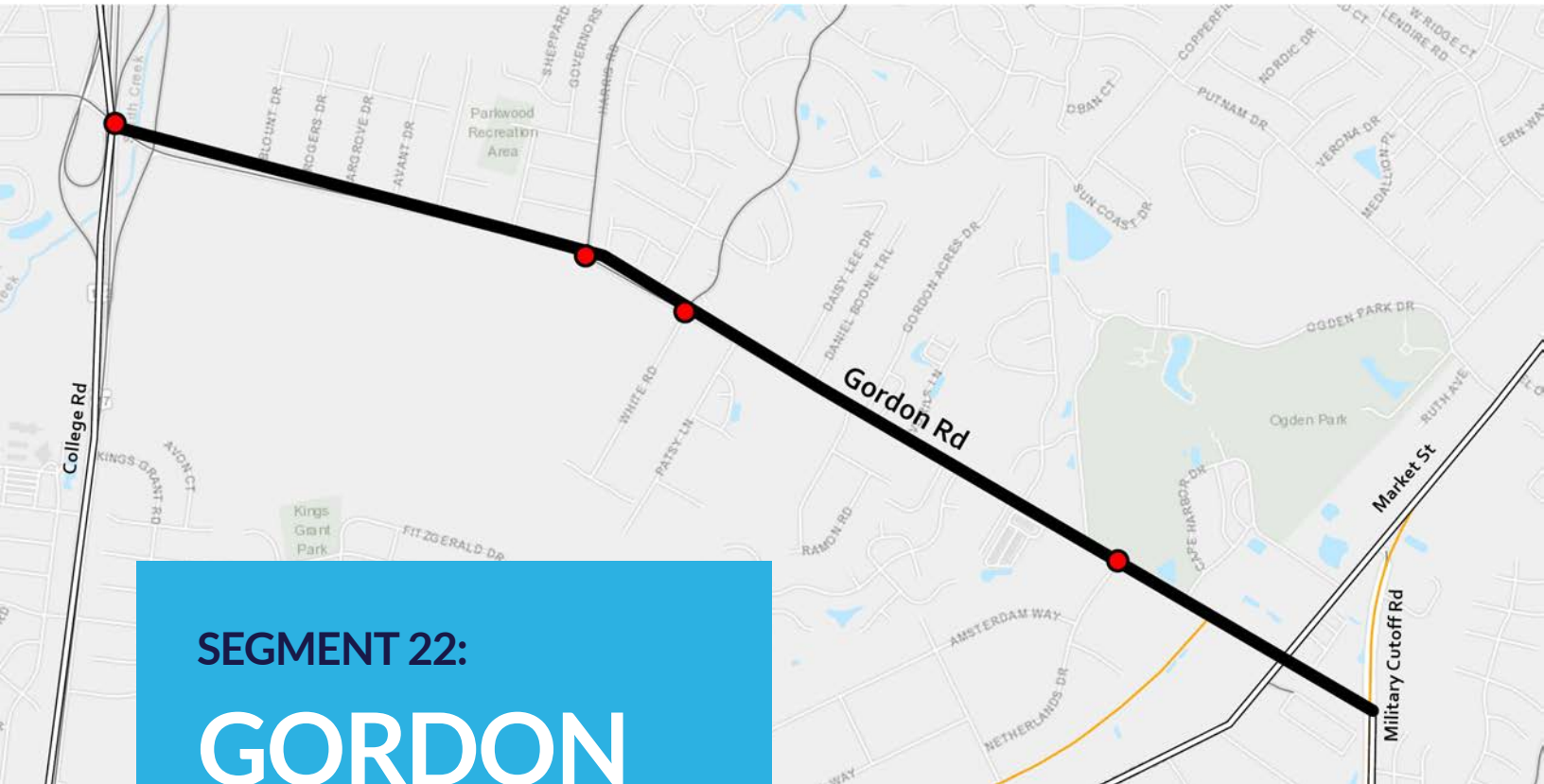
TRAVEL TIME SCORE: 28

CURRENT PROJECTS AND PLANS

2020-2029 STIP:
(none)

CAPE FEAR MOVING FORWARD 2045:
- BP-361 | Central College Road Trail Extension Bike Lanes
- BP-546 | Central College Road Trail MUP

TRANSPORTATION BOND:
(none)

SEGMENT 22:

GORDON ROAD

FROM: I-40
TO: MILITARY CUTOFF ROAD

LENGTH: 2.74 MILES

HOT SPOTS: 4

1. College Road/I-40
2. Harris Road
3. White Road
4. Netherland Drive

ALTERNATE ROUTE(S):
NONE

WMPO CONGESTION MANAGEMENT TECHNIQUES

SHIFT MODE OF TRIP:
- Increase Transit Frequency
- Expand Bicycle and Pedestrian Network
- Multimodal Access at Intersections

LAND USE:
- Transit-Oriented Land Development
- Require MPO Review for Regional Scale Developments
- Construct Supportive Accessways with New Development
- Mixed-Use Land Development
- Infill and Densification

TRAVEL TIME RELIABILITY DATA		SCORE
Volume/Capacity (V/C)	0.89	9
Delay Rate (minutes/mile) AM	1.84	8
Delay Rate (minutes/mile) PM	2.04	10
Travel Time Reliability AM	1.25	10
Travel Time Reliability PM	1.22	7
Crash Rate (crashes/mile)	81.02	6
Truck Volume (AADT)	0	1

MULTIMODAL DATA		SCORE
Transit Ridership (stops | combined ridership)	8 | 54,922	4
Bicycle Suitability (suitability | % MUP | % bicycle infrastructure)	2.00 | 0.00 | 0.00	4
Pedestrian Suitability (% sidewalk | % crosswalk | % MUP)	0.02 | 0.00 | 0.00	1
Bicycle Crashes (crashes/mile)	0.00	10
Pedestrian Crashes (crashes/mile)	0.73	6

