Cape Fear Public Transportation Authority

Shifting Gears
Transitioning Service Models

Introduction

As Wave Transit evolves to meet the changing public transportation needs of a rapidly growing community, analysis of the transit offerings of the region require consistent study. This analysis will review the current Wave Transit service methodology called coverage versus a competing approach called a convenience model.

A coverage model offers infrequent transit service (typically 60 minute headways) over the majority of an urbanized area (UZA). This model ensures that all jurisdictions encompassing the UZA have access to federal and state public transportation revenues if local match is provided. Coverage models are common in regional transit systems. The major drawback of the coverage model is that less populous areas are not as economical or efficient due to fewer passengers.

Another popular transit service model is the convenience model. This method of service delivery allocates resources to the most densely populated areas on a more frequent basis, either consistently or during peak demand, or over extended hours during the service day. This service model offers increased convenience for passengers and potential passengers living in denser areas which can make commuting by bus more appealing potentially leading to higher ridership. The convenience model is challenging, especially in transit dependent areas, because it offers no service in outlying urbanized areas.

Wave Transit currently offers a hybrid service model which offers convenient service in the more populous areas where ridership is high, and less frequency in the outlying areas. The majority of fixed route transit service is based on a coverage model. This exception is the UNCW area and the Brooklyn and Creekwood neighborhoods. Data analysis of population per hectare demonstrates that there is no perfect model for transit planning based on population density as the main factor. Transit dependency, economic factors, employment centers, educational opportunities and healthcare providers weigh heavily on where transit should be located. This is true especially in the suburban United States where the automobile is seen as a necessity. Fuel prices, interest and insurance rates, traffic congestion and commuting costs all impact transit service planning.

The following analysis will quantify the cost of the current transit model in Southeastern North Carolina in an effort to provide an overview of the advantages and disadvantages of a different service model. Prioritization of route efficiency is based on a 2018 report by TransPro Consulting titled *Wave Transit's Short-Term Efficiencies and Long-Term Governing Model.*

TransPro Report

An efficiency and governance study was undertaken by the City of Wilmington and New Hanover County in 2018. The TransPro Consulting *Wave Transit's Short-Term Efficiencies and Long-Term Governing Model* report offered the community an opportunity to evaluate the effectiveness and efficiency of Wave Transit in order to improve transit service in the rapidly growing region. The primary efficiency and route productivity evaluation variable was ridership. This includes passengers per mile and passengers per hour. This evaluation method adheres to sound transit planning analysis but is typically blind to economic factors, like household income, that are necessary when planning transit routes. Other economic factors such as employment, fuel costs and household vehicle availability were also not evaluated which could leave no safety net in areas where transit service is currently provided and could be impactful in an economic downturn. A set of performance measures, as agreed by consensus of the region's elected officials, should be developed to guide transit planning throughout the region.

Fixed Route Funding - Current Model

The TransPro report includes a section titled *Opportunities for Productivity Improvements.* The consultant notes "The balance between geographic coverage and route productivity is a community and agency decision. If the goal is to maintain current levels of geographic coverage, knowing that this comes at the expense of route productivity and service frequency, then few structural changes need to be made. If, however, Wave Transit and the community at large wish to focus more on route productivity, then the following items provide opportunities for improved route productivity." It is important to note that route productivity is narrowly defined in the report. A formal definition of productivity should be developed and agreed upon by the community's elected officials in order to offer a clear understanding of the expectations regarding transit service planning and route offerings.

The following cost estimates are not based on the Authority's current adopted budget. After releasing the proposed budget for public comment, final health and liability insurance premiums were remitted by the Authority's underwriters. This led to an increase in estimated expenses of $208,400. Additionally, the North Carolina state budget has been adopted by the NCGA but remains in limbo due to Governor Cooper's veto. The funding allocated to the State Maintenance Assistance Program has reverted to the FY 2019 adopted amount which is $168,000 less than the Authority's current FY 2020 budget.

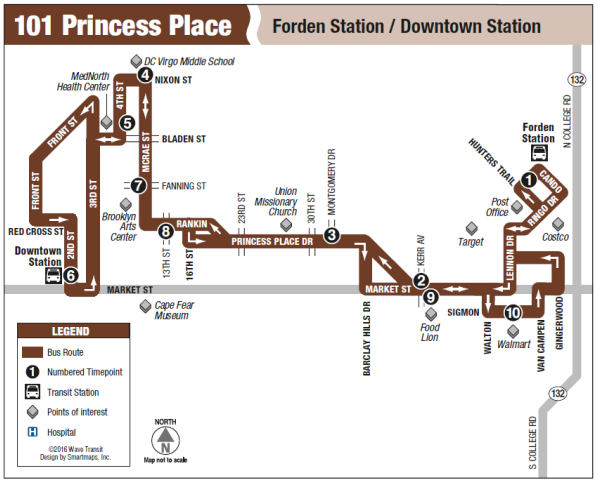
Expenses & Revenues by Route

Route 101 - Princess Place

Route 101 is Wave's highest ridership route. The route serves both of Wave's major transfer locations as well as the Northside, Creekwood and Brooklyn neighborhoods. The route serves a significant number of transit dependent passengers. Route 101 operates Monday through Saturday from 6:00am to 9:00pm. Sunday hours are 9:00am to 6:00pm.

