CHARTING THE FUTURE
REIMAGINE
WAVE TRANSIT

Market Analysis

WAVE SHORT RANGE TRANSIT PLAN
NOVEMBER 2023

Wave
CAPE FEAR PUBLIC TRANSPORTATION AUTHORITY

NELSON
NYGAARD

Table of Contents

1 Introduction

About Reimagine Wave Transit

Reimagine Wave Transit is the short-range transit plan for Wave. The agency is conducting a comprehensive assessment of its existing transit service and establishing a vision of what its services should look like in the coming years. In the Wilmington area, Wave plays a vital role in connecting residents to the region's housing, jobs, and major destinations. The purpose of this short-range transit plan (SRTP) is to evolve Wave Transit to make its service more efficient, effective, and convenient. The Wave SRTP includes four phases:

1. This document, the Market Analysis , which provides an assessment of the existing and potential market for transit in the Wilmington region.
2. A State of the System Analysis , which offers a comprehensive review of the existing Wave network, an assessment of each route, and offers recommendations for restructuring Wave's services to better serve the region.
3. Service Alternatives , which presents different fiscally constrained approaches for evolving the Wave network to better serve the residents and visitors of the Wilmington region. The service alternatives provide three paths forward for Wave based on different funding levels: existing funding, reduced funding, and expanded funding.
4. The Final Plan, which summarizes and compiles the three earlier phases. Implementation of the SRTP's recommendations is expected to begin in 2024.

During each phase of the SRTP, Wave staff and the project team will engage with Wave bus operators, residents, existing customers, and stakeholders to ensure that the Final Plan reflects the community's vision for transit in the Wilmington area.

Market Analysis Overview

Much like businesses assess markets to identify potential customers, focus their strategies, and prioritize their investments, transit agencies benefit from conducting research on their service area to identify key market segments, demands, and gaps in service. This market analysis is an evaluation of where transit demand is located within the Wilmington region. Specifically, this report describes:

- The underlying demand for transit, which is based on population density, job density, demographics, and other factors.
- Major transit trip generators.
- Where people are traveling from and where they are going.
- Opportunities and challenges related to serving the Wilmington-area transit market.

The Market Analysis is the first step in understanding the existing condition of transit in the Wave service area. By identifying the target market segments for public transit in and around Wilmington, this analysis will help guide investment and service planning priorities for the agency.

Why is transit important?

Transit has the promise of being a safe, affordable, and convenient travel option for people of all ages and abilities. Transit is the most affordable mode for travel in the Wilmington region. A monthly pass for unlimited Wave rides costs $80 for adults; $40 for seniors (age 65 and older), residents with disabilities, local veterans, and local K-12

students; and is free for UNCW students, faculty, and staff. **Wave Transit costs riders less than $1,000 a year.**

By contrast, **automobile ownership and gas cost New Hanover County residents an average of $10,237 per year** (Center for Neighborhood Technology Housing & Transportation Index). Given that New Hanover County residents spend an average of 26 percent of their income on transportation, well-functioning public transit can remove a significant cost burden for many people, especially the 30,000 New Hanover County residents living below the poverty line (US Census).

Figure 1 | A year of unlimited transit passes costs a regular rider on Wave less than $1,000 a year.

Figure 2 | For the typical resident in New Hanover County, the annual cost of automobile ownership (including fueling, insurance, and maintenance) is more than $10,000 per year (Center for Neighborhood Technology Housing and Transportation Index).

When a region invests in quality transit, it can allow for greater upward economic mobility for its residents, as lessening the burden of transportation costs can allow for a resident's resources to be spent on other needs , such as education, health care, savings, and the purchases of goods and investments. Additionally, transit is the most efficient method of transporting people in environments where street space is limited. Cars use more space than buses to move people, and the combined effect of thousands of cars on the road with only one or two people inside can result in significant congestion during peak travel periods. Transit vehicles such as buses can carry many more people down a street while using a fraction of the space that would be required to move those same people in cars.

New Hanover County Housing & Transportation Costs

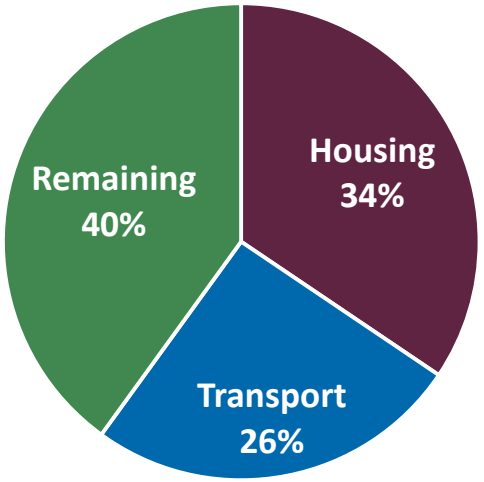


Figure 3 | Housing and transportation costs typically command more than half of the average New Hanover County resident's annual earnings (Center for Neighborhood Technology Housing and Transportation Index)

The benefits of transit extend beyond alleviating congestion – **transit is both safer and more environmentally-friendly compared to traveling in a private car.** According to the CDC, communities with higher transit use experience fewer traffic related deaths per capita, and transit use reduces per-capita greenhouse gas emissions and pollution (CDC "Transportation Recommendations" https://www.cdc.gov/transportation/expand-public-transportation.html).