MULTIMODAL SCORE: 25

TRAVEL TIME SCORE: 51
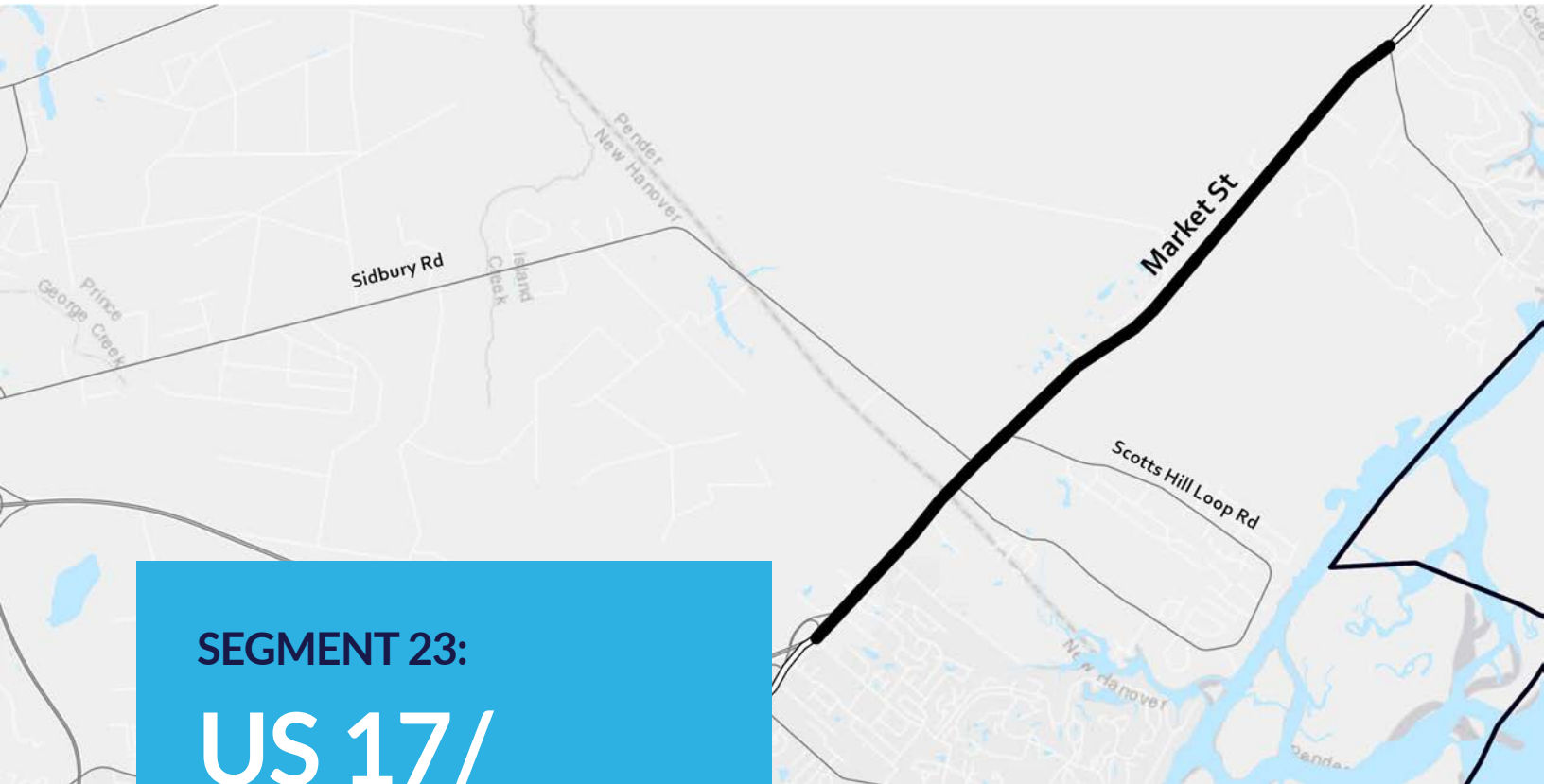
CURRENT PROJECTS AND PLANS

2020-2029 STIP:
- U-6202 | Gordon Rd Widening

CAPE FEAR MOVING FORWARD 2045:
- BP-795 | Gordon Rd & Netherlands Dr Crosswalk Improvements

TRANSPORTATION BOND:
(none)

SEGMENT 23:

US 17/ MARKET STREET

FROM: NC140
TO: WASHINGTON ACRES ROAD

LENGTH: 5.82 MILES

HOT SPOTS: 0

ALTERNATE ROUTE(S):
NONE

WMPO CONGESTION MANAGEMENT TECHNIQUES

REDUCE DEMAND:
- Alternative Roadways

SHIFT MODE OF TRIP:
- Increase Transit Frequency
- Expand Bicycle and Pedestrian Network
- Multimodal Access at Intersections
- Increase Transit Frequency

IMPROVE OPERATIONS:
- Geometric Intersection Improvements
- Access Management

LAND USE:
- Regional Activity Centers
- Require MPO Review for Regional Scale Developments
- Construct Supportive Accessways with New Development
- Mixed-Use Land Development
- Infill and Densification

TRAVEL TIME RELIABILITY DATA		SCORE
Volume/Capacity (V/C)	0.73	7
Delay Rate (minutes/mile) AM	0.16	1
Delay Rate (minutes/mile) PM	0.54	3
Travel Time Reliability AM	1.13	5
Travel Time Reliability PM	1.29	9
Crash Rate (crashes/mile)	34.19	3
Truck Volume (AADT)	1855	7

MULTIMODAL DATA		SCORE
Transit Ridership (stops	combined ridership)	0	0	0
Bicycle Suitability (suitability | % MUP | % bicycle infrastructure)	0.79	0.00	0.00	2
Pedestrian Suitability (% sidewalk | % crosswalk | % MUP)	0.00	0.00	0.00	1
Bicycle Crashes (crashes/mile)	0.00	10
Pedestrian Crashes (crashes/mile)	0.52	7

MULTIMODAL SCORE: 20

TRAVEL TIME SCORE: 35

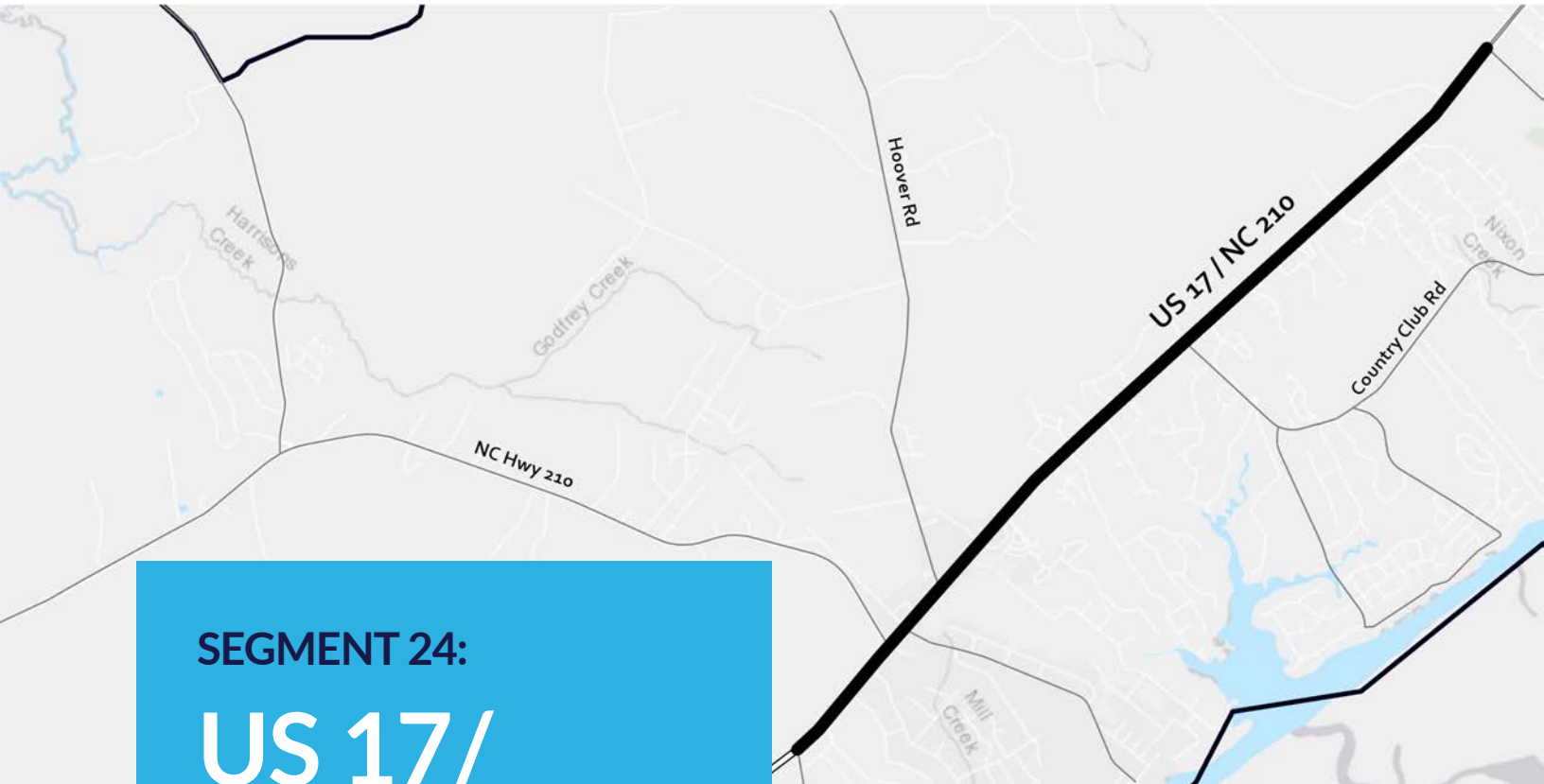## CURRENT PROJECTS AND PLANS

2020-2029 STIP:
- U-5732 | US17/NC210 Superstreet
- R-3300 | Future NC417/Hampstead Bypass

CAPE FEAR MOVING FORWARD 2045:
- R-3300 | Future NC417/Hampstead Bypass

TRANSPORTATION BOND:
(none)

SEGMENT 24:

US 17/ NC 210

FROM: WASHINGTON ACRES ROAD
TO: SLOOP POINT ROAD

LENGTH: 8.64 MILES

HOT SPOTS: 0

ALTERNATE ROUTE(S):
NONE

WMPO CONGESTION MANAGEMENT TECHNIQUES

REDUCE DEMAND:
• Alternative Roadways

SHIFT MODE OF TRIP:
• Increase Transit Frequency
• Expand Bicycle and Pedestrian Network
• Multimodal Access at Intersections