Fiscal Year 2020 Expenses & Revenues

Route Cost - $450,820
Farebox Revenue - $96,800
State Funding Allocated - $38,168
Federal Funding Allocated - $159,440
Local Funding Allocated - $125,289
Program Revenue Allocated - $643
FY 2020 Route Deficit - $30,480

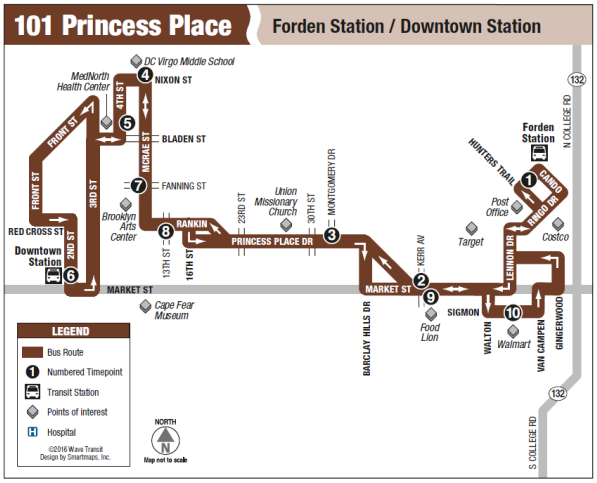


Route 101 - Princess Place Peak

Peak transit service is defined as additional transit service provided at times of highest demand. Peak service via Route 101 peak is provided from 6:00am to 6:00pm Monday through Friday. No peak service is provided on Saturday and Sunday.

Fiscal Year 2020 Expenses & Revenues

Route Cost - $271,889
Farebox Revenue - $64,533
State Funding Allocated - $23,019
Federal Funding Allocated - $96,158
Local Funding Allocated - $75,562
Program Revenue Allocated - $388
FY 2020 Route Deficit - $12,229

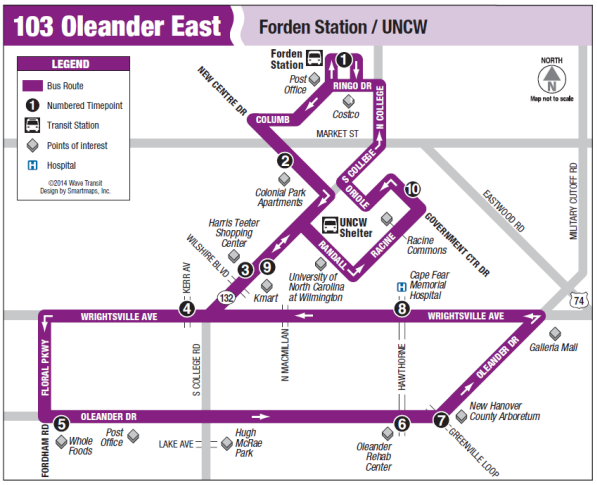


Route 103 - Oleander East

Serving the New Hanover County government center, UNCW and the eastern portion of the service area, Oleander East serves a densely populated area which incorporates residential, commercial, retail and health services. Route 103 provides hourly service Monday through Saturday from 6:00am to 9:00pm. Sunday service is from 9:00am to 6:00pm.

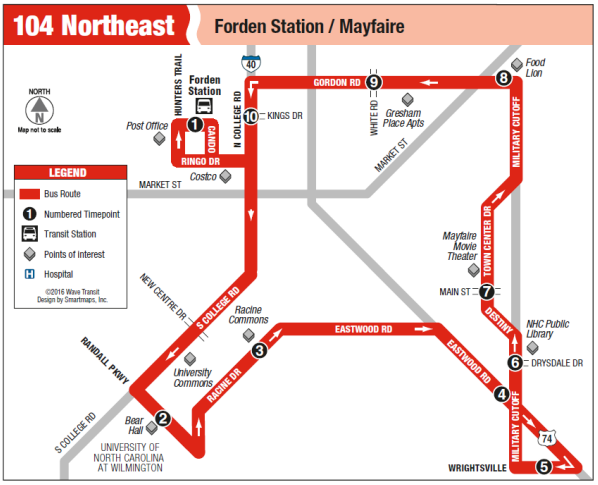
Fiscal Year 2020 Expenses & Revenues

Route Cost - $470,597
Farebox Revenue - $54,323
State Funding Allocated - $39,843
Federal Funding Allocated - $166,434
Local Funding Allocated - $130,785
Program Revenue Allocated - $672
FY 2020 Route Deficit - $78,541



Route 104 - Northeast

Route 104 serves Mayfaire and the Military Cutoff corridor as well as the rapidly growing residential area off Gordon Road in the mid-northern portion of the County. Service is provided every 60 minutes. The route operates Monday through Saturday from 6:00am until 9:00pm and on Sunday from 9:00am to 6:00pm.

