



DISCLAIMER

THIS INFORMATION IS CURRENTLY UNDER REVIEW BY THE FEDERAL TRANSIT ADMINISTRATION AND IS SUBJECT TO REVISION PENDING FTA FEEDBACK.



August 23, 2019

Ms. Felicia L. James
Associate Administrator for Planning and Environment
Federal Transit Administration
1200 New Jersey Avenue SE
Washington, DC 20590

Dear Ms. James,

In partnership with the City of Raleigh, GoRaleigh is pleased to submit to the Federal Transit Administration (FTA) the project justification, local financial commitment criteria and supporting documentation for the Wake Bus Rapid Transit (BRT): New Bern Avenue Project. These materials are in support of FTA's consideration of the President's FY 2021 Capital Investment Grant (CIG) program funding for the project. We believe that the \$71.5M Wake BRT: New Bern Avenue Project will receive an overall "Medium-High" rating.

GoRaleigh proposes to implement a Bus Rapid Transit (BRT) line along the 5.1-mile corridor of New Bern Avenue connecting the Raleigh central business district with WakeMed Raleigh Campus and New Hope Road. The project includes construction of approximately 3.3 miles of new dedicated transit infrastructure improvements between the GoRaleigh Station in downtown Raleigh and WakeMed Campus at Sunnybrook Road, and approximately 1.8 miles of service in general traffic lanes between Sunnybrook Road and New Hope Road. The project also includes transit signal priority (TSP) at signalized intersections throughout the 5.1-mile corridor and ten (10) weather-protected BRT stations. All BRT stations will be designed to include special BRT-specific branding, off-board fare payment, level vehicle boarding platforms, real-time bus arrival information, schedule and route information, and ADA accessibility. Terminus at New Hope Road will serve a proposed Park and Ride and transfer facility that is a separately funded project.

Thank you for the opportunity to share the Wake BRT: New Bern Avenue Project with you, and to be considered for inclusion in the President's FY 2021 Capital Investment Grant program. If you have any questions, please do not hesitate to contact Mila Vega, Planning Supervisor, by email at mila.vega@raleighnc.gov or by phone at (919) 996-4123.

Sincerely,

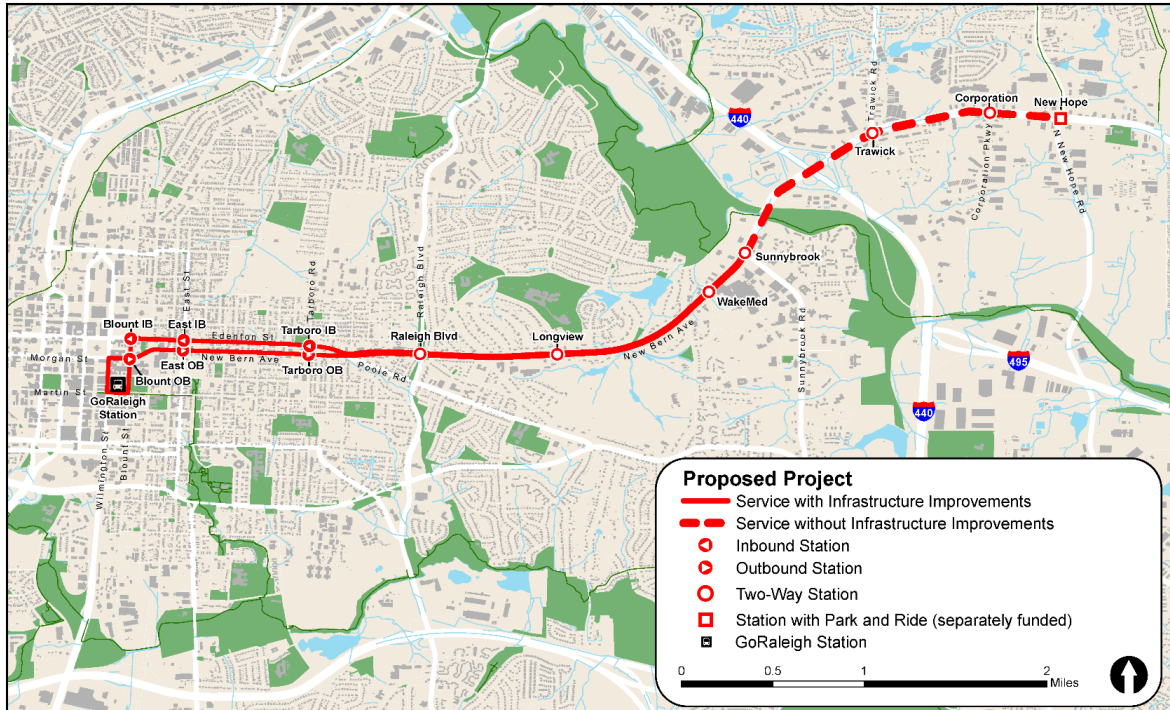
Michael Moore

Director
Transportation Department
City of Raleigh

CC: Tyrhonda Edwards, FTA Office of Planning and Environment
Yvette G. Taylor, PhD, FTA Region 4 Regional Administrator
Keith Melton, FTA Region 4 Director, Office of Planning & Program Development

AUGUST 23, 2019

Wake BRT: New Bern Avenue



SECTION 5309 CAPITAL INVESTMENT GRANT PROGRAM SMALL STARTS CRITERIA REPORT

WAKE BUS RAPID TRANSIT (BRT): NEW BERN AVENUE PROJECT

Submitted By: GoRaleigh

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INTRODUCTION

This document serves as GoRaleigh's, the City of Raleigh's public transportation department, submission of Small Starts criteria and other information to the Federal Transit Administration (FTA) to support its request for the Wake Bus Rapid Transit (BRT): New Bern Avenue Project (subsequently referred to as the New Bern Avenue BRT Project) to be considered for inclusion in the President's FY 2021 budget proposal to Congress. This document was prepared in accordance with the most current FTA requirements as described in its *2016 Final Small Starts Interim Policy Guidance* and *2019 Reporting Instructions for the Section 5309 Small Starts Criteria*, and includes FTA's most recent Small Starts criteria reporting templates and standard cost category (SCC) Workbook.

This Small Starts report is organized in the following sections:

- 1) General Reporting Information, which includes:
 - 1.1. Project Background Information
 - 1.2. Travel Forecasts and Supporting Documentation
 - 1.3. Operation and Maintenance (O&M) Cost and Supporting Documentation
 - 1.4. Capital Costs
- 2) Project Justification Criteria, which includes:
 - 2.1 Mobility Improvements, Cost Effectiveness, and Congestion Relief Template
 - 2.2 Environmental Benefits Template
 - 2.3 Land Use Templates and Supporting Documentation
 - 2.4 Economic Development Templates and Supporting Documentation
- 3) Local Financial Commitment Criteria, which includes:
 - 3.1 Small Starts Project Finance Template
 - 3.2 Financial Plan and Supporting Documentation
 - 3.3 Local Financial Commitment Checklist

This report is supported by the following electronic files and attached as supporting documents in the zip folder.

- Project Maps (in PDF format)
- Travel Forecast Results Report (in PDF format)
- FTA SCC Workbook (in Excel format)
- Small Starts Criteria Templates (in Excel format)
- Letters of Support (PDF format)
- Existing Land Use Supporting Documentation (in Excel format)
- Transit-Supportive Land Use and Affordable Housing Plans and Policies Supporting Documentation (In PDF format)
- Financial Plan and Supporting Documentation (in Word and Excel format)

1 GENERAL REPORTING INFORMATION

The following subsections present the information necessary for FTA to understand the project, its planning context, and how and why it addresses the identified transportation problems in the corridor. Project background information comprises the following items:

- Project Description Template
- Project Narrative
- Project Map
- Travel Forecast Results and Methodology
- Project Operations and Maintenance Costs
- Project Capital Costs

1.1 PROJECT DESCRIPTION

SMALL STARTS PROJECT DESCRIPTION TEMPLATE		
PROJECT NAME:	Wake Bus Rapid Transit: New Bern Avenue Project	
Participating Agencies		
Lead Agency	Name	GoRaleigh (City of Raleigh)
	Contact Person	David Eatman
	Address	Department of Transportation - Transit, PO Box 590, Raleigh,
	Telephone Number	919-996-4040
	Fax Number	
	Email	david.eatman@raleighnc.gov
Metropolitan Planning Organization	Name	CAMPO
	Contact Person	Bret Martin
	Address	421 Fayetteville Street, Suite 203, Raleigh, NC 27601
	Telephone Number	919-996-4410
	Fax Number	919-996-1729
	Email	Bret.Martin@Campo-nc.us
Transit Agency	Name	GoRaleigh (City of Raleigh)
	Contact Person	Mila Vega
	Address	Department of Transportation - Transit, PO Box 590, Raleigh,
	Telephone Number	919-996-4123
	Fax Number	
	Email	Mila.Vega@raleighnc.gov
State Department of Transportation	Name	North Carolina Department of Transportation
	Contact Person	Joey Hopkins
	Address	2612 N. Duke St., Durham, NC 27704
	Telephone Number	919-220-4600
	Fax Number	
	Email	jhopkins@ncdot.gov
Other Relevant Agencies	Name	Wake County
	Contact Person	Nicole D. Kreiser
	Address	P.O. Box 550 Raleigh NC 27602
	Telephone Number	919-856-5613
	Fax Number	919-856-6184
	Email	Nicole.Kreiser@wakegov.com
Other Relevant Agencies	Name	
	Contact Person	
	Address	
	Telephone Number	
	Fax Number	
	Email	
Other Relevant Agencies	Name	
	Contact Person	
	Address	
	Telephone Number	
	Fax Number	
	Email	

SMALL STARTS PROJECT DESCRIPTION TEMPLATE (Page 2)			
Project Definition	Length (miles)	5	
	Mode/Technology	BRT	
	Number of Stations	10	
	List each station separately, including the number of park and ride spaces at each and whether structured or surface parking	Edenton Street /New Bern Avenue at Blount Street	
		Edenton Street/New Bern Avenue at Bloodworth Street	
		Edenton Street/New Bern Avenue at Tarboro Street	
		New Bern Avenue at Raleigh Boulevard	
		New Bern Avenue at Clarendon Crescent	
		New Bern Avenue at Luther Road	
		New Bern Avenue at Sunnybrook Road	
		New Bern Avenue at Trawick Road	
		New Bern Avenue at Corporation Parkway	
New Bern Avenue at New Hope Road (100 PNR Spaces)			
List each station with major transfer facilities to other modes			
Type of Alignment by Segment (Number of Miles)	Number of vehicles/rolling stock	7	
	Above grade		
	Below grade		
	At grade	5.1	
	Exclusive	3.3	
	Mixed Traffic	1.8	
Status of Existing Right of Way	Ownership – who owns the right of way?	City of Raleigh & North Carolina Department of Transportation	
	Current Use: active freight or passenger service?	General Traffic and Unused Median	

SMALL STARTS PROJECT DESCRIPTION TEMPLATE (Page 3)			
Seeking Use of Project Justification Warrants?		No	
Project Planning Dates			
Current Year	Opening Year	Horizon	Exact Horizon Year (e.g., 2035)
2019	2023	20 Years	2045
Capital Cost Estimate	2019 constant dollars	\$	63,631,642
	Year of Expenditure	\$	70,747,782
Levels of Service	Headways	Opening Year	Horizon Year
		Weekday Peak	10
		Weekday Off-peak	15
		Weekday Evening	20
	Hours of Service	Opening Year	Horizon Year
		Weekday	20
		Weekend	18.5
			18.5
Type of Model Used for Travel Forecasts		FTA Simplified Trips on Projects (STOPS) model	
Fare Policy Assumptions Used in Travel Forecasts [footnote 1]		Actual fare values used in STOPS using the fare structure.cfl	
Estimated Number of U.S. Jobs Related to Design, Construction, Operation and Maintenance of the Project		931	
Project Planning and Development Schedule	Project Schedule		
	Insert anticipated or actual date		
	Anticipated NEPA Class of Action	Categorical Exclusion (CE)	
	Entry into Project Development	5/28/2019	
	Receipt of CE	1/20/2020	
	LPA selected	6/4/2019	
	LPA included in the financially constrained long range plan	8/21/2019	
	Anticipated SSGA/Construction Grant Award	10/31/2020	
Construction Duration (enter start and end dates)	1/31/2021		
	Initiation of Revenue Service		
	10/1/2023		
Project Management			
Project Manager	Name	Mila Vega	
	Address	Department of Transportation - Transit, PO Box 590, Raleigh,	
	Phone	919-996-4123	
	Fax		
	Email	mila.vega@raleighnc.gov	
Agency CEO	Name	Ruffin Hall	
	Address	222 West Hargett St, Suite 224, Raleigh, NC 27601	
	Phone	919-996-3070	
	Fax		
	Email	citymanager@raleighnc.gov	
Key Agency Staff: Overall Small Starts Criteria	Name		
	Address		
	Phone		
	Fax		
	Email		

SMALL STARTS PROJECT DESCRIPTION TEMPLATE (Page 4)		
Key Agency Staff: Ridership Forecasts	Name	David Walker
	Address	Department of Transportation - Transit, PO Box 590,
	Phone	919-996-3942
	Fax	
	Email	David.Walker@raleighnc.gov
Key Agency Staff: Cost Estimates	Name	Larry Aggers
	Address	Department of Transportation - Transit, PO Box 590,
	Phone	919-996-3900
	Fax	
	Email	Larry.Aggers@raleighnc.gov
Key Agency Staff: Environmental Documentation	Name	Morgan Simmons
	Address	Department of Transportation - Transit, PO Box 590,
	Phone	919-996-2291
	Fax	
	Email	Morgan.Simmons@raleighnc.gov
Key Agency Staff: Land Use Assessment	Name	Het Patel
	Address	Department of Transportation - Transit, PO Box 590,
	Phone	919-996-5120
	Fax	
	Email	Het.Patel@raleighnc.gov
Key Agency Staff: Financial Assessment	Name	Shavon Tucker
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	Fax	
	Email	Shavon.Tucker@raleighnc.gov
Key Agency Staff: Project Maps	Name	Het Patel
	Address	Department of Transportation - Transit, PO Box 590,
	Phone	919-996-5120
	Fax	
	Email	Het.Patel@raleighnc.gov
Contractors		
Current Prime Contractor	Name	WSP USA
	Address	1 Penn Plaza, 2nd floor, 250, W 34th Street, New York,
	Phone	212-465-5000
	Fax	
	Email	
Prime Contractor: Project Manager	Name	Greg Saur
	Address	434 Fayetteville St #1500, Raleigh, NC 27601
	Phone	919-376-2703
	Fax	
	Email	greg.saur@wsp.com
Contractor Responsible for Travel Forecasts	Name	Rhett Fussell
	Address	434 Fayetteville St #1500, Raleigh, NC 27601
	Phone	919-836-4075
	Fax	
	Email	Rhett.Fussell@WSP.com
Contractor Responsible for Capital Cost Estimates	Name	Steve Karnis
	Address	1001 Morehead Square Dr SUITE 610, Charlotte, NC
	Phone	704-342-8479
	Fax	
	Email	Steve.Karnis@wsp.com

Introduction

In 2016, the voters of Wake County approved a half-cent sales tax dedicated to transit infrastructure in the County. The revenues from this measure will catalyze the largest expansion of transit in Raleigh's history, and served as the impetus for the *Wake County Transit Plan*—a bold and comprehensive vision to enhance the region's transit network by providing improved connections to major activity centers, and expanding its network to accommodate the region's tremendous growth. The *Wake County Transit Plan* identified the New Bern Avenue BRT Project as a priority investment that will serve key activity centers and provide a foundation for a frequent transit network that will serve Raleigh's urban core and inner-ring suburbs.

Project Description

The New Bern Avenue BRT Project corridor is one of four corridors that were identified in the Wake Transit Plan for BRT service implementation. The New Bern Avenue BRT Project will travel along the 5.1-mile New Bern Avenue corridor, connecting the Raleigh central business district with the WakeMed Raleigh Campus, and New Hope Road. As shown in Figure 1, the Project connects the GoRaleigh Station and transfer center in downtown Raleigh, then operates along paired one way streets (eastbound along New Bern Avenue and westbound along Edenton Street) for approximately 1 mile, before traveling nearly 4 miles along New Bern Avenue to the route's terminus at New Hope Road. Although the Project originates at GoRaleigh Station, this station is not included in the accompanying FTA Small Starts templates given that is an existing facility that will not undergo significant enhancements as part of the New Bern Avenue BRT Project other than the addition of a BRT platform.

The project includes construction of approximately 3.3 miles of new dedicated transit infrastructure improvements between the GoRaleigh Station in downtown Raleigh and Sunnybrook Road, including transit signal priority (TSP) at signalized intersections and ten (10) weather-protected BRT stations. All BRT stations will be designed to include special BRT-specific branding, off-board fare payment, level vehicle boarding platforms, real-time bus arrival information, schedule and route information, and ADA accessibility. The project also includes approximately 1.8 miles of service in general traffic lanes, with potential TSP at signalized intersections, between Sunnybrook Road and New Hope Road. The terminus at New Hope Road will serve a proposed Park and Ride and transfer facility that is a separately funded project.

The New Bern Avenue BRT Project corridor is proposed along the current GoRaleigh Route 15 corridor, one of the most productive and highest ridership route in the GoRaleigh System. The existing GoRaleigh Route 15 (WakeMed) is regularly one of the top performing routes in the GoRaleigh network. The average weekday ridership along this route is approximately 2,014 representing 11 percent of the total system average weekday riders. Additionally, the average weekend ridership along this route is approximately 1,848 representing almost 11 percent of the total system average weekend riders. When completed, the New Bern Avenue BRT Project will increase service along the corridor substantially from 16,836 annual revenue service hours to 24,338 annual revenue service hours.

The project also includes the purchase of seven (7) compressed natural gas buses and the following span of service and frequencies:

- Weekdays: 4 AM – 12 AM span of service

- 4 AM – 6 AM, 20-minute frequency
- 6 AM – 9 AM, 10-minute frequency
- 9 AM – 3 PM, 15-minute frequency
- 3 PM – 6 PM, 10-minute frequency
- 6 PM – 9 AM, 15-minute frequency
- 9 PM – 12 PM, 20-minute frequency
- Weekends and Holidays: 5:30 AM – 12 AM span of service, 20-minute frequency

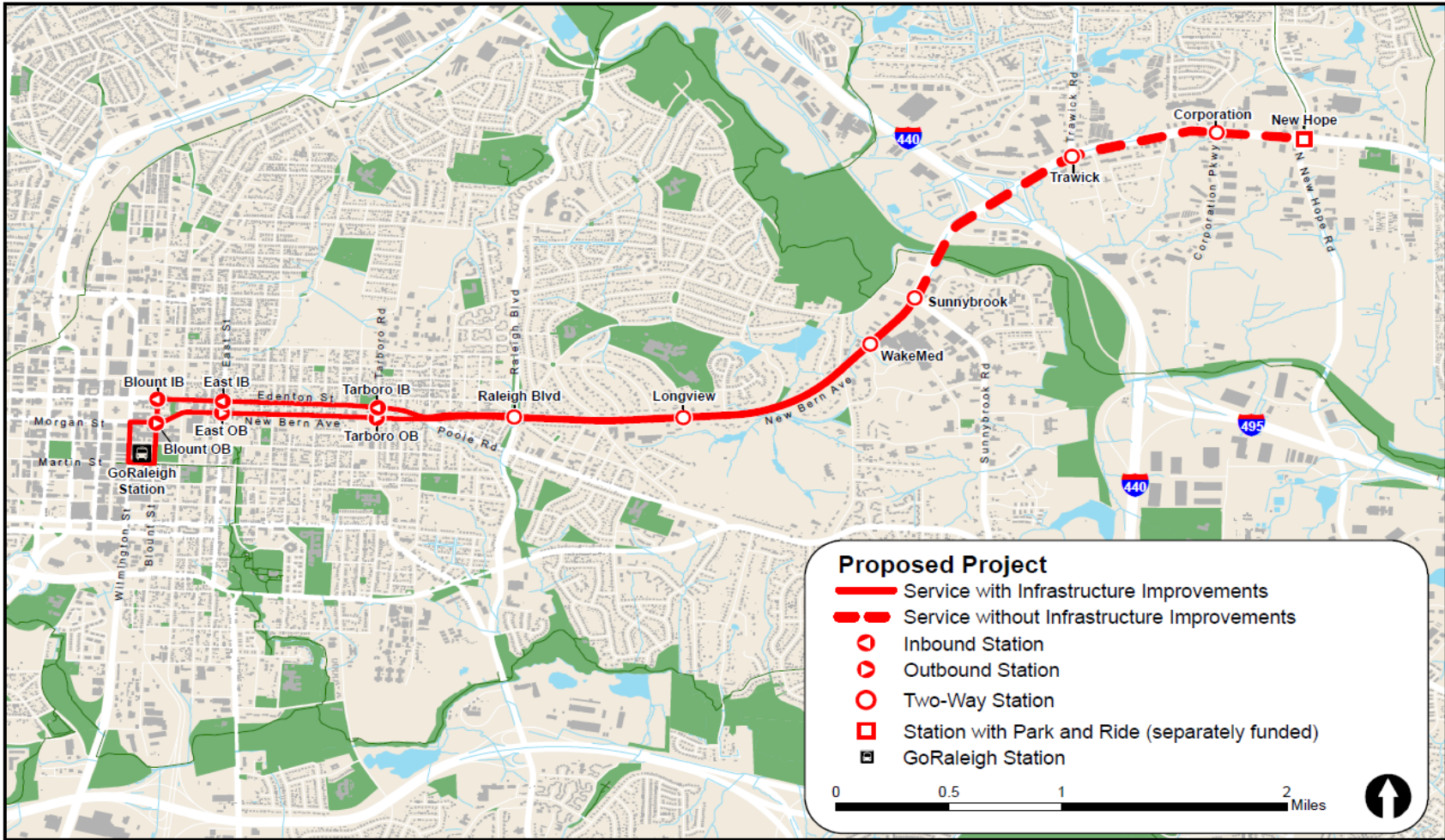
Aside from the new BRT route, the transit-priority infrastructure along the New Bern Avenue BRT Project corridor will benefit other local and express bus routes that operate within or across the New Bern Avenue Corridor (an additional 21 buses per hour during peak times), including: GoRaleigh Routes 10 (Longview), 15L (Trawick), 18 (Poole/Barwell), 18S (Poole), 19 (MLK/Sunnybrook), 55X (Poole Road Express), and GoTriangle Route’s KRX (Knightdale-Raleigh) and ZWX (Zebulon-Wendell-Raleigh Express). The average weekday ridership of these routes is approximately 3,697, which represents growth of 7.3 percent between FY 2017 and FY 2018.

Table 1 summarizes in detail the New Bern Avenue BRT Project’s implementation schedule. Public engagement is presently taking place and will continue as GoRaleigh refines station locations, running-way options, transit signal priority details and cost estimates for the project. The community engagement period is proposed to last until the end of 2019, during which two more open houses are scheduled – in October and December. Final design and environmental approvals will be completed throughout 2020 and construction will take place in 2021 and 2022, with the New Bern Avenue BRT Project beginning service in October 2023.