IMPROVE OPERATIONS:
• Access Management

LAND USE:
• Mixed-Use Land Development
• Regional Activity Centers

TRAVEL TIME RELIABILITY DATA		SCORE
Volume/Capacity (V/C)	0.96	10
Delay Rate (minutes/mile) AM	0.63	4
Delay Rate (minutes/mile) PM	0.14	1
Travel Time Reliability AM	1.22	9
Travel Time Reliability PM	1.12	4
Crash Rate (crashes/mile)	51.39	4
Truck Volume (AADT)	2300	8

MULTIMODAL DATA		SCORE
Transit Ridership (stops	combined ridership)	0	0	0
Bicycle Suitability (suitability | % MUP | % bicycle infrastructure)	2.00	0.00	0.00	4
Pedestrian Suitability (% sidewalk | % crosswalk | % MUP)	0.00	0.00	0.00	1
Bicycle Crashes (crashes/mile)	0.00	10
Pedestrian Crashes (crashes/mile)	0.00	10

MULTIMODAL SCORE: 25

TRAVEL TIME SCORE: 40
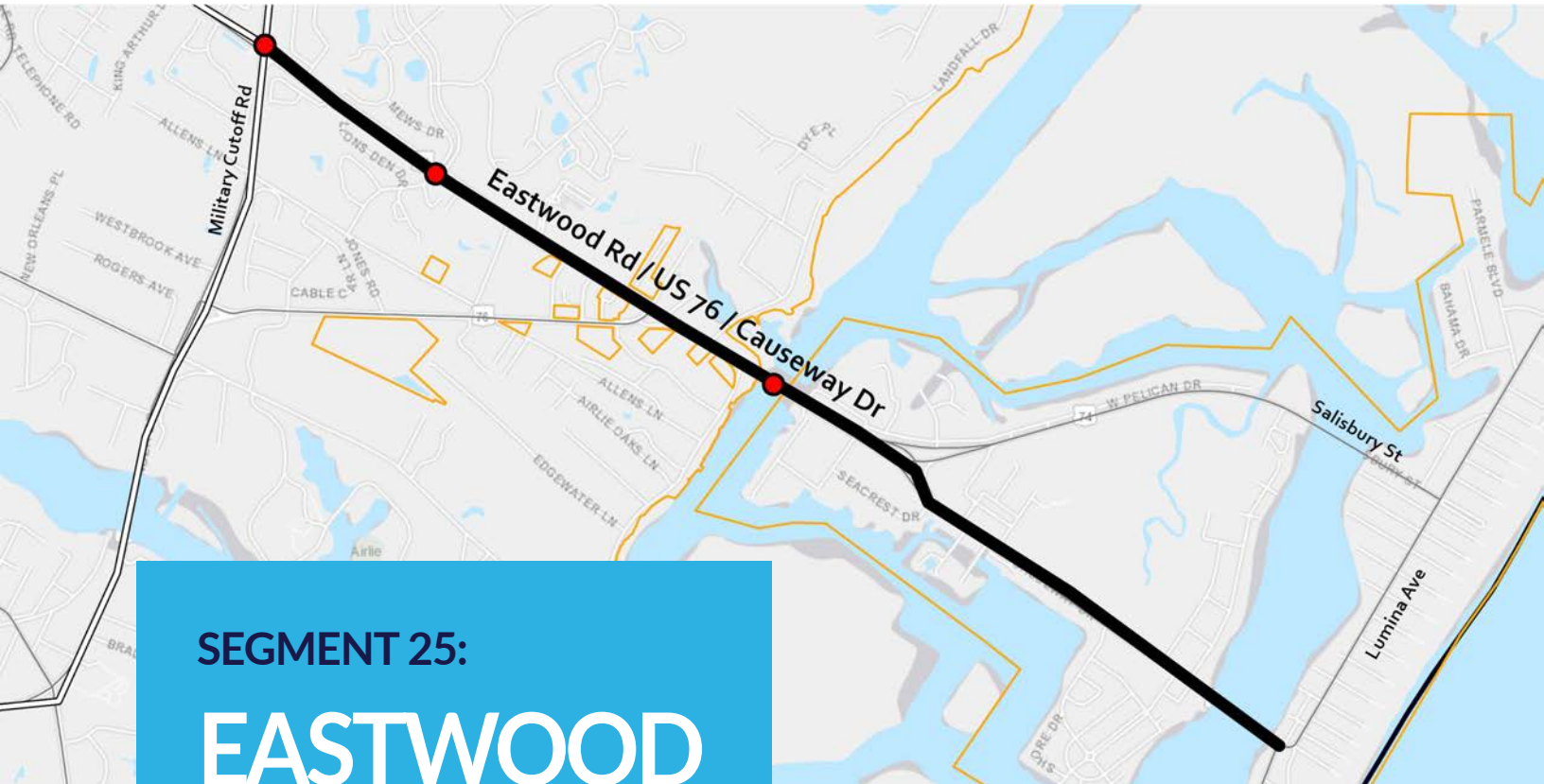
CURRENT PROJECTS AND PLANS

2020-2029 STIP:
• U-5732 | US17/NC210 Superstreet
• R-3300 | Future NC417/Hampstead Bypass

CAPE FEAR MOVING FORWARD 2045:
• R-3300 | Future NC417/Hampstead Bypass

TRANSPORTATION BOND:
(none)

SEGMENT 25:

EASTWOOD RD/US 76/ CAUSEWAY DRIVE

FROM: MILITARY CUTOFF ROAD
TO: LUMINA AVENUE

LENGTH: 2.45 MILES

HOT SPOTS: 3

1. Military Cutoff Road
2. Landfall Entrance
3. Heide Trask Drawbridge

ALTERNATE ROUTE(S):
NONE

WMPO CONGESTION MANAGEMENT TECHNIQUES

SHIFT MODE OF TRIP:
• Increase Transit Frequency
• Expand Bicycle and Pedestrian Network
• Multimodal Access at Intersections

INCREASE CAPACITY:
• Convert Intersection or Grade Separation to Interchange

TRAVEL TIME RELIABILITY DATA		SCORE
Volume/Capacity (V/C)	0.47	3
Delay Rate (minutes/mile) AM	0.92	6
Delay Rate (minutes/mile) PM	0.90	5
Travel Time Reliability AM	1.19	7
Travel Time Reliability PM	1.18	6
Crash Rate (crashes/mile)	52.65	4
Truck Volume (AADT)	624	3

MULTIMODAL DATA		SCORE
Transit Ridership (stops | combined ridership)	1 | 54,922	2
Bicycle Suitability (suitability | % MUP | % bicycle infrastructure)	5.84 | 0.46 | 0.22	9
Pedestrian Suitability (% sidewalk | % crosswalk | % MUP)	0.72 | 0.02 | 0.46	8
Bicycle Crashes (crashes/mile)	0.00	10
Pedestrian Crashes (crashes/mile)	0.00	10