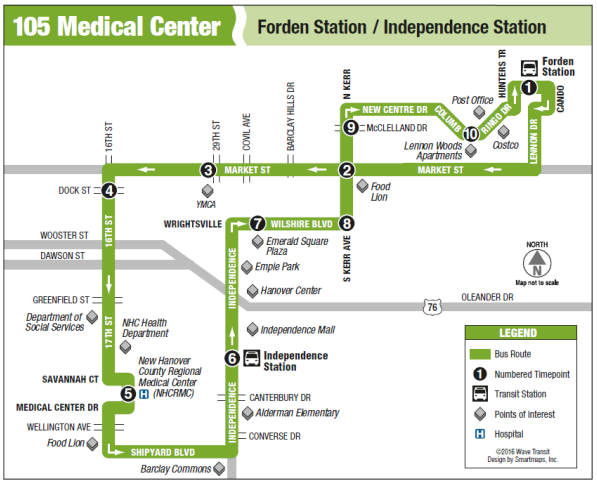


Fiscal Year 2020 Expenses & Revenues

Route Cost - $488,792
Farebox Revenue - $50,147
State Funding Allocated - $41,383
Federal Funding Allocated - $172,869
Local Funding Allocated - $143,117
Program Revenue Allocated - $697
FY 2020 Route Deficit - $80,578

Route 105 - Medical Center

As implied by the route name, Route 105 primarily serves the area around New Hanover Regional Medical Center. It also serves the New Hanover County Department of Social Services, Social Security, Wilmington Housing Authority and the NHC Health Department. Service is provided every 60 minutes. The route operates Monday through Saturday from 6:00am until 9:00pm and on Sunday from 9:00am to 6:00pm.

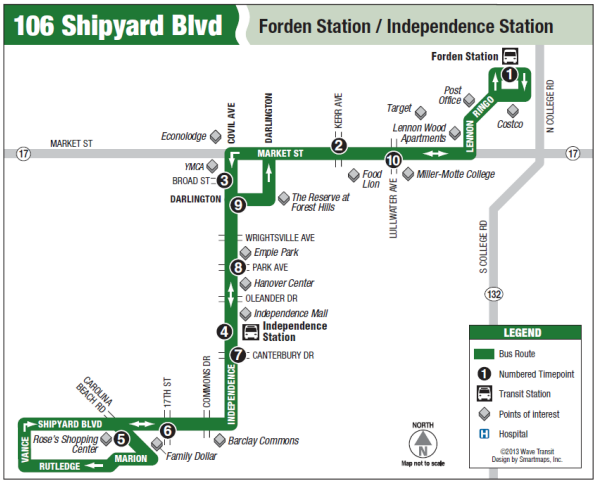


Fiscal Year 2020 Expenses & Revenues

Route Cost - $450,820
Farebox Revenue - $66,203
State Funding Allocated - $38,168
Federal Funding Allocated - $159,440
Local Funding Allocated - $125,289
Program Revenue Allocated - $643
FY 2020 Route Deficit - $61,077

Route 106 - Shipyard Blvd

Route 106 serves the western portion of the service including the NHRMC. A secondary transfer location for three routes is located along the Shipyard Blvd route at the Collection at Independence (formerly Independence Mall). Service is provided every 60 minutes. The route operates Monday through Saturday from 6:00am until 9:00pm and on Sunday from 9:00am to 6:00pm.



Fiscal Year 2020 Expenses & Revenues

Route Cost - $457,148
Farebox Revenue - $64,934
State Funding Allocated - $38,704
Federal Funding Allocated - $161,678
Local Funding Allocated - $127,048
Program Revenue Allocated - $652
FY 2020 Route Deficit - $64,133

Route 107 - College Road

Initiated in 2013, Route 107 is an express service providing limited stops between Forden Station and a secondary transfer point at Monkey Junction. Technically, the route is part of Route 301 since the College Road route deviates to provide service to Pleasure Island. Service hours are from 6:00am to 9:00pm with varying headways Monday through Saturday. Sunday service is provided from 9:00am to 6:00pm.