Table 1. Implementation Schedule

Implementation Phase	Duration
FTA Acceptance into Small Starts Project Development	May 2019
Selection of Locally Preferred Alternative (LPA)	June 2019
Compliance with NEPA	March 2019 – January 2020
Adoption of LPA in LRTP	August 2019
Completion of Project Development	September 2020
Award Small Starts Construction Grant Agreement	October 2020
Anticipated Major Construction	January 2021 – December 2022
Start of Revenue Service	October 2023

Figure 1. Map of the New Bern Avenue BRT Project Route



Current Setting

Wake County is currently home to more than one million residents and is expected to add an additional 250,000 people within the next 10 years. Areas of high population density in the county are those near the center of Raleigh, as well as to the north between I-440 and I-540. The largest employment center is located in downtown Raleigh, with other major centers at nearby research and university campuses, and hospitals / health care facilities such as at the WakeMed campus on New Bern Avenue.

New Bern Avenue has long served as the eastern gateway into Raleigh and contains a wealth of historical, institutional, and architectural assets that contributes to the roadway's identity as Raleigh's Cultural Corridor. Established in 1792 by the William Christmas Plan for Raleigh, New Bern Avenue is one of the four original ceremonial roadways radiating out from the North Carolina State Capitol. New Bern Avenue is classified as a Secondary Arterial Thoroughfare in Raleigh's *2030 Comprehensive Plan* and serves as a major east-west commuting route into downtown Raleigh. The current roadway cross-section is a four-lane median divided roadway from I-440 to Poole Road and operates as a bifurcated one-way pair from Poole Road to the North Carolina State Capitol.

The *2030 Comprehensive Plan* designates several different areas of Raleigh that lie adjacent to segments of the New Bern Avenue BRT Project corridor. An "Historic Urban" area extends from downtown eastward past Swain Street to Raleigh Boulevard. The Tarboro Street intersection with New Bern-Edenton is the first activity node and acts as a gateway to the College Park and Idlewild neighborhoods, and St. Augustine's College.

The "Suburban Residential" character area begins at Raleigh Boulevard and extends east to Donald Ross Drive. The character of the corridor changes dramatically at the start of this district where a planted median divide east and west-bound traffic. The landscaped single family homes of the Longview Gardens neighborhood dominate the corridor to the north. Each roadway section includes a two-lane ribbon pavement and gravel shoulders with grassed swales. No sidewalks are provided even though numerous bus stops and high-use pedestrian paths exist along the road shoulders.

Crossing the King Charles intersection, the Longview Shopping Center is the corridor's second activity node, providing, retail, services and restaurants that are in short supply along the corridor. East of the shopping center, the residential development pattern along both sides of the corridor is set far away from the street.

The "Medical Campus" character area of New Bern Avenue extends from Donald Ross Drive to Crabtree Creek. The park-like quality of the previous area changes into the offices and commercial buildings associated with the WakeMed campus. The planted median dominates the view along what continues as an auto-oriented arterial, with sidewalks reappearing sporadically on the southern edge of the roadway. Approaching the high point of the district, the corridor's final and largest landmark appears. The WakeMed main building and its associated campus sit high in the landscape and dominate the surrounding development.

The medical center, in conjunction with the Wake County Human Services and Wake Technical Community College campus buildings, create the substance of an important and very busy activity node along the New Bern Avenue BRT Project corridor. Even though the area medical services attract a large number of employees and visitors, very few commercial services are conveniently available in the immediate area.

Future Conditions

Raleigh's 2030 *Comprehensive Plan* identifies the New Bern Avenue BRT Project corridor as a "Transit Emphasis Corridor" with the "Downtown Center" on one end and a "City Growth Center" on the other. The real estate market is likely to support TOD in the corridor due to these designations.

The New Bern Avenue BRT Project corridor is a Transit Emphasis Corridor because it was identified in the *Wake County Transit Plan* and programmed for a much higher level of bus service, including frequent buses, improved stop amenities, a more complete pedestrian network, and traffic signal priority for transit. A hybrid approach to frontage is recommended.

The area of the New Bern Avenue BRT Project corridor within the City Growth Center is where significant infill development and redevelopment are anticipated to occur in the future. The section of the New Bern Avenue BRT Project within the Downtown Center is ripe for continued transit-supportive development.

Downtown Raleigh has emerged as the largest urban center in an expanding region. Regional growth patterns are shifting eastward, placing downtown Raleigh closer to the center of the region's urbanized land mass as projected to 2030. The prevailing development model in downtown Raleigh continues to be mixed-use, with some combination of for-sale residential condominiums, office space, and ground-floor retail space. Year after year, each successive project allocates a greater portion of the building's ground-floor to active uses. That trend is indicative of an increasingly positive outlook regarding the market for retail in downtown Raleigh. Additionally, newer residential projects have also increased in size; residential projects completed within the past three years averaged about 70 units per development, whereas the residential projects currently under construction average about 125 units per development.

The upward trend in downtown Raleigh's revitalization has resulted in significant economic, fiscal, civic, and cultural gains. Strong job growth, commercial and residential development and significant public projects have helped downtown establish a competitive edge and become a model for transit-supportive development that is expected to be replicated along the New Bern Avenue BRT Project corridor.

Purpose of the Project

Meeting this projected growth (and related travel demand) is one of three overarching challenges that the implementation of BRT along New Bern Avenue is intended to address; the other two are to improve transit service and to support local planning efforts to preserve and enhance the quality of life in Wake County.

The purpose of the New Bern Avenue BRT Project is to implement improved transit service from downtown Raleigh to New Hope Road. This new transit investment will accommodate projected growth, create infrastructure that allows the BRT route and local routes to bypass major congestion points, and improve the attractiveness of the service to realize ridership growth. Project needs are summarized below from the *Wake Transit Plan Major Investment Study's Purpose and Need*:

- Address existing and projected future growth and travel demand;
- Create infrastructure that allows transit service to bypass major congestion points;
- Facilitate ridership growth along the corridor;
- Improve transit service and customer experience; and

- Support local planning efforts to preserve and enhance the quality of life along the corridor.

Summary

The New Bern Avenue BRT Project is a catalytic first step to realizing the ambitions of the *Wake County Transit Plan*, and providing reliable, frequent bus service to the residents of Raleigh. Constructing bus rapid transit along the growing New Bern Avenue Corridor – a corridor that already has one of the best-performing bus route in the city – will better connect major employment centers such as the WakeMed campus to downtown Raleigh, and provide riders with fast and reliable service, enhanced transit amenities such as off-board fare payment, level vehicle boarding, real-time bus arrival information, schedule and route information and ADA accessibility.

1.2 TRAVEL FORECASTS

GoRaleigh estimates nearly 2,500 average weekday boardings on the New Bern Avenue BRT Project at the Project's opening, and just more than 6,000 boardings at the 2045 horizon year. The travel forecasting results are summarized in FTA's Small Starts Travel Forecasting template on the following page, and the travel demand forecasting methodology report is provided as an attachment to this document.

The project's annualization factor was derived from GoRaleigh's latest (2017) system-wide unlinked transit trip data reported to FTA's National Transit Database.

SMALL STARTS TRAVEL FORECASTS TEMPLATE	
PROJECT NAME:	Wake Bus Rapid Transit: New Bern Avenue Project

Trips on the Project								
Line	Transit market	Trips made by:	Daily linked trips		Annualization factor	Annual linked trips (daily trips * annualization factor)		Brief description of the process used to develop travel forecasts (e.g., local model, FTA simplified national model, incremental data-driven method, direct demand model)
			Current Year (2019)	Horizon (20 Years)		Current Year (2019)	Horizon (20 Years)	
1a	Modeled trips: home-based work (HBW)	Non-transit dependents	413	1,431	333	137,529	476,523	FTA Simplified Trips on Projects (STOPS) model
1b		Transit dependents	546	1,358		181,818	452,214	
2a	Modeled trips: all other trip purposes	Non-transit dependents	529	1,215	333	176,157	404,595	FTA Simplified Trips on Projects (STOPS) model
2b		Transit dependents	868	2,092		289,044	696,636	
3a	Special market 1 (specify)	Non-transit dependents				0	0	
3b		Transit dependents				0	0	
4a	Special market 2 (specify)	Non-transit dependents				0	0	
4b		Transit dependents				0	0	
5a	Special market 3 (specify)	Non-transit dependents				0	0	
5b		Transit dependents				0	0	
6a	Special market 4 (specify)	Non-transit dependents				0	0	
6b		Transit dependents				0	0	
7a	Subtotal (lines 1 through 6)	Non-transit dependents				313,686	881,118	
7b		Transit dependents				470,862	1,148,850	
8a	Total annual linked trips with special markets (lines 7a through 7b)					784,548	2,029,968	
8b	Total daily linked trips without special markets (lines 1a through 2b)		2,356	6,096				
9	New transit trips		1,083	1,540				

Vehicle-Miles of Travel (VMT)												
Line	Mode / Technology	Daily VMT				Annualization factor	Annual VMT (for automobile, calculation is daily VMT * annualization factor; for transit, source is service plans for each mode/technology)				VMT change (Build minus No-build VMT)	
		Current Year (2019)		Horizon (20 Years)			Current Year (2019)		Horizon (20 Years)		Current Year (2019)	Horizon (20 Years)
		No-build	Build	No-build	Build		No-build	Build	No-build	Build		
10	Automobile	0	-7,839	0	-8,963	333	0	-2,610,387	0	-2,984,679	-2,610,387	-2,984,679
11	Diesel bus						167,921		167,921		-167,921	-167,921
12	Hybrid bus										0	0
13	CNG bus						34,393	389,400	34,393	389,400	355,007	355,007
14	Electric bus										0	0
15	Heavy rail [1]										0	0
16	Light rail / streetcar [1]										0	0
17	Commuter rail (new diesel locomotive or DMU) [1]										0	0
18	Commuter rail (used diesel locomotive) [1]										0	0
19	Commuter rail (electric or EMU) [1]										0	0

1.3 OPERATIONS AND MAINTENANCE COSTS

Operating and maintenance costs for the New Bern Avenue BRT Project are estimated at \$2.5 million (2024 dollars), however since the New Bern Avenue BRT Project is a direct replacement of the current GoRaleigh Route 15-WakeMed, the net additional operating and maintenance cost is approximately \$0.99 million. However, GoRaleigh is reconsidering maintaining – though reducing – the Route 15-WakeMed service, in which case future travel forecasts and financial plans will be updated accordingly.

An operations and maintenance cost methodology is included in the *Wake Bus Rapid Transit (BRT): New Bern Avenue Project Small Starts Financial Plan* attached to this report.

1.4 CAPITAL COSTS

The total capital cost of the New Bern Avenue BRT Project is \$63.6 million in 2019 dollars or \$71.4 million in year of expenditure dollars.

The methodology for estimating costs is presented in the *Wake Bus Rapid Transit (BRT): New Bern Avenue Project Small Starts Financial Plan* attached to this submission.

The following pages present the cost estimate in FTA's Standardized Cost Category (SCC) format, and other SCC worksheets required for this submittal. These worksheets are also provided electronically as an attachment to this report.

1.4.1 Build Main Worksheet

MAIN WORKSHEET-BUILD ALTERNATIVE								(Rev.21, June 2019)
City of Raleigh							Today's Date	8/19/19
New Bern Avenue BRT, Raleigh, NC							Yr of Base Year \$	2019
Application for SSGA							Yr of Revenue Ops	2023
	Quantity	Base Year Dollars w/o Contingency (X000)	Base Year Dollars Allocated Contingency (X000)	Base Year Dollars TOTAL (X000)	Base Year Dollars Unit Cost (X000)	Base Year Dollars Percentage of Construction Cost	Base Year Dollars Percentage of Total Project Cost	YOE Dollars Total (X000)
10 GUIDEWAY & TRACK ELEMENTS (route miles)	5.39	5,057	1,517	6,574	\$1,219	18%	10%	7,401
10.01 Guideway: At-grade exclusive right-of-way				0				0
10.02 Guideway: At-grade semi-exclusive (allows cross-traffic)	5.39	5,057	1,517	6,574	\$1,219			7,401
10.03 Guideway: At-grade in mixed traffic				0				0
10.04 Guideway: Aerial structure				0				0
10.05 Guideway: Built-up fill				0				0
10.06 Guideway: Underground cut & cover				0				0
10.07 Guideway: Underground tunnel				0				0
10.08 Guideway: Retained cut or fill				0				0
10.09 Track: Direct fixation				0				0
10.10 Track: Embedded				0				0
10.11 Track: Ballasted				0				0
10.12 Track: Special (switches, turnouts)				0				0
10.13 Track: Vibration and noise dampening				0				0
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)	20	3,276	983	4,259	\$213	11%	7%	4,795
20.01 At-grade station, stop, shelter, mall, terminal, platform	20	3,276	983	4,259	\$213			4,795
20.02 Aerial station, stop, shelter, mall, terminal, platform				0				0
20.03 Underground station, stop, shelter, mall, terminal, platform				0				0
20.04 Other stations, landings, terminals: Intermodal, ferry, trolley, etc.				0				0
20.05 Joint development				0				0
20.06 Automobile parking multi-story structure				0				0
20.07 Elevators, escalators				0				0
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	0	0	0	0	\$0	0%	0%	0
30.01 Administration Building: Office, sales, storage, revenue counting				0				#DIV/0!
30.02 Light Maintenance Facility				0				#DIV/0!
30.03 Heavy Maintenance Facility				0				#DIV/0!
30.04 Storage or Maintenance of Way Building				0				#DIV/0!
30.05 Yard and Yard Track				0				#DIV/0!
40 SITEWORK & SPECIAL CONDITIONS	10,903	10,903	3,271	14,174	\$2,629	38%	22%	15,958
40.01 Demolition, Clearing, Earthwork		208	62	270				304
40.02 Site Utilities, Utility Relocation		3,977	1,193	5,170				5,821
40.03 Haz. mat'l, contam'd soil removal/mitigation, ground water treatments				0				0
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks				0				0
40.05 Site structures including retaining walls, sound walls				0				0
40.06 Pedestrian / bike access and accommodation, landscaping		1,665	499	2,164				2,437
40.07 Automobile, bus, van accessways including roads, parking lots		1,629	489	2,118				2,385
40.08 Temporary Facilities and other indirect costs during construction		3,423	1,027	4,450				5,011
50 SYSTEMS	9,296	9,296	2,789	12,084	\$2,242	33%	19%	13,605
50.01 Train control and signals				0				0
50.02 Traffic signals and crossing protection		2,615	784	3,399				3,827
50.03 Traction power supply: substations				0				0
50.04 Traction power distribution: catenary and third rail				0				0
50.05 Communications		4,081	1,224	5,305				5,973
50.06 Fare collection system and equipment		2,600	780	3,380				3,805
50.07 Central Control				0				0
Construction Subtotal (10 - 50)	5.39	28,531	8,559	37,090	\$6,880	100%	58%	41,759
60 ROW, LAND, EXISTING IMPROVEMENTS	70	70	21	91	\$17		0%	95
60.01 Purchase or lease of real estate		70	21	91				95
60.02 Relocation of existing households and businesses				0				0
70 VEHICLES (number)	7	6,735	1,347	8,083	\$1,155		13%	9,455
70.01 Light Rail				0				0
70.02 Heavy Rail				0				0
70.03 Commuter Rail				0				0
70.04 Bus	7	6,735	1,347	8,083	\$1,155			9,455
70.05 Other				0				0
70.06 Non-revenue vehicles				0				0
70.07 Spare parts				0				0
80 PROFESSIONAL SERVICES (applies to Cats. 10-50)	10,486	10,486	2,097	12,583	\$2,334	34%	20%	13,631
80.01 Project Development		4,780	956	5,736				6,213
80.02 Engineering (not applicable to Small Starts)		0	0	0				0
80.03 Project Management for Design and Construction		2,282	456	2,739				2,967
80.04 Construction Administration & Management		1,997	399	2,397				2,596
80.05 Professional Liability and other Non-Construction Insurance		428	86	514				556
80.06 Legal; Permits; Review Fees by other agencies, cities, etc.		285	57	342				371
80.07 Surveys, Testing, Investigation, Inspection		428	86	514				556
80.08 Start up		285	57	342				371
Subtotal (10 - 80)	5.39	45,822	12,025	57,847	\$10,730		91%	64,940
90 UNALLOCATED CONTINGENCY				5,785			9%	6,513
Subtotal (10 - 90)	5.39			63,632	\$11,803		100%	71,453
100 FINANCE CHARGES							0%	0
Total Project Cost (10 - 100)	5.39			63,632	\$11,803		100%	71,453
Allocated Contingency as % of Base Yr Dollars w/o Contingency				0				0
Unallocated Contingency as % of Base Yr Dollars w/o Contingency				0				0
Total Contingency as % of Base Yr Dollars w/o Contingency				0				0
Unallocated Contingency as % of Subtotal (10 - 80)				0				0

1.4.2 Project Description

PROJECT DESCRIPTION - BUILD ALTERNATIVE		(Rev.21, June 2019)
City of Raleigh		Today's Date 8/19/19
New Bern Avenue BRT, Raleigh, NC		
Application for SSGA		
<p>Describe the project elements to explain the unit costs shown on the Main Worksheet.</p> <p>A 5.39 mile new Bus Rapid Transit (BRT) project beginning in downtown Raleigh, continuing along the one-way pair of Edenton Street and New Bern Avenue then into the median of New Bern Avenue from Poole Road to Sunnybrook Road and continuing in mixed traffic along New Bern Avenue from Sunnybrook Road to New Hope Road. The BRT vehicles in the downtown and one-way pair portion of the project will operate in a Business Access and Transit (BAT) lane. BRT vehicles from Poole Road to Sunnybrook Road will operate in dedicated two-way bus lanes to be constructed in the median of New Bern Avenue. From Sunnybrook Road to New Hope Road, the BRT vehicles will operate in mixed traffic.</p>		
10 GUIDEWAY & TRACK ELEMENTS (route miles)		
10.01 Guideway: At-grade exclusive right-of-way		This estimate does not include this SCC item.
10.02 Guideway: At-grade semi-exclusive (allows cross-traffic)		This SCC mainly includes the two-way bus lanes in the median of New Bern Avenue. It also includes the Downtown and One-Way Pair BAT lanes that will receive a full paint treatment.
10.03 Guideway: At-grade in mixed traffic		This estimate does not include this SCC item.
10.04 Guideway: Aerial structure		This estimate does not include this SCC item.
10.05 Guideway: Built-up fill		This estimate does not include this SCC item.
10.06 Guideway: Underground cut & cover		This estimate does not include this SCC item.
10.07 Guideway: Underground tunnel		This estimate does not include this SCC item.
10.08 Guideway: Retained cut or fill		This estimate does not include this SCC item.
10.09 Track: Direct fixation		This estimate does not include this SCC item.
10.10 Track: Embedded		This estimate does not include this SCC item.
10.11 Track: Ballasted		This estimate does not include this SCC item.
10.12 Track: Special (switches, turnouts)		This estimate does not include this SCC item.
10.13 Track: Vibration and noise dampening		This estimate does not include this SCC item.
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)		
20.01 At-grade station, stop, shelter, mall, terminal, platform		This SCC includes the cost for 10 total stations (20 platforms). Includes station amenities such as canopies, benches, lighting, signing, art, etc.
20.02 Aerial station, stop, shelter, mall, terminal, platform		This estimate does not include this SCC item.
20.03 Underground station, stop, shelter, mall, terminal, platform		This estimate does not include this SCC item.
20.04 Other stations, landings, terminals: Intermodal, ferry, trolley, etc.		This estimate does not include this SCC item.
20.05 Joint development		This estimate does not include this SCC item.
20.06 Automobile parking multi-story structure		This estimate does not include this SCC item.
20.07 Elevators, escalators		This estimate does not include this SCC item.
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS		
30.01 Administration Building: Office, sales, storage, revenue counting		This estimate does not include this SCC item.
30.02 Light Maintenance Facility		This estimate does not include this SCC item.
30.03 Heavy Maintenance Facility		This estimate does not include this SCC item.
30.04 Storage or Maintenance of Way Building		This estimate does not include this SCC item.
30.05 Yard and Yard Track		This estimate does not include this SCC item.
40 SITEWORK & SPECIAL CONDITIONS		
40.01 Demolition, Clearing, Earthwork		This SCC includes cleaning & grubbing, earthwork and proof rolling.
40.02 Site Utilities, Utility Relocation		This SCC includes estimated drainage improvements along the corridor, street lighting and potential utility relocations.
40.03 Haz. mat'l, contam'd soil removal/mitigation, ground water treatments		This estimate does not include this SCC item.
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks		This estimate does not include this SCC item.
40.05 Site structures including retaining walls, sound walls		This estimate does not include this SCC item.
40.06 Pedestrian / bike access and accommodation, landscaping		This SCC includes costs for sidewalks, curb ramps, driveways and corridor landscaping.
40.07 Automobile, bus, van accessways including roads, parking lots		This SCC includes all new pavement for the project along with the pavement milling and overlay in the Downtown and One-Way Pair areas of the project. This also includes the pavement needed for a proposed bike path along New Bern Avenue in the one-way pair area.
40.08 Temporary Facilities and other indirect costs during construction		This SCC includes Mobilization, Erosion/Sediment Control, Temporary Traffic Control, and Field Engineering costs.
50 SYSTEMS		
50.01 Train control and signals		This estimate does not include this SCC item.
50.02 Traffic signals and crossing protection		This SCC includes costs for all necessary traffic signal modifications along the corridor including Transit Signal Priority (TSP) upgrades at each intersection, bus lane signal heads, and traffic cameras.
50.03 Traction power supply: substations		This estimate does not include this SCC item.
50.04 Traction power distribution: catenary and third rail		This estimate does not include this SCC item.
50.05 Communications		This SCC includes costs for a dedicated fiber optic line along the entire length of the project along with the safety and security items at the stations including CCTV cameras and emergency telephones.
50.06 Fare collection system and equipment		This SCC included costs for the fare collection ticket vending machines at each of the 10 stations.
50.07 Central Control		This estimate does not include this SCC item.
Construction Subtotal (10 - 50)		
60 ROW, LAND, EXISTING IMPROVEMENTS		
60.01 Purchase or lease of real estate		This SCC includes costs for the anticipated property, permanent easement and temporary easement needs for the project.
60.02 Relocation of existing households and businesses		This estimate does not include this SCC item.
70 VEHICLES (number)		
70.01 Light Rail		This estimate does not include this SCC item.
70.02 Heavy Rail		This estimate does not include this SCC item.
70.03 Commuter Rail		This estimate does not include this SCC item.
70.04 Bus		This SCC includes cost for 7 new BRT vehicles.
70.05 Other		This estimate does not include this SCC item.
70.06 Non-revenue vehicles		This estimate does not include this SCC item.
70.07 Spare parts		This estimate does not include this SCC item.
80 PROFESSIONAL SERVICES (applies to Cats. 10-50)		
80.01 Project Development		This SCC item cost is based on 15% of the construction subtotal
80.02 Engineering (not applicable to Small Starts)		This estimate does not include this SCC item.
80.03 Project Management for Design and Construction		This SCC item cost is based on 8% of the construction subtotal
80.04 Construction Administration & Management		This SCC item cost is based on 7% of the construction subtotal
80.05 Professional Liability and other Non-Construction Insurance		This SCC item cost is based on 1.5% of the construction subtotal
80.06 Legal; Permits; Review Fees by other agencies, cities, etc.		This SCC item cost is based on 1% of the construction subtotal
80.07 Surveys, Testing, Investigation, Inspection		This SCC item cost is based on 1.5% of the construction subtotal
80.08 Start up		This SCC item cost is based on 1% of the construction subtotal
Subtotal (10 - 80)		
90 UNALLOCATED CONTINGENCY		A 10% unallocated contingency value was used for the SCC.
Subtotal (10 - 90)		
100 FINANCE CHARGES		
Total Project Cost (10 - 100)		