MULTIMODAL SCORE: 39

TRAVEL TIME SCORE: 34

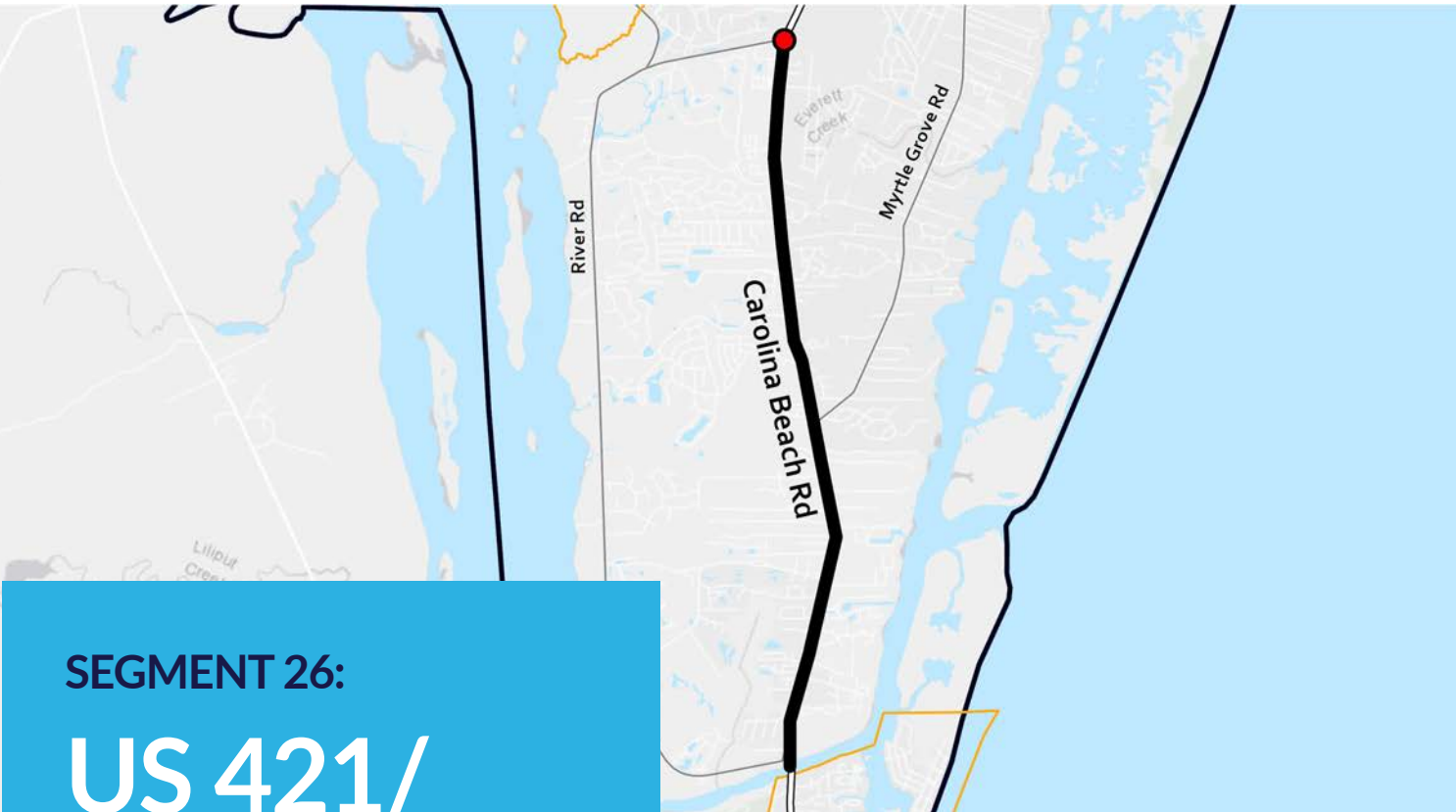## CURRENT PROJECTS AND PLANS

2020-2029 STIP:
• U-5710 | US74/Eastwood Rd & Military Cutoff Rd

CAPE FEAR MOVING FORWARD 2045:
• BP-441 | Causeway Dr Sharrows
• BP-563 | Causeway Dr & Salisbury St Crosswalk Improvements
• BP-644 | Causeway Dr & Lumina St Crosswalk Improvements

TRANSPORTATION BOND:
(none)

SEGMENT 26:

US 421/ CAROLINA BEACH RD

FROM: SANDERS ROAD
TO: SNOW'S CUT BRIDGE

LENGTH: 2.90 MILES

HOT SPOTS: 1

1. Sanders Road

ALTERNATE ROUTE(S):
RIVER ROAD

WMPO CONGESTION MANAGEMENT TECHNIQUES

SHIFT MODE OF TRIP:
- Increase Transit Frequency
- Expand Bicycle and Pedestrian Network
- Establish Park and Ride Lots

LAND USE:
- Require MPO Review for Regional Scale Developments
- Construct Supportive Accessways with New Development
- Mixed-Use Land Development
- Infill and Densification

TRAVEL TIME RELIABILITY DATA		SCORE
Volume/Capacity (V/C)	0.63	5
Delay Rate (minutes/mile) AM	0.12	1
Delay Rate (minutes/mile) PM	0.09	1
Travel Time Reliability AM	1.13	5
Travel Time Reliability PM	1.18	6
Crash Rate (crashes/mile)	79.31	6
Truck Volume (AADT)	1320	6

MULTIMODAL DATA		SCORE
Transit Ridership (stops | combined ridership)	6 | 8,508	2
Bicycle Suitability (suitability | % MUP | % bicycle infrastructure)	0.34 | 0.00 | 0.00	1
Pedestrian Suitability (% sidewalk | % crosswalk | % MUP)	0.01 | 0.00 | 0.00	1
Bicycle Crashes (crashes/mile)	0.69	3
Pedestrian Crashes (crashes/mile)	2.07	2

MULTIMODAL SCORE: 9 | **TRAVEL TIME SCORE:** 30

CURRENT PROJECTS AND PLANS

2020-2029 STIP:
(none)

TRANSPORTATION BOND:
(none)

CAPE FEAR MOVING FORWARD 2045:
- BP-560 | US421/Carolina Beach Rd & Halyburton Pkwy Crosswalk Improvements
- BP-561 | Carolina Beach Rd & Myrtle Grove Rd Pedestrian Signal
- BP-626 | River Rd & Carolina Beach Rd Crosswalk Improvements
- PT-146 | Route 301 Hourly Frequency
- RW-221 | US421/Snow's Cut Bridge Replacement

Dow Rd

Lake Park Blvd

SEGMENT 27:

US 421/ LAKE PARK BLVD

FROM: SNOW'S CUT BRIDGE
TO: END OF US421

LENGTH: 6.99 MILES

HOT SPOTS: 0

ALTERNATE ROUTE(S):
NONE

TRAVEL TIME RELIABILITY DATA		SCORE
Volume/Capacity (V/C)	0.32	1
Delay Rate (minutes/mile) AM	0.35	2
Delay Rate (minutes/mile) PM	0.50	3
Travel Time Reliability AM	1.14	5
Travel Time Reliability PM	1.04	1
Crash Rate (crashes/mile)	12.02	1
Truck Volume (AADT)	616	3

MULTIMODAL DATA		SCORE
Transit Ridership (stops	combined ridership)	3	8,508	2
Bicycle Suitability (suitability | % MUP | % bicycle infrastructure)	5.57	0.00	0.76	9
Pedestrian Suitability (% sidewalk | % crosswalk | % MUP)	0.96	0.03	0.00	7
Bicycle Crashes (crashes/mile)	0.00	10
Pedestrian Crashes (crashes/mile)	0.29	9

WMPO CONGESTION MANAGEMENT TECHNIQUES

SHIFT MODE OF TRIP:

- Increase Transit Frequency
- Expand Bicycle and Pedestrian Network
- Establish Park and Ride Lots

MULTIMODAL SCORE: 37

TRAVEL TIME SCORE: 16

CURRENT PROJECTS AND PLANS

2020-2029 STIP:
(none)