Fiscal Year 2020 Expenses & Revenues

Route Cost - $311,622
Farebox Revenue - $19,629
State Funding Allocated - $26,383
Federal Funding Allocated - $110,210
Local Funding Allocated - $86,604
Program Revenue Allocated - $445
FY 2020 Route Deficit - $68,351

Route 108 - Market Street

The Market Street was initiated to serve as an express route between Forden Downtown Stations. The route also provides service to Randall Parkway. In 2019 it is also scheduled to begin service to the Sigmon Road Walmart. Hourly service is provided from 6:00am to 9:00pm Monday through Saturday. Sunday service is offered from 9:00am to 6:00pm.

Fiscal Year 2020 Expenses & Revenues

Route Cost - $379,703
Farebox Revenue - $72,275
State Funding Allocated - $32,147
Federal Funding Allocated - $131,200
Local Funding Allocated - $105,524
Program Revenue Allocated - $542
FY 2020 Route Deficit - $38,015

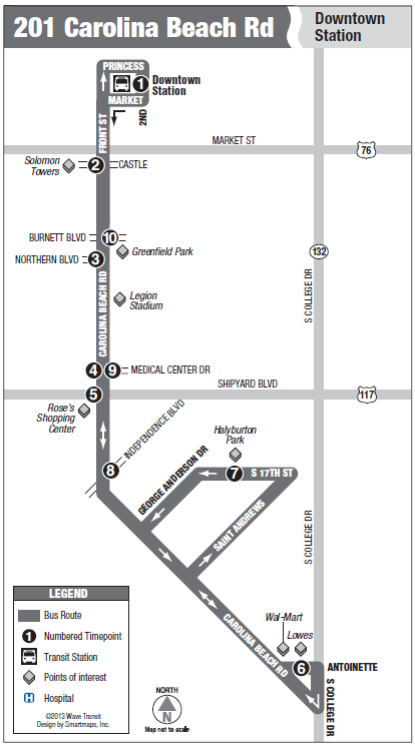
Route 201 - Carolina Beach Road

Route 201 offers service between Downtown Station and Monkey Junction Station via Carolina Beach Road. Wilmington's Halyburton Park is also along the route. Service hours are from 6:00am to 9:00pm with a one hour headway Monday through Saturday. Sunday service is provided from 9:00am to 6:00pm.

Fiscal Year 2020 Expenses & Revenues

Route Cost - $479,299
Farebox Revenue - $119,228
State Funding Allocated - $40,579
Federal Funding Allocated - $169,512
Local Funding Allocated - $168,875
Program Revenue Allocated - $684

FY 2020 Route Surplus - $19,579



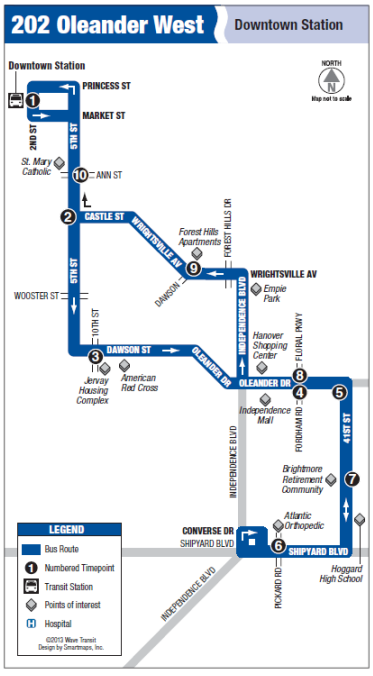
Route 202 - Oleander West

Route 202 serves south central and western portions of the service area, including the NHC Senior Resource Center and Hoggard High School. It also serves as a transfer location on the Oleander Drive side of the Collection at Independence. It operates from 6:00am to 9:00pm Monday through Saturday providing 60 minute service. Sunday service is provided from 9:00am to 6:00pm.

Fiscal Year 2020 Expenses & Revenues

Route Cost - $441,327
Farebox Revenue - $67,736
State Funding Allocated - $37,364
Federal Funding Allocated - $156,082
Local Funding Allocated - $122,650
Program Revenue Allocated - $630

FY 2020 Route Deficit - $56,864



202 Schedule

MONDAY–FRIDAY: 6:00am – 9:00pm (every 60 minutes)
SATURDAY: 6:00am – 9:00pm (every 60 minutes)
SUNDAY: 9:00am – 6:00pm (every 60 minutes)

Service operates on 60-minute frequency. Time points indicate the minutes after each hour that a bus will arrive at that location during operating hours. All bus routes return to their starting point (bus stop #1) after leaving bus stop #10.