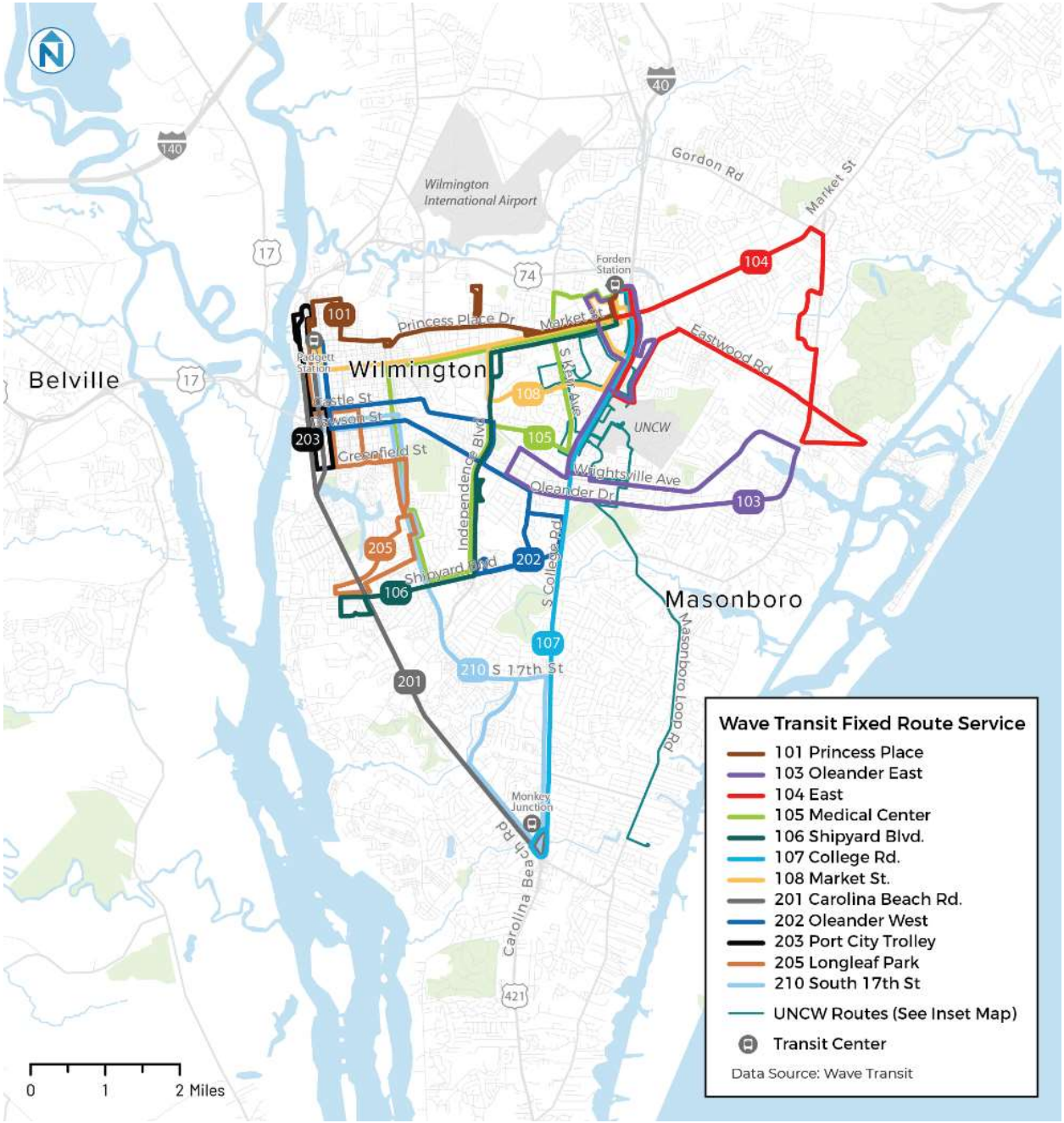
Wave Transit Services

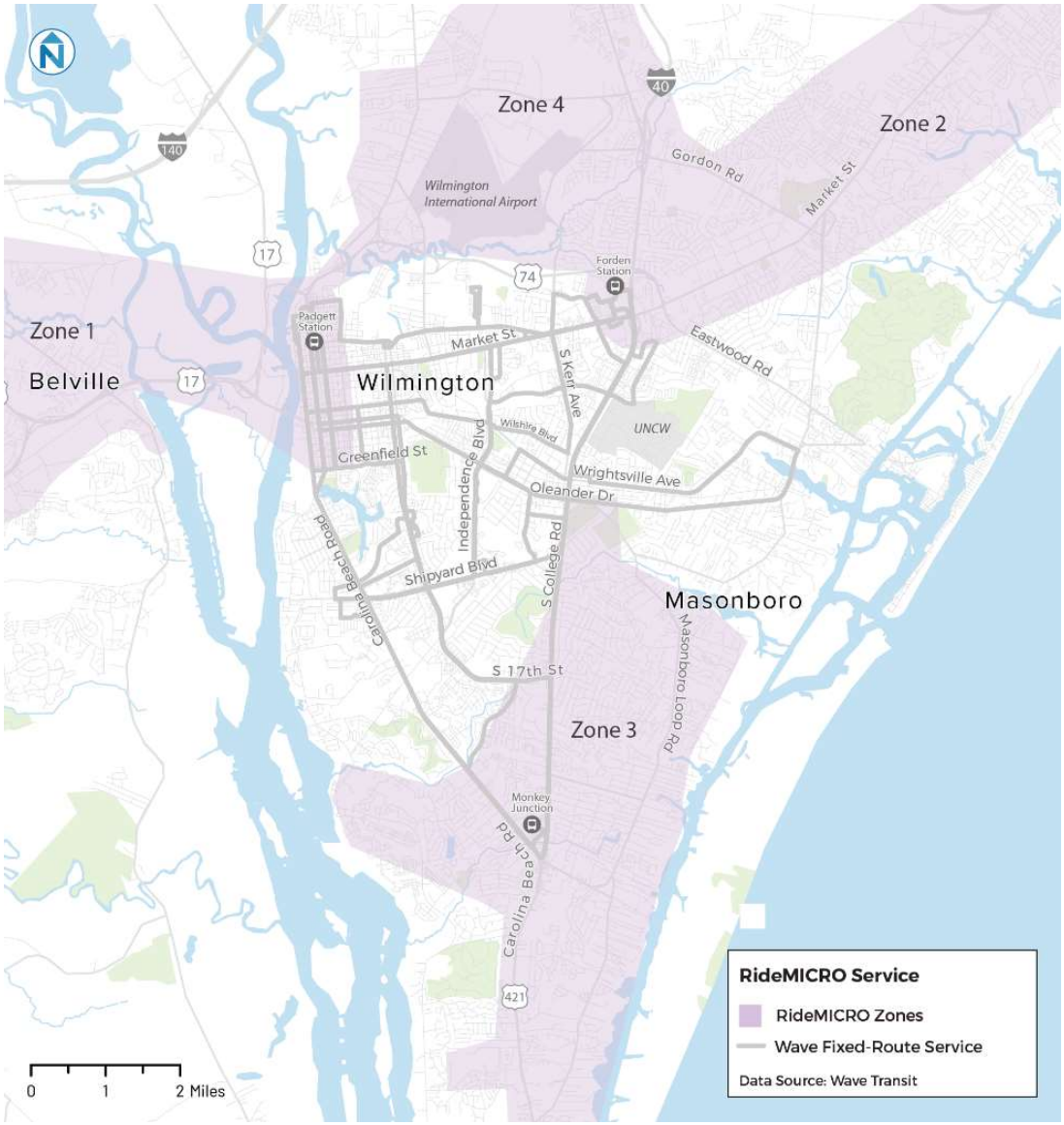
Wave Transit provides transit service to the City of Wilmington and throughout New Hanover County with four distinct service types:

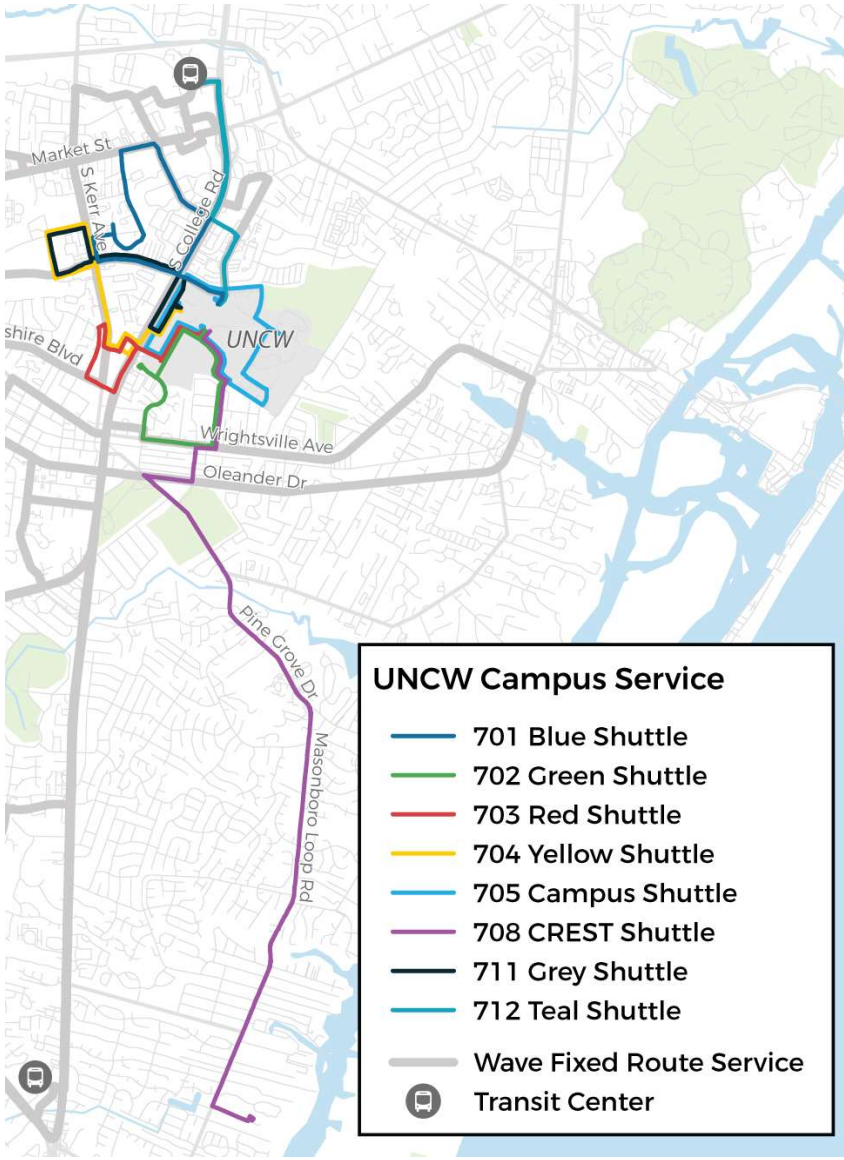
- Fixed-route bus services (marketed as "Wave Routes") oriented to serving the travel needs of the public.
- University of North Carolina-Wilmington (UNCW) circulators ("Seahawk Shuttle") oriented to serving the on- and off-campus travel needs of UNCW students, faculty, staff, and general public.
- Microtransit service ("RideMICRO")
- Paratransit services ("Dial-A-Ride Transportation" or "DART")

Service Area

Wave's service area comprises the entirety of New Hanover County, an area of 200 square miles with an estimated 219,957 people and 113,721 jobs. Wave's RideMICRO Zone 1 service extends west into Brunswick County and RideMICRO Zone 2 service extends northeast into Pender County. DART service is available within ¾ of a mile of any Wave fixed route.




Zone 4
Zone 2
Zone 1
Belville
Wilmington
Zone 3
Masonboro
Wilmington International Airport
Forden Station
Padgett Station
Market St
Gordon Rd
Eastwood Rd
S Kerr Ave
Wilshire Blvd
UNCW
Greenfield St
Independence Blvd
Wrightsville Ave
Oleander Dr
Shipyard Blvd
S College Rd
Carolina Beach Road
S 17th St
Masonboro Loop Rd
Monkey Junction
Carolina Beach Rd
RideMICRO Service
RideMICRO Zones
Wave Fixed-Route Service
Data Source: Wave Transit
0
1
2 Miles


Market St
S Kerr Ave
S College Rd
UNCW
Wrightsville Ave
Oleander Dr
Pine Grove Dr
Masonboro Loop Rd
UNCW Campus Service
701 Blue Shuttle
702 Green Shuttle
703 Red Shuttle
704 Yellow Shuttle
705 Campus Shuttle
708 CREST Shuttle
711 Grey Shuttle
712 Teal Shuttle
Wave Fixed Route Service
Transit Center

2 Transit Market Analysis

Overview of Transit Demand

Transit ridership is the result of the underlying demand for transit and the attractiveness of the service. The underlying demand for transit is driven by five key factors:

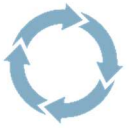
The 5 Key Factors of Transit Demand

Population Density: Greater population density is a good indicator of transit demand because transit relies on people being close to service. Higher density makes it feasible to provide increased levels of transit service.

Socioeconomic Characteristics: Some people may be more likely to use transit because of socioeconomic characteristics. For instance, households with no access to a vehicle are much more likely to use transit.

Job Types and Job Density: Jobs are a strong indicator of demand for transit because travel to and from work is usually the most frequent type of transit trip. Jobs involving customers, clients, patients, and students produce additional demand for transit because each job represents the people that visit the jobsite for any services provided.

Major Activity Centers: High-activity areas, such as large employers, hospitals, schools, and shopping centers, can generate large numbers of transit trips and indicate where people might travel via transit.



Travel Patterns: Travel patterns or flows demonstrate the locations that people travel to and from daily and offer insight on places that should be connected.