CAPE FEAR MOVING FORWARD 2045:
- BP-843 | K Ave & US421 Crosswalk Improvements
- BP-851 | North Carolina Ave & S Lake Park Blvd Crosswalk Improvements
- BP-852 | South Carolina Ave & S Lake Park Blvd Crosswalk Improvements
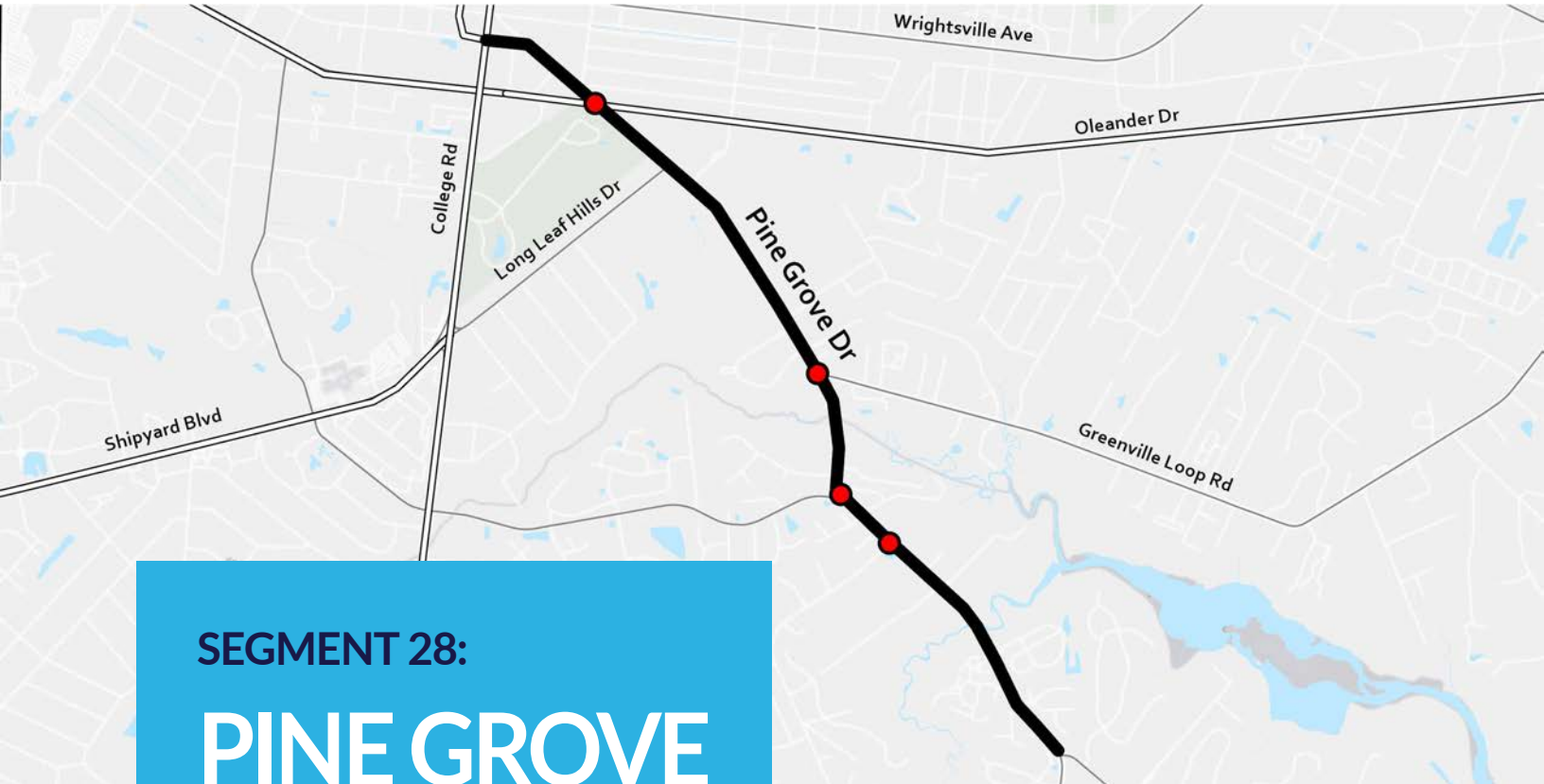- BP-853 | Texas Ave & S Lake Park Blvd Crosswalk Improvements
- PT-98 | Carolina Beach Rd at Snow's Cut Bridge

- PT-140 | Public Transportation to and from the Ferry
- PT-146 | Route 301 Hourly Frequency
- RW-221 | US421/Snow's Cut Bridge Replacement

TRANSPORTATION BOND:
(none)

TRAVEL TIME RELIABILITY DATA

TRAVEL TIME RELIABILITY DATA		SCORE
Volume/Capacity (V/C)	0.90	9
Delay Rate (minutes/mile) AM	1.53	7
Delay Rate (minutes/mile) PM	1.31	7
Travel Time Reliability AM	1.26	10
Travel Time Reliability PM	1.25	8
Crash Rate (crashes/mile)	42.17	3
Truck Volume (AADT)	0	1

MULTIMODAL DATA		SCORE
Transit Ridership (stops	combined ridership)	2	0	1
Bicycle Suitability (suitability | % MUP | % bicycle infrastructure)	4.60	0.03	0.00	6
Pedestrian Suitability (% sidewalk | % crosswalk | % MUP)	0.13	0.00	0.03	2
Bicycle Crashes (crashes/mile)	0.00	10
Pedestrian Crashes (crashes/mile)	0.40	8

MULTIMODAL SCORE: 27

TRAVEL TIME SCORE: 45

SEGMENT 28:

PINE GROVE DRIVE

FROM: COLLEGE ROAD
TO: MASONBORO SOUND ROAD

LENGTH: 2.49 MILES

HOT SPOTS: 4

1. Oleander Drive
2. Greenville Loop Road
3. Holly Tree Road
4. Beasley Road

ALTERNATE ROUTE(S):
COLLEGE ROAD

WMPO CONGESTION MANAGEMENT TECHNIQUES

SHIFT MODE OF TRIP:
- Increase Transit Frequency
- Expand Bicycle and Pedestrian Network
- Multimodal Access at Intersections

INCREASE CAPACITY:
- Convert Intersection or Grade Separation to Interchange
- Add General Purpose Lanes
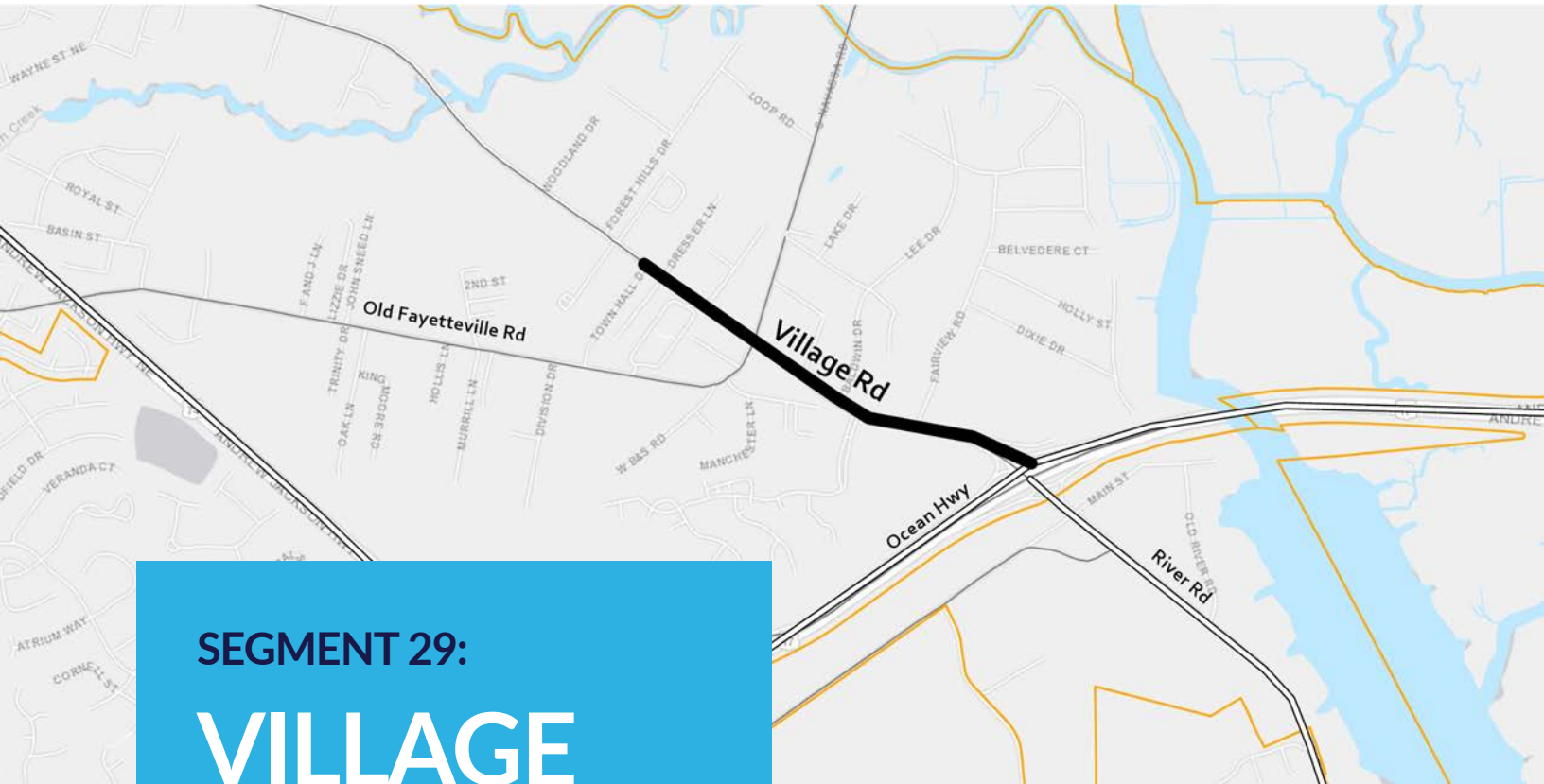
CURRENT PROJECTS AND PLANS