BUS STOP	TIME
1 Downtown Station	:00
2 5th St / Castle St	:05
3 Dawson St / 10th St	:09
4 Oleander Dr / Fordham Rd (Whole Foods)	:17
5 41st St / Oleander Dr	:18
6 Shipyard Blvd / Pickard Rd	:25
7 41st at Brightmore Retirement Community	:32
8 Oleander Dr / Floral Pkwy	:39
9 Wrightsville Ave / Dawson St	:43
10 5th St / Ann St	:53

Fares Cash One-Way

Adult	$2.00
Senior* (age 65+)	$1.00
Persons with Disabilities*	$1.00
Students** (K–12th)	$1.00
Local College Students**	$1.00
UNCW Students & Staff**	free

* Reduced fares are available to disabled persons, Medicare card holders, and ages 65+ with valid ID.
** Valid ID required.

FARES SUBJECT TO CHANGE WITH NOTICE

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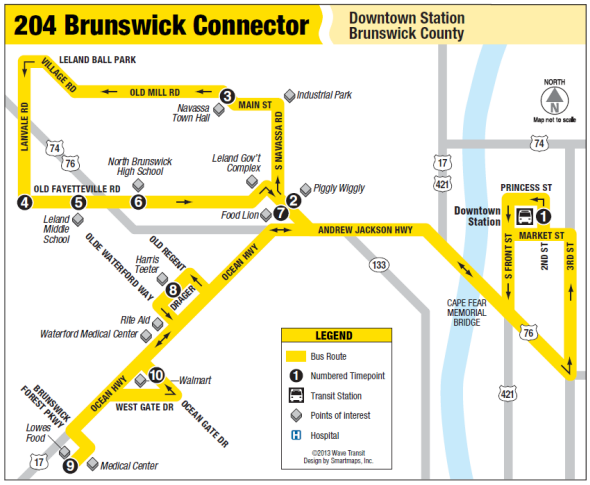
www.wavetransit.com
(910) 343-0106

Route 204 - Brunswick Connector

The only route that serves the UZA outside of New Hanover County, the Brunswick Connector offers service to Northern Brunswick County through the towns of Leland and Navassa. Route 204 connects urban Brunswick County to New Hanover County at the Wilmington Downtown Station. The route is supported by the Brunswick Consortium and receives strong financial and elected official support from the area. Service is offered hourly Monday through Friday from 6:00am until 6:00pm. There is no weekend service.

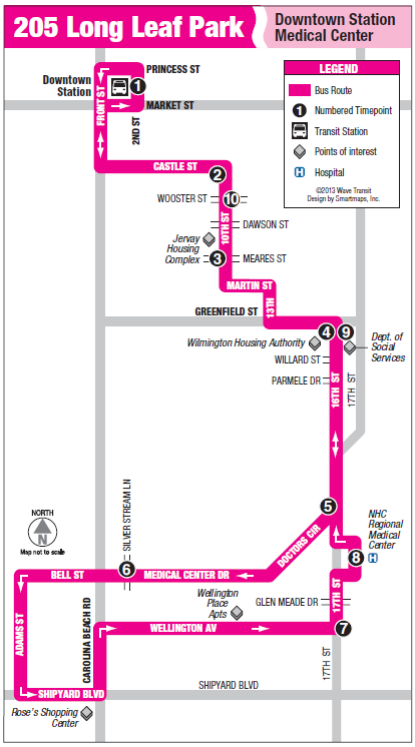


Fiscal Year 2020 Expenses & Revenues

Route Cost - $337,729
Farebox Revenue - $30,191
State Funding Allocated - $28,594
Federal Funding Allocated - $119,444
Local Funding Allocated - $109,781
Program Revenue Allocated - $482
FY 2020 Route Deficit - $49,238

Route 205 - Long Leaf Park

Route 205 serves the Bottom and Dry Pond neighborhoods and the NHRMC area including NHC DSS and the Health Department. The route is partially funded with FTA §5310 Elderly and Disabled funding. Service is offered hourly Monday through Saturday from 6:00am until 9:00pm. Sunday service is provided from 9:00am until 6:00pm.

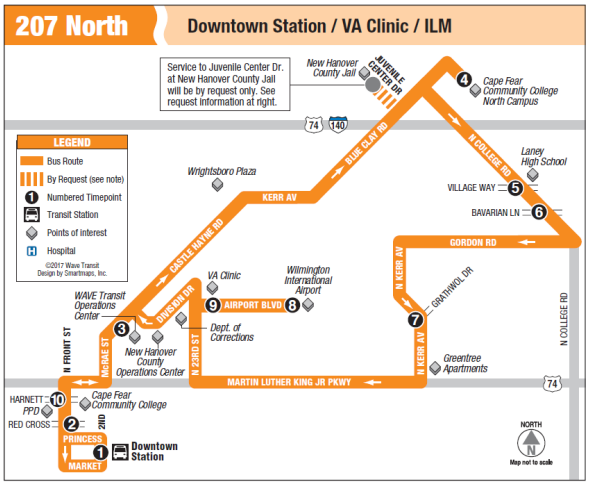


Fiscal Year 2020 Expenses & Revenues

Route Cost - $423,132
Farebox Revenue - $85,307
State Funding Allocated - $35,824
Federal Funding Allocated - $146,206
Local Funding Allocated - $117,594
Program Revenue Allocated - $604
FY 2020 Route Deficit - $37,597