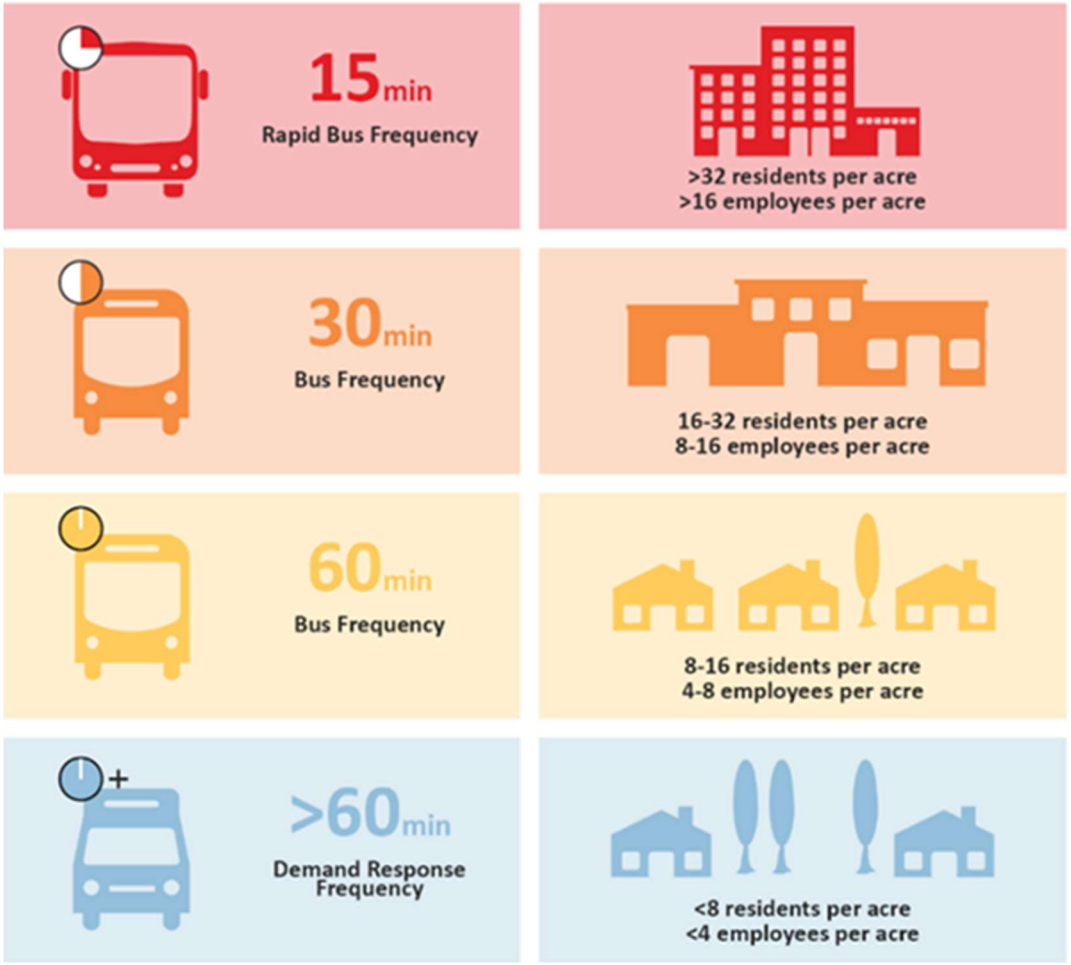
Density and Transit Demand

More than any other factors, population density and job density are the primary drivers of transit demand. This is because:

- The reach of transit is generally limited to within one-quarter to one-half mile of a transit route, depending on the conditions of the pedestrian facilities. As a result, the size of the travel market is directly related to the density of development in that area.
- The size of the travel market is closely related to the frequency of transit that can be supported. Bigger markets support more frequent service, while smaller markets can only support less frequent service.
- To attract travelers who have other options, such as automobiles, transit must be relatively frequent –at least every 30 minutes. The least frequent fixed-route transit services should operate no less than hourly to be considered useful.

Areas with large numbers of people, jobs, and other activities produce the greatest demand for transit service. As a result, population density residents per acre) and job density (jobs per acre) provide a useful indicator of just how much underlying demand there is for transit in a particular area. Higher concentrations of residents, jobs, or both can support higher levels of transit service.

Figure 4 | Density and Associated Potential Transit Frequencies (based on Nelson\Nygaard research)



Population Density

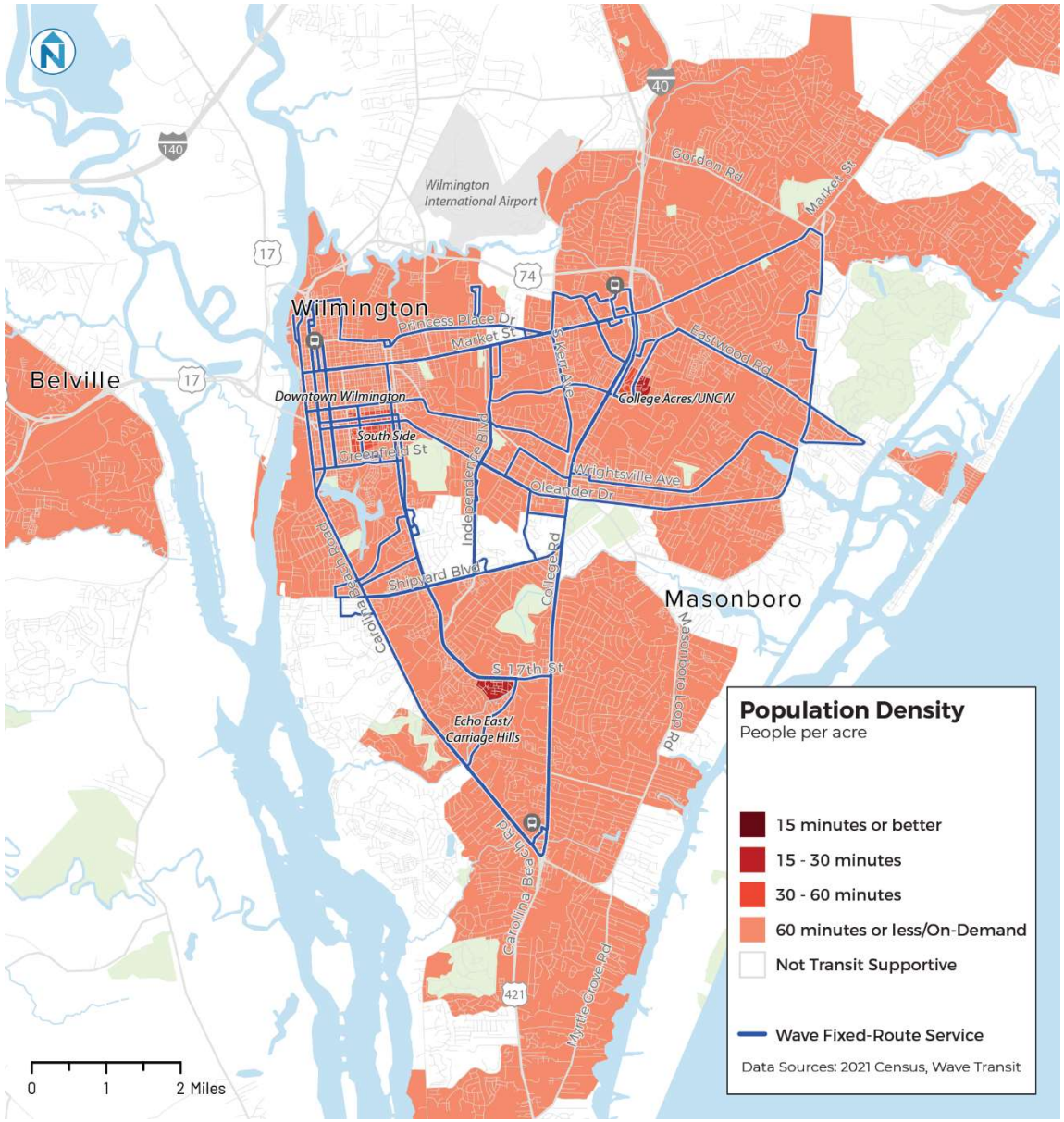
There are approximately 239,500 people living in Wave's service area, and Wilmington is the largest city by population and has the greatest density. The following areas in the service area have the highest population density:

- Downtown Wilmington/South Side
- College Acres/UNCW
- Echo East/Carriage Hills

Population density is relatively lower but can still support 60-minute or on demand service in most other areas of Wilmington proper and along and near the following corridors:

- Carolina Beach Road
- College Road
- Market Street
- Gordon Road
- Myrtle Grove Road

The population in Wilmington and surrounding areas is more dispersed than job demand because of the prevalence of single-family homes. Wave currently provides fixed route service to all higher density residential areas, and fixed route service or RideMICRO service is currently provided to most other transit supportive residential areas.



Socioeconomic Characteristics

Demographics and Transit Index Factors

This market analysis examines the distribution of different socioeconomic groups in addition to population and job density because research has shown that certain population groups have a higher propensity for taking transit than the overall population. Specifically, these socioeconomic groups include:

- **Race:** White residents account for 80% of the population in the Wilmington area but 34% of transit commuters. Non-white residents of New Hanover County are more than three times more likely to rely on transit than the general population.
- **Vehicle Ownership:** Having no access to a vehicle is the strongest socioeconomic factor for determining the likelihood of a resident to rely on Wave services. Wilmington residents without access to a vehicle are more than 17 times more likely to take transit than the general population.
- **Age:** Wilmington's young people (16–to 19-year-olds) and seniors (age 55 and older) are meaningfully more likely to rely on Wave services. These residents may not want to or be able to operate a car, and residents aged 65 and older are eligible for half price fares.
- **Poverty Status:** Wilmington residents living near or below the federal poverty level are often more likely to take transit than those whose incomes are at or above 150 percent of the poverty level. Wave service is much more affordable than car ownership.

The following table describes the relative transit propensity of the above demographic groups in Wave's service area. The Transit Index Factor (TIF) shown next to each group corresponds to the relative likelihood of that group to commute on transit compared to the average New Hanover County resident.