1.4.3 Inflation

INFLATION WORKSHEET			(Rev.21, June 2019)							
City of Raleigh			Today's Date		8/19/19					
New Bern Avenue BRT, Raleigh, NC			Yr of Base Year \$		2019					
Application for SSGA			Yr of Revenue Ops		2023					
Insert comments, notes, etc.										
BASE YEAR DOLLARS (X\$000)	Base Yr Dollars	Double-Check Total	2007	2008	2009	2019	2020	2021	2022	2023
10 GUIDEWAY & TRACK ELEMENTS (route miles)	6,574	6,574	0	0	0			2,169	2,169	2,235
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)	4,259	4,259	0	0	0			1,405	1,405	1,448
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	0	0	0	0	0					
40 SITEWORK & SPECIAL CONDITIONS	14,174	14,174	0	0	0			4,677	4,677	4,819
50 SYSTEMS	12,084	12,084	0	0	0			3,988	3,988	4,109
60 ROW, LAND, EXISTING IMPROVEMENTS	91	91	0	0	0		91			
70 VEHICLES (number)	8,083	8,083	0	0	0					8,083
80 PROFESSIONAL SERVICES (applies to Cats. 10-50)	12,583	12,583	0	0	0	2,517	2,517	2,517	2,517	2,517
90 UNALLOCATED CONTINGENCY	5,785	5,785	0	0	0			1,909	1,909	1,967
100 FINANCE CHARGES	0	0	0	0	0	0	0	0	0	0
Total Project Cost (10 - 100)	63,632	63,632	0	0	0	2,517	2,608	16,665	16,665	25,177
Inflation Rate			0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040
Compounded Inflation Factor			1.593	1.532	1.473	1.000	1.040	1.082	1.125	1.170
YEAR OF EXPENDITURE DOLLARS (X\$000)	YOE Dollars		2007	2008	2009	2019	2020	2021	2022	2023
10 GUIDEWAY & TRACK ELEMENTS (route miles)	7,401					0	0	2,346	2,440	2,615
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)	4,795					0	0	1,520	1,581	1,694
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	0					0	0	0	0	0
40 SITEWORK & SPECIAL CONDITIONS	15,958					0	0	5,059	5,261	5,638
50 SYSTEMS	13,605					0	0	4,313	4,486	4,807
60 ROW, LAND, EXISTING IMPROVEMENTS	95					0	95	0	0	0
70 VEHICLES (number)	9,455					0	0	0	0	9,455
80 PROFESSIONAL SERVICES (applies to Cats. 10-50)	13,631					2,517	2,617	2,722	2,831	2,944
90 UNALLOCATED CONTINGENCY	6,513					0	0	2,065	2,147	2,301
100 FINANCE CHARGES	0									
Total Project Cost (10 - 100)	71,453		0	0	0	2,517	2,712	18,025	18,746	29,453

1.4.4 Schedule

Raleigh City Council selected a locally preferred alternative (LPA) for the New Bern Avenue BRT Project in June 2019, and is currently undertaking public engagement activities related to the project. Capital Area Metropolitan Planning Organization (CAMPO) adopted the LPA into the LRTP in August 2019. The City expects to complete these public engagement activities by the end of 2019 and anticipates completing the environmental review process by January 2020, receiving a Small Starts Grant Agreement in October 2020, and opening the New Bern Avenue BRT Project for revenue service in October 2023.

SCHEDULE		(Rev.21, June 2019)						
City of Raleigh	Today's Date	8/19/19						
New Bern Avenue BRT, Raleigh, NC	Yr of Base Year \$	2019						
Application for SSGA	Yr of Revenue Ops	2023						
Insert comments, notes, etc.	Start Date	End Date	2018	2019	2020	2021	2022	2023
10 GUIDEWAY & TRACK ELEMENTS (5.39 route miles)	03/01/21	06/01/23						
20 STATIONS, STOPS, TERMINALS, INTERMODAL (10)	03/01/21	06/01/23						
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS								
40 SITEWORK & SPECIAL CONDITIONS	03/01/21	06/01/23						
50 SYSTEMS	03/01/21	06/01/23						
60 ROW, LAND, EXISTING IMPROVEMENTS	12/31/19	12/31/20						
70 VEHICLES (7)	04/01/23	08/01/23						
80 PROFESSIONAL SERVICES (applies to Cats. 10-50)	05/28/19	12/31/23						
90 UNALLOCATED CONTINGENCY	03/01/21	06/01/23						
100 FINANCE CHARGES (CC Only)								
REVENUE OPERATIONS	10/01/23							

1.4.6 Funding Sources by Category

FUNDING SOURCES BY CATEGORY													(Rev.21, June 2019)	
City of Raleigh											Today's Date 8/19/19			
New Bern Avenue BRT, Raleigh, NC														
Application for SSGA														
	Cost		Funding Summary			Federal Sources					Local Sources			
	YOE Cost (X000)	Double-check Total	Federal 5309 Small Starts Funds	Federal Other Funds	Local Funds	Federal 5309 Small Starts	CMAQ Funds	Other	Other	Other	Wake Transit Tax Proceeds	City of Raleigh (Bonds)	City of Raleigh (General Funds)	
10 GUIDEWAY & TRACK ELEMENTS (route miles)	7,401	7,475	3,667	63	3,745	3,667	63				3,404	325	16	
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)	4,795	4,843	2,375	41	2,426	2,375	41				2,205	211	10	
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	0	0	0	0	0	0	0				0	0	0	
40 SITEWORK & SPECIAL CONDITIONS	15,958	16,117	7,906	136	8,075	7,906	136				7,339	702	34	
50 SYSTEMS	13,605	13,741	6,741	116	6,884	6,741	116				6,257	598	29	
60 ROW, LAND, EXISTING IMPROVEMENTS	95	96	47	1	48	47	1				44	4	0	
70 VEHICLES (number)	9,455	8,837	4,335	75	4,427	4,335	75				4,024	385	19	
80 PROFESSIONAL SERVICES (applies to Cats. 10-50)	13,631	13,767	6,753	116	6,897	6,753	116				6,269	599	29	
90 UNALLOCATED CONTINGENCY	6,513	6,578	3,227	56	3,295	3,227	56				2,995	286	14	
100 FINANCE CHARGES	0	0	0	0	0	0	0				0	0	0	
Total Project Cost (10 - 100)	71,453	71,453	35,051	605	35,798	35,051	605	0	0	0	32,536	3,111	151	
Percentage of Total Project Cost	100%		49.1%	0.8%	50.1%	49.1%	0.8%	0.0%	0.0%	0.0%	45.5%	4.4%	0.2%	
			49.1%	50.9%										
			100.00%											

1.4.7 Funding Sources by Year

FUNDING SOURCES BY YEAR												
											(Rev.21, June 2019)	
Insert Project Sponsor's Name here											Today's Date 6/29/19	
Insert Project Name and Location												
Insert Current Phase (e.g. Applic. for SSGA, Construction, Rev Ops)												
	Total, All Years		2007	2008	2009	2017	2018	2019	2020	2021	2022	2023
Total Project Cost In YOE Dollars Below insert funding sources and amounts for each year.	71,453	double check	0	0	0	0	0	2,517	2,712	18,025	18,746	29,453
Federal 5309 Small Starts	35,051	35,051						0	0	11,684	11,684	11,684
Local	35,798	35,798						2,517	2,511	6,140	6,861	17,770
Federal Other	605	605						0	202	202	202	0
Total Project Cost (10 - 100)	71,453	71,453	0	0	0	0	0	2,517	2,712	18,025	18,746	29,453

2 PROJECT JUSTIFICATION CRITERIA

The following presents the information necessary to support the project justification ratings.

2.1 MOBILITY IMPROVEMENTS, COST EFFECTIVENESS, AND CONGESTION RELIEF

The estimated ratings for the Mobility Improvements, Cost Effectiveness, and Congestion Relief criteria based on the FTA guidance are presented in Table 2 and the reporting template on the following page. The values used for each rating reflect an average of current and horizon year (2045) travel forecasts.

Table 2 Mobility Improvements, Cost Effectiveness, and Congestion Relief Estimated Ratings

Measure	Value Used in Rating		Estimated Rating
Mobility Improvements	Annual Linked trips	2,217,114	Low
Cost Effectiveness	Annualized Federal Share of project per annual linked trip	\$1.35	Medium-High
Congestion Relief	New Weekday Linked Transit Trips	1,312	Medium-Low

2.2 ENVIRONMENTAL BENEFITS

The estimated rating for the New Bern Avenue BRT Project's Environmental Benefits criterion based on FTA guidance is shown in Table 3; the FTA Environmental Benefits template is presented on pages 25-29.

Table 3 Environmental Benefits Estimated Rating

Measure	Value Used in Rating		Estimated Rating
Environmental Benefits	Ratio of environmental benefits to annualized Federal share of project	36.8	High

SMALL STARTS MOBILITY, COST-EFFECTIVENESS, AND CONGESTION RELIEF TEMPLATE	
PROJECT NAME:	Wake Bus Rapid Transit: New Bern Avenue Project

Mobility Improvements				
Line	Item	Values		Source/Calculation
		Current Year (2019)	Horizon (20 Years)	
1	Annual linked trips on the project with double weight for trips by transit-dependent persons	1,255,410	3,178,818	Travel Forecasts Template, Line 7a + 2 * Line 7b
2	Value used in rating	2,217,114		If a 10- or 20-year horizon is used: 50 percent * Line 1 current year value + 50 percent * Line 1 horizon year value If no horizon year is used: Line 1 current year value
		LOW		

Cost Effectiveness				
Line	Item	Values		Source/Calculation
		Current Year (2019)	Horizon (20 Years)	
3	Annualized Federal share of project capital cost (constant 2017 dollars)	\$1,532,462	\$1,532,462	Source: SCC Build Annualized worksheet
4	Annual linked trips on the project	784,548	2,029,968	Travel Forecasts Template, Line 8a
5	Annualized Federal share of the project per annual linked trip on the project	\$1.95	\$0.75	Line 6 / Line 5
6	Value used in rating	\$1.35		If a 10- or 20-year horizon is used: 50 percent * Line 7 current year value + 50 percent * Line 7 horizon year value If no horizon year is used: Line 7 current year value
		MEDIUM-HIGH		

Congestion Relief				
Line	Item	Values		Source/Calculation
		Current Year (2019)	Horizon (20 Years)	
7	New Weekday Linked Transit Trips	1,083	1,540	Travel Forecasts Template, Line 9
8	Value used in rating	1,312		If a 10- or 20-year horizon is used: 50 percent * Line 7 current year value + 50 percent * Line 7 horizon year value If no horizon year is used: Line 7 current year value
		MEDIUM-LOW		

SMALL STARTS ENVIRONMENTAL BENEFITS TEMPLATE	
PROJECT NAME:	Wake Bus Rapid Transit: New Bern Avenue Project

Attainment Status			
Line	Item	Values	Source/Calculation
1	Regional air quality attainment status, carbon monoxide (CO)	Attainment	Source: EPA Green Book
2	Regional air quality attainment status, nitrogen dioxide (NO ₂)	Attainment	
3	Regional air quality attainment status, ozone (O ₃) (2008 8-hour standard)	Maintenance	
4	Regional air quality attainment status, particulate matter (PM _{2.5}) (2006 standard)	Attainment	

ADDITIONAL ENVIRONMENTAL BENEFITS INPUTS REQUIRED FOR WARRANTED SMALL STARTS PROJECTS ONLY			
Line	Item	Values	Source/Calculation
A	Existing Annual Transit Ridership in the Corridor Today		Input by project sponsor
B	Percentage Change in Corridor Annual Transit Vehicle Hours That Would Result from Implementation of the Proposed Project		Input by project sponsor
C	Elasticity Factor		TCRP Report 95, Traveler Response to Transportation System Changes: Transit Scheduling and Frequency (2004)
D	Estimated Increase in Annual Project Ridership		Line A * Line B * Line C
E	Average share of transit users that previously drove		Factor based on data from past projects in the CIG program
F	Estimated new transit ridership coming from autos		Line D * Line E
G	Average auto occupancy factor		Nation-wide average for work trips from the 2009 National Household Travel Survey
H	Estimated decrease (increase) in auto trips		Line F / Line G
I	Project Length		From Project Description Template
J	Average trip length factor		Factor based on data from past projects in the CIG program
K	Estimated decrease (increase) in Annual Auto Vehicle Miles Travelled		Line H * Line I * Line J

Summary Results				
		Current Year (2019)	Horizon (20 Years)	
5	Value of environmental benefits	\$572,414	\$556,861	Sum of lines 19, 30, 41, 52, 63, 74, 85 and 96 for current and applicable (if any) horizon
6	Annualized Federal share of project	\$1,532,462	\$1,532,462	Mobility and Cost Effectiveness Template, Line 3
7	Ratio of environmental benefits to annualized Federal share of project	37.4%	36.3%	Line 5 / Line 6
8	Value used in rating	36.8%		If a 10- or 20-year horizon is being used: 50 percent * Line 7 current year value + 50 percent * Line 7 horizon year value If no horizon year is being used: Line 7 current year value
		HIGH		

SMALL STARTS ENVIRONMENTAL BENEFITS TEMPLATE (page 2)
VALUE OF BENEFITS BY FACTOR

Air Quality: Carbon Monoxide (CO)																
Line	Mode	Current Year					Horizon - 10 Years					Horizon - 20 Years				
		VMT Decrease (Increase)	Conversion Factor: Emissions (kg) / VMT	Emissions Decrease (Increase) (kg)	Monetization Factor (\$ / kg)	Value of Improvement [1]	VMT Decrease (Increase)	Conversion Factor: Emissions (kg) / VMT	Emissions Decrease (Increase) (kg)	Monetization Factor (\$ / kg)	Value of Improvement [1]	VMT Decrease (Increase)	Conversion Factor: Emissions (kg) / VMT	Emissions Decrease (Increase) (kg)	Monetization Factor (\$ / kg)	Value of Improvement [1]
9	Automobile	2,610,387	0.01677	43,776.19	\$0.08	\$3,502.10	---	0.01146	---	\$0.08	---	2,984,679	0.01026	30,622.81	\$0.08	\$2,449.82
10	Diesel Bus	167,921	0.00583	978.98	\$0.08	\$78.32	---	0.00326	---	\$0.08	---	167,921	0.00289	485.29	\$0.08	\$38.82
11	Hybrid Bus	0	0.00583	0.00	\$0.08	\$0.00	---	0.00326	---	\$0.08	---	0	0.00289	0.00	\$0.08	\$0.00
12	CNG Bus	(355,007)	0.03962	(14,065.36)	\$0.08	(\$1,125.23)	---	0.02030	---	\$0.08	---	(355,007)	0.01716	(6,091.91)	\$0.08	(\$487.35)
13	Electric Bus	0	0.00645	0.00	\$0.08	\$0.00	---	0.00539	---	\$0.08	---	0	0.00504	0.00	\$0.08	\$0.00
14	Heavy Rail	0	0.00706	0.00	\$0.08	\$0.00	---	0.00685	---	\$0.08	---	0	0.00673	0.00	\$0.08	\$0.00
15	Light Rail / Streetcar	0	0.01051	0.00	\$0.08	\$0.00	---	0.01020	---	\$0.08	---	0	0.01001	0.00	\$0.08	\$0.00
16	Commuter Rail - New diesel locomotive or DMU	0	0.01680	0.00	\$0.08	\$0.00	---	0.01680	---	\$0.08	---	0	0.01680	0.00	\$0.08	\$0.00
17	Commuter Rail - Used diesel locomotive	0	0.01680	0.00	\$0.08	\$0.00	---	0.01680	---	\$0.08	---	0	0.01680	0.00	\$0.08	\$0.00
18	Commuter Rail - Electric or EMU	0	0.01281	0.00	\$0.08	\$0.00	---	0.01243	---	\$0.08	---	0	0.01219	0.00	\$0.08	\$0.00
19	TOTAL CHANGE	2,423,301	---	30,689.80	---	\$2,455.18	---	---	---	---	---	2,797,593	---	25,016.18	---	\$2,001.29

Air Quality: Mono-Nitrogen Oxides (NO _x)																
Line	Mode	Current Year					Horizon - 10 Years					Horizon - 20 Years				
		VMT Decrease (Increase)	Conversion Factor: Emissions (kg) / VMT	Emissions Decrease (Increase) (kg)	Monetization Factor (\$ / kg)	Value of Improvement [1]	VMT Decrease (Increase)	Conversion Factor: Emissions (kg) / VMT	Emissions Decrease (Increase) (kg)	Monetization Factor (\$ / kg)	Value of Improvement [1]	VMT Decrease (Increase)	Conversion Factor: Emissions (kg) / VMT	Emissions Decrease (Increase) (kg)	Monetization Factor (\$ / kg)	Value of Improvement [1]
20	Automobile	2,610,387	0.00091	2,375.45	\$12.96	\$30,785.86	---	0.00028	---	\$15.66	---	2,984,679	0.00020	596.94	\$16.20	\$9,670.36
21	Diesel Bus	167,921	0.00867	1,455.87	\$12.96	\$18,868.10	---	0.00208	---	\$15.66	---	167,921	0.00114	191.43	\$16.20	\$3,101.16
22	Hybrid Bus	0	0.00867	0.00	\$12.96	\$0.00	---	0.00208	---	\$15.66	---	0	0.00114	0.00	\$16.20	\$0.00
23	CNG Bus	(355,007)	0.00384	(1,363.23)	\$12.96	(\$17,667.40)	---	0.00341	---	\$15.66	---	(355,007)	0.00335	(1,189.27)	\$16.20	(\$19,266.21)
24	Electric Bus	0	0.00583	0.00	\$18.36	\$0.00	---	0.00439	---	\$22.95	---	0	0.00398	0.00	\$23.76	\$0.00
25	Heavy Rail	0	0.00638	0.00	\$18.36	\$0.00	---	0.00558	---	\$22.95	---	0	0.00532	0.00	\$23.76	\$0.00
26	Light Rail / Streetcar	0	0.00950	0.00	\$18.36	\$0.00	---	0.00831	---	\$22.95	---	0	0.00791	0.00	\$23.76	\$0.00
27	Commuter Rail - New diesel locomotive or DMU	0	0.01320	0.00	\$12.96	\$0.00	---	0.01320	---	\$15.66	---	0	0.01320	0.00	\$16.20	\$0.00
28	Commuter Rail - Used diesel locomotive	0	0.09300	0.00	\$12.96	\$0.00	---	0.04300	---	\$15.66	---	0	0.02090	0.00	\$16.20	\$0.00
29	Commuter Rail - Electric or EMU	0	0.01157	0.00	\$18.36	\$0.00	---	0.01012	---	\$22.95	---	0	0.00964	0.00	\$23.76	\$0.00
30	TOTAL CHANGE	2,423,301	---	2,468.10	---	\$31,986.56	---	---	---	---	---	2,797,593	---	(400.91)	---	(\$6,494.69)

SMALL STARTS ENVIRONMENTAL BENEFITS TEMPLATE (page 3)

Air Quality: Volatile Organic Compounds (VOCs)																
Line	Mode	Current Year					Horizon - 10 Years					Horizon - 20 Years				
		VMT Decrease (Increase)	Conversion Factor: Emissions (kg) / VMT	Emissions Decrease (Increase) (kg)	Monetization Factor (\$ / kg)	Value of Improvement [1]	VMT Decrease (Increase)	Conversion Factor: Emissions (kg) / VMT	Emissions Decrease (Increase) (kg)	Monetization Factor (\$ / kg)	Value of Improvement [1]	VMT Decrease (Increase)	Conversion Factor: Emissions (kg) / VMT	Emissions Decrease (Increase) (kg)	Monetization Factor (\$ / kg)	Value of Improvement [1]
31	Automobile	2,610,387	0.00060	1,566.23	\$3.78	\$5,920.36	---	0.00027	---	\$4.69	---	2,984,679	0.00021	626.78	\$4.86	\$3,046.16
32	Diesel Bus	167,921	0.00073	122.58	\$3.78	\$463.36	---	0.00024	---	\$4.69	---	167,921	0.00016	26.87	\$4.86	\$130.58
33	Hybrid Bus	0	0.00073	0.00	\$3.78	\$0.00	---	0.00024	---	\$4.69	---	0	0.00016	0.00	\$4.86	\$0.00
34	CNG Bus	(355,007)	0.00146	(518.31)	\$3.78	(\$1,959.21)	---	0.00115	---	\$4.69	---	(355,007)	0.00111	(394.06)	\$4.86	(\$1,915.12)
35	Electric Bus	0	0.00012	0.00	\$3.78	\$0.00	---	0.00010	---	\$4.69	---	0	0.00010	0.00	\$4.86	\$0.00
36	Heavy Rail	0	0.00013	0.00	\$3.78	\$0.00	---	0.00013	---	\$4.69	---	0	0.00013	0.00	\$4.86	\$0.00
37	Light Rail / Streetcar	0	0.00019	0.00	\$3.78	\$0.00	---	0.00019	---	\$4.69	---	0	0.00020	0.00	\$4.86	\$0.00
38	Commuter Rail - New diesel locomotive or DMU	0	0.00055	0.00	\$3.78	\$0.00	---	0.00055	---	\$4.69	---	0	0.00055	0.00	\$4.86	\$0.00
39	Commuter Rail - Used diesel locomotive	0	0.00436	0.00	\$3.78	\$0.00	---	0.00126	---	\$4.69	---	0	0.00044	0.00	\$4.86	\$0.00
40	Commuter Rail - Electric or EMU	0	0.00024	0.00	\$3.78	\$0.00	---	0.00023	---	\$4.69	---	0	0.00024	0.00	\$4.86	\$0.00
41	TOTAL CHANGE	2,423,301	---	1,170.50	---	\$4,424.51	---	---	---	---	---	2,797,593	---	259.59	---	\$1,261.62