2020-2029 STIP:
(none)

CAPE FEAR MOVING FORWARD 2045:
- BP-49 | Peachtree Ave MUP

TRANSPORTATION BOND:
- Pine Grove Drive & Oleander Drive Intersection Improvements

TRAVEL TIME RELIABILITY DATA		SCORE
Volume/Capacity (V/C)	0.48	3
Delay Rate (minutes/mile) AM	0.55	4
Delay Rate (minutes/mile) PM	0.38	3
Travel Time Reliability AM	1.18	7
Travel Time Reliability PM	1.09	3
Crash Rate (crashes/mile)	20.81	2
Truck Volume (AADT)	0	1

MULTIMODAL DATA		SCORE
Transit Ridership (stops | combined ridership)	4 | 18,499	2
Bicycle Suitability (suitability | % MUP | % bicycle infrastructure)	3.69 | 0.00 | 0.00	6
Pedestrian Suitability (% sidewalk | % crosswalk | % MUP)	0.45 | 0.05 | 0.04	5
Bicycle Crashes (crashes/mile)	0.31	6
Pedestrian Crashes (crashes/mile)	0.31	8

SEGMENT 29:

VILLAGE ROAD

FROM: US17/74/76
TO: TOWN HALL DRIVE

LENGTH: 3.22 MILES

HOT SPOTS: 0

ALTERNATE ROUTE(S):
NONE

WMPO CONGESTION MANAGEMENT TECHNIQUES

REDUCE DEMAND:
• Alternative Roadways

SHIFT MODE OF TRIP:
• Expand Bicycle and Pedestrian Network
• Multimodal Access at Intersections

LAND USE:
• Require MPO Review for Regional Scale Developments
• Construct Supportive Accessways with New Development
• Mixed-Use Land Development
• Infill and Densification

MULTIMODAL SCORE: 27
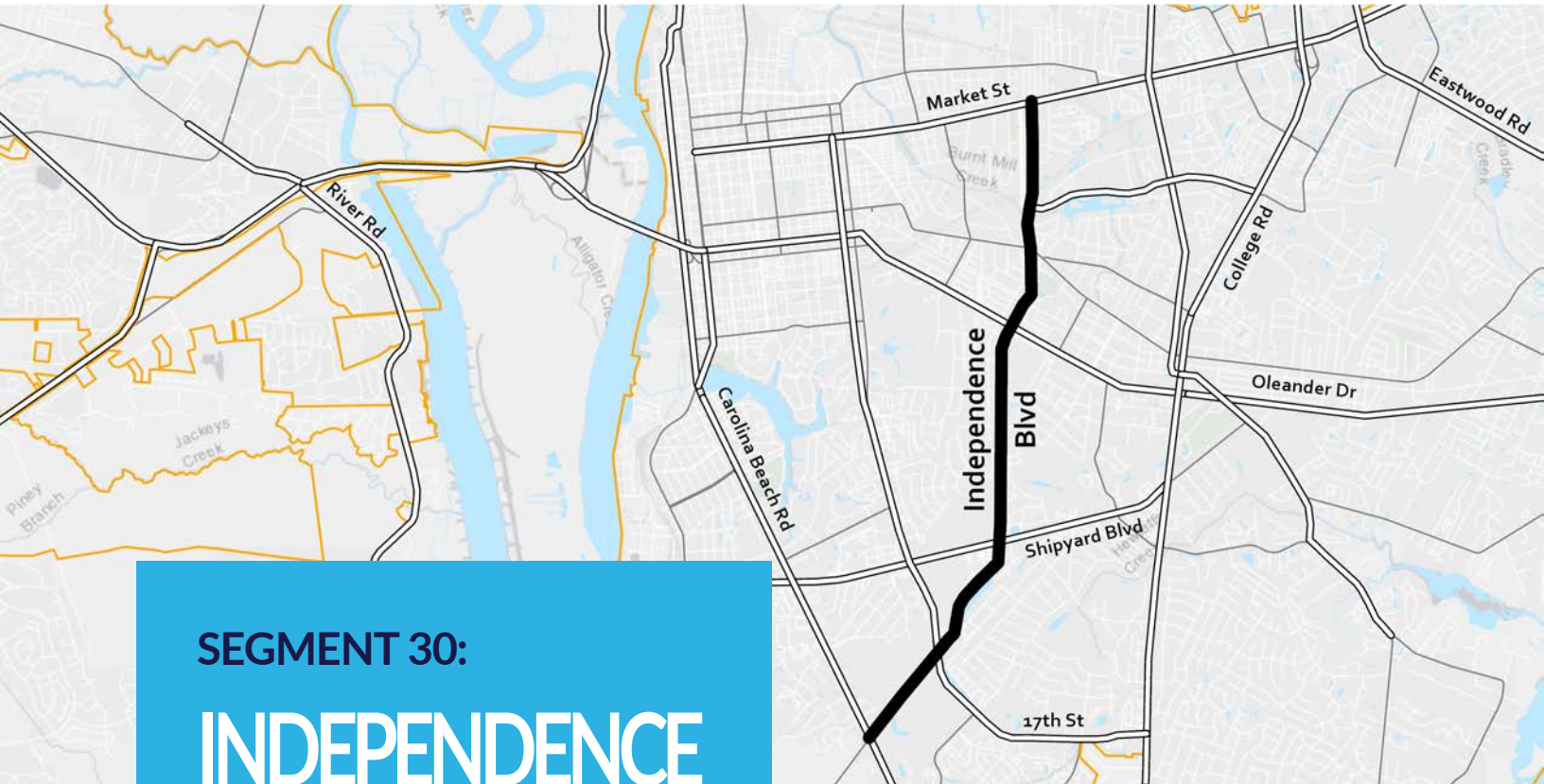
TRAVEL TIME SCORE: 23

CURRENT PROJECTS AND PLANS

2020-2029 STIP:
(none)

CAPE FEAR MOVING FORWARD 2045:
• PT-91 | Village Rd at Food Lion
• PT-156 | Route 204 Extended Service to 9pm and Weekends

TRANSPORTATION BOND:
(none)

SEGMENT 30:

INDEPENDENCE BLVD

FROM: US421
TO: MARKET STREET

LENGTH: 4.85 MILES

HOT SPOTS: 0

ALTERNATE ROUTE(S):
  COLLEGE ROAD
  17TH STREET

WMPO CONGESTION MANAGEMENT TECHNIQUES

REDUCE DEMAND:
• Alternative Roadways

SHIFT MODE OF TRIP:
• Increase Transit Frequency
• Expand Bicycle and Pedestrian Network
• Multimodal Access at Intersections

INCREASE CAPACITY:
• Convert Intersection or Grade Separation to Interchange

LAND USE:
• Transit-Oriented Land Development
• Require MPO Review for Regional Scale Developments
• Construct Supportive Accessways with New Development
• Mixed-Use Land Development
• Infill and Densification

TRAVEL TIME RELIABILITY DATA		SCORE
Volume/Capacity (V/C)	0.65	6
Delay Rate (minutes/mile) AM	1.47	7
Delay Rate (minutes/mile) PM	1.57	8
Travel Time Reliability AM	1.07	1
Travel Time Reliability PM	1.10	3
Crash Rate (crashes/mile)	48.04	4
Truck Volume (AADT)	0	1