Figure 5 | Wilmington Area Transit Index Factors (Census ACS 2021)

DEMOGRAPHIC GROUP	TRANSIT INDEX FACTOR
RACE	
White Alone	0.43
Non-White	3.20
VEHICLE OWNERSHIP	
No Car	17.66
1 Car	0.85
2 or More Cars	0.38
AGE	
16 to 19 years	1.24
20 to 24 years	1.02
25 to 44 years	0.81
45 to 54 years	0.69
55 years or over	1.56
POVERTY STATUS	
Below 100 percent of the poverty level	4.35
100 to 149 percent of the poverty level	1.96
At or above 150 percent of the poverty level	0.46

Wilmington Area Transit Propensity

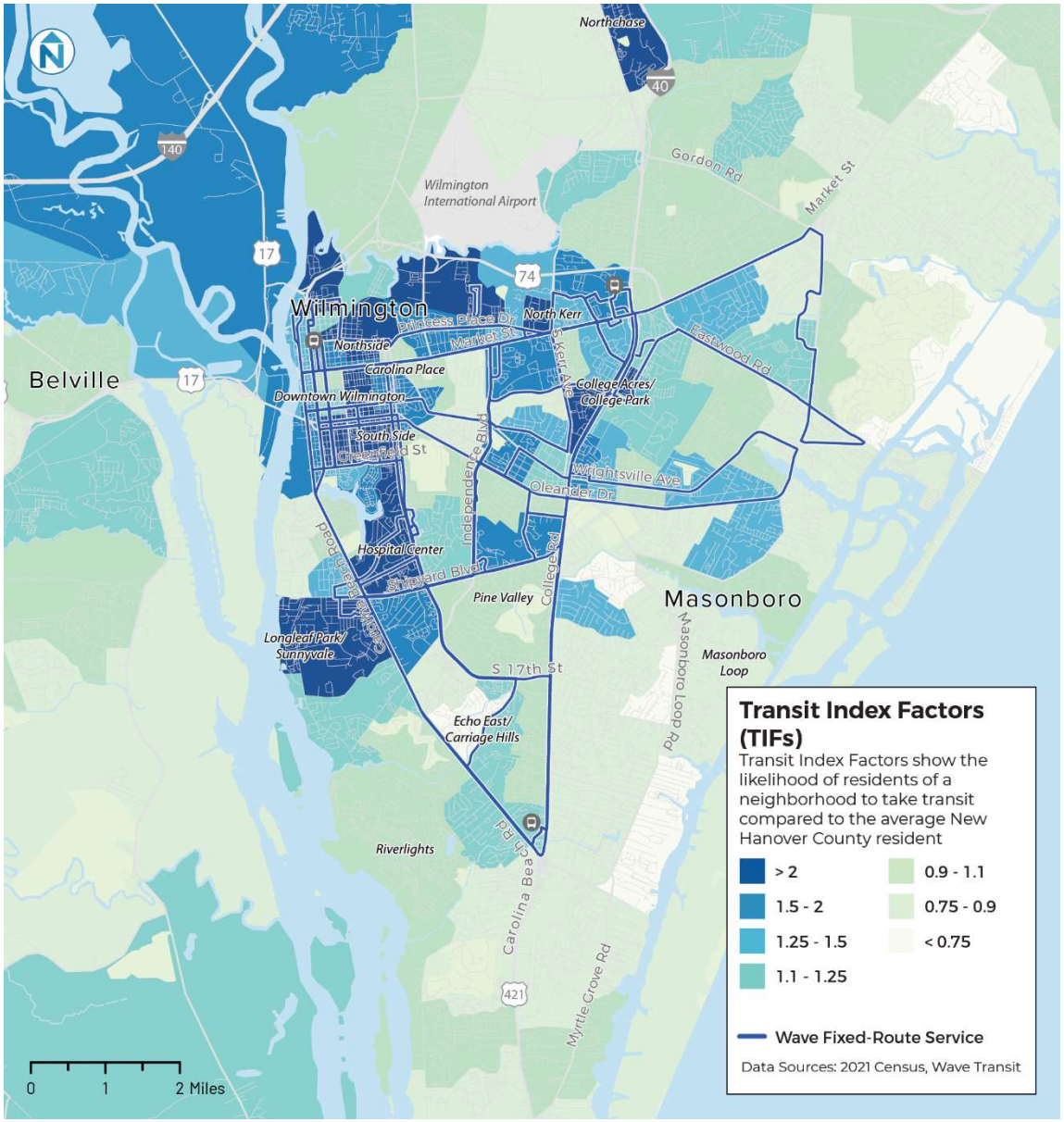
Mapping the average TIF of residents in Wave's service area makes clear the propensity of different neighborhoods to rely on transit. In general, residents in Wilmington have a higher propensity to use transit compared to residents in outlying areas, with some important exceptions.

The neighborhoods and communities where residents have the highest propensity to use transit include:

- Downtown Wilmington/South Side
- Carolina Place
- Northside
- Longleaf Park/Sunnyvale
- Hospital Center
- College Acres/College Park
- North Kerr
- Northchase

Residents of most suburban and exurban communities in New Hanover County are less likely to use transit, including:

- Masonboro Loop
- Pine Valley
- Riverlights



Adjusted Population Density

This study uses the TIFs shown in Figure 5 to adjust the population density figures to reflect the propensity of different communities to rely on transit. By multiplying the population density of each block group by that block group's average TIF, population-based demand increases in many Wilmington neighborhoods. For example, an area with 10 residents per acre that has many zero-car households will have much higher transit demand than an area with 10 residents per acre and few households with zero cars.

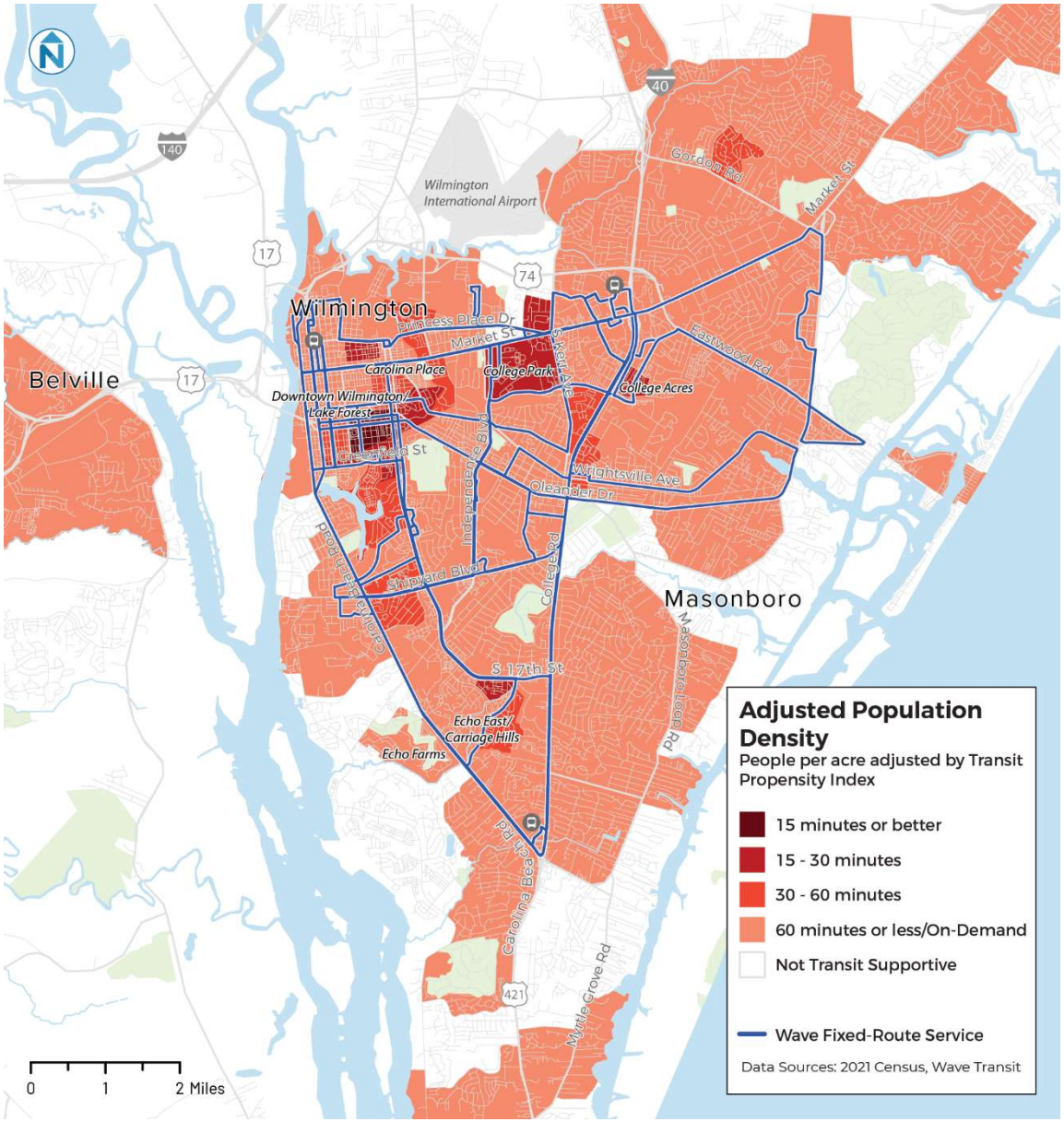
When transit propensity is considered with population density, the residential areas near UNCW, Downtown Wilmington, and around Shipyard Boulevard emerge as even stronger transit markets.

Adjusted population demand is highest in the following neighborhoods and communities:

- Downtown Wilmington/Dry Pond
- Carolina Place
- College Park
- College Acres
- Echo East, Carriage Hills, Echo Farms

When accounting for transit propensity, population density is unsupportive of transit service in Myrtle Grove north of Golden Road and south of Piner Road.

Wave currently provides fixed route service to all higher density residential areas within its service area, although much of this service is infrequent and provides indirect or circuitous service.