Air Quality: Particulate Matter (PM _{2.5})																
Line	Mode	Current Year					Horizon - 10 Years					Horizon - 20 Years				
		VMT Decrease (Increase)	Conversion Factor: Emissions (kg) / VMT	Emissions Decrease (Increase) (kg)	Monetization Factor (\$ / kg)	Value of Improvement [1]	VMT Decrease (Increase)	Conversion Factor: Emissions (kg) / VMT	Emissions Decrease (Increase) (kg)	Monetization Factor (\$ / kg)	Value of Improvement [1]	VMT Decrease (Increase)	Conversion Factor: Emissions (kg) / VMT	Emissions Decrease (Increase) (kg)	Monetization Factor (\$ / kg)	Value of Improvement [1]
42	Automobile	2,610,387	0.000010	26.10	\$680.40	\$17,761.07	---	0.000010	---	\$861.30	---	2,984,679	0.000010	29.85	\$896.40	\$26,754.66
43	Diesel Bus	167,921	0.000480	80.60	\$680.40	\$54,841.53	---	0.000090	---	\$861.30	---	167,921	0.000030	5.04	\$896.40	\$4,515.72
44	Hybrid Bus	0	0.000480	0.00	\$680.40	\$0.00	---	0.000090	---	\$861.30	---	0	0.000030	0.00	\$896.40	\$0.00
45	CNG Bus	(355,007)	0.000010	(3.55)	\$680.40	(\$2,415.47)	---	0.000010	---	\$861.30	---	(355,007)	0.000010	(3.55)	\$896.40	(\$3,182.28)
46	Electric Bus	0	0.000378	0.00	\$561.60	\$0.00	---	0.000313	---	\$688.50	---	0	0.000299	0.00	\$712.80	\$0.00
47	Heavy Rail	0	0.000413	0.00	\$561.60	\$0.00	---	0.000398	---	\$688.50	---	0	0.000399	0.00	\$712.80	\$0.00
48	Light Rail / Streetcar	0	0.000615	0.00	\$561.60	\$0.00	---	0.000593	---	\$688.50	---	0	0.000593	0.00	\$712.80	\$0.00
49	Commuter Rail - New diesel locomotive or DMU	0	0.000190	0.00	\$680.40	\$0.00	---	0.000190	---	\$861.30	---	0	0.000190	0.00	\$896.40	\$0.00
50	Commuter Rail - Used diesel locomotive	0	0.004600	0.00	\$680.40	\$0.00	---	0.001330	---	\$861.30	---	0	0.000470	0.00	\$896.40	\$0.00
51	Commuter Rail - Electric or EMU	0	0.000750	0.00	\$561.60	\$0.00	---	0.000722	---	\$688.50	---	0	0.000723	0.00	\$712.80	\$0.00
52	TOTAL CHANGE	2,423,301	---	103.16	---	\$70,187.14	---	---	---	---	---	2,797,593	---	31.33	---	\$28,088.10

SMALL STARTS ENVIRONMENTAL BENEFITS TEMPLATE (page 4)

Greenhouse Gases (Carbon Dioxide Equivalent [CO ₂ e])																
Line	Mode	Current Year					Horizon - 10 Years					Horizon - 20 Years				
		VMT Decrease (Increase)	Conversion Factor: Emissions (ton) / VMT	Emissions Decrease (Increase) (tons)	Monetization Factor (\$ / ton)	Value of Improvement [1]	VMT Decrease (Increase)	Conversion Factor: Emissions (ton) / VMT	Emissions Decrease (Increase) (tons)	Monetization Factor (\$ / ton)	Value of Improvement [1]	VMT Decrease (Increase)	Conversion Factor: Emissions (ton) / VMT	Emissions Decrease (Increase) (tons)	Monetization Factor (\$ / ton)	Value of Improvement [1]
53	Automobile	2,610,387	0.000532	1,388.73	\$38.00	\$52,771.58	---	0.000434	---	\$38.00	---	2,984,679	0.000397	1,184.92	\$38.00	\$45,026.87
54	Diesel Bus	167,921	0.003319	557.33	\$38.00	\$21,178.48	---	0.002854	---	\$38.00	---	167,921	0.002721	456.91	\$38.00	\$17,362.66
55	Hybrid Bus	0	0.002655	0.00	\$38.00	\$0.00	---	0.002283	---	\$38.00	---	0	0.002177	0.00	\$38.00	\$0.00
56	CNG Bus	(355,007)	0.002935	(1,041.94)	\$38.00	(\$39,593.89)	---	0.002524	---	\$38.00	---	(355,007)	0.002406	(854.15)	\$38.00	(\$32,457.55)
57	Electric Bus	0	0.002934	0.00	\$38.00	\$0.00	---	0.002441	---	\$38.00	---	0	0.002303	0.00	\$38.00	\$0.00
58	Heavy Rail	0	0.003211	0.00	\$38.00	\$0.00	---	0.003106	---	\$38.00	---	0	0.003073	0.00	\$38.00	\$0.00
59	Light Rail / Streetcar	0	0.004779	0.00	\$38.00	\$0.00	---	0.004623	---	\$38.00	---	0	0.004574	0.00	\$38.00	\$0.00
60	Commuter Rail - New diesel locomotive or DMU	0	0.007970	0.00	\$38.00	\$0.00	---	0.007970	---	\$38.00	---	0	0.007970	0.00	\$38.00	\$0.00
61	Commuter Rail - Used diesel locomotive	0	0.007970	0.00	\$38.00	\$0.00	---	0.007970	---	\$38.00	---	0	0.007970	0.00	\$38.00	\$0.00
62	Commuter Rail - Electric or EMU	0	0.005821	0.00	\$38.00	\$0.00	---	0.005632	---	\$38.00	---	0	0.005572	0.00	\$38.00	\$0.00
63	TOTAL CHANGE	2,423,301	---	904.11	---	\$34,356.18	---	---	---	---	---	2,797,593	---	787.68	---	\$29,931.98

Energy Use (British Thermal Units [Btu])																
Line	Mode	Current Year					Horizon - 10 Years					Horizon - 20 Years				
		VMT Decrease (Increase)	Conversion Factor: Energy Use (million Btu) / VMT	Energy Use Decrease (Increase) (million Btu)	Monetization Factor (\$ / million Btu)	Value of Improvement [1]	VMT Decrease (Increase)	Conversion Factor: Energy Use (million Btu) / VMT	Energy Use Decrease (Increase) (million Btu)	Monetization Factor (\$ / million Btu)	Value of Improvement [1]	VMT Decrease (Increase)	Conversion Factor: Energy Use (million Btu) / VMT	Energy Use Decrease (Increase) (million Btu)	Monetization Factor (\$ / million Btu)	Value of Improvement [1]
64	Automobile	2,610,387	0.007559	19,731.92	\$1.72	\$33,938.89	---	0.006167	---	\$1.72	---	2,984,679	0.005633	16,812.70	\$1.72	\$28,917.84
65	Diesel Bus	167,921	0.041436	6,957.96	\$1.56	\$10,854.42	---	0.035635	---	\$1.56	---	167,921	0.033978	5,705.61	\$1.56	\$8,900.75
66	Hybrid Bus	0	0.033149	0.00	\$1.56	\$0.00	---	0.028508	---	\$1.56	---	0	0.027182	0.00	\$1.56	\$0.00
67	CNG Bus															
68	Electric Bus															
69	Heavy Rail															
70	Light Rail / Streetcar															
71	Commuter Rail - New diesel locomotive or DMU	0	0.096138	0.00	\$1.56	\$0.00	---	0.096138	---	\$1.56	---	0	0.096138	0.00	\$1.56	\$0.00
72	Commuter Rail - Used diesel locomotive	0	0.096138	0.00	\$1.56	\$0.00	---	0.096138	---	\$1.56	---	0	0.096138	0.00	\$1.56	\$0.00
73	Commuter Rail - Electric or EMU															
74	TOTAL CHANGE	2,778,308	---	26,689.87	---	\$44,793.31	---	---	---	---	---	3,152,600	---	22,518.30	---	\$37,818.59

SMALL STARTS ENVIRONMENTAL BENEFITS TEMPLATE (page 5)

Safety: Fatalities																
Line	Mode	Current Year					Horizon - 10 Years					Horizon - 20 Years				
		VTM Decrease (Increase)	Conversion Factor: Fatalities / VMT	Fatality Decrease (Increase)	Monetization Factor (\$ / fatality)	Value of Improvement [1]	VTM Decrease (Increase)	Conversion Factor: Fatalities / VMT	Fatality Decrease (Increase)	Monetization Factor (\$ / fatality)	Value of Improvement [1]	VTM Decrease (Increase)	Conversion Factor: Fatalities / VMT	Fatality Decrease (Increase)	Monetization Factor (\$ / fatality)	Value of Improvement [1]
75	Automobile	2,610,387	0.000000013	0.03	\$9,100,000	\$308,808.78	---	0.000000013	---	\$9,100,000	---	2,984,679	0.000000013	0.04	\$9,100,000	\$353,087.53
76	Diesel Bus	167,921	0.000000004	0.00	\$9,100,000	\$6,112.31	---	0.000000004	---	\$9,100,000	---	167,921	0.000000004	0.00	\$9,100,000	\$6,112.31
77	Hybrid Bus	0	0.000000004	0.00	\$9,100,000	\$0.00	---	0.000000004	---	\$9,100,000	---	0	0.000000004	0.00	\$9,100,000	\$0.00
78	CNG Bus	(355,007)	0.000000004	(0.00)	\$9,100,000	(\$12,922.24)	---	0.000000004	---	\$9,100,000	---	(355,007)	0.000000004	(0.00)	\$9,100,000	(\$12,922.24)
79	Electric Bus	0	0.000000004	0.00	\$9,100,000	\$0.00	---	0.000000004	---	\$9,100,000	---	0	0.000000004	0.00	\$9,100,000	\$0.00
80	Heavy Rail	0	0.000000007	0.00	\$9,100,000	\$0.00	---	0.000000007	---	\$9,100,000	---	0	0.000000007	0.00	\$9,100,000	\$0.00
81	Light Rail / Streetcar	0	0.000000009	0.00	\$9,100,000	\$0.00	---	0.000000009	---	\$9,100,000	---	0	0.000000009	0.00	\$9,100,000	\$0.00
82	Commuter Rail - New diesel locomotive or DMU	0	0.000000012	0.00	\$9,100,000	\$0.00	---	0.000000012	---	\$9,100,000	---	0	0.000000012	0.00	\$9,100,000	\$0.00
83	Commuter Rail - Used diesel locomotive	0	0.000000012	0.00	\$9,100,000	\$0.00	---	0.000000012	---	\$9,100,000	---	0	0.000000012	0.00	\$9,100,000	\$0.00
84	Commuter Rail - Electric or EMU	0	0.000000012	0.00	\$9,100,000	\$0.00	---	0.000000012	---	\$9,100,000	---	0	0.000000012	0.00	\$9,100,000	\$0.00
85	TOTAL CHANGE	2,423,301	---	0.03	---	\$301,998.85	---	---	---	---	---	2,797,593	---	0.04	---	\$346,277.60

Safety: Injuries																
Line	Mode	Current Year					Horizon - 10 Years					Horizon - 20 Years				
		VTM Decrease (Increase)	Conversion Factor: Injuries / VMT	Injury Decrease (Increase)	Monetization Factor (\$ / injury)	Value of Improvement [1]	VTM Decrease (Increase)	Conversion Factor: Injuries / VMT	Injury Decrease (Increase)	Monetization Factor (\$ / injury)	Value of Improvement [1]	VTM Decrease (Increase)	Conversion Factor: Injuries / VMT	Injury Decrease (Increase)	Monetization Factor (\$ / injury)	Value of Improvement [1]
86	Automobile	2,610,387	0.000000195	0.51	\$490,000	\$249,422.48	---	0.000000195	---	\$490,000	---	2,984,679	0.000000195	0.58	\$490,000	\$285,186.08
87	Diesel Bus	167,921	0.000001824	0.31	\$490,000	\$150,080.73	---	0.000001824	---	\$490,000	---	167,921	0.000001824	0.31	\$490,000	\$150,080.73
88	Hybrid Bus	0	0.000001824	0.00	\$490,000	\$0.00	---	0.000001824	---	\$490,000	---	0	0.000001824	0.00	\$490,000	\$0.00
89	CNG Bus	(355,007)	0.000001824	(0.65)	\$490,000	(\$317,290.72)	---	0.000001824	---	\$490,000	---	(355,007)	0.000001824	(0.65)	\$490,000	(\$317,290.72)
90	Electric Bus	0	0.000001458	0.00	\$490,000	\$0.00	---	0.000001458	---	\$490,000	---	0	0.000001458	0.00	\$490,000	\$0.00
91	Heavy Rail	0	0.00000155	0.00	\$490,000	\$0.00	---	0.00000155	---	\$490,000	---	0	0.00000155	0.00	\$490,000	\$0.00
92	Light Rail / Streetcar	0	0.000001696	0.00	\$490,000	\$0.00	---	0.000001696	---	\$490,000	---	0	0.000001696	0.00	\$490,000	\$0.00
93	Commuter Rail - New diesel locomotive or DMU	0	0.000001746	0.00	\$490,000	\$0.00	---	0.000001746	---	\$490,000	---	0	0.000001746	0.00	\$490,000	\$0.00
94	Commuter Rail - Used diesel locomotive	0	0.000001746	0.00	\$490,000	\$0.00	---	0.000001746	---	\$490,000	---	0	0.000001746	0.00	\$490,000	\$0.00
95	Commuter Rail - Electric or EMU	0	0.000001746	0.00	\$490,000	\$0.00	---	0.000001746	---	\$490,000	---	0	0.000001746	0.00	\$490,000	\$0.00
96	TOTAL CHANGE	2,423,301	---	0.17	---	\$82,212.49	---	---	---	---	---	2,797,593	---	0.24	---	\$117,976.10

2.3 LAND USE

The following presents the quantitative FTA Small Starts Land Use Templates and supporting land use documentation for the New Bern Avenue BRT Project corridor, including requested information on:

- Corridor and Station Area Character and Development
- Parking Supply in the Central Business District
- Affordable Housing Provisions
- Pedestrian Facilities and Station Area Development Character

Current and forecast population and employment figures for Wake County and around station areas were drawn from the Triangle Regional Model maintained by the North Carolina Institute for Transportation Research and Education, while housing unit data was derived from the most recent American Community Survey.

The number of affordable housing units reserved for households with a 60 percent AMI or lower was provided by the Triangle J Council of Governments (TJCOG), the regional planning agency for the Raleigh-Durham region. TJCOG collects data on Legally-Binding Affordability Restricted housing units from multiple sources throughout the region, including affordable housing, nonprofits, commercial data providers, and the National Housing Preservation Database. For this effort, TJCOG reviewed the data to eliminate duplicates, exclude units that serve households at above 60 percent of Area Median Income (AMI), and correct apparent errors.

Table 4 provides an overview of the land use in the corridor, as well as proposed rating where applicable based on FTA's breakpoints.

Table 4. New Bern Avenue Project Station Area Land Use Overview

Station Area Characteristics	(Totals within ½-mile radius of stations)	Estimated Rating (if applicable)
Population	12,639	
Average Population Density	2,432	Low
Employment	51,128	Medium-Low
Employment Density	9,838	
Housing Units	4,992	
Legally Binding Affordability Restricted Housing Units	1,228	
Legally Binding Affordability Restricted Housing Units Proportion	7.21	High
Parking Supply (Central Business District)		Estimated Rating (if applicable)
Employees	36,968	
Parking Spaces	26,900	
Parking Spaces per Employee	0.72	Low
Average Cost per Day	\$16.00	Medium-High

Sources: Housing Unit figures are from the American Community Survey, Population and Employment figures from the Triangle Regional Model maintained by the North Carolina Institute for Transportation Research and Education, Affordable Housing Units from Triangle J Council of Governments, Parking Supply figures from the City of Raleigh's Downtown Development and Future Parking Needs Study, and Parking Cost figures derive from 2018 Parkopedia Parking Index.

2.3.1 Quantitative Land Use Templates

SMALL STARTS LAND USE TEMPLATE (QUANTITATIVE DATA)			
PROJECT NAME:	Wake Bus Rapid Transit: New Bern Avenue Project		
Population, Employment and Housing – Metropolitan Area, CBD, and Corridor			
Geographic Area Item	Current Year (2019)	Horizon (20 Years)	Growth (%)
Metropolitan Area			
Total Population	1,685,640	2,826,431	67.7%
Total Employment	852,541	1,534,840	80.0%
Central Business District [see footnote 1]			
Total Employment	36,968	78,742	113.0%
Employment – Percent of Metropolitan Area	4.3%	5.1%	
CBD Land Area (sq. mi.)	0.9	0.9	
Employment Density (e.g., jobs per sq. mi.)	41,075.6	87,491.1	
Corridor			
Total Population	13,952	25,411	82.1%
Total Employment	54,034	98,323	82.0%
Population – Percent of Metropolitan Area	1%	1%	
Employment – Percent of Metropolitan Area	6%	6%	
Corridor Land Area (sq. mi.)	5.9	5.9	
Population Density (persons per sq. mi.)	2,371.7	4,319.6	
Employment Density (jobs per sq. mi.)	9,185.2	16,713.8	
Total - All Counties in which Project Stations are Located			
Housing Units - All Types	411,632		
Housing Units - Legally Binding Affordability Restricted	14,043		
Number of Counties	1		
Total - All Station Areas (1/2-mile radius) [See footnote 2]			
Housing Units - All Types	4,992		
Housing Units - Legally Binding Affordability Restricted	1,228		
Population	12,639	21,829	72.7%
Employment at New Project Stations	51,128	83,696	63.7%
Employment at Existing Stations Along the Line [see footnote 3]			
Land Area (square miles)	5.2	5.2	
Housing Unit Density (units per sq. mi.) - All Types	960.5		
Population Density (persons per sq. mi.)	2,431.9	4,200.1	
Employment Density (persons per sq. mi.)	9,837.5	16,103.9	
Station-Area Share of Legally Binding Affordability Restricted Housing Units	25%		
Share of Housing Units that are Legally Binding Affordability Restricted in the Corridor compared to Share in the Counties			
Proportion in All Station Areas	25%		
Proportion in All Counties in which Project Stations are Located	3%		
Ratio, Proportion in All Station Areas to Proportion in All Counties in which Project Stations are Located	7.21		
Housing Totals for Each County in which Project Stations are Located			
	Current Year		
County 1	County Name:	Wake	
Housing Units - All Types [See footnote 4]	411,632		
Housing Units - Legally Binding Affordability Restricted	14,043		
County 2	County Name:		
Housing Units - All Types			
Housing Units - Legally Binding Affordability Restricted			
County 3	County Name:		
Housing Units - All Types			
Housing Units - Legally Binding Affordability Restricted			
County 4	County Name:		
Housing Units - All Types			
Housing Units - Legally Binding Affordability Restricted			
County 5	County Name:		
Housing Units - All Types			
Housing Units - Legally Binding Affordability Restricted			

SMALL STARTS LAND USE TEMPLATE (QUANTITATIVE DATA) page 2

Housing, Population and Employment for Each Station Area That is Part of the Proposed Project			
	Current Year	Horizon	Growth (%)
Station Area 1 [See footnote 5]			
Station Name:	Edenton Street at Blount Street/New Bern Avenue at Blount Street		
Housing Units - All Types	991		
Population	1,029	6,326	514.8%
Employment	34,544	59,538	72.4%
Land Area (square miles)	0.6	0.6	
Housing Unit Density (units per sq. mi.) - All Types	1,652		
Population Density (persons per sq. mi.)	1,715	10,543	
Employment Density (persons per sq. mi.)	57,573	99,230	
Station Area 2			
Station Name:	Bern Avenue at Bloodworth Street/Edenton Street at Bloodworth Street		
Housing Units - All Types	553		
Population	2,067	2,972	43.8%
Employment	630	3,861	512.9%
Land Area (square miles)	0.4	0.4	
Housing Unit Density (units per sq. mi.) - All Types	1,383		
Population Density (persons per sq. mi.)	5,168	7,430	
Employment Density (persons per sq. mi.)	1,575	9,653	
Station Area 3			
Station Name:	New Bern Avenue at Tarboro Street/Edenton Street at Tarboro Street		
Housing Units - All Types	723		
Population	2,368	2,888	22.0%
Employment	1,570	1,838	17.1%
Land Area (square miles)	0.5	0.5	
Housing Unit Density (units per sq. mi.) - All Types	1,446		
Population Density (persons per sq. mi.)	4,736	5,776	
Employment Density (persons per sq. mi.)	3,140	3,676	
Station Area 4			
Station Name:	New Bern Avenue at Raleigh Boulevard		
Housing Units - All Types	558		
Population	1,565	2,102	34.3%
Employment	441	517	17.2%
Land Area (square miles)	0.5	0.5	
Housing Unit Density (units per sq. mi.) - All Types	1,083		
Population Density (persons per sq. mi.)	3,037	4,079	
Employment Density (persons per sq. mi.)	856	1,003	
Station Area 5			
Station Name:	New Bern Avenue at Clarendon Crescent		
Housing Units - All Types	522		
Population	967	1,517	56.9%
Employment	507	638	25.8%
Land Area (square miles)	0.6	0.6	
Housing Unit Density (units per sq. mi.) - All Types	850		
Population Density (persons per sq. mi.)	1,574	2,469	
Employment Density (persons per sq. mi.)	825	1,039	
Station Area 6			
Station Name:	New Bern Avenue at Luther Road		
Housing Units - All Types	400		
Population	820	1,231	50.1%
Employment	6,396	6,904	7.9%
Land Area (square miles)	0.5	0.5	
Housing Unit Density (units per sq. mi.) - All Types	849		
Population Density (persons per sq. mi.)	1,740	2,612	
Employment Density (persons per sq. mi.)	13,573	14,651	
Station Area 7			
Station Name:	New Bern Avenue at Sunnybrook Road		
Housing Units - All Types	368		
Population	1,793	2,070	15.4%
Employment	3,486	3,965	13.7%
Land Area (square miles)	0.5	0.5	
Housing Unit Density (units per sq. mi.) - All Types	716		
Population Density (persons per sq. mi.)	3,487	4,025	
Employment Density (persons per sq. mi.)	6,779	7,710	

SMALL STARTS LAND USE TEMPLATE (QUANTITATIVE DATA) page 3			
	Current Year	Horizon	Growth (%)
Station Area 8	Station Name: New Bern Avenue at Trawick Road		
Housing Units - All Types	298		
Population	499	791	58.5%
Employment	1,960	3,372	72.0%
Land Area (square miles)	0.6	0.6	
Housing Unit Density (units per sq. mi.) - All Types	477		
Population Density (persons per sq. mi.)	798	1,265	
Employment Density (persons per sq. mi.)	3,134	5,392	
Station Area 9	Station Name: New Bern Avenue at Corporation Parkway		
Housing Units - All Types	247		
Population	615	768	24.9%
Employment	582	1,366	134.7%
Land Area (square miles)	0.4	0.4	
Housing Unit Density (units per sq. mi.) - All Types	603		
Population Density (persons per sq. mi.)	1,502	1,875	
Employment Density (persons per sq. mi.)	1,421	3,335	
Station Area 10	Station Name: New Bern Avenue at New Hope Road		
Housing Units - All Types	332		
Population	916	1,164	27.1%
Employment	1,012	1,697	67.7%
Land Area (square miles)	0.5	0.5	
Housing Unit Density (units per sq. mi.) - All Types	607		
Population Density (persons per sq. mi.)	1,674	2,127	
Employment Density (persons per sq. mi.)	1,849	3,101	

2.3.2 Additional Land Use Documentation

The following sections provide additional information on land uses adjacent to the New Bern Avenue BRT Project, as well as in the greater Raleigh area.

2.3.2.1 Population and Employment Characteristics

The Raleigh metropolitan area is forecast to increase its resident population and employment dramatically in the years ahead. The current population of the metro area is approximately 1.7 million, and is expected to grow 67%, to 2.8 million, in the next 25 years. The number of employees accommodated in the metro area is expected to grow by 80% during the same period, from 850,000 currently to more than 1.5 million by 2045.

Population and employment along the New Bern Avenue BRT Project corridor is expected to exceed these growth rates, with both increasing by 82% over the next 20 years. There are currently nearly 14,000 residents and 55,000 employees within a ½-mile radius of the Project corridor.