Route 207 - North

Mostly serving the unincorporated area of New Hanover County, Route 207 serves ILM, the NHC Correctional Facility, CFCC North Campus and Laney High School. The route is also the only public transportation offering to the Wilmington Veterans Administration Clinic. In addition to shared funding sources, Route 207 is eligible for Rural Operating Assisting Program funding through the NCDOT which is a combination of federal and state subsidies. Hourly service is offered Monday through Friday from 6:00am to 9:00pm. No weekend service is provided.

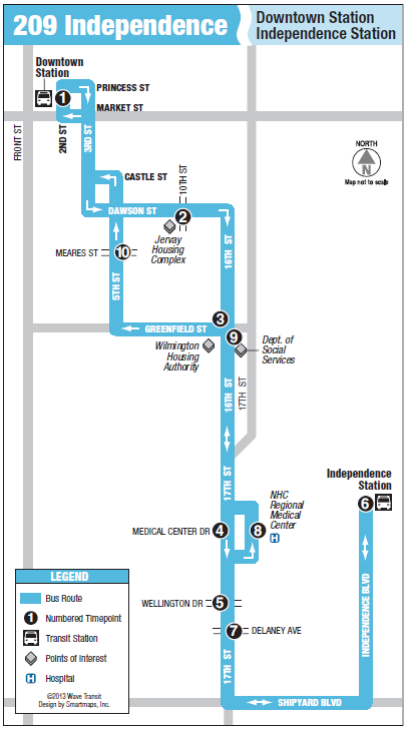


Fiscal Year 2020 Expenses & Revenues

Route Cost - $389,957
Farebox Revenue - $34,449
ROAP - $ 41,599
State Funding Allocated - $33,015
Federal Funding Allocated - $93,144
Local Funding Allocated - $160,615
Program Revenue Allocated - $556
FY 2020 Route Deficit - $26,579

Route 209 - Independence

Route 209 serves the Greenfield Lake area as well as the areas in the vicinity of NHRMC. It also provides transfers at the Collection at Independence. Hourly service is offered Monday through Saturday from 6:00am to 9:00pm and Sunday from 9:00am until 6:00pm.

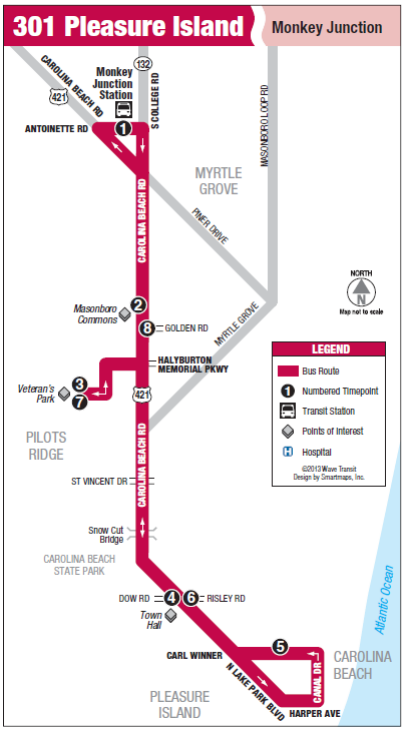


Fiscal Year 2020 Expenses & Revenues

Route Cost - $438,162
Farebox Revenue - $70,434
State Funding Allocated - $37,097
Federal Funding Allocated - $154,963
Local Funding Allocated - $121,771
Program Revenue Allocated - $625
FY 2020 Route Deficit - $53,272

Route 301 - Pleasure Island

The Pleasure Island Route is served by deviating Route 107 four times on weekdays and Saturdays and three times on Sundays. The route has demonstrated success in providing service employees access to jobs and minimizing parking issues. It is the only route offered by Wave Transit that serves the area beaches and Ashley High School. The route operates seven days per week. Free transfers from other Wave Transit buses are not accepted on Route 301which is referred to as premium pricing due to the extended length of the route.