MULTIMODAL DATA		SCORE
Transit Ridership (stops	combined ridership)	12	257,134	7
Bicycle Suitability (suitability | % MUP | % bicycle infrastructure)	7.09	0.57	0.30	10
Pedestrian Suitability (% sidewalk | % crosswalk | % MUP)	0.33	0.05	0.57	7
Bicycle Crashes (crashes/mile)	0.21	7
Pedestrian Crashes (crashes/mile)	0.21	9

MULTIMODAL SCORE: 40

TRAVEL TIME SCORE: 30

CURRENT PROJECTS AND PLANS

2020-2029 STIP:
• TD-5290 | Route 106 Amenity Upgrades
• U-4434 | Independence Blvd Extension

CAPE FEAR MOVING FORWARD 2045:
• BP-15 | Independence Blvd MUP (Phase 2)
• BP-594 | Carolina Beach Rd & Independence Blvd Crosswalk Improvements
• PT-38 | Independence Blvd & Canterbury Dr
• PT-40 | Independence Blvd & Park Ave
• PT-148 | Rush Hour Service on High Ridership Routes 8-11am and 3-5pm (108)

• PT-152 | Earlier Weekday Service on High Ridership Routes (108)
• RW-223 | Independence Blvd Access Management

TRANSPORTATION BOND:
(none)

NCDOT 2020-2029 Current STIP

October 2020

Town of Leland
PEDESTRIAN PLAN

CAPE FEAR
Moving Forward 2045
METROPOLITAN TRANSPORTATION PLAN

December 2016

Prepared for the Town of Leland & NCDOT
Prepared by Alta Planning + Design

Town of Carolina Beach
Pedestrian Plan

MAY 2018

Prepared for:
Prepared by:
vhb

IN THIS SECTION:

1. INTEGRATING THE CMP INTO THE TRANSPORTATION PLANNING PROCESS

INTEGRATING THE CMP INTO THE TRANSPORTATION PLANNING PROCESS

The results of the CMP are integrated into the transportation planning process through the development of the Comprehensive Transportation Plan (CTP), Metropolitan Transportation Plan (MTP), State Transportation Improvement Program (STIP), and local plans.

COMPREHENSIVE TRANSPORTATION PLAN

The CTP identifies long term priorities for the region. The CTP also helps to identify which corridors should be evaluated during the Congestion Management Process. The CMP uses a data-driven approach to begin transitioning these high-level plans into concrete projects that can be programed into the MTP and STIP.

METROPOLITAN TRANSPORTATION PLAN

The MTP is a medium range plan that helps transition projects from the CTP to funding sources such as the STIP, Surface Transportation Block Grant Program (STBGP), and local funds. The currently adopted MTP, Cape Fear Moving Forward 2045, was adopted in 2020 and is required to be updated every five years. This means that the CMP, which is updated biennially, will have two more iterations completed by the time the next MTP is adopted. The Biennial Data Reports can be compared to determine the success of projects and strategies that have been implemented, while identifying corridors still in need of improvements or new corridors requiring mitigation due to recent development. The identification of needed improvements and congestion mitigation will serve as a source of projects for the next MTP.
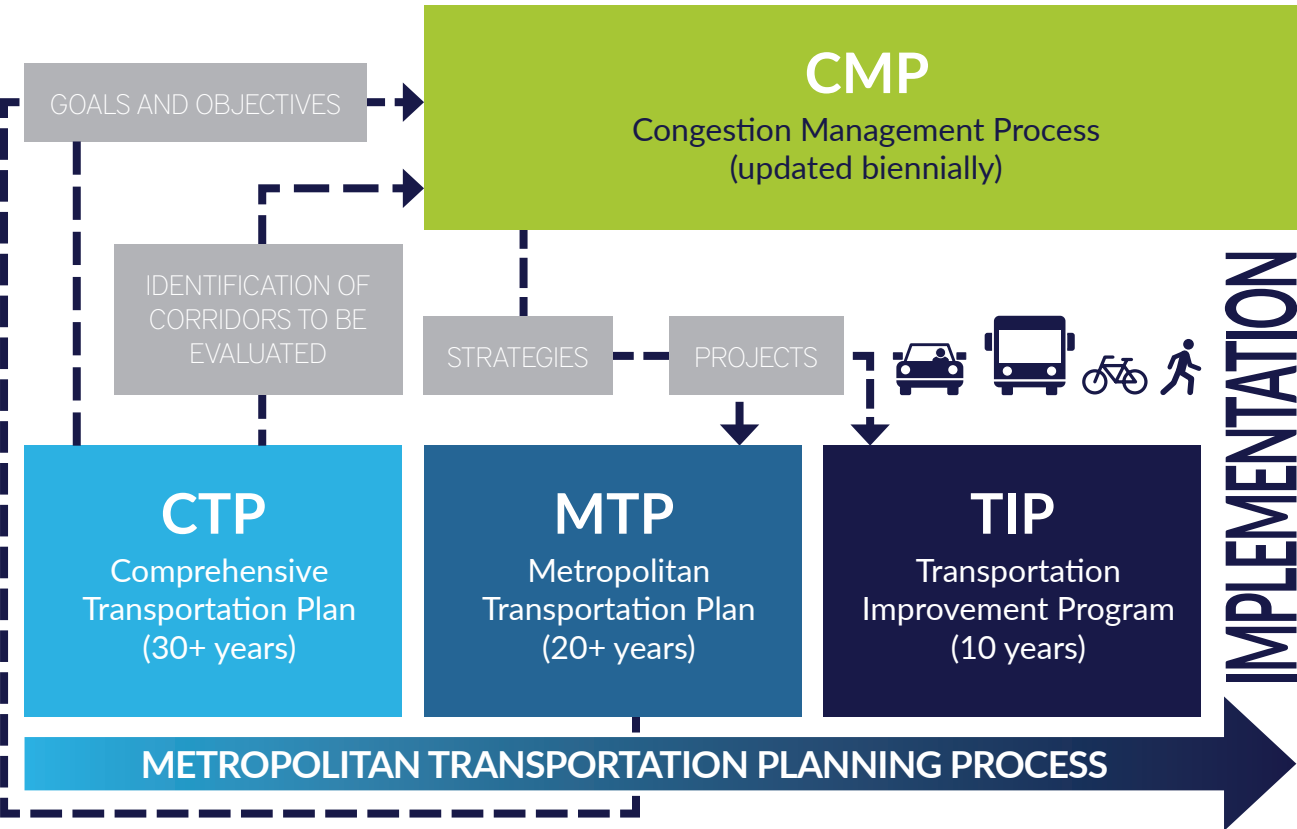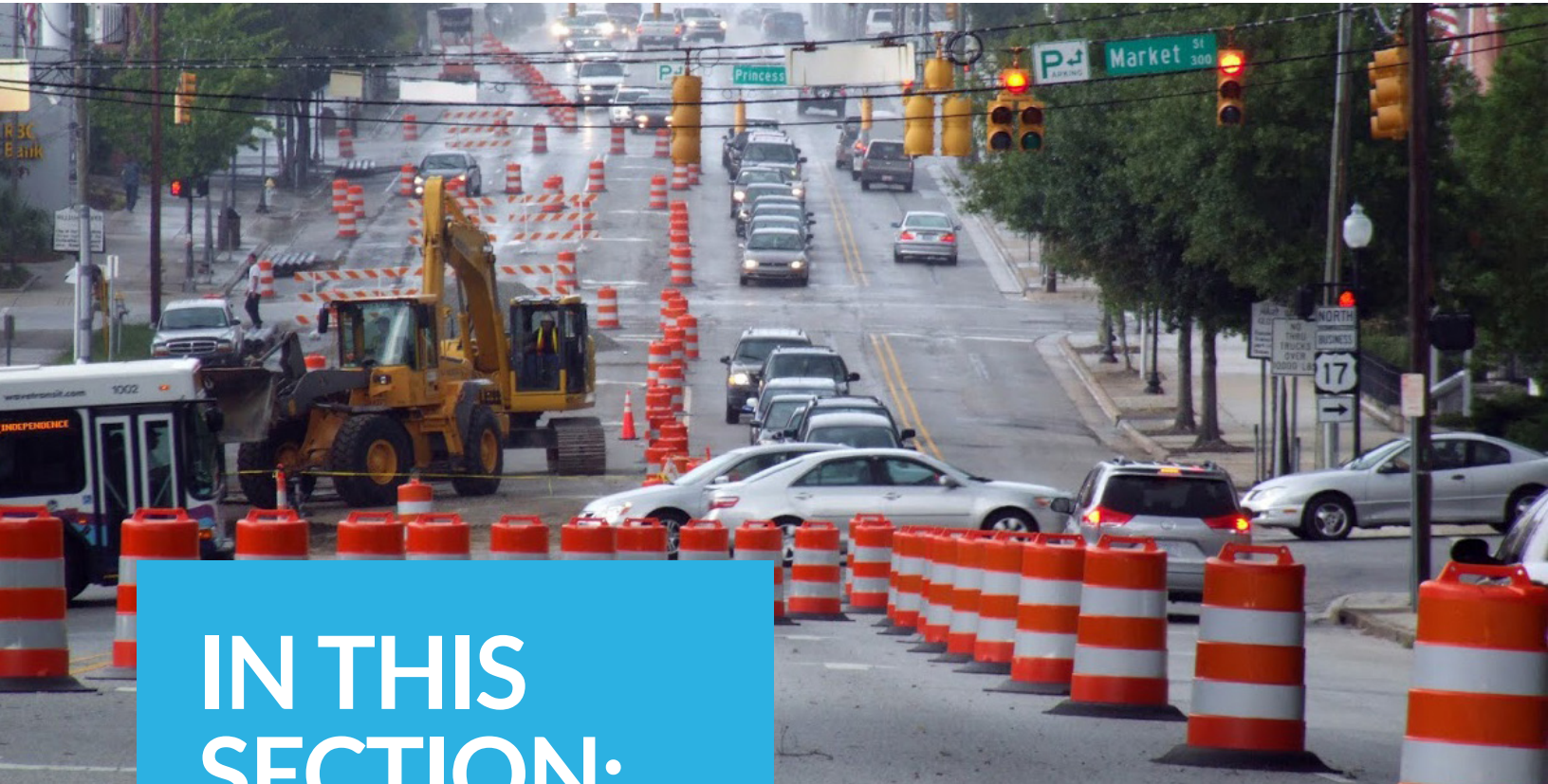
STATE TRANSPORTATION IMPROVEMENT PROGRAM