The New Bern Avenue BRT Project will provide a direct connection to the largest employment center in the metro area—downtown Raleigh. The downtown area currently accommodates nearly 37,000 employees, but is expected to more than double that figure by 2040 to 78,000 employees in downtown Raleigh.

The maps on the following pages present the employment and population densities of areas adjacent to the New Bern Avenue BRT Project corridor.

Figure 2. Employment Density Map

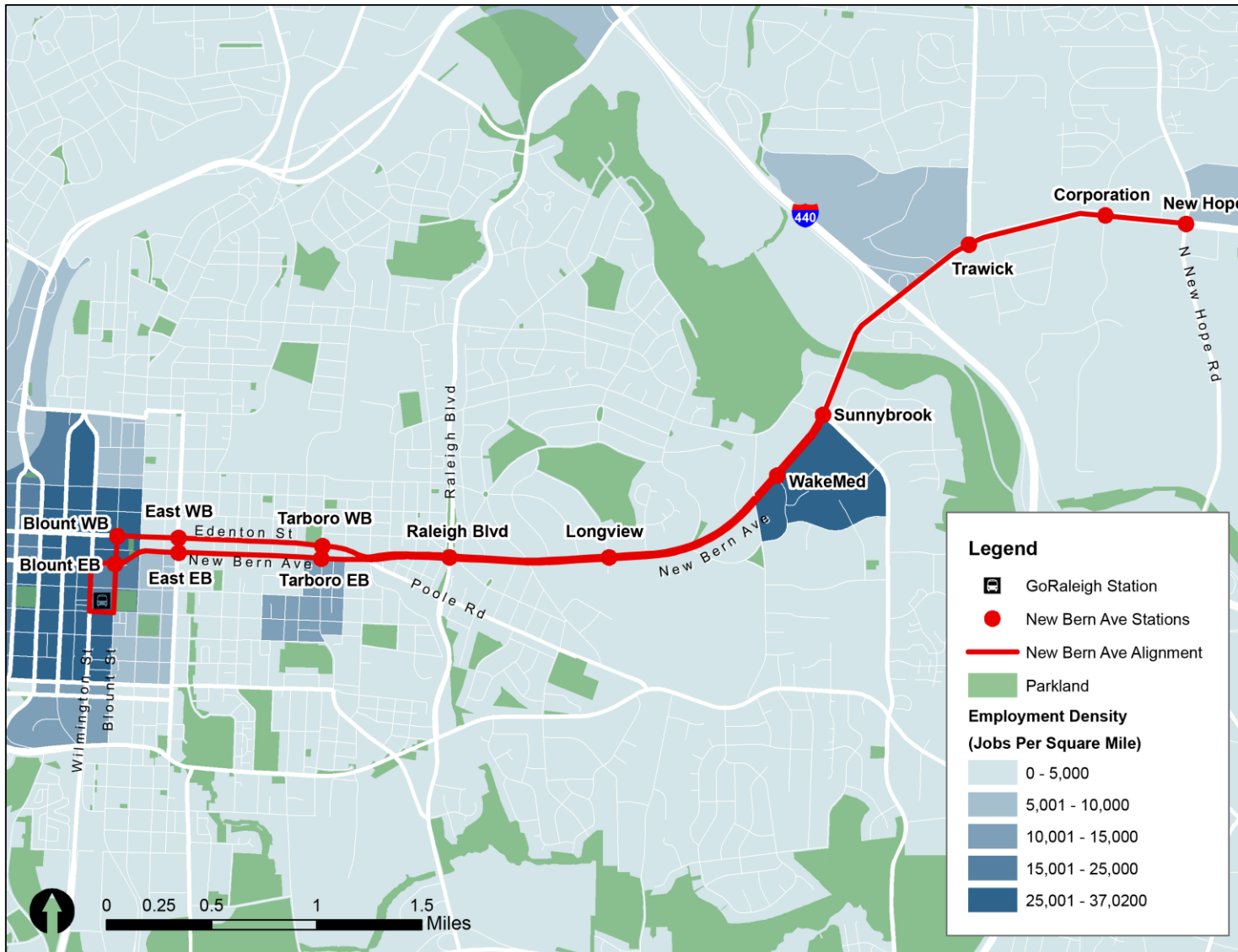
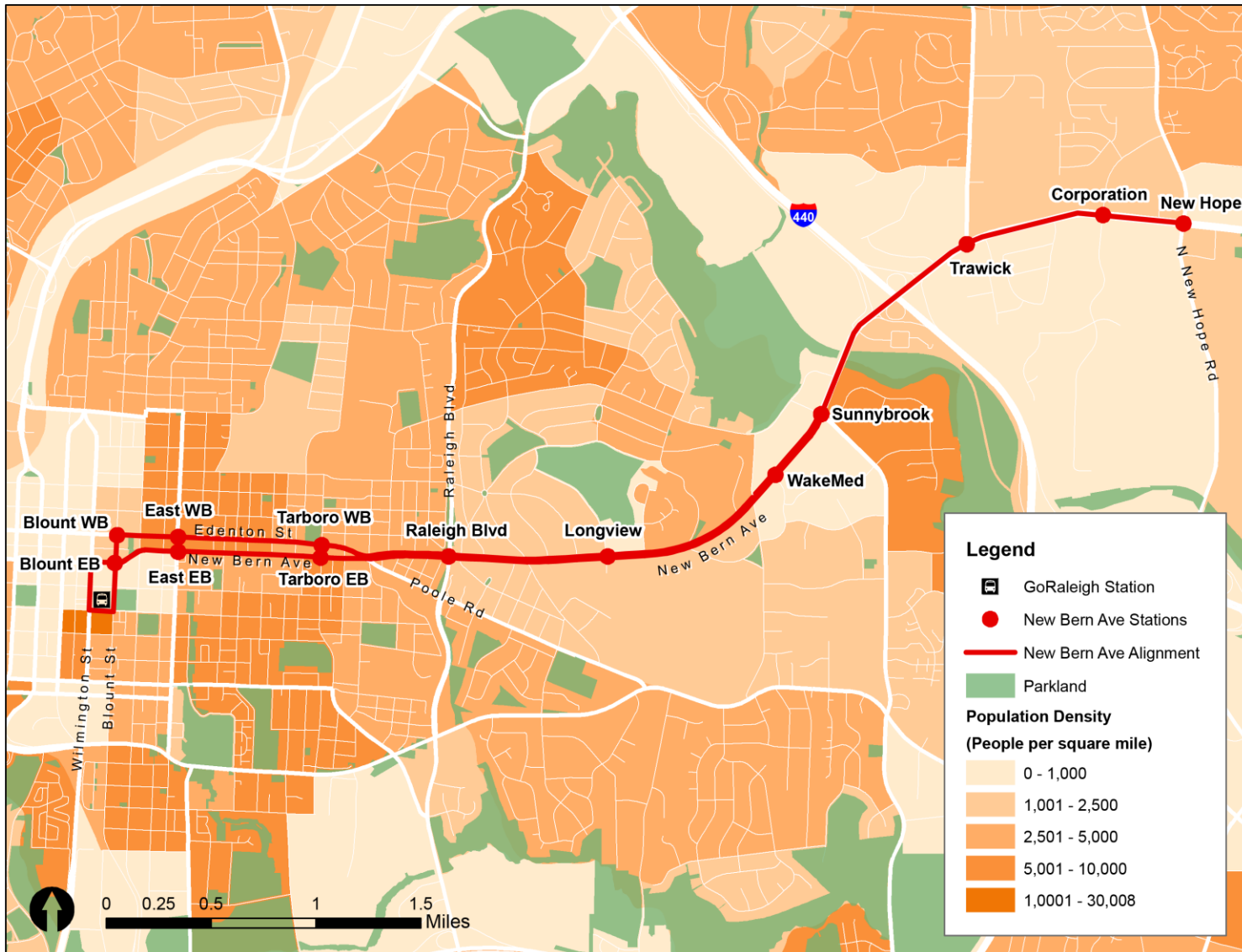


Figure 3. Population Density Map



2.3.2.2 Major Trip Generators

The following trip generators are situated along the New Bern Avenue BRT Project corridor.

- Downtown Raleigh – The central business district of Raleigh is rapidly growing, with more than 36,900 in total employment.
- Wake County Justice Center – An 11-story building housing the County Clerk of Superior Court, the County Attorney, and County Courthouse.
- Numerous city and state government centers are located at the western terminus of the proposed BRT alignment, such as: North Carolina State Capitol, North Carolina Department of Labor, North Carolina General Assembly, Terry Sanford Federal Building, North Carolina State Bar, and other state offices.
- Six museums in the downtown portion of the corridor: North Carolina Museum of History, North Carolina Museum of Natural Sciences, City of Raleigh Museum, Pope House Museum, Norwood House, and Marbles Kids Museum.
- GoRaleigh Transit Station – Serves local and regional buses as well as the R-line, a free downtown circulator.
- Richard B. Harrison Community Library – A branch of the Wake County library system.
- WakeMed’s Raleigh campus – Founded in 1961, the medical campus employs nearly 8,500 employees.
- St. Augustine’s University – A historical black college and university (HBCU).
- Department of Motor Vehicles – The Division of Motor Vehicles’ headquarters is a major employer and activity hub along the corridor.

2.3.2.3 Existing Station Area Development Character

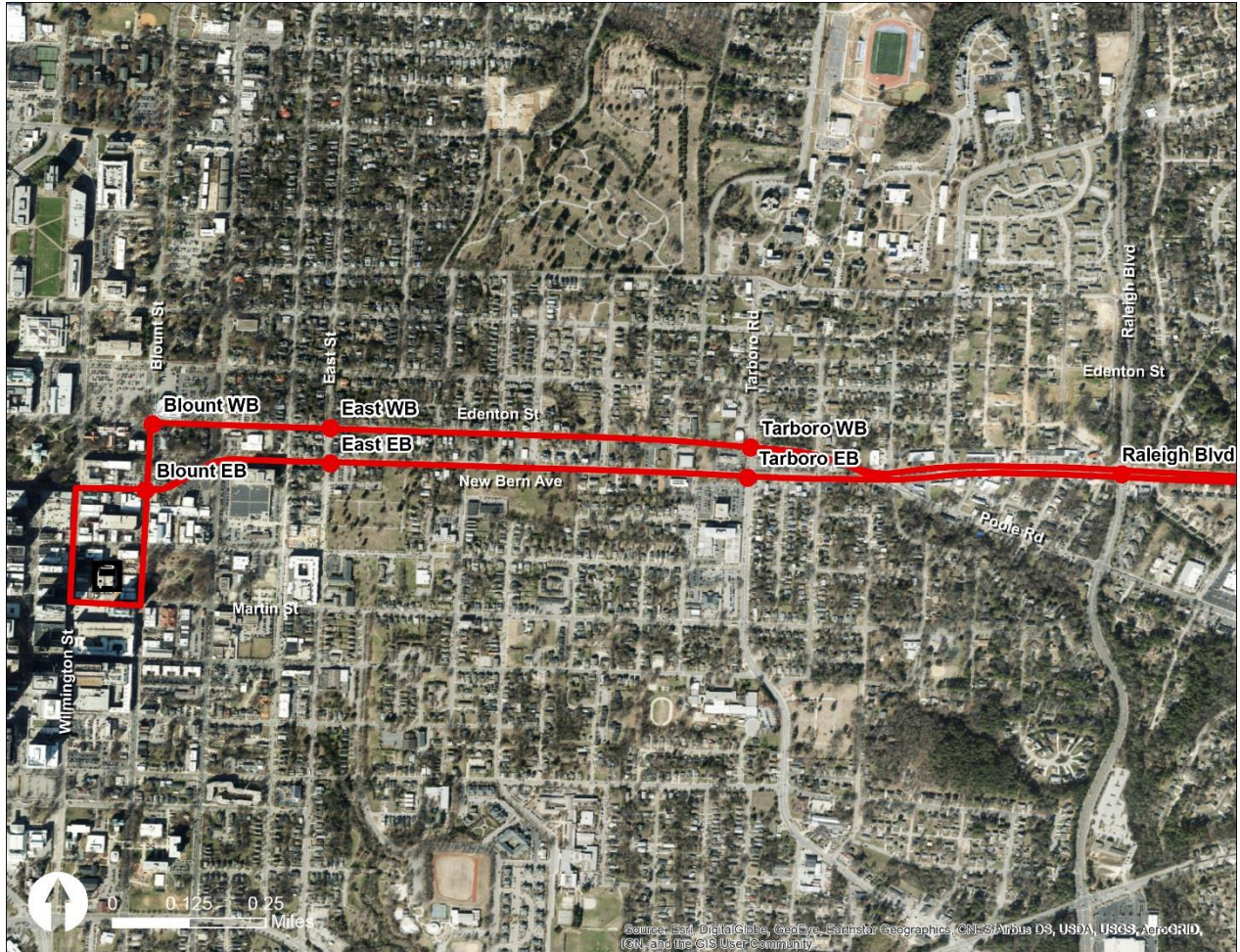
The New Bern Avenue BRT Project travels from the GoRaleigh Transit Station to the WakeMed campus and continues eastbound to New Hope Road. There are four principal segments of the route: Historic Urban, Suburban Residential, Medical Campus, and Western Shopping.

The characteristics of existing development around the New Bern Avenue BRT Project station areas vary substantially, from dense employment centers in downtown Raleigh, to single-family residential, to medium-density mixed-use areas by the WakeMed Raleigh Campus, and then to medium-density shopping center development.

The following describes the development and land use features that are characteristic of each of the New Bern Avenue BRT Project segments.

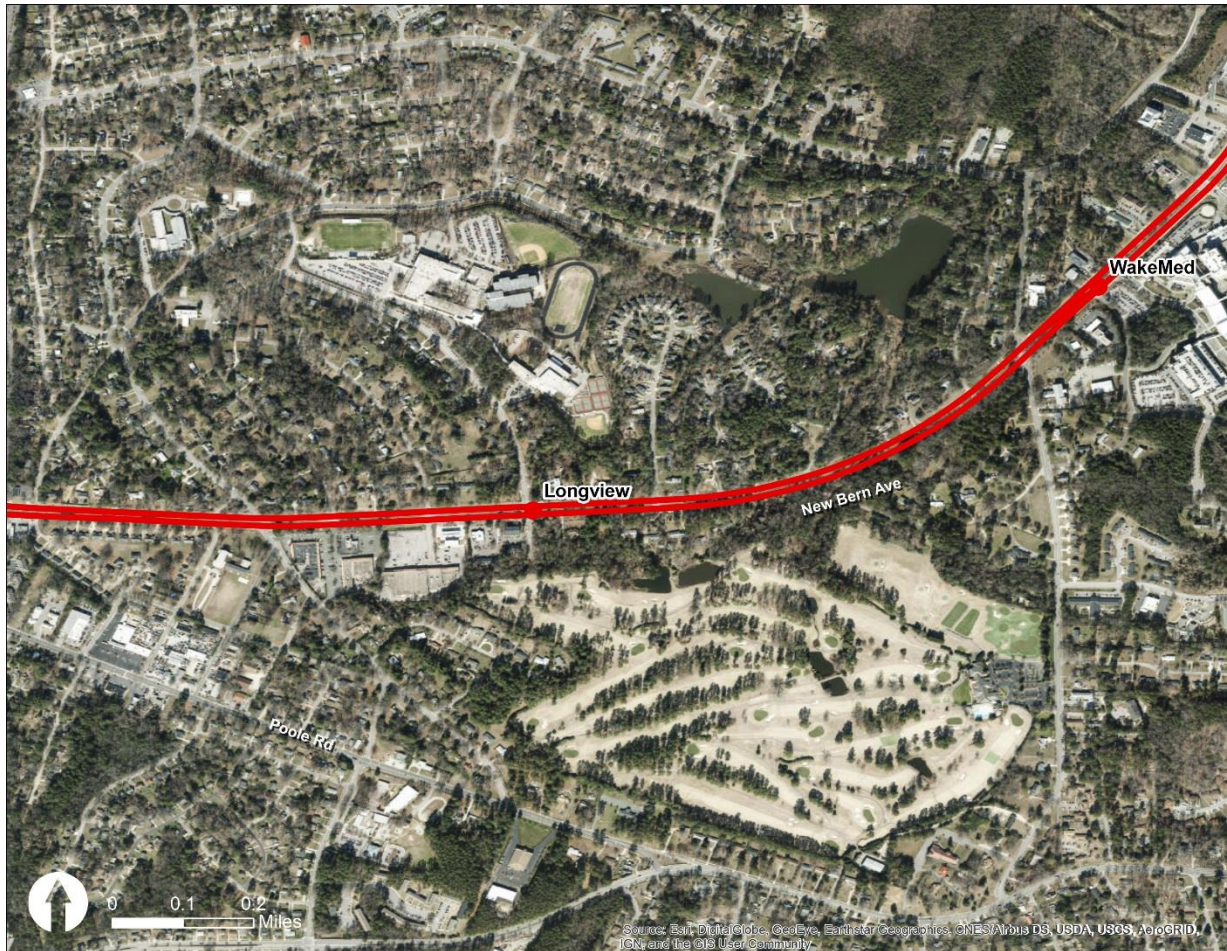
Historic Urban – This segment of the New Bern Avenue route, shown in Figure 4, extends from downtown Raleigh to Raleigh Boulevard, and will provide a vital connection to the existing GoRaleigh Transit Station, enabling transfer to regional bus service. The corridor is lined with street trees and sidewalks on both sides and the character of the adjacent historic neighborhoods are aesthetically pleasing and comfortably scaled.

Figure 4. New Bern Avenue Historic Urban Segment



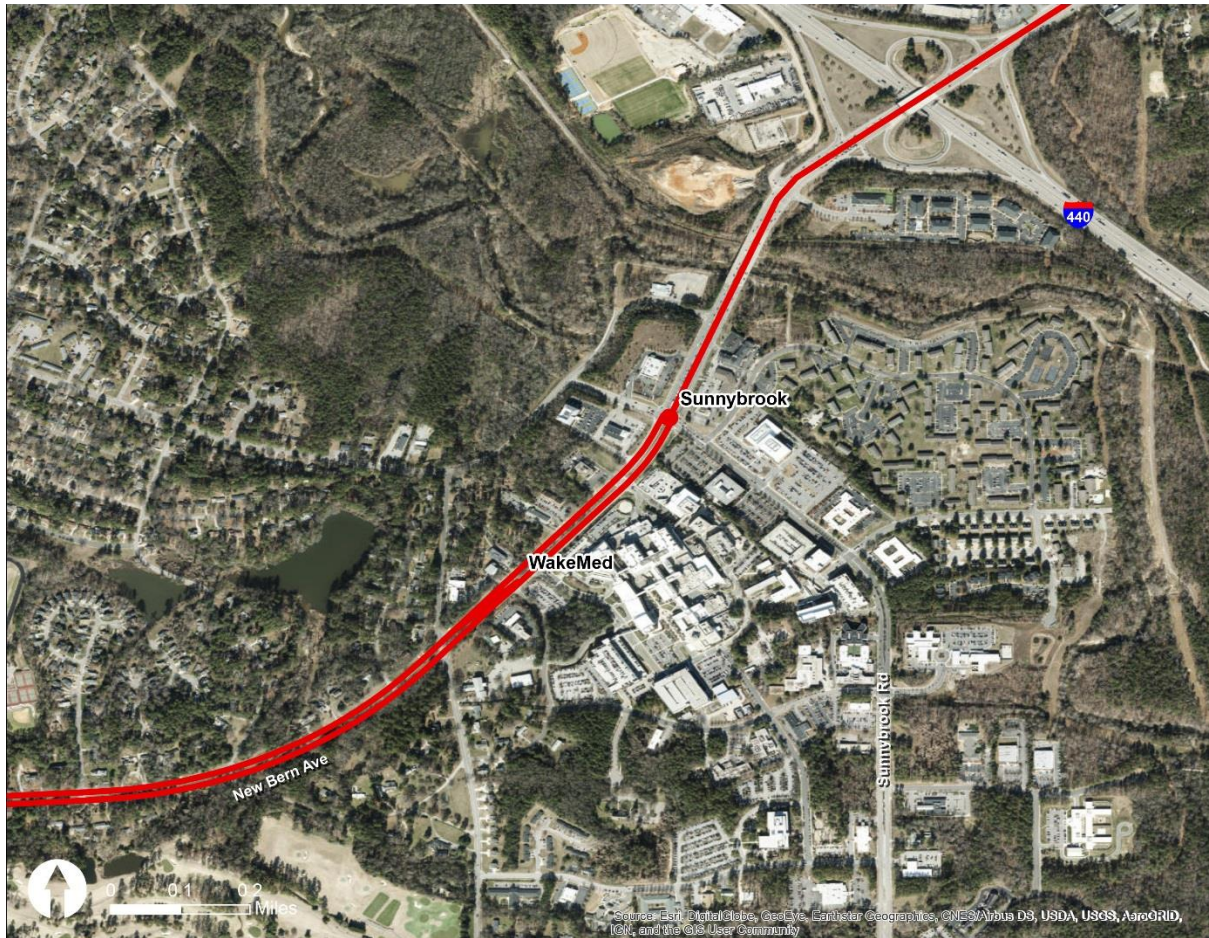
Suburban Residential – The Suburban Residential segment, shown in Figure 5, begins at Raleigh Boulevard and extends east to Donald Ross Drive. The character changes dramatically at the start of this district where a planted median divides east- and west-bound traffic. The landscaped single family homes of the Longview Gardens neighborhood dominate the corridor to the north. Each roadway section includes a two-lane ribbon pavement and gravel shoulders with grassed swales. No sidewalks are provided even though numerous bus stops and high-use pedestrian paths exist along the road shoulders. While not pedestrian friendly, the mature trees and landscaped median make this area pleasant and attractive.