Job Types and Job Density

Job Density

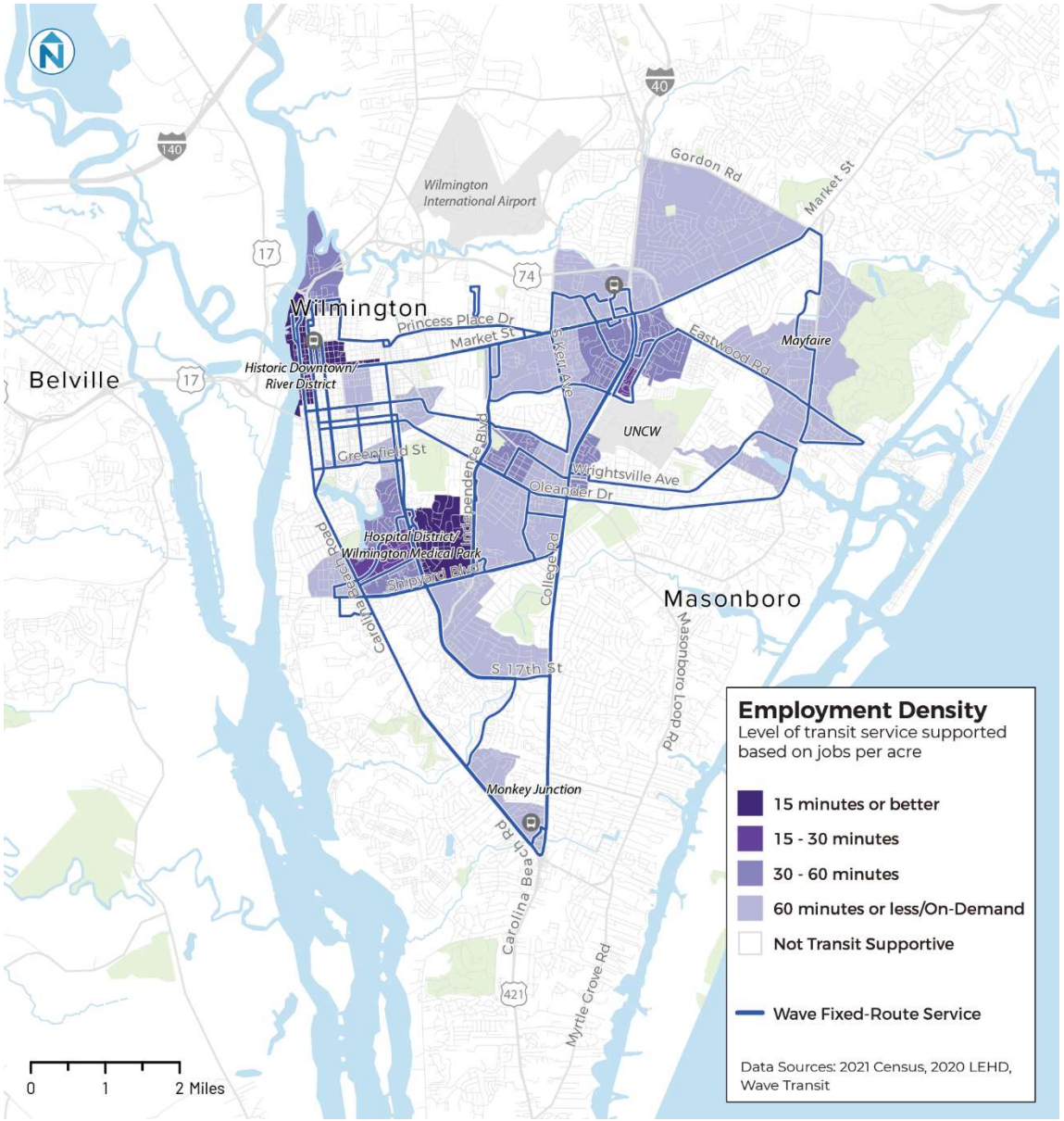
Commuting to work is one of the most common and consistent reasons that people ride transit, making job density a strong indicator for transit demand. Employment density additionally demonstrates the demand for travel that is not related to work commutes, such as where customers and medical patients are traveling. Employment density is more focused on key corridors than population density. Job density alone is high enough to support service frequencies of 30-minute or less in the following areas:

- Historic Downtown/River District
- Hospital District and Wilmington Medical Park
- UNCW and nearby retail

Job density is relatively lower but still transit supportive in and near several other areas:

- Monkey Junction
- Mayfaire
- Independence Mall and north of Oleander Drive
- Market Street corridor west of Gordon Road

Wave currently provides fixed route service to all the region's largest job centers, however outside of Downtown Wilmington most job centers are located on disconnected road networks or lack pedestrian facilities—obstacles which pose a challenge to designing effective transit service.



Job Type and Job Adjustment Factor

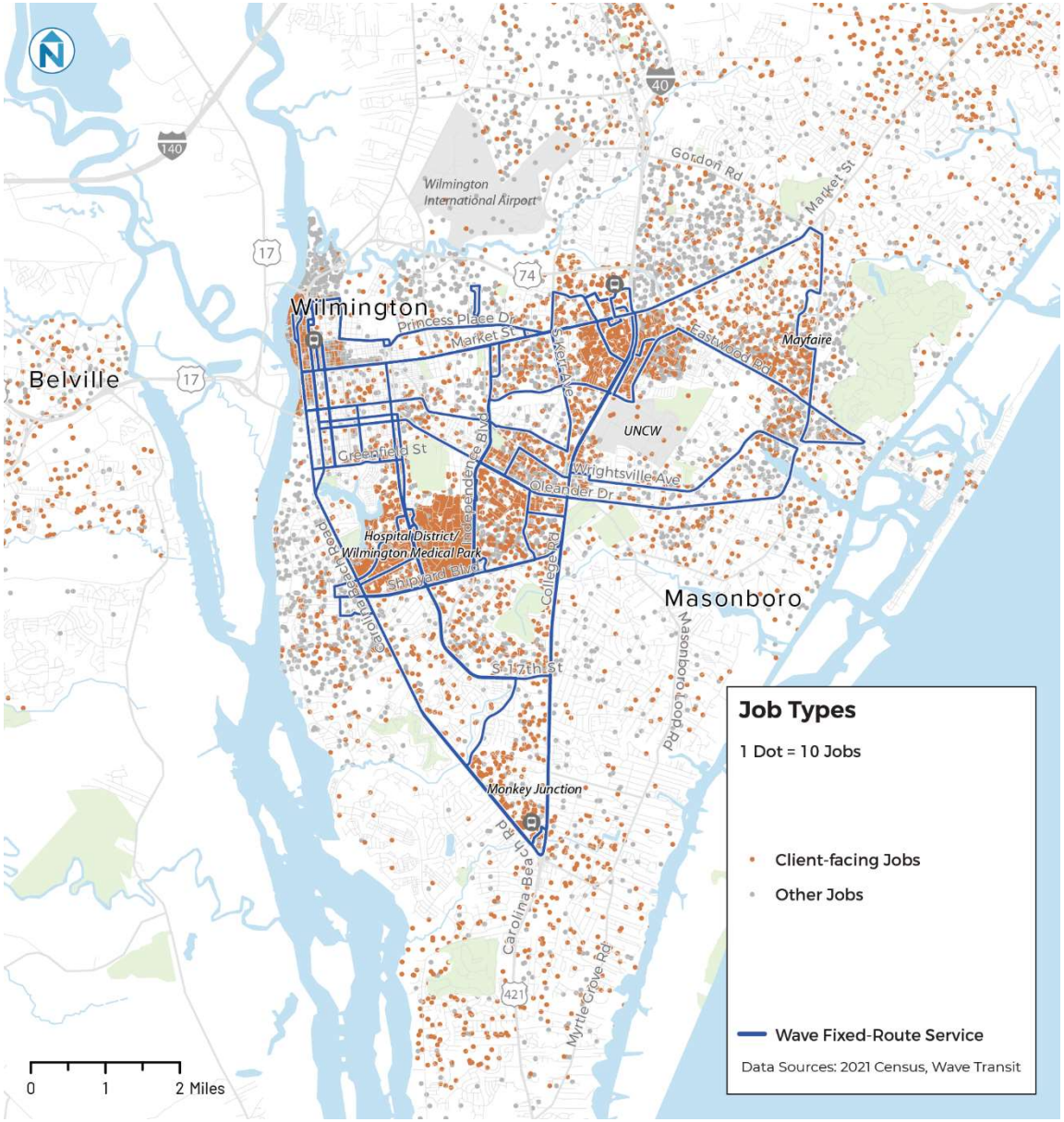
Certain types of jobs generate higher levels of transit demand. Specifically, "client-facing jobs" –including those that attract customers, clients, patients, and students—attract not just the workers employed there but the people who visit these sites for the services provided there. Other jobs, such as office and manufacturing, account for relatively lower transit demand because they are less likely to attract people beyond those working those jobs. Areas with higher ratios of client-facing jobs to other jobs include:

- Hospital District and Wilmington Medical Park
- Mayfaire
- Independence Mall and nearby
- Monkey Junction
- UNCW and nearby

Using the factors shown below, employment density can be adjusted by an appropriate job type factor:

Figure 6 | Job Type Factors (Based on Nelson\Nygaard research)

JOB TYPE	DEMAND COMPARED TO AVERAGE JOB	DEMAND COMPARED TO AVERAGE RESIDENT
Jobs with customers, clients, patients, and students	1.3	2.5
Other jobs	0.9	1.7



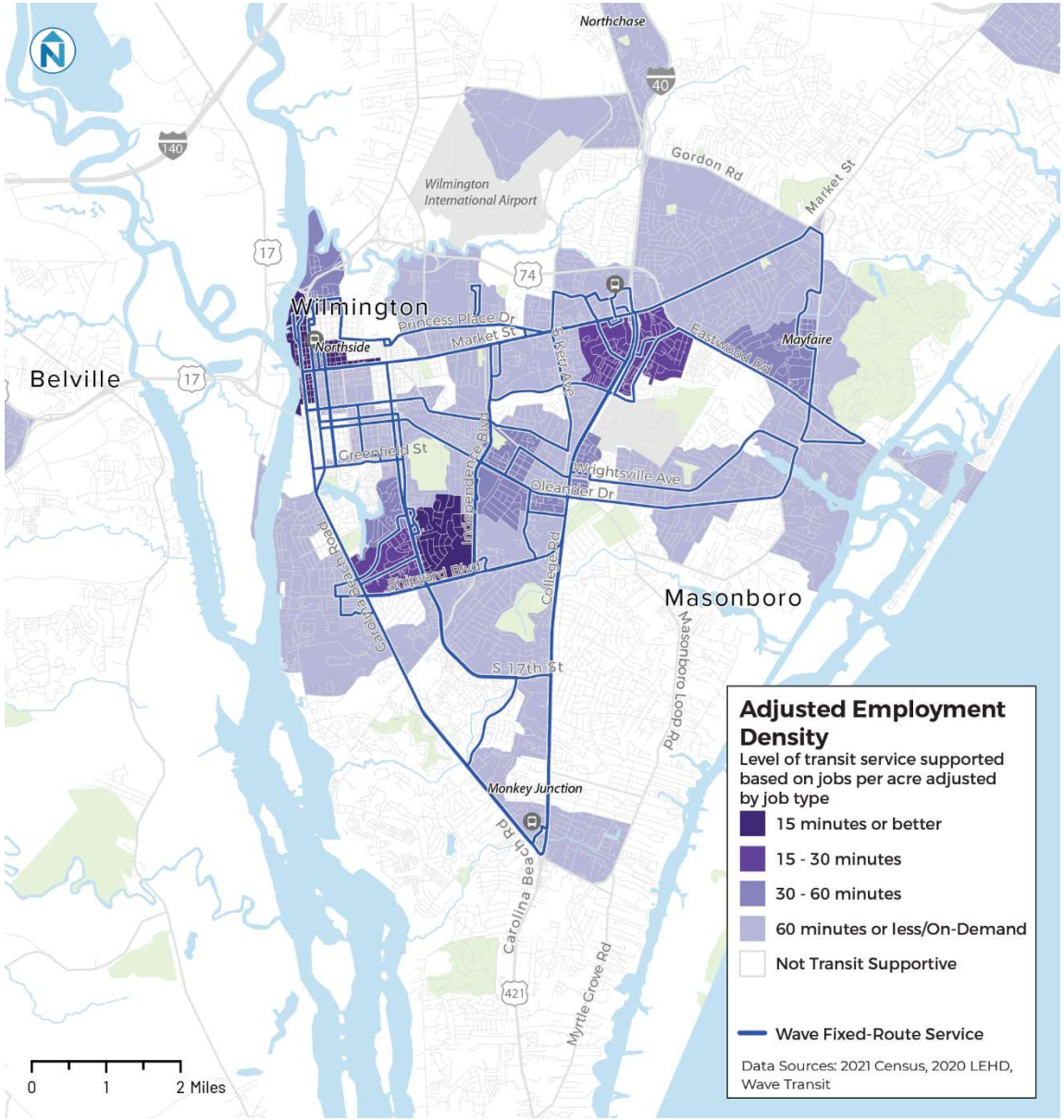
Adjusted job-based demand

When accounting for job type, the UNCW and nearby Smith Creek Station retail area and the Shipyard Boulevard corridor emerge as additional areas where job density alone can support frequent transit service.

The UNCW travel market is unique within the Wilmington region, due to the parking limitations that make transit a necessity there and the nearly 20,000 students, faculty, and staff traveling to and within the 660-acre campus every day. Wave and UNCW can continue to coordinate to fine-tune the Seahawk Shuttle service to this strong but hyperlocal transit market, while maintaining simple connections to and clear integration with Wave's public-oriented fixed-route services.

Adjusted job density alone is high enough to support at least hourly service in the following additional areas:

- Along Market Street west of Gordon Road
- Mayfaire
- Northside
- Along Oleander Drive
- Near Independence Mall
- Near Monkey Junction
- Along Carolina Beach Road
- Northchase
- College Road north of Carolina Beach Road



Overall Demand for Transit

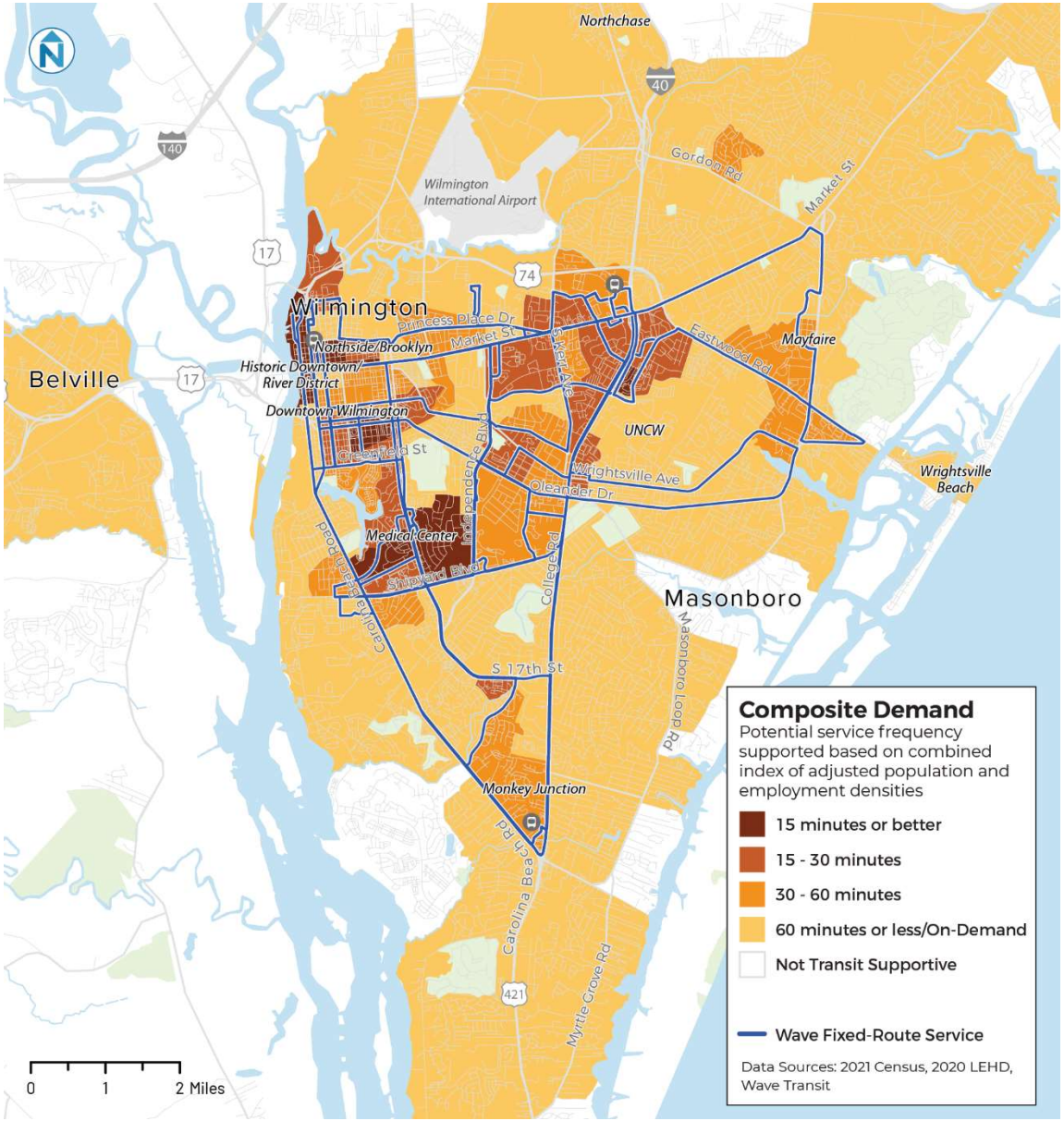
The overall demand for transit is determined by combining population density adjusted by transit propensity and employment density adjusted by job type. This map illustrates where demand for transit is the greatest and where to focus transit investments. **All of Wilmington has the density, demographics, and job types to support fixed-route transit, potentially at higher frequencies than currently provided.**

Wave can determine how to meet demand by matching its service frequencies to the predominant levels of underlying demand. Frequency decisions should also account for the fact that demand typically accumulates along routes; passengers board the bus and stay on until reaching its major destination. Transit demand is highest and can support more frequent service than what is offered today in:

- Downtown Wilmington and Historic Downtown/River District
- Northside and Brooklyn
- In and north of UNCW
- Medical Center

Transit demand is moderate and can support 30-to-60-minute frequencies in and near:

- Monkey Junction
- Mayfaire
- Carolina Beach Road
- Shipyard Boulevard

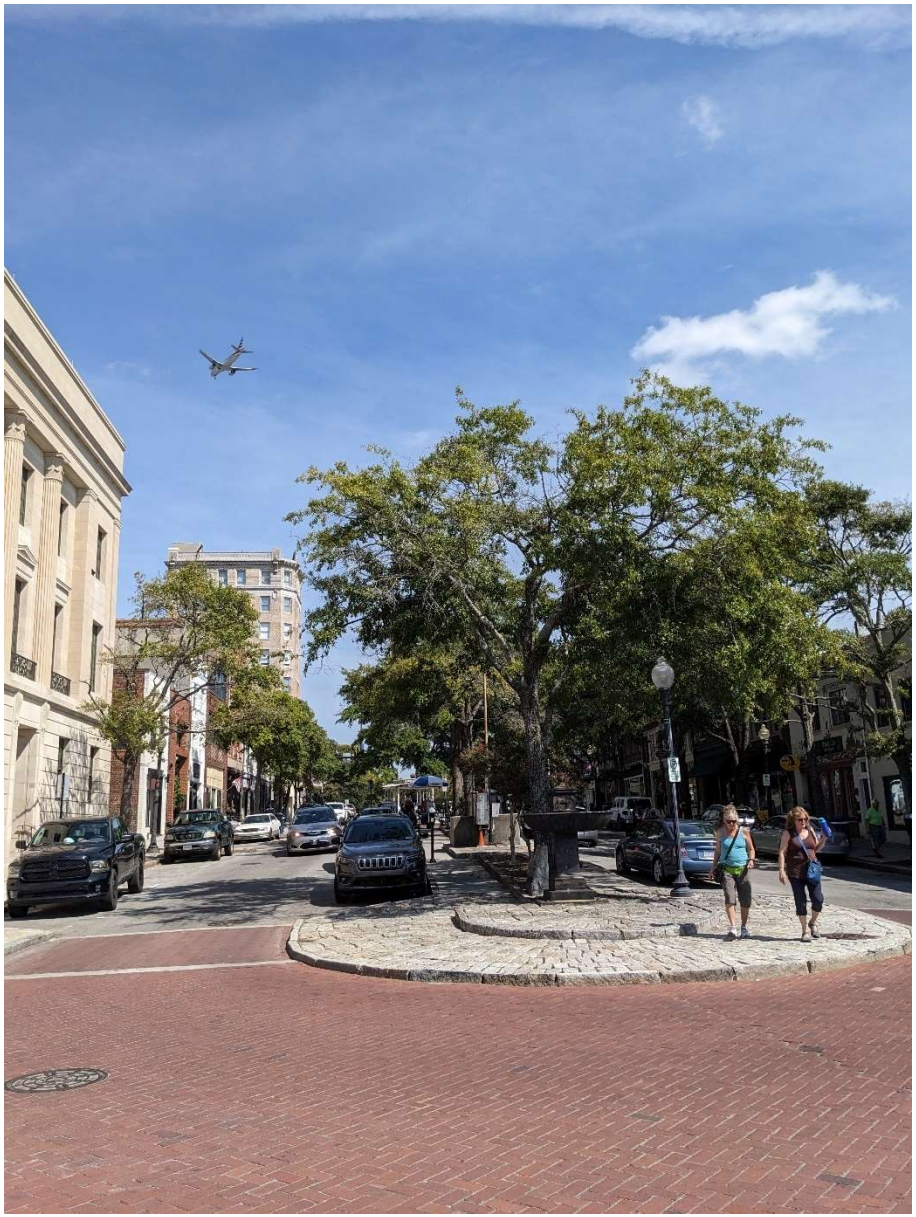


- College Road
- Market Street west of Gordon Road
- South 17th Street
- St. Andrews Drive

The rest of Wilmington and some other regional corridors can support at least hourly bus service or on-demand service like microtransit, including:

- Market Street west of Gordon Road
- Northchase
- Wrightsville Beach
- North College Road
- Gordon Road

As described in the previous sections, Wave provides service on all these corridors. However, much of that service is infrequent and provides indirect or circuitous service.