The NCDOT STIP prioritizes short term funding for projects throughout the state. Projects in the STIP are required to be in the MTP. The CMP serves to help prioritize projects in the MTP before they reach the STIP and then further strengthens the case for projects as they enter the STIP process.

LOCAL PLANS

The CMP serves as an indicator and starting point for the development of local plans. Corridors identified in the CMP with poor travel time reliability may need additional studies including corridor plans and collector street plans. Corridors with significant safety concerns may need safety studies completed. Corridors with significant congestion and truck volumes might have studies done to improve the efficiency of freight movement. Multimodal data provides insight to locations where transit, bicycle, and pedestrian infrastructure is most needed. The CMP uses a data-driven approach to identify transportation needs in the region and provide high level planning solutions as a foundation for future plan development.

GOALS AND OBJECTIVES

CMP
Congestion Management Process
(updated biennially)

IDENTIFICATION OF CORRIDORS TO BE EVALUATED

STRATEGIES

PROJECTS

CTP
Comprehensive Transportation Plan
(30+ years)

MTP
Metropolitan Transportation Plan
(20+ years)

TIP
Transportation Improvement Program
(10 years)

IMPLEMENTATION

METROPOLITAN TRANSPORTATION PLANNING PROCESS

2021: • Continue to monitor and begin the report cycle in 2021 for the 2022 CMP Biennial Data Report

2022: • Reference the 2020 Biennial Data Report during STIP project submittal
• Develop and adopt the 2022 CMP Biennial Data Report

2023: • Recommend additional local plans from trends identified in the 2020 and 2022 CMP Biennial Data Reports

2024: • Reference the 2022 Report during STIP project submittal
• Develop and adopt the 2024 CMP Biennial Data Report
• Incorporate the data and strategies identified in the previous CMPs into the 2050 MTP

FUTURE CONSIDERATIONS

Previously, and in this plan, the focus on congestion management has revolved around recurring congestion. While this is a significant source of congestion that is easily identifiable, non-recurring congestion counts towards an even larger percentage of congestion. This includes events such as crashes, weather, work zones, and special events. As the WMPO becomes more familiar with NPMRDS data and its capabilities, it would be beneficial to begin looking at these non-recurring events and attempt to mitigate them, or plan

Source: FHWA

for them. In additional to NPMRDS, changes and growth in Intelligent Transportation Systems (ITS) are likely to affect transportation in our region in future years. These changes should be studied to determine potential impacts to or easing of non-recurring congestion.

SEASONAL TRAVEL TIME STUDY

Located in a coastal environment with numerous beach towns, the WMPO planning area experiences seasonal congestion related to tourism, one of the largest industries in the region. Using NPMRDS data, the CMP can compare delay rates and travel time reliability in both the peak and off season to identify which corridors could be improved without overengineering for the peak season. Reducing congestion would make Wilmington a more attractive destination for travelers and reduce the negative impacts of congestion on locals.

SPECIAL EVENTS

Special events are grouped as non-recurring congestion in the FHWA CMP guidebook, but in the case of certain events, such as the Azalea Festival in Wilmington, the effects of these events can be further studied. NPMRDS data can be provided down to the day to help identify corridors that are the most strained during large events in the region. With this data, along with coordination with local traffic and police forces that manage the event, future improvements can be identified. This would result in more organized events for guests and less negative impacts on locals.

INCIDENT MANAGEMENT

Incidents are one of the largest sources of non-recurring congestion. The unpredictable nature of motor vehicle crashes makes it difficult to mitigate the impact of congestion. Improving response times would both reduce congestion and potentially save lives. By using available data to identify corridors with the most accidents and collaborating with local responders, solutions can be identified to improve response times. For example, the City of Charlotte identified the patrolling of corridors with high crash rates by first responders as a solution.

WEATHER

Weather is another unpredictable, non-recurring cause of congestion. Weather causes reduced visibility and decreased traction, leading to slower travel speeds that are not in sync with the signal system as well as increased

EVALUATION

With the introduction of NPMRDS data and new scoring methods, the 2020 Biennial Data Report will serve as a benchmark for future travel time studies. Although this report will be utilized as a benchmark against at least one more report cycle evaluated by the same metrics, we intend to continuously review our process and be ready to integrate the use of new data when appropriate and/or necessary. Similarly, discussions will continue with our planning partners to ensure our process appropriately reports, analyzes, and tracks congestion in our region.
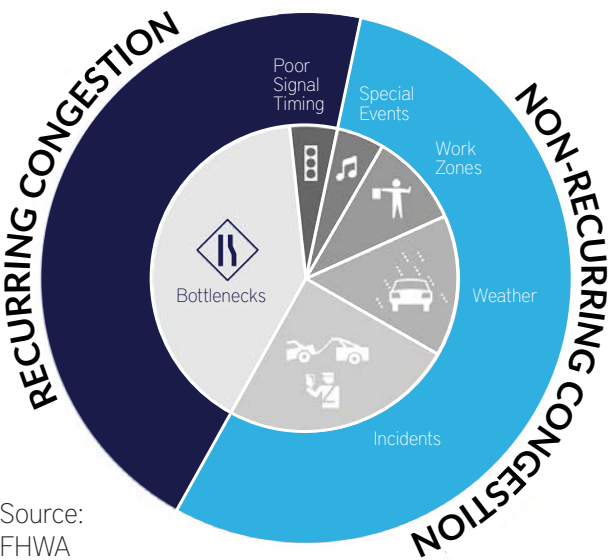
NEXT STEPS

It is important to consider the results of this plan during the development of future planning efforts. Some of these efforts include the STIP and MTP as well as local plans. A rough timeline of when and how this plan may be referenced in the future is shown on the following page.

IN THIS SECTION:

1. EVALUATION
2. NEXT STEPS
3. FUTURE CONSIDERATIONS

EVALUATION AND NEXT STEPS

crash rates. Furthermore, evacuations due to hurricanes and storm damage are important considerations in the region's transportation network. NPMRDS data can be used to study the impact of evacuations on congestion in the region and help to identify where solutions can be implemented.

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