Figure 5. New Bern Avenue Suburban Residential Segment



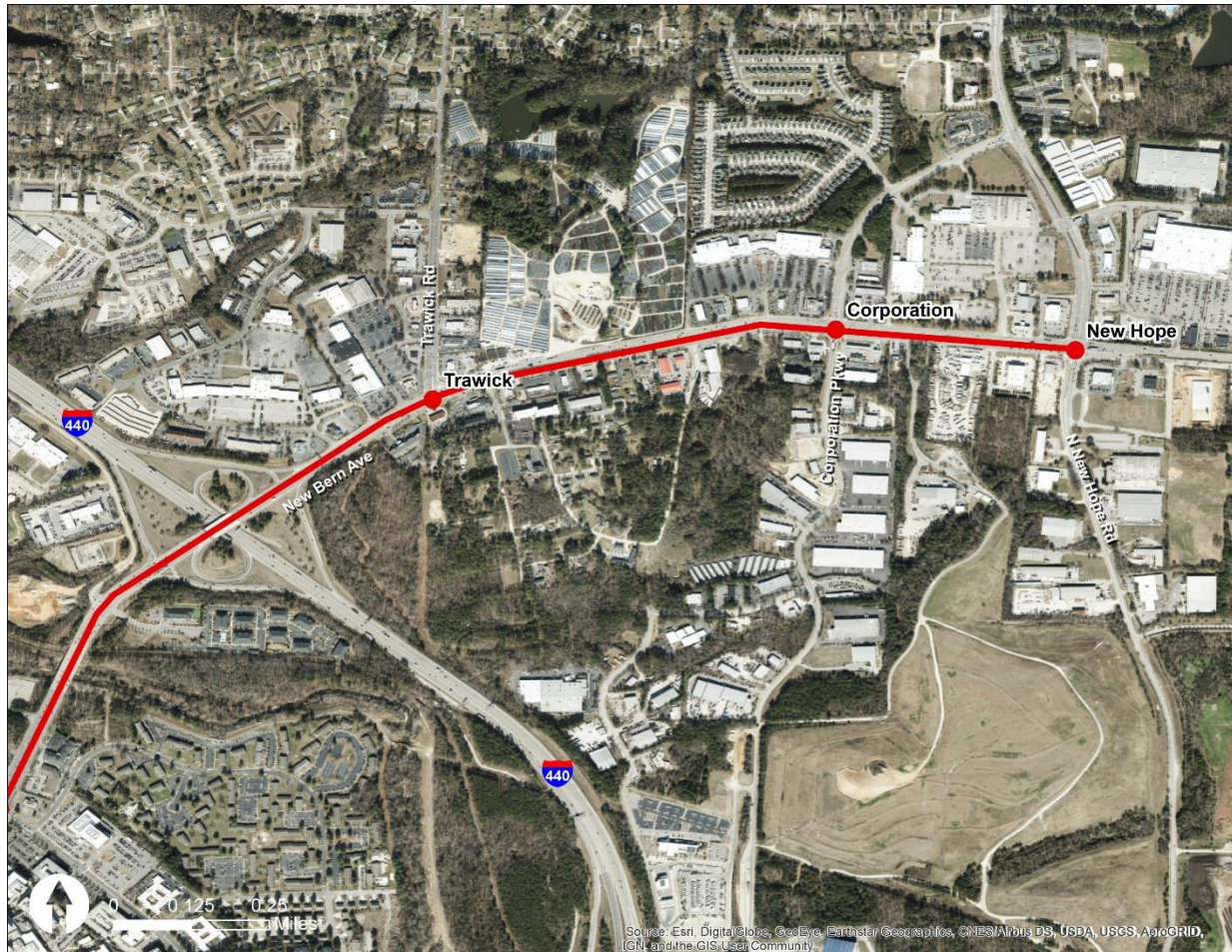
Medical Campus – The Medical Campus segment, shown in Figure 6, extends from Donald Ross Drive to Interstate 440. The area is characterized by offices and commercial buildings associated with the WakeMed campus. The medical center, in conjunction with the Wake County Human Services and Wake Technical Community College campus buildings, create the substance of an important and very busy activity node along the New Bern Avenue BRT Project. Even though the area medical services attract a large number of employees and visitors, very few commercial services are conveniently available in the immediate area.

Figure 6. New Bern Avenue Medical Campus Segment



Western Shopping – The Western Shopping segment, shown in Figure 7, extends from Interstate 440 to New Hope Road. This segment is mainly characterized by small to medium-sized retailers and strip malls.

Figure 7. New Bern Avenue Western Shopping Segment



2.3.2.4 Existing Corridor and Station Area Parking Supply

The Raleigh central business district supplies approximately 27,000 public parking spaces according to the City of Raleigh’s *Downtown Development and Future Parking Needs Study*. With nearly 37,000 employees accommodated in downtown Raleigh, there are 0.72 parking spaces per employee, corresponding to a Low rating (> 0.5) for FTA’s CIG parking supply measure.

The average cost per day for parking in downtown Raleigh is \$16.00, according to the 2018 Parkopedia Parking Index. This corresponds with a Medium-High rating (between \$12.00 - \$16.00 per day) for FTA’s CIG parking cost measure.

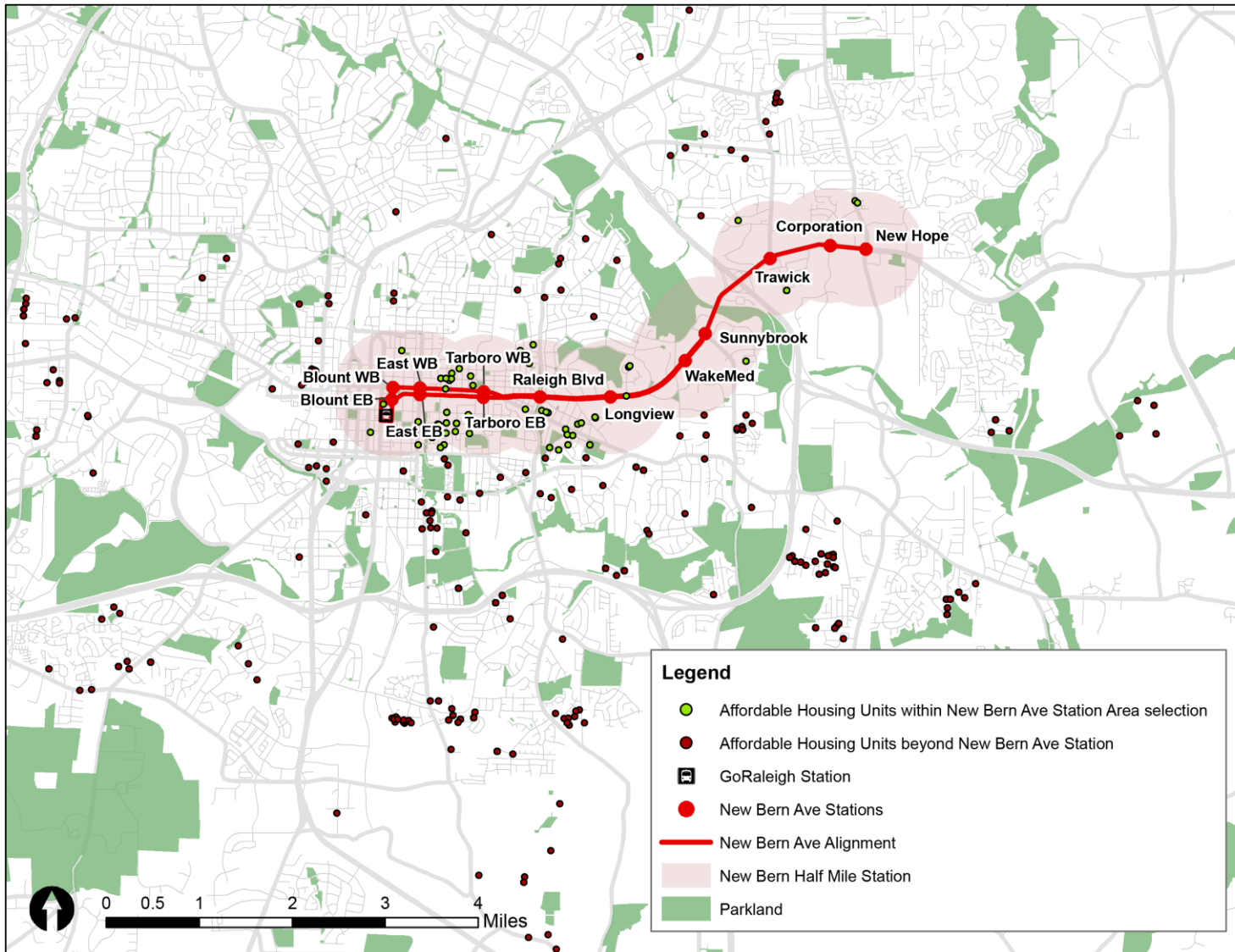
2.3.2.5 Existing Affordable Housing

Wake County is estimated to have 411,632 housing units, of which 14,043 are legally binding affordability restricted units (approximately 3 percent of all units). Proposed stations along the New

Bern Avenue BRT Project would serve approximately 1,228 affordable units, representing 25 percent of the total housing units served by the Project's proposed stations.

Figure 8 on the following page shows affordable housing developments near the New Bern Avenue BRT Project. As the map illustrates, the largest clusters of affordable housing developments along the line are located in and near the downtown Raleigh area.

Figure 8. New Bern Avenue BRT Project Affordable Housing Map



2.4 ECONOMIC DEVELOPMENT

The following section provides an overview of the tools and policies that the City of Raleigh and Wake County are advancing or have adopted in the New Bern Avenue BRT Project corridor and throughout the region to promote transit-supportive development and affordable housing around transit. The Small Starts Economic Development Effects criterion measures the extent to which a proposed project is likely to induce additional, transit-supportive development in the future based on an examination of existing local plans and policies to support transit-oriented and economic development proximate to the project. FTA evaluates three factors in its derivation of an Economic Development Effects rating:

1. Transit-supportive plans and policies;
2. Demonstrated performance and impacts of those plans and policies in the corridor and elsewhere in the region; and
3. Policies and tools in place to preserve or increase the amount of affordable housing in the project corridor.

FTA assigns ratings of Low (1) to High (5) for each measure and combines them into an overall Economic Development Effects rating. As opposed to the other Small Starts criteria, the Economic Development Effects criterion is based on qualitative, not quantitative, factors.

The City of Raleigh oversees land use planning which supports economic development, sustainability, and improved transportation options on the New Bern Avenue BRT Project corridor. Similar to other cities with increasing populations, Raleigh has planning policies that are designed to support transit, transit-oriented development (TOD), and equitable TOD (eTOD). Certain adopted and proposed plans and policies directly embrace the walkability, active streetscape, and density required of transit-supportive land uses around each of the proposed New Bern Avenue BRT Project station areas. These are supported by local and regional transportation planning efforts by Wake County, Research Triangle Regional Public Transportation Authority (GoTriangle), and the Triangle J Council of Governments (TJCOG) that provide a framework for continued transit-supportive redevelopment of the corridor. The following presents synthesis of these land use and affordable housing plans, policies, and other documentation. Some notable plans, polices, and development activity reviewed for this evaluation include:

- City of Raleigh
- Land Use – Transit Policy Alignment White Paper (2018)
- [2030 Comprehensive Plan Update](#) (2018)
- [Unified Development Ordinance](#) (2013)
- [Affordable Housing Location Policy](#) (2015)
- [Affordable Housing Improvement Plan, FY 2016 – FY 2020](#) (2015)
- [New Bern Avenue Corridor Study](#) (2012)
- [FY 2017-2018 Consolidated Annual Performance and Evaluation Report Summary](#) (2018)
- [Raleigh Downtown Plan](#) (2015)
- [Downtown Development and Future Parking Needs Study](#) (2017)

- [Notice of Availability of Funds for Gap Funding Rental Development Program, 2018-19 Tax Credit Developments](#) (2019)
- Research Triangle Regional Public Transportation Authority (GoTriangle)
- [Transit-Oriented Development Guidebook](#) (2018)
- Wake County
- [Transit Governance Interlocal Agreement](#) (2016)
- [Wake Transit Plan: A Wake County Transit Investment Strategy Report](#) (2016)
- [Affordable Housing Plan: Final Briefing Book](#) (2017)
- Triangle J Council of Governments
- [Comparison of Housing Policies, Practices, and Goals for Wake County Communities](#) (2018)
- Connecting the Dots: Linking Transit Investments, Development Decision and Affordable Housing along Wake County’s Bus Investment Corridors (2019)

2.4.1 Transit-Supportive Plans and Policies

The specific measures used to evaluate transit-supportive plans and policies for Small Starts projects are:

- Transit-supportive corridor policies;
- Supportive zoning near transit; and
- Tools to implement transit-supportive plans and policies.

The following sections describe how the New Bern Avenue BRT Project rates against each of these measures.

2.4.1.1 Transit-Supportive Corridor Policies

FTA guidelines provide that the transit corridor planning process should include an assessment of existing conditions and opportunities, identification of needed revisions to local comprehensive plans and capital improvement programs, and development of other tools to enhance the transit-supportive nature of the corridor and station areas. The process may involve three distinct steps: (1) Conceptual plans that consider potential placement and type of development, pedestrian facilities and linkages, and design concepts/guidelines for buildings and public spaces, and include policy recommendations and implementation steps; (2) Local plans, including local comprehensive plans, small area plans, and redevelopment plans, institutional master plans, and design guidelines, that provide a local policy framework for development; and (3) Capital Improvement Programs that list specific projects to be undertaken by state, regional, or local agencies to enhance the transit-supportive nature of station areas.

2.4.1.1.1 Plans and Policies to Increase Corridor and Station Area Development

FTA provides that transit-supportive corridor plans and policies should encourage development at transit-supportive densities in station areas. Wake County and the City of Raleigh have issued plans that are intended to increase corridor and station-area development.

In January 2012, the City of Raleigh adopted the *New Bern Avenue Corridor Study*, which identified specific issues along the New Bern Avenue corridor, or “Raleigh’s Cultural Corridor”, as well as opportunities to enhance the appearance and function of the corridor, and appropriate actions necessary to implement improvements that will present New Bern Avenue to visitors and residents as a model gateway that communicates Raleigh’s pride in its cultural and architectural history. The study envisioned BRT as a major transportation investment to enhance economic vitality of the corridor and included policies and actions to increase corridor development, such as:

Transit Patterns Objectives:

- TP.3 Introduce a BRT network to improve and enhance mobility throughout the New Bern Avenue corridor service area
- Transit Patterns Actions:
 - TP A.1 Coordinate with NCDOT to implement the median running BRT design and station locations from Raleigh Boulevard to I-440
 - TP A.2 Pursue funding grants to support the design and implementation of a BRT system along New Bern Avenue and Edenton Street into downtown Raleigh
 - TP A.3 Work collaboratively with Community Development staff to incorporate public transit access into the planned revitalization of the College Park and Idlewild neighborhoods

Land Use Objectives:

- LU.1 Build upon the character of the New Bern Avenue corridor to support a livable and sustainable community
- LU.3 Encourage redevelopment of higher residential densities and vertical mixed-uses
- LU.4 Encourage the development of service-oriented businesses within the WakeMed area
- LU.5 Provide for an appropriate land use and density transition between commercial and residential uses
- LU.6 Identify ways to create deeper lots with New Bern Avenue road-frontage to support expanded business opportunities

Land Use Actions:

- LU A.1 Amend the Future Land Use Map to include land use changes depicted on the map
- LU A.3 Provide information necessary to encourage redevelopment of identified soft sites in a pattern defined by the recommended land uses and street frontages

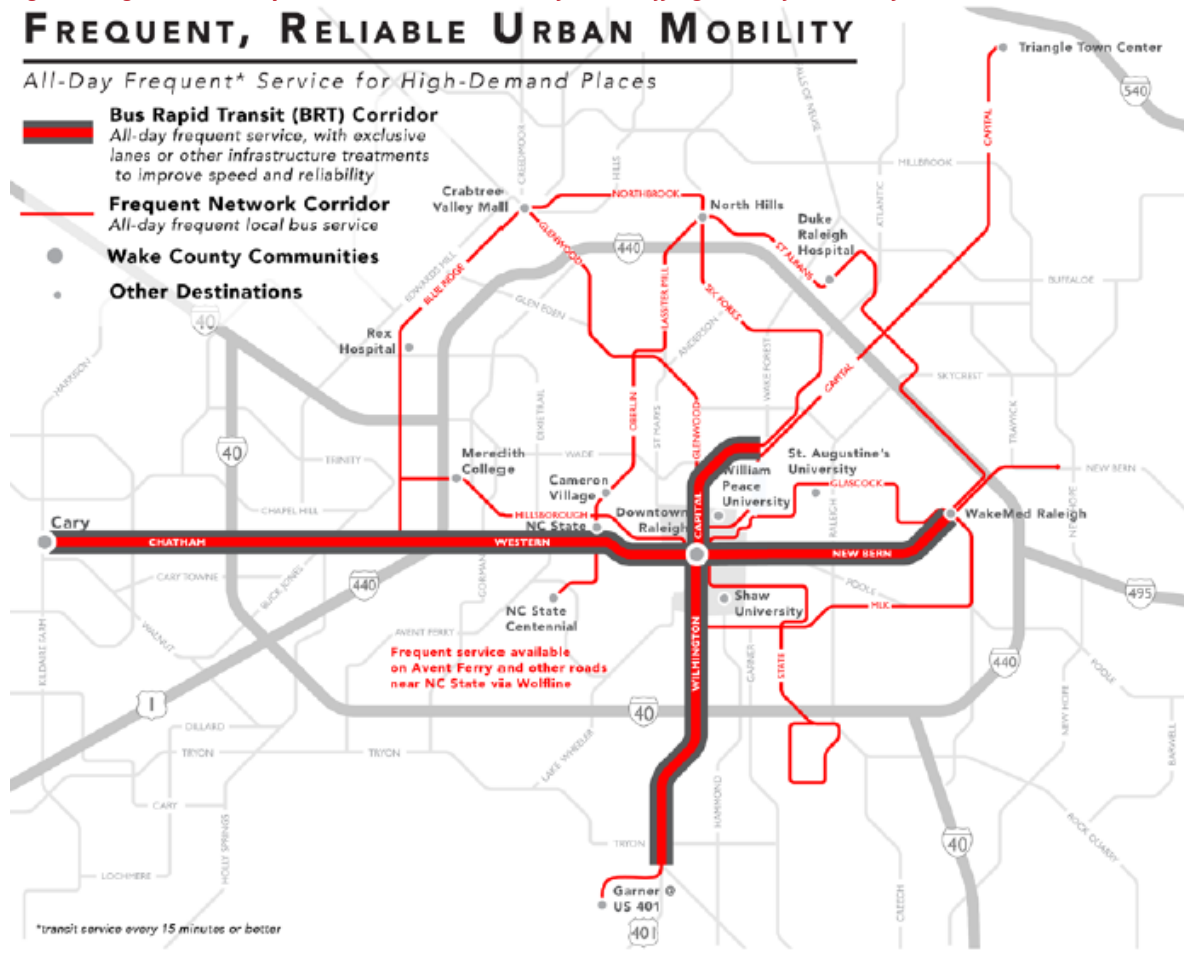
Wake County’s *Wake Transit Plan: A Wake County Transit Investment Strategy Report* (2016), adopted by Wake County, Capital Area Metropolitan Planning Organization (CAMPO), and GoTriangle, describes the projects to be implemented through a half-cent sales tax advisory referendum dedicated to transit infrastructure that Wake County voters approved in November 2016. The referendum will invest \$2.3 billion in the first 10 years of implementation from the sales tax increase leveraged by vehicle registration fees, vehicle rental tax revenues, federal and state contributions, existing local revenues that fund current transit services, and fares paid by bus and train customers. This has set the stage for the largest expansion of transit in the region and County’s history, with significant transit improvements slated to impact the City of Raleigh, including commuter rail transit

between Durham and Raleigh, a BRT network connecting Cary and Raleigh and extending along several key corridors, including New Bern Avenue, a frequent network serving Raleigh's urban core and inner-ring suburbs, and other improvements. Other investments in the County will connect other Wake County communities to the City of Raleigh through peak-hour commuter bus services.

The *Wake Transit Plan* encourages development at transit-supportive densities in station areas by focusing enhanced transit services where high transit demand driven by transit-supportive development is anticipated. It was developed with community input that supported the objective that BRT could promote denser land uses and economic development. As part of the transit planning process, it conducted a detailed Transit Suitability Analysis that developed mapping and numeric scoring for potential enhanced transit routes to allow for a detailed comparison of corridors and their anticipated transit demand, both now and in the future. The corridor analysis further anticipated where Wake County should be considering future patterns of transit-conducive development. The analysis was conducted by looking at both 2010 and projected 2040 conditions for population, employment, zero-car households, income, congestion, land uses, and major activity centers across Wake County.

The analysis led to the *Wake Transit Plan* defining four "Big Moves." Big Move 3 seeks to provide frequent, reliable urban mobility to the densifying areas of the County (Figure 9). BRT is recommended as a means of improving speed, reliability, and amenities of bus service following patterns of high demand characterized by density, walkability, linearity and proximity.

Figure 9. Big Moves 3: Frequent, Reliable Urban Mobility to Densifying Areas of the County



Source: Wake Transit Plan (2016)

The City of Raleigh’s *2030 Comprehensive Plan Update* (2018) is another document that encourages development at transit-supportive densities in station areas. In 2009, seven years prior to the 2016 transit sales tax measure, the City adopted the *2030 Comprehensive Plan*, listing policies and actions to spur both TOD and eTOD. The City has adopted amendments to the *2030 Comprehensive Plan* every year thereafter to remain relevant, calling for more of the City’s growth to be directed towards major transit corridors and walkable mixed-use settings through the following policies and actions:

- Land Policy LU 4.7 addresses capitalizing on transit access by calling for denser and more intense residential and mixed-use development near fixed-guideway transit stations;
- Transportation Policy T 1.1 explicitly states that transportation planning, development, expansion, and investment in transportation facilities should be coordinated with the Future Land Use Map;
- Urban Design Policy UD 8.1 on TOD seeks to promote dense, mixed-use development within the core area around transit stations with development intensity greatest within walking distance of existing and proposed rail stations and bus rapid transit stations;

- Land Use Action LU 2.1, calling for future studies of high-density areas, as necessary, to plan for growth centers, mixed-use centers, and transit station areas (rail or bus transfer nodes) and identify areas appropriate for higher-density mixed-use development;
- Downtown Raleigh Policy DT 1.16, which provides that the highest density development should occur along the axial streets (including New Bern Avenue), major streets, surrounding the squares, and within close proximity to planned transit stations, Policy DT 4.1, which encourages high-density residential development in downtown, consistent with the target of accommodating another 25,000 residents by 2030.

The *Comprehensive Plan's* current Growth Framework Map (Figure 10) shows where the City of Raleigh will encourage density and mixed-use development, and defines priority corridors based on transportation function and relationship to adjacent land uses. It sets forth a vision for how Raleigh should grow to accommodate the next 120,000 households and 170,000 jobs anticipated in the city by 2030. Rather than accommodating this growth “in a centerless and undifferentiated pattern of sprawling development”, it seeks to direct 60 percent of Raleigh’s future growth into the Downtown Regional Center¹, seven City Growth Centers², four BRT Corridors³, including the New Bern Avenue BRT Project corridor, and over 40 Mixed-Use Community Centers⁴, connected via a network of parkways, frequent bus service routes, and urban streets. In designated “Bus Rapid Transit Areas”, defined as the areas within one-quarter mile of streets where BRT service is proposed, these BRT corridors and station areas are programmed for increased density and special design standards promoting enhanced pedestrian mobility and reduced parking requirements.