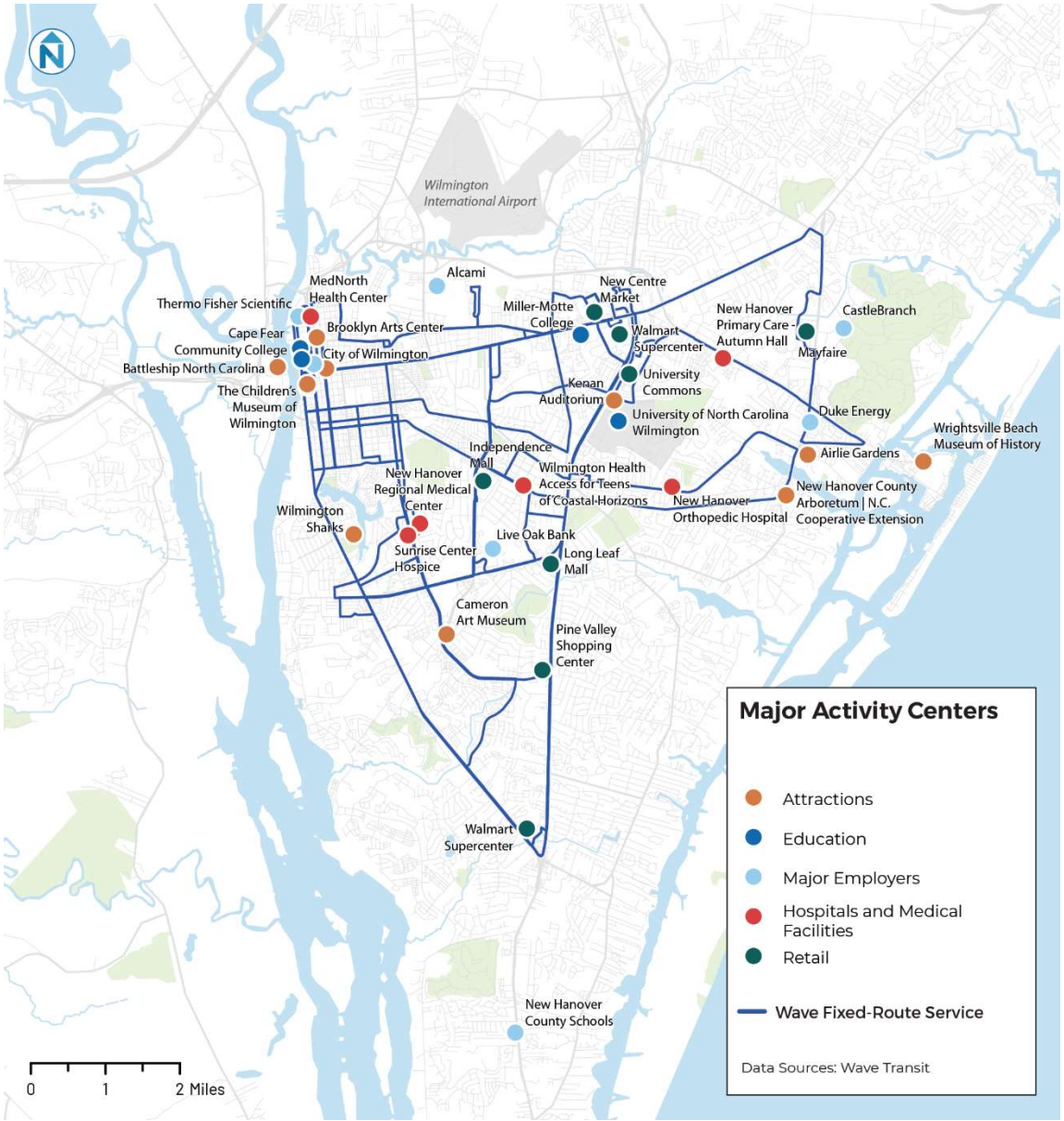


Major Activity Centers

Some activity centers generate additional demand for transit. Most of these places – large employers, shopping malls and retail centers, hospitals, housing developments and town centers – generate relatively consistent demand for transit throughout the year. Other activity centers like colleges and universities are significant transit demand generators only during certain seasons of the year:

- Downtown and the Northside are characterized by a high concentration of major destinations including museums, performing arts centers, tourist attractions, major employers, and a medical center.
- Shopping centers and major retail anchors are concentrated along some important regional thoroughfares like South College Road, Market Street, and Carolina Beach Road. Many of these destinations lack safe pedestrian infrastructure or are separated from a major corridor by large surface parking lots.
- UNCW is a regional destination that draws significant travel during the school year. It also anchors the many nearby big-box retail sites.
- Services and jobs in the Medical District attract patients, visitors, and staff from across the region.

Wave's fixed route bus routes most major destinations except for the north campus of Cape Fear Community College, the Airport, and Smiths Creek Industrial Park which are served by RideMICRO Zone 4.

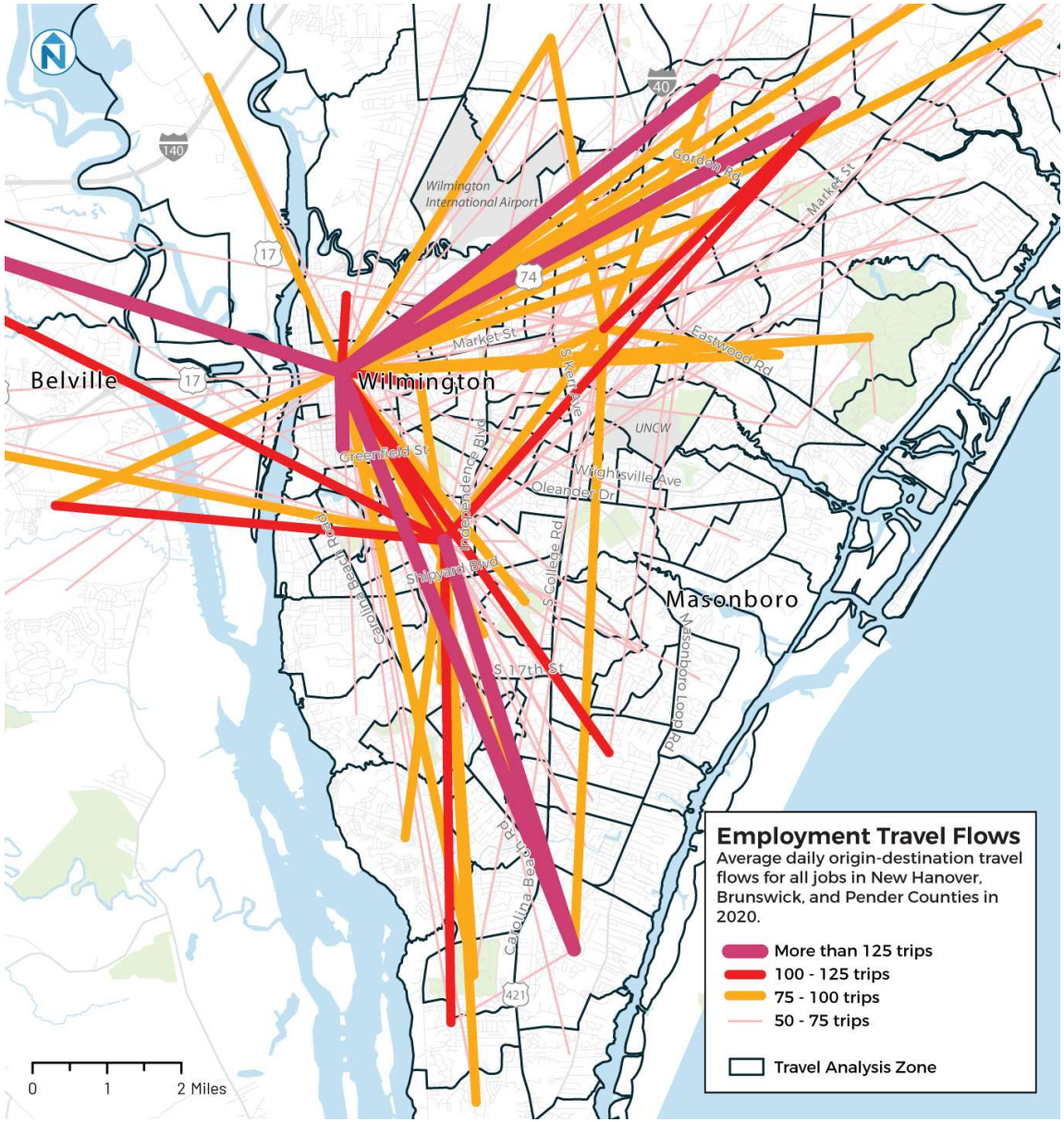


Travel Patterns

For transit to be effective, it must take people from where they live to where they need to go. Visualizing travel patterns allows Wave to understand where direct or quick transfer connections should be established within an area. Travel flows within the study area were mapped based on work trips taken demand travel analysis zones, which are defined by county subdivisions and city neighborhoods. The data is sourced from the Longitudinal Employment Household Dynamics (LEHD) survey from the US Census Bureau.