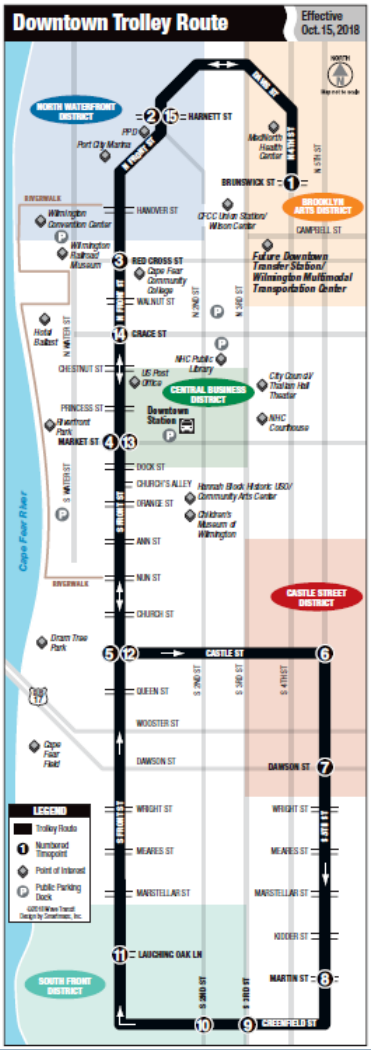


Fiscal Year 2020 Expenses & Revenues

Route Cost - $356,522
State Funding Allocated - $30,185
Federal Funding Allocated - $126,090
Local Funding Allocated - $99,082
Program Revenue Allocated - $509
FY 2020 Route Deficit - $100,657

Route 203 - Downtown Trolley

In 2001 the former Wilmington Transit Authority introduced the Wilmington Downtown Trolley in an effort to mitigate traffic congestion in the CBD. The route has evolved and changed many times throughout its service life. In 2018, a group of Downtown stakeholders worked with the Authority as part of its Short Range Transit Plan to redevelop the trolley route. The new program includes new vehicles, a new name, new logo and a restructured route serving all five downtown districts. The full initiative is scheduled to launch in late 2019 with a renewed marketing and public relations campaign. A forty minute headway is offered Monday through Friday from 7:10am until 8:50pm. Saturday service is from 10:30am through 8:50pm and Sunday service is from 10:30am until 5:30pm.

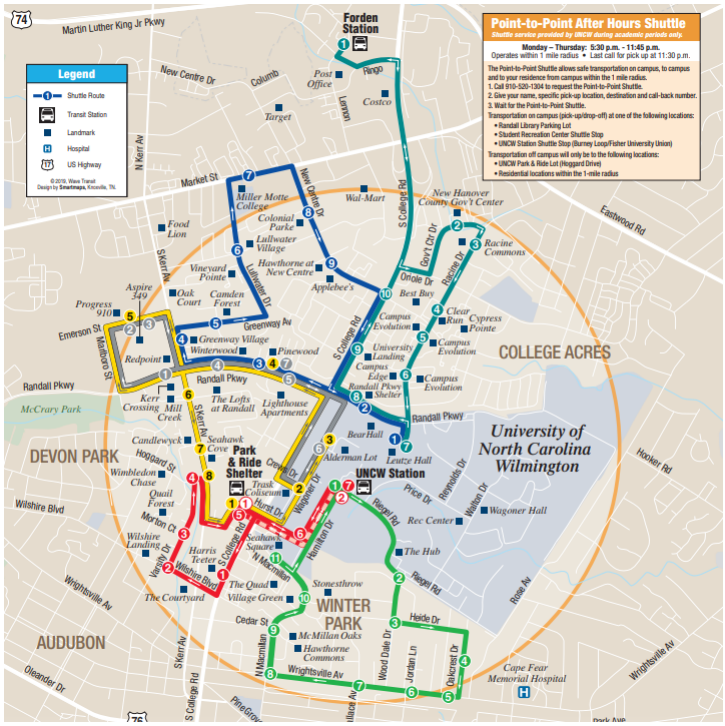


Fiscal Year 2020 Expenses & Revenues

Route Cost - $159,766
Farebox Revenue - $13,811
State Funding Allocated - $13,526
Federal Funding Allocated - $56,504
Local Funding Allocated - $68,199
Program Revenue Allocated - $228
FY 2020 Route Deficit - $7,498

UNCW Seahawk Shuttles

Introduced in 1997, the Seahawk Shuttle program is a series of routes that are operated as a joint effort between Wave Transit and UNCW. Both agencies provide vehicles and operators serving the various transit opportunities. The routes are designed to mitigate traffic congestion in the university area and provide a safe means for students to access the campus. The shuttle program also allows the University to limit parking infrastructure. UNCW students who provide valid identification are not charged a fare at time of boarding. Students pay for the service through fees assessed by the university. Non-students can access the UNCW routes through remittance of the regular Wave Transit fare. Annual adjustments to meet significant growth of the university as well as respond to new development is a collective effort of UNCW and Wave Transit planning staff.