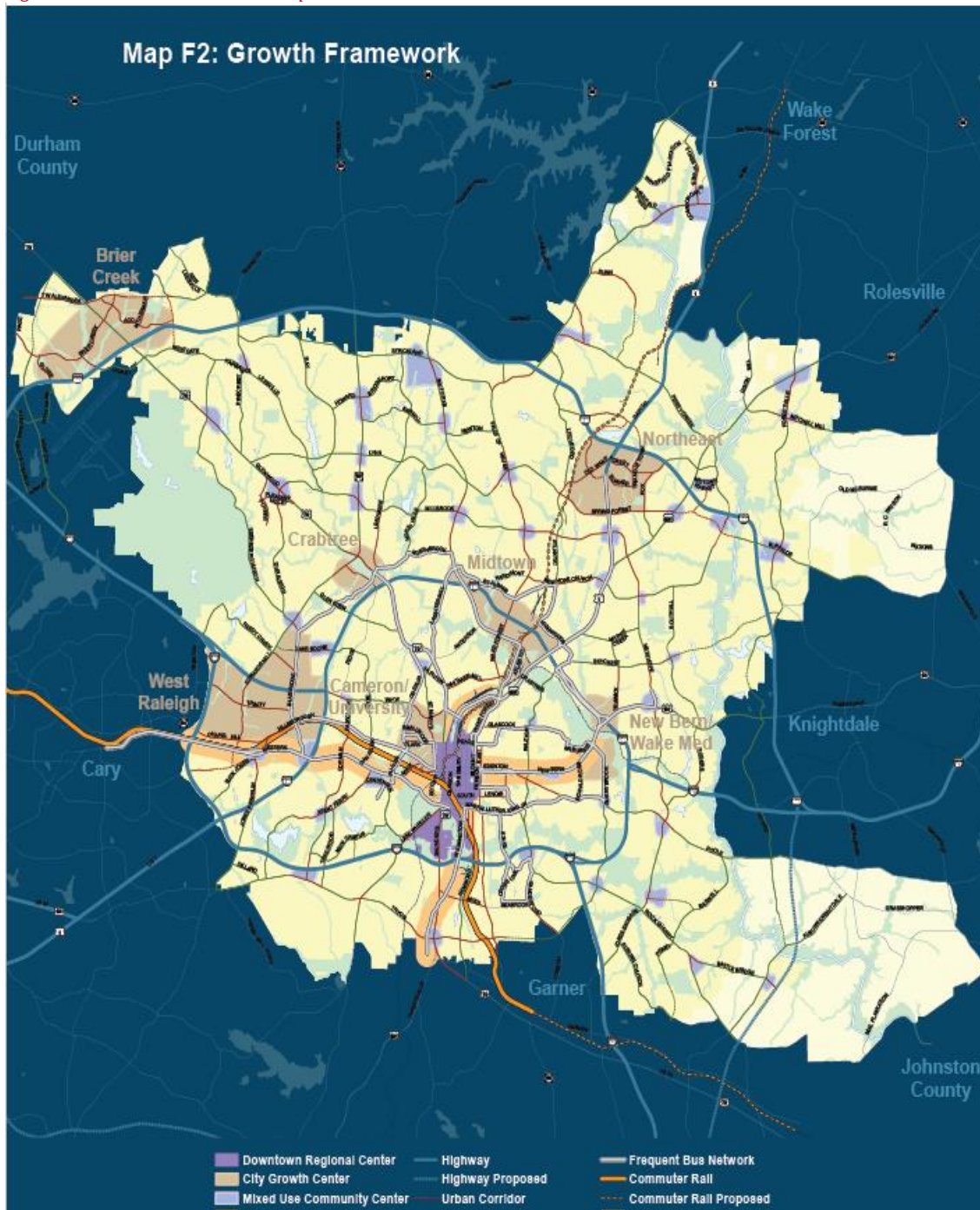
¹ The “Downtown Regional Center” encompasses the existing and future limits of Raleigh’s urban core, including the western end of the New Bern Avenue BRT Project corridor, stretching south towards I-40 and north along Capital Boulevard. It is where the most intense growth and highest levels of transit, bicycle, and pedestrian access are contemplated. Consistent with the eastward shift of regional growth patterns, the Downtown Regional Center is viewed emerges as a hub for a rapidly growing region, served by highways, rail transit, high-speed intercity rail, and local and express bus.

² “City Growth Centers” are located throughout the city and along major urban and transit corridors, including the New Bern/Wake Med center at the eastern end of the New Bern Avenue BRT Project corridor. These centers provide significant opportunities for new residential and economic development and redevelopment. City Growth Centers are generally in locations with combined highway and targeted transit access, such as the New Bern Avenue BRT Project.

³ “Bus Rapid Transit Areas” are within one-quarter mile of streets where BRT service is proposed, and programmed for increased density and special design standards promoting enhanced pedestrian mobility and reduced parking requirements. There is some overlap with City Growth Centers and the Downtown Regional Center.

⁴ “Mixed-use Community Centers” are located generally at places where transit and urban corridors intersect, including along New Bern Avenue. Where there is an existing base of mixed-uses, these centers are targeted for infill development and improvements to urban design and connectivity intended to retrofit them over time as more integrated, walkable centers. Examples include various aging shopping areas in Southwest and Southeast Raleigh along New Bern Avenue and Western Boulevard corridors.

Figure 10. Growth Framework Map



2.4.1.1.2 Plans and Policies to Enhance Transit-Friendly Character of Corridor and Station Area Development

FTA considers the nature of planned development surrounding stations and along the corridor, and the quality of the pedestrian environment, as described in conceptual plans, local plans, and design guidelines for both streets and site development. Transit-supportive plans, design guidelines, and policies are those that encourage TOD features, including:

- Short building setbacks;
- Human-scale, active façades;
- Entrances oriented towards streets, sidewalks and other public areas;
- Street furniture, trees, crosswalks and other pedestrian amenities;
- Vertical and/or horizontal mixing of building uses, land use mix, retail and housing availability; and
- Parking primarily placed behind buildings or in structures.

The *New Bern Avenue Corridor Study* encouraged TOD through policies and actions, including:

Transit Patterns Objectives:

- TP.1 Improve street cross sections to include multimodal transit options that interconnect bike trails, sidewalks and bus stops;
- TP.2 Continue to improve bus service and passenger stop accommodations;

Frontage Typologies Objectives:

- FT.1 Define corridor frontage typologies and development standards for the space between the public right-of-way and building façades in order to create a safe, convenient and transit-supportive pedestrian environment

Frontage Typologies Actions

- FT A.1 Utilize the recommended frontage typology standards to guide the evaluation of site plan and rezoning proposals for properties with corridor frontage
- Green – Pedestrian friendly areas; setback between 10 and 30 feet from street. Landscaped front yard; no parking between building façade and street.
- Urban Limited – For mixed use areas; building setback between 5 and 20 feet. No parking in front of building, but allowed to sides.
- Parking Limited – Maximum of two rows of parking between building façade and street. Building setback is between 10 and 100 feet.

Streetscape Design Objectives:

- SD.1 Consider roadway modifications to support a complete streets design strategy
- SD.2 Improve pedestrian safety at major intersections
- SD.3 Identify additional pedestrian crossings where the distance between traffic signals is greater than 1,000 feet
- SD.4 Improve transit, bike, and pedestrian accommodations throughout the corridor

The City of Raleigh's *2030 Comprehensive Plan's* Urban Design element is intended to guide the quality of developments oriented around transit stations. It acknowledges that transit-supportive design guidelines encourage greater intensity of use and bulk immediately surrounding transit stations, with development tapering down in both use and size as distance from the station increases. Transit-supportive design features of the *Comprehensive Plan* include:

- Wide sidewalks and bicycle facilities to welcome non-auto uses;
- Ample public realm and streetscape amenities to accommodate transit users waiting for or alighting from transit;
- Engaging yet simple wayfinding; and
- Structured parking designed to make efficient use of land and limit visual and roadway clutter.

Specific policies encourage high-quality, pedestrian-focused design in areas that are designated for improved transit service and growth, including:

- Policy UD 8.8, which insists that private and public development within one quarter of a mile of fixed-rail and bus rapid transit stations should include streetscapes and public spaces that allow transit users places to sit and rest when waiting for or alighting from transit;
- Policy UD 1.10, which encourages coordination of frontage across multiple sites to create cohesive places and consistency with the designations on the Urban Form Map (Figure 11) such that development in city growth centers (including one at the eastern end of the New Bern Avenue BRT Project corridor) and along corridors targeted for public investment in transit and walkability should use a compatible urban form; and
- Policy UD 2.1, which provides that buildings in mixed-use developments should be oriented along streets, plazas and pedestrian ways with facades that create an active and engaging public realm.

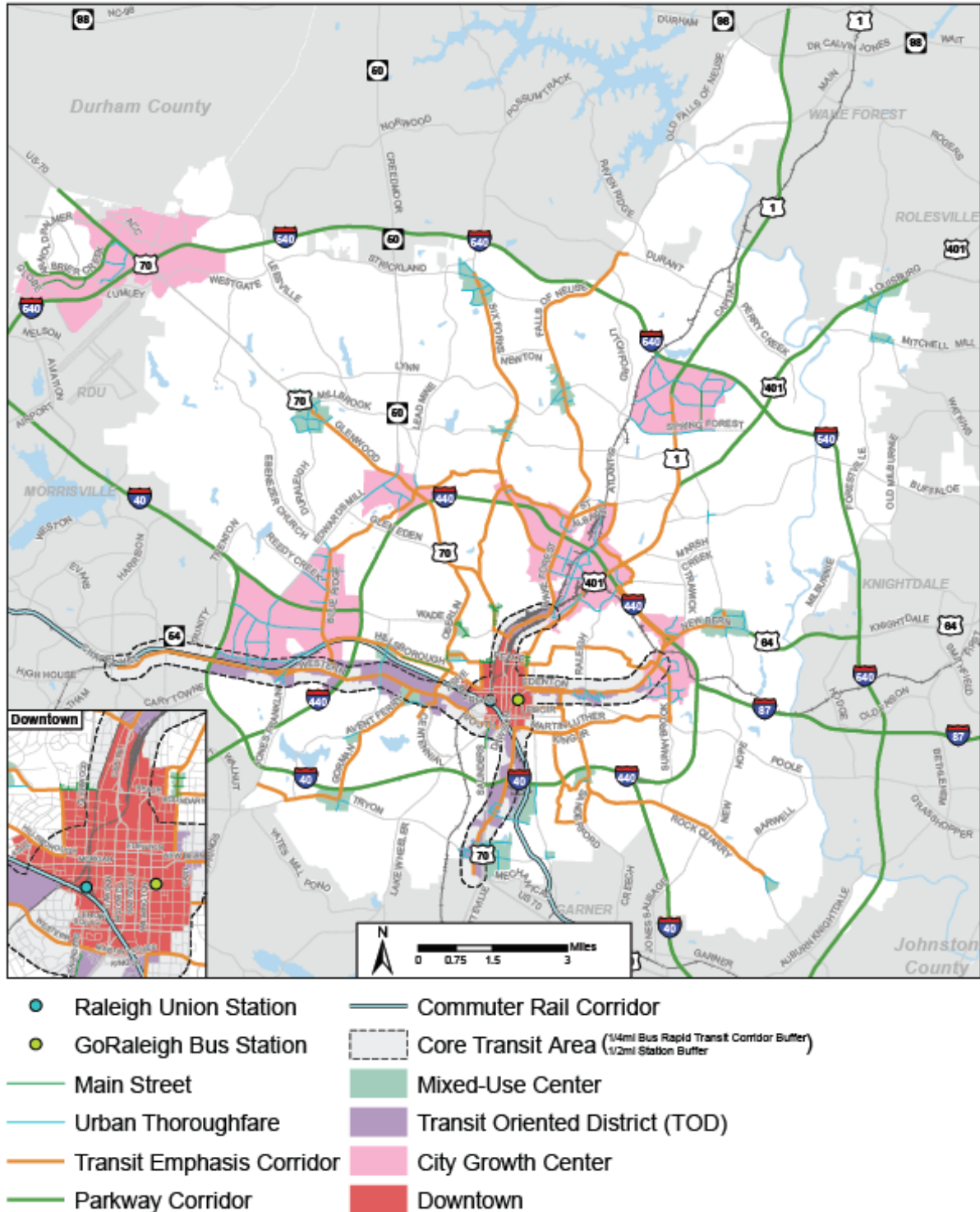
The *2030 Comprehensive Plan's* contains design guidelines, which, under Policy UD 7.3, are intended to be used to review rezoning petitions and development applications for mixed-use developments, or rezoning petitions and development applications along Transit Emphasis Corridors⁵ or in City Growth Centers, Transit Oriented Districts⁶, and Mixed-Use Centers, including preliminary site

⁵ As defined by the City of Raleigh's Urban Form Map, Transit Emphasis Corridors are generally major streets and programmed for a much higher level of bus-based service, including frequent buses, amenities at every stop, the completion of the pedestrian network, and potentially traffic signal priority for transit.

⁶ Transit Oriented Districts have not been mapped yet, but are intended to be pedestrian-friendly urban environments defined in specific TOD plans.

Figure 11. Urban Form Map

Map UD-1: Urban Form



Source: Unified Development Ordinance (2013)

plans and development plans. Relevant guidelines that aim to enhance the transit-friendly character of corridor and station area development include:

- #1: All mixed-use developments should generally provide retail (such as eating establishments, food stores, and banks), and other uses such as office and residential within walking distance of each other, and mixed uses should be arranged in a compact and pedestrian-friendly form;
- #7: Buildings should be located close to the pedestrian-oriented street (within 25 feet of the curb), with off-street parking behind and/or beside the buildings;
- #17: Higher building densities and more intensive land uses should be within walking distance of transit stops, permitting public transit to become a viable alternative to the automobile; and
- #25: The primary entrance should be both architecturally and functionally on the front facade of any building facing the primary public street.

2.4.1.1.3 Plans to Improve Pedestrian Facilities, Including Facilities for Persons with Disabilities

According to FTA, design guidelines, conceptual plans, local plans and capital improvement programs improve pedestrian facilities when they include provisions for:

- Sidewalks or wider sidewalks as needed;
- Street spacing at regular intervals;
- Connected pedestrian paths;
- Street crossings;
- Lighting; and
- Facilities for disabled travelers.

Such measures are included in the *2030 Comprehensive Plan* to ensure safe and direct pedestrian mobility and access throughout the station area at all hours of the day. Examples include:

- Policy LU 7.6 on pedestrian-friendly development, which calls for new and redeveloped commercial and mixed-use developments to be pedestrian-friendly;
- Policy T 3.4 on pedestrian-friendly road design, which requires the city to design Complete Street amenities with the pedestrian in mind, avoiding the use of traffic control and safety devices that favor vehicles;
- Policy UD 8.4 on transit-supportive pedestrian networks, which recommends sidewalks in areas within walking distance of bus rapid transit stops to be no less than eight feet wide and accompanied by complementary streetscape elements such as plantings, bike racks, and furniture, including places to sit;
- Policy UD 8.6, which recommends that automobile-oriented uses, such as drive-thrus, that detract from the character and function of transit corridors and negatively affect the pedestrian environment, should be located away from transit stations;
- Policy UD 8.7 on connections to transit stops, which encourages additional street and pedestrian connections to help minimize travel distances to transit stops;
- Design Guideline #5: Block faces should have a length generally not exceeding 660 feet;

- Design Guideline #6: Streets should be lined by buildings rather than parking lots and should provide interest especially for pedestrians;
- Design Guideline #18: Convenient, comfortable pedestrian access between the transit stop and the building entrance should be planned as part of the overall pedestrian network;
- Design Guideline #21: It is the intent of these guidelines to build streets that are integral components of community design, so public and private streets, as well as commercial driveways that serve as primary pedestrian pathways to building entrances, should be designed as the main public spaces of the city and should be scaled for pedestrians;
- Design Guideline #22: Sidewalks should be 5-8 feet wide in residential areas and located on both sides of the street and sidewalks in commercial areas and other areas where walkability is a focus should be a minimum of 14-18 feet wide to accommodate sidewalk uses such as vendors, merchandising, and outdoor seating;
- Design Guideline #26: The ground level of the building should offer pedestrian interest along sidewalks, including windows, entrances, architectural details, signage, awnings, and ornamentation; and
- Design Guideline #27: Sidewalks should be the principal place of pedestrian movement and casual social interaction.

Area-specific guidance for the “New Bern Corridor Study” in the *2030 Comprehensive Plan* provides two action items related to improving pedestrian facilities on New Bern Avenue:

- Action AP-NB 1, which calls for improving pedestrian safety at major intersections and exploring options for midblock crossings; and
- Action AP-SB 2, which calls for improving pedestrian, bicycle, and lighting facilities along the corridor and into neighborhoods to create a safe, healthy, and walkable environment.

2.4.1.1.4 Parking Policies

FTA focuses on transit-supportive policies and plans related to parking, including:

- Local requirements for developers;
- Parking limits and ratios;
- Parking cash-out programs;
- Provisions for shared parking, and
- Parking fees.

Parking policies are included in the *2030 Comprehensive Plan's* design guidelines, which include:

- #7: Off-street parking should be located behind and/or beside buildings, and when a development plan is located along a high-volume corridor without on-street parking, one bay of parking separating the building frontage along the corridor is preferred;
- #8: Parking should not be located at an intersection;

- #14: Parking lots should not dominate the frontage of pedestrian-oriented streets, interrupt pedestrian routes, or negatively impact surrounding developments; and
- #15: Parking lots should be located behind or in the interior of a block whenever possible and not occupy more than 1/3 of the frontage of the adjacent building or not more than 64 feet, whichever is less.

Parking regulations are included in the City of Raleigh’s *Unified Development Ordinance (UDO)*, a revised zoning code intended to provide the necessary tools to implement the land use and development policies of the *2030 Comprehensive Plan*. The *UDO* allows for intense, compact and walkable mixed-use development in core areas around planned transit stations and includes the following parking policies for the *Downtown District* and *Transit District Overlay* areas:

- One parking space is required per dwelling unit; however, no more than two on-site parking spaces per dwelling unit are allowed;
- No vehicle parking is required for the first 16 dwelling units;
- One parking space per 500 square feet is required for all nonresidential gross floor area;
- No vehicle parking is required for the first 10,000 square feet of gross floor area of any nonresidential use (for the Downtown District) or the first 10,000 square feet of ground story gross floor area that meets the ground story height and ground story transparency requirements for a mixed-use building (for Transit District Overlay areas);
- In the Downtown District, no vehicle parking is required for indoor recreation, personal service, restaurant, retail sales, and banks up to 30,000 square feet of gross floor area provided when at least 25% of the ground floor of the building is devoted to such uses;
- In Transit District Overlay areas, surface parking associated with a nonresidential use may not exceed the enumerated parking requirement; and
- A Parking Fee may be paid in lieu of complying with the minimum parking requirements.

In addition to the parking reductions allowed in Transit District Overlay areas and areas with urban frontage, the *UDO* has further provisions for other areas that are close to high-frequency transit, including a 10 percent reduction in the required number of parking spaces for uses with a main entrance within a walking distance of 1,320 feet of an operating transit stop or stops with service intervals no longer than 15 minutes during peak commute hours. This reduction does not apply in the Downtown District. The *UDO* also reduces parking restrictions for affordable housing developments to one space per unit.

Table 5 includes FTA’s benchmarks for planned parking ratios, which are used to rate a project for transit-supportive plans and policies. As stated above, the *UDO* generally requires one parking space per 500 square feet for all nonresidential uses. Thus, the city’s current parking policies would generate a Medium rating.

Table 5. FTA Benchmarks for Planned Parking Ratios

Rating	CBD spaces per 1000 s.f.	Other spaces per 1000 s.f.
High (5)	< 1	< 1.5
Medium-High (4)	1 – 1.75	1.5 – 2.25
Medium (3)	1.75 – 2.5	2.25 – 3.0

Low-Medium (2)	2.5 – 3.25	3.0 – 3.75
Low (1)	> 3.25	> 3.75

Source: Table 12 (p. 35) of Federal Transit Administration’s *Guidelines for Land Use and Economic Development Effects for New Starts and Small Starts Projects* (August 2013)

2.4.1.2 Supportive Zoning Near Transit

Noting that zoning regulations establish the framework for station area development, FTA bases this rating on an assessment of zoning ordinances that support increased development density in transit station areas and enhanced transit-oriented character of station area development and pedestrian access. Zoning allowances for reduced parking and traffic mitigation are also considered. Both existing and proposed zoning ordinances are reviewed to assess allowable densities and types of uses, incentives to increase development in station areas, provisions to enhance transit-oriented character and pedestrian access and provisions for reduced parking and traffic mitigation. In evaluating this item, the greatest emphasis is placed on residential and commercial densities allowed under current as well as proposed zoning regulations.

2.4.1.2.1 Zoning Ordinances that Support Increased Development Density in Transit Station Areas

FTA seeks zoning ordinances and maps to determine whether existing zoning regulations support increased development density in transit station areas. Draft ordinance revisions may also be acknowledged by FTA if they describe planned changes that allow or encourage development at transit-supportive densities. Current and proposed zoning is evaluated for the half-mile area surrounding proposed transit stations.

Raleigh’s *UDO*, its existing zoning code, categorizes the entirety of the city’s planning jurisdiction into zoning districts, each with their own standards for use, bulk, form, and other site development regulations. Figure 12 shows Raleigh’s existing zoning. Nearly two-thirds of Raleigh’s jurisdictional land area is residentially zoned, and approximately 55 percent of this area is zoned for single-family development only. Approximately 25 percent of the city is zoned for a mix of uses, and nearly all the mixed-use zones permit residential development. Of the city’s mixed-use zoning districts, only Office Park, which accounts for just 0.5 percent of the mixed-use district’s total, does not permit residential use.

Figure 12 shows that the current zoning of the New Bern Avenue BRT Project corridor is mixed-use at the western (Downtown Raleigh) and eastern ends. The middle portion of the corridor is primarily zoned as residential and includes Character Protection overlay districts. Proposed station locations are presented in Figure 13. The city’s mixed-use districts enable the type of development that would create successful TOD.

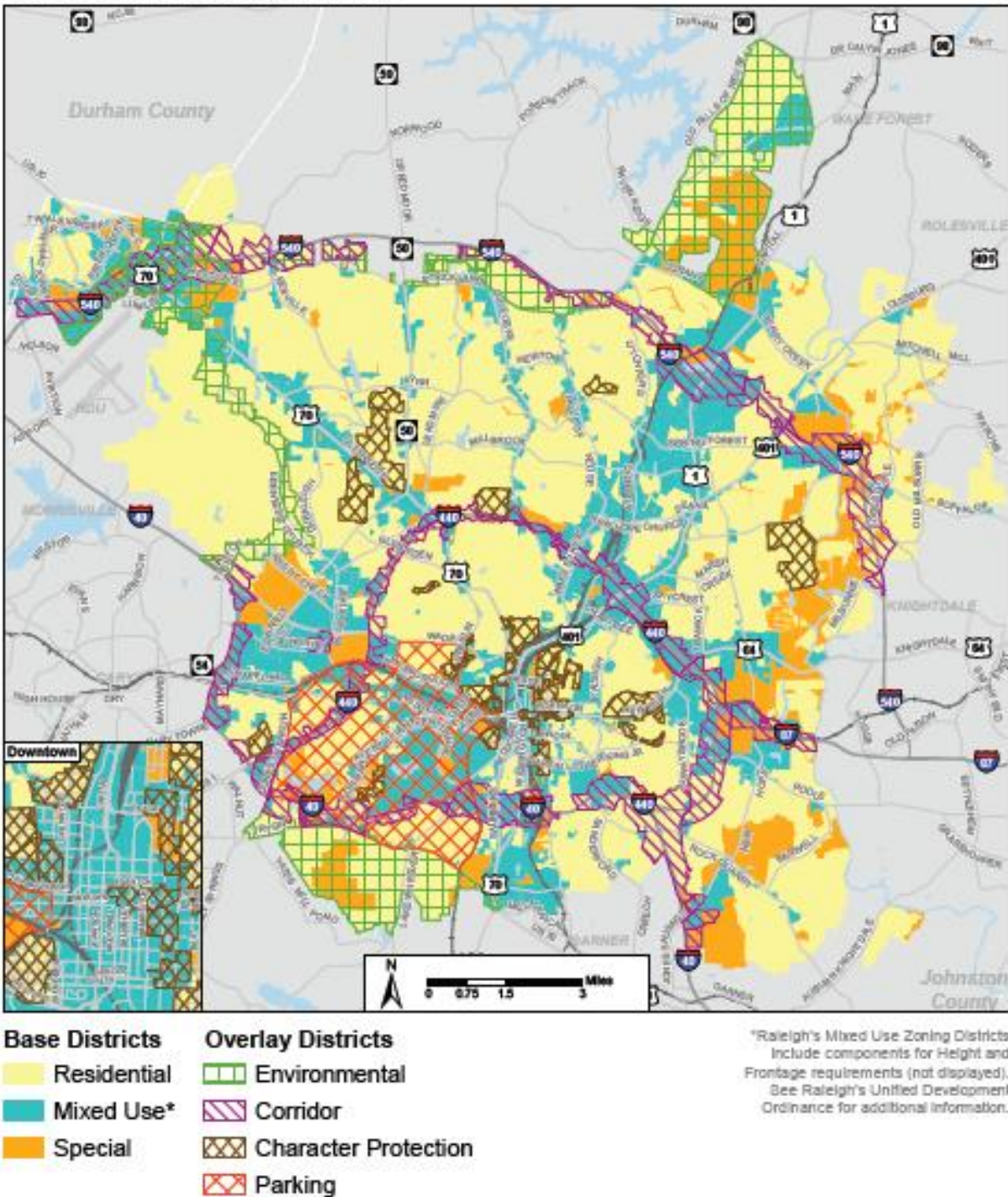
The mixed-use districts established by the City of Raleigh are intended to create neighborhoods with a variety of uses. Mixed-use zoning typologies that support TOD include:

- *Residential Mixed Use (RX)*: intends to provide for a variety of residential building types with limited retail;
- *Office Mixed Use (OX)*: intends to provide for a variety of office and employment uses while allowing for housing and limited retail and service-related options (can serve as a land use transition between other mixed-use districts and residential neighborhoods);

- *Neighborhood Mixed Use (NX)*: intends to provide for a variety of residential, retail, service, and commercial uses all within walking distance of residential neighborhoods
- *Commercial Mixed Use (CX)*: intends to provide for a variety of residential, retail, service, and commercial uses
- *Downtown Mixed Use (DX)*: intends to provide for intense mixed-use development of the City's downtown area

Figure 12. Existing Zoning

Map LU-2: Existing Zoning



Source: 2030 Comprehensive Plan

Figure 13. New Bern Avenue BRT Project Corridor Map Showing Proposed Station Locations

Wake BRT: New Bern Avenue

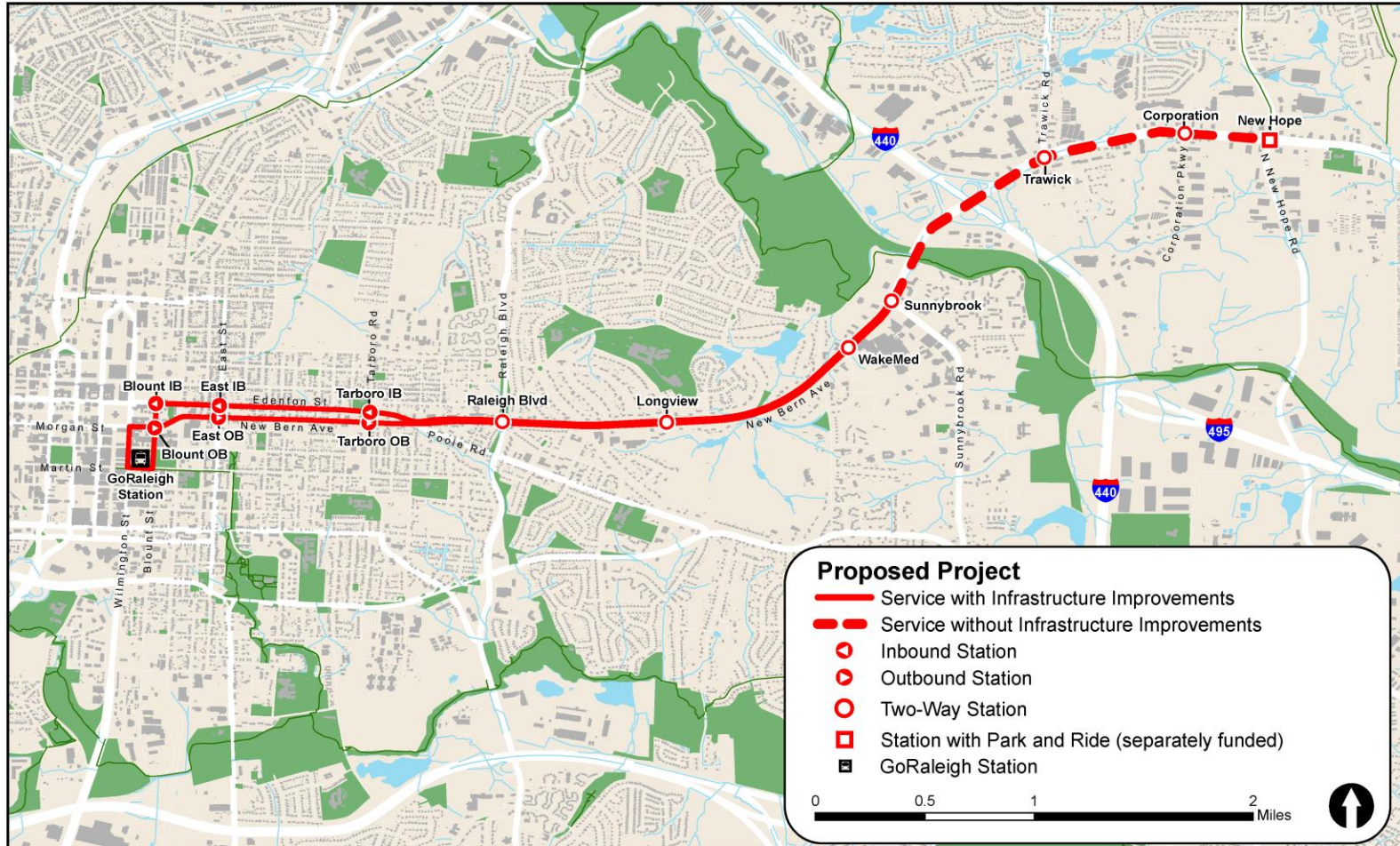
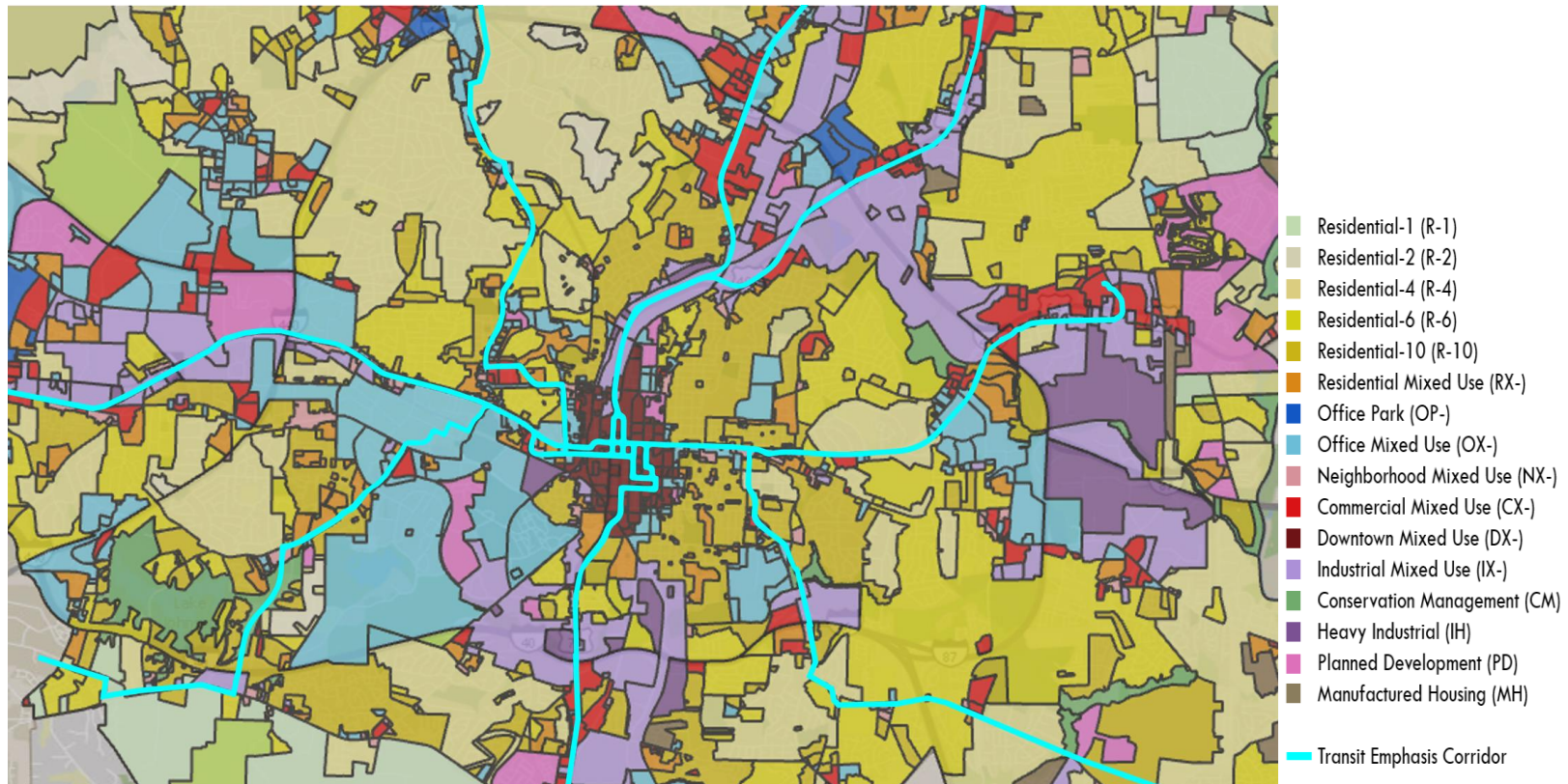


Figure 14. Raleigh's Zoning Code Overlaid with Transit Emphasis Corridors



Each mixed-use district is comprised of one or more of the following components where districts must include a height designation, with an optional frontage:

- Use and Base Dimensions (e.g., RX-, NX-, CX-, DX-);
- Height (-3 stories, -4, -5, -7, -12, -20, -40)⁷; and
- Frontage.

Frontage refers to the City of Raleigh’s approach to design and character of commercial, mixed-use or multi-family development when it faces the street. The parameters of frontage include the placement of the building on the site, the location of primary entrances, landscaping provided along the front of the property, and the location of parking. The *2030 Comprehensive Plan Update* asserts that frontage is a fundamental urban design attribute, as it governs the relationship between private investment on private land and the public investment in the public realm. As Raleigh continues to develop and redevelop, the *Comprehensive Plan Update* desires a more urban and pedestrian-friendly approach to frontage, consistent with the movement towards multimodal transportation solutions. An Urban Form Map (Figure 16) provides guidance as to when frontage should be directly shaped by zoning.

These mixed-use districts are transit- and TOD-supportive because they allow a range of commercial, residential, retail, office, entertainment, education, and other uses. They are walkable and mixed-use in nature and allow for concentrated activities, supported by higher densities, public amenities, and compact building design with a traditional neighborhood construct.

As shown in Figure 14 above, the New Bern Avenue BRT Project corridor is bookended by Downtown Mixed-Use zoning on its western end and Office Mixed-Use, Commercial Mixed Use, Residential Mixed Use, and Industrial Mixed Use zoning on its eastern end. The majority of the New Bern Avenue BRT Project corridor is residentially zoned, with some overlap of transit-supportive zoning in the commercial mixed-use district (red), Residential Mixed Use district (orange), and Office mixed use district (light blue). The residential mixed-use district is intended to provide for a variety of residential building types with retail, and the office mixed-use zoning primarily encourages office and employment uses.

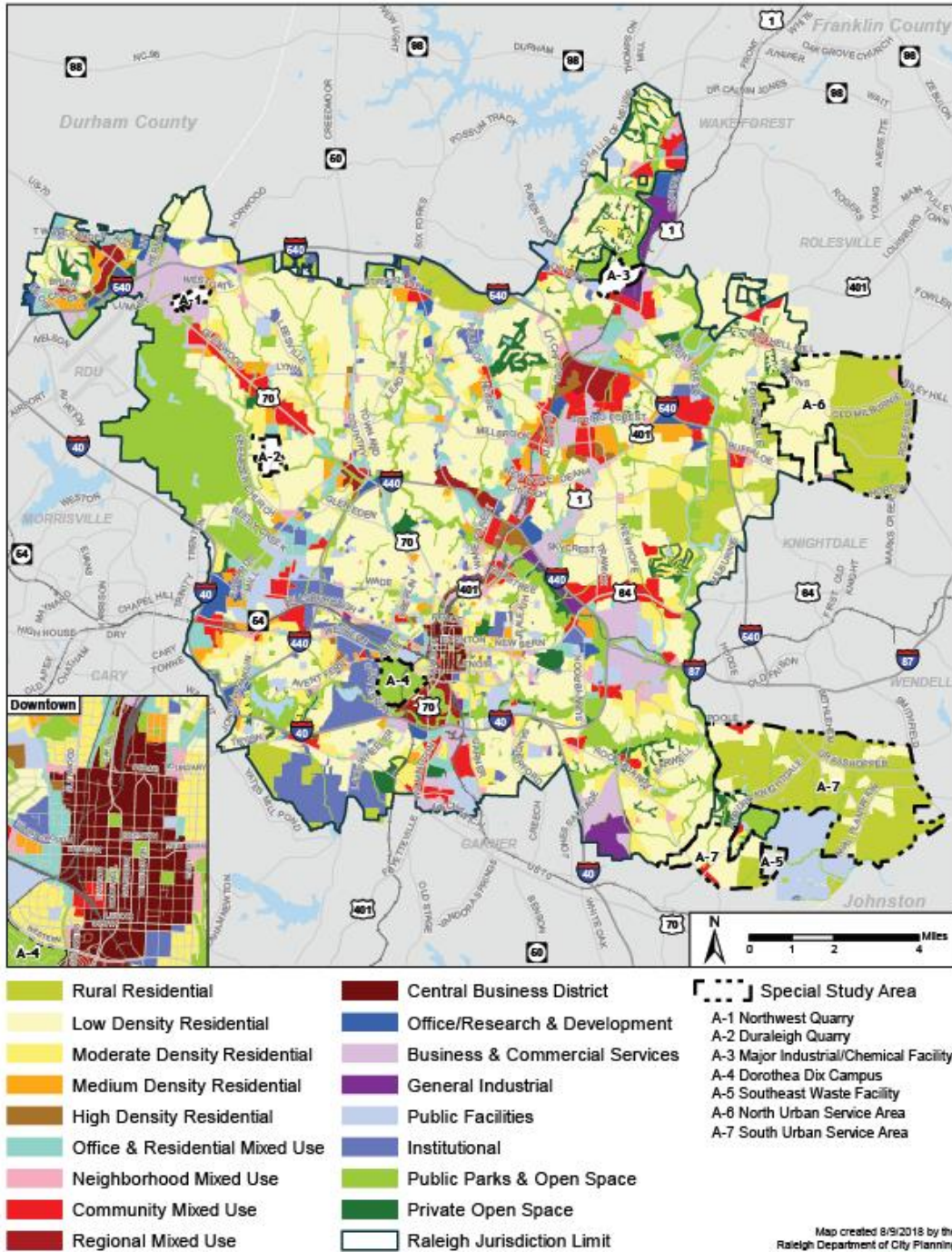
Draft zoning code revisions are currently being drafted by the City of Raleigh to realize changes that allow for or encourage development at transit-supportive densities and implement Raleigh’s *2030 Comprehensive Plan’s* fundamental Vision Theme of “Coordinating Land Use and Transportation.” This theme envisions that “higher density residential and mixed-use development will provide the land use pattern needed to support successful new local and regional public transit services.” Raleigh’s desired future land use patterns are shown on a Future Land Use Map (Figure 15). The map provides the land use foundation for the *2030 Comprehensive Plan* and, as part of the adopted *Comprehensive Plan*, carries the same legal weight as the Plan document itself. The map indicates the intended distribution and intensity of land uses over the next 20 years to create a logical framework to guide future zoning and development.

⁷ Height requirements only apply to apartments, general buildings, mixed-use buildings, and civic buildings. All other buildings such as detached and attached houses, townhouses, and open lots cannot be taller than 3 stories.

The *Future Land Use Map* shows a variety of mixed-use zoning along the New Bern Avenue BRT corridor than the current zoning map conveys. Currently low density residentially-zoned areas in the middle of the corridor are designated moderate and medium density residential, increasing development density in potential transit station areas.

Figure 15. Map of Future Land Uses

Map LU-3: Future Land Use



Source: 2030 Comprehensive Plan

2.4.1.2.2 Zoning Ordinances that Enhance Transit-Oriented Character of Station Area Development and Pedestrian Access

According to FTA, zoning that encourages transit-supportive design includes:

- Zoning for mixed-use buildings and sites;
- Low minimum and/or maximum building setback requirements;
- Design requirements to create human-scale, active façades;
- Requirements for entrances oriented towards streets, sidewalks, and other public areas; and
- Site design requirements related to parking placement.

As explained above, the *2030 Comprehensive Plan's* Future Land Use Map shows a variety of mixed-use land use designation along the New Bern Avenue BRT Project corridor, including office and residential mixed-use and community mixed-use zoning. Neighborhood mixed-use classification is intended to provide for a variety of residential, retail, service and commercial uses all within walking distance of residential neighborhoods. Specific pedestrian-friendly design treatments are not specified for these mixed-use classifications, but if stations are located within them, mixed uses will be encouraged.

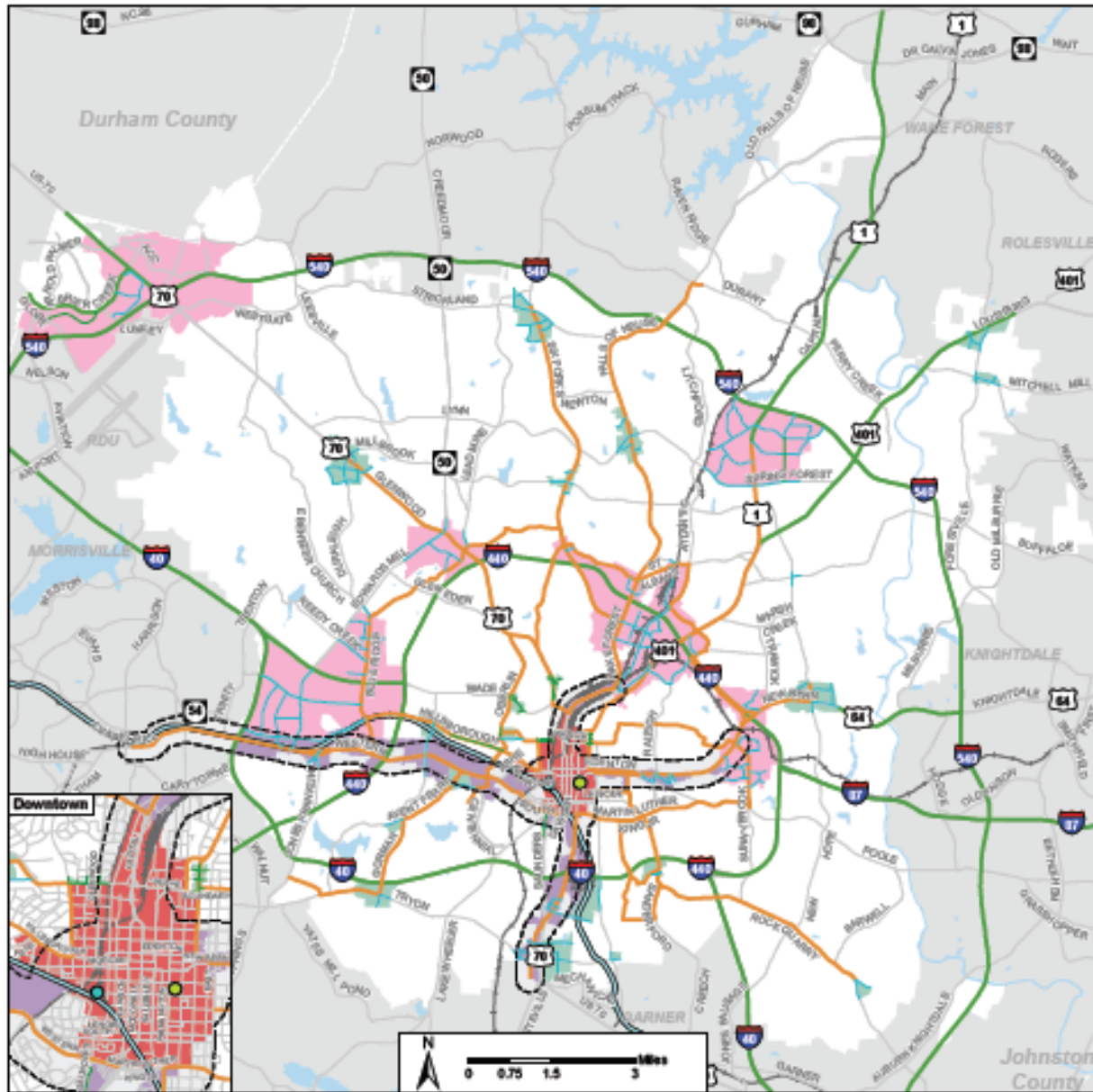
Raleigh's *UDO* encourages pedestrian-friendly design, mixed-uses, and other transit-supportive features if New Bern Avenue BRT Project station areas are designated Transit Overlay Districts, which are defined in the zoning code as areas that, when combined with the appropriate base district, height and frontage, allows for intense, compact and walkable mixed-use development in core areas around planned transit stations as designated on the Urban Form Map (Figure 16) or in an adopted station area plan. However, at present, no corridors have been designated Transit Overlay Districts.⁸

FTA provides that zoning that enhances the transit-oriented character of station area development and pedestrian access include broader areas designated as a transit overlay zone with appropriate design regulations. Transit-supportive overlay districts are tools for increasing densities, restricting uses that are not transit-supportive, and improving design features in station areas. The greatest weight is given to districts that have been adopted into ordinance and applied to station areas. Consideration is also given to districts that have been adopted but not applied, or to districts that are proposed for adoption. The certainty of adoption and application is considered in the context of phase of the process the project is in, i.e., as the project progresses through the steps in the process, districts should move from the proposal stage to adoption to application.

⁸ Note that the Urban Form Map (Figure 11) shows Transit Oriented Districts, not Transit Overlay Districts, which have not been mapped yet.

Figure 16. Urban Form Map with Transit Overlay Districts

Map UD-1: Urban Form



Source: 2030 Comprehensive Plan

Accordingly, Raleigh's Transit Overlay District designation modifies the underlying district, height and frontage standards to promote a vibrant pedestrian core by prohibiting certain incompatible uses (single unit living, two-unit living, cemetery, outdoor