Wave's route network reflects the hub-and-spoke nature of travel patterns in the Wilmington region, where the major job sites in Downtown, the Medical District, UNCW and its surrounding retail, and to a lesser extent Monkey Junction attract regional trips. In particular, there are major (100+average daily trips) travel flows between the following areas:

- Downtown Wilmington to and from the Southside, Medical District, Monkey Junction, Brunswick County, and communities north of Market Street and west of North College Road
- UNCW and its surrounding retail area to and from Monkey Junction, Downtown, and nearby residential areas
- Medical District to and from Downtown, Monkey Junction, residential areas along Carolina Beach Road, and Brunswick County



Travel Market Opportunities and Operating Challenges

With transit centers located in Downtown, north of UNCW, and Monkey Junction, Wave's hubs are well-located to enable trips to and from these major destinations. The importance of the Medical District for regional travel may indicate that there exists an opportunity to increase the frequency of transit service to and from this area.

Downtown Wilmington and its environs are the best suited for operating frequent fixed-route transit service due to the area's importance as a regional destination, the overall demand for transit, the well-connected street grid, and the high-quality pedestrian facilities located there.

Outside of Downtown Wilmington, the other important job and activity centers of the Medical District, UNCW and its nearby retail areas, Monkey Junction, and the corridors connecting these places are characterized by very unsafe pedestrian conditions. These areas have disjointed street networks, inconsistent or missing pedestrian infrastructure, high-speed and automobile-oriented thoroughfares, and large surface parking lots that can make accessing a bus stop and designing transit service challenging. Wave must necessarily balance providing front door service to the most important destinations within these areas with their goal of providing quality service which should generally be direct, fast, and frequent. There may exist opportunities to streamline transit service in these high-demand areas, especially (1) in partnership with municipalities and property owners to improve pedestrian facilities near key sites and/or (2) when complemented by high-frequency local circulators that connect to Wave's major transit hubs.

Serving Transit Markets with Low Demand or Unsafe Pedestrian Conditions

The primary barriers to providing effective transit service to the Wilmington region's jobs and transit-reliant residents is the suburban style development of many locations where a disconnected street network, inconsistent or lacking pedestrian facilities, and low or dispersed demand make operating a bus difficult or cost-ineffective. Traditional fixed-route bus services should operate in areas that have sufficient pedestrian infrastructure and density to support it. The fixed-route service alternatives described below may be more appropriate for low demand and unwalkable areas that still have a need for transit.

Local Circulators

Local circulator services typically operate on a frequent headway and are designed to directly serve important destinations and corridors. Wave currently provides circulator service downtown with its Port City Trolley Route.

A potential market for a new local circulator is the big-box style commercial agglomeration north of UNCW near the intersection of College Road and Market Street. Despite this area's obvious draw for transit riders who must necessarily access the area on foot, this area is designed for access by personal automobile, with poor sidewalk infrastructure, large surface parking lots, and wide high-speed arterials. A local and high frequency circulator might better serve this area by providing front door service to the most important destinations and allowing for easy transfer at nearby Forden Station.

Microtransit (also known as On-Demand and Demand-Response)

Microtransit is a demand response service that provides door-to-door or curb-to-curb trips within a specified service area using smaller transit vehicles. These services typically operate in lower density suburban and rural communities. As opposed to traditional demand-response service, microtransit service can typically be hailed with only a short wait using a smartphone-based platform. Well-designed microtransit service should provide connection to fixed-route service without duplicating that service. Wave can avoid duplicating fixed-route service with microtransit service by adjusting zone boundaries or setting pick-up and drop-off restrictions within the platform.

Microtransit can be a useful fixed-route service alternative for Wave outside of the "core" of the agency's transit market roughly bounded by Downtown, Monkey Junction, and Forden Station. In these outlying markets, there is dispersed and inherently difficult-to-serve demand for transit in many suburban communities. It would be cost-ineffective for Wave to provide fixed-route transit service to most of these communities due to their low-density and cul-de-sac style nature. However, as the transit propensity analysis and the location of some major destinations suggests, real need for transit does exist in many of Wilmington's suburban areas, and microtransit can help serve this need at a lower cost than hourly fixed-route bus service.

Microtransit can also play the role of a local circulator in environments where pedestrian conditions are unsafe. A microtransit zone focused on the big-box style commercial agglomeration north of UNCW may serve this market more conveniently and safely than what Wave offers today.

Wave currently operates four microtransit services (RideMICRO) in suburban areas, however in some areas such as Downtown Wilmington and along Route 101 Princess Place, RideMICRO service duplicates fixed route service.

Rideshare Services

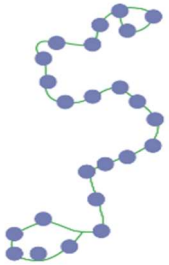
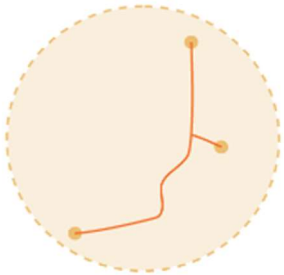
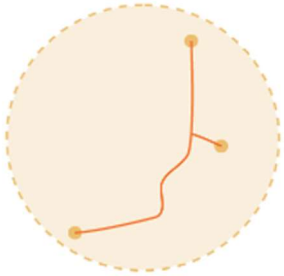
Private rideshare like Uber and Lyft compete directly with transit and evidence suggests that they play a role in the declining transit ridership across the country. However, public-private partnerships with these companies can also help serve as a way for individuals to reach fixed-route services on demand and be integrated into a transit system rather than compete by serving trips in low-density areas that are not efficiently served by traditional transit or when there are bursts of demand that overwhelm the capacity of microtransit services.

While density, more than raw numbers, matters most to traditional fixed-route or frequent service, office parks and warehouses, which employ many people in one area, are often a priority for a region to serve with transit. Often employees of these areas are lower income or work second and third shift times and may have fewer resources to put toward transportation. Large employers often take an interest in how their employees get to work and are more likely to have the resources to invest in their employees' commutes. The industrial and warehouse uses along the Cape Fear River and near the airport could be well-suited for rideshare partnerships.

Transportation Demand Management and Go Coast

Employment areas that lack concentrated density but still form a congregation of employers are prime targets for Transportation Demand Management (TDM) solutions like shuttles, van services, and car share services that can coordinate with public transit services. Specialized TDM services have specialized schedules and drop-off points that can be fine-tuned to get employees to and from the main sites of a TDM zone These types of services are typically much more efficient than a part-time or low-frequency and circuitous bus route that a transit agency would typically operate to serve these areas.

Wave can work with major employers and office/industrial parks through its existing relationship with Go Coast, the Wilmington area MPO to coordinate transportation demand management solutions in the region. Employment sites like the industrial area of Cape Fear northwest of Downtown Wilmington and the warehouse/distribution agglomeration near the intersection of Highway 17 and I-140 in Brunswick County could be well-served by TDM solutions.

SERVICE TYPE	SERVICE STRUCTURE	BENEFITS AND CHALLENGES	VEHICLE TYPE
LOCAL CIRCULATOR		**BENEFITS** Stops are closer together, requiring less walking Provides good coverage, serving a wide variety of destinations **CHALLENGES** Routes can be circuitous and make frequent stops, causing longer travel times and making them difficult to operate on-time.	
MICROTRANSIT		**BENEFITS** Provides service in areas that lack the population density to support fixed-route bus service Improves the mobility of residents without other travel options Can serve dispersed destinations that are difficult to serve with a bus **CHALLENGES** High cost per passenger than other transit services Difficult to advertise service without physical bus stops	
RIDESHARE SERVICES		**BENEFITS** Provides service in areas that lack the population density to support fixed-route bus service Improves the mobility of residents without other travel options Can serve dispersed destinations that are difficult to serve with a bus **CHALLENGES** High cost per passenger than other transit services Difficult to advertise service without physical bus stops	

3 Summary

As of April 2023, Wave Transit carried an average of 46,000 riders per month; these trips represent the vital role that Wave plays in connecting Wilmington residents and visitors to the region's jobs, housing, and services. Especially for the approximately 30,000 New Hanover County residents living below the poverty line, Wave offers a low-cost transportation network that frees up residents' resources for other fundamental needs.

Wave Transit provides excellent coverage to the vast majority of transit supportive areas within its service area. Its network of fixed-route bus routes, UNCW oriented "Seahawk Shuttle" services, microtransit, and paratransit provide a sizeable network that reaches most areas with at least some demand for transit.

There is unmet demand for more frequent service. All of Wilmington and some adjacent corridors and communities have the underlying population density, job density, and demographics to support higher frequency transit than what Wave currently provides. Additionally, much of the service that Wave does provide on these corridors is infrequent and there may exist opportunities to redesign routes to be less indirect and circuitous.

- Transit demand is highest and can support more frequent service along Market Street west of College Road and between Downtown Wilmington and the Medical District.
- The importance of the Medical District for regional travel may indicate that there exists an opportunity to increase the frequency and improve the coordination of transit service to and from this area.
- Transit demand could support at least 30-minute frequency service along College Road, Shipyard Boulevard, Independence Boulevard, and Oleander Drive.

The UNCW travel market is uniquely strong and hyperlocal within the Wilmington region . Wave and UNCW can continue to coordinate to fine-tune the Seahawk Shuttle service, while maintaining simple connections to and clear integration with Wave's public-oriented fixed-route services.

There are significant infrastructural barriers within the service area caused by incomplete or lacking pedestrian infrastructure and automobile-oriented development. The important job and activity centers of the Medical District, Monkey Junction, and UNCW and its nearby retail areas are characterized by unsafe pedestrian facilities, high-speed and automobile-oriented thoroughfares, and large surface parking lots that can make accessing a bus stop and designing transit service challenging. Wave must necessarily balance providing front door service to the most important destinations within these areas with their goal of providing quality service which should generally be direct, fast, and frequent.

There exist three major opportunities for Wave to facilitate better and safer service to major suburban destinations and disperse residential areas with high transit need:

1. More closely partner with municipalities and property owners to improve pedestrian facilities near key sites and bus stops, especially along and near College Road, Market Street west of 17th Street, Carolina Beach Road, Shipyard Boulevard, and Oleander Drive.
2. Potentially implement a new local fixed-route or microtransit circulator between Forden Station and the major destinations within the big-box retail and strip mall agglomeration north of UNCW near the intersection of College Road and Market Street.
3. Evolve existing microtransit services to better serve the underlying dispersed and difficult-to-serve markets without simultaneously duplicating more cost-effective fixed-route bus routes.


101 PRINCESS PLACE

NELSON NYGAARD