Fiscal Year 2020 Expenses & Revenues

Route Cost - $1,319,651

Federal Funding Allocated - $544,651

Local Funding Allocated - $775,000

FY 2020 Route Deficit/Surplus - $0

Service Availability

Pursuant to 49 CFR Section 21.7 Title VI of the Civil Rights Act of 1964, FTA funding is required to "Promote the full and fair participation of all affected populations in transportation decision making." Additionally, FTA Circular 4702.1A V.2.a(5) defines service availability as "... a general measure of the distribution of routes within an agency's service area." In some instances a transit provider's policy might be to distribute service so that 90 percent of all residents in the service area are within one-fourth of a mile of bus or rail service. A policy could indicate the maximum distance between stops along bus routes. These measures of coverage and stop distances typically vary by population density. For example, in more densely populated areas, the standard for bus stop distance might be a shorter distance than it would be in suburban or rural areas. In less densely populated areas, the percentage of the total population within one-fourth of a mile to routes or lines might also be lower.

The Cape Fear Public Transportation Authority is not as restrictive when determining service availability as the above examples due to the level of service offered. Service availability of Wave Transit offerings are evaluated as part of the short range transit planning process which typically occurs every five years. The long range transit planning process of the Wilmington Metropolitan Planning Organization also evaluates public transportation service availability. Key factors in the service availability planning process includes:

1. Planning efforts
2. Evaluation of transit services market
3. Input from stakeholders and the public
4. Evaluation of current services
5. Service change options
6. Preferred alternatives
7. Funding and implementation plan development

The 2018 *Wave Transit Short Range Plan* did not offer any service reductions based on the above accepted transit planning principles. It did recommend increase in transit service in areas of the UZA not currently served based on service availability guidelines. The TransPro Consulting *Wave Transit's Short-Term Efficiencies and Long-Term Governing Model* report recommended elimination of select routes and reallocating resources to move to a model that increased convenience at the expense of coverage. No potential civil rights implications were referenced as part of the TransPro report.

Service availability analysis is critical when significant changes to service levels are recommended to ensure compliance with Title VI. Should the policymakers in the UZA desire to reallocate resources from existing service to other areas, a service availability analysis would be required. Consultation with federal civil rights consultant firm KWA regarding the suggestion that a reallocation of resources be made to higher density areas resulting in a situation where service availability will be non-existent could be undertaken by Authority civil rights staff but limited professional consulting assistance would be required.

Recommendation

Major modification to the current service availability model may be possible but thorough study and careful consideration must be undertaken to ensure compliance with multiple federal laws and regulations. Significant analysis must also be undertaken to ensure complementary ADA paratransit service is not overly impactful and ADA accessibility is in accordance with the Act and FTA regulations and requirements.

Step one of the process would be to reach consensus regarding the desired service availability and levels of service provided. Step two would require study of any civil rights and/or ADA impacts resulting from the proposed changes. Finally, a plan to modify the service provided by the Cape Fear Public Transportation Authority could be drafted to include funding for any compliant plan. The process should be expected to take several months to ensure the public comment requirements are met and thoroughly vetted.

Conclusion

The Cape Fear Public Transportation Authority was chartered to oversee the public transportation program in the Wilmington UZA. The main function of the Authority is to provide public transportation services that comply with the requirements of 49 USC Chapter 53. Authorizing legislation from the State of North Carolina limit Wave Transit's scope and provide no mechanism for the levy of fees to support the Authority.

The Cape Fear Public Transportation Authority was created by joint resolution of the City of Wilmington and New Hanover County under authorizing legislation provided at NCGS 160A Article 25. With the exception of passenger fares, Wave Transit does not possess the authority to levy taxes or fees to support the Authority and is wholly at the will of the authorizing agencies for local funding. Ancillary services provided by Wave Transit including intercity bus service facility provisions, negotiated services to UNCW, NHC DSS and other agencies are utilized but would not be possible without support from the authorizing governments. Service availability, including areas served, hours of service, types of service and other locally authorized guidelines are by consensus of the areas elected officials who serve on the board of the Wilmington Metropolitan Planning Organization. Wave Transit provides input regarding these decisions in regard to compliance with federal and state laws and guidelines.

Professional planning studies, with significant public input, have demonstrated that the public transportation needs of the community are underserved. Any reduction in service would exacerbate this reality. Absent a dedicated funding source, the Authority is unable to implement the necessary transit improvements required to meet the needs of the rapidly growing region.

As demonstrated in the route financial analysis of this report, local funding is inadequate to meet the current and short term requirements to provide the existing level of transit service. In fiscal year 2020 a deficit of $745,526 is expected to be realized without significant service reductions or revenue identification. While limited fund balance is available to offset the majority of the deficit, a balanced budget amendment must be considered by the Authority Board by the end of calendar year 2019 to ensure compliance with the requirements of the North Carolina General Statutes and 49 USC. Supplemental funding has not been identified and absent additional appropriation from authorizing governments, significant service reductions to present a balanced budget amendment will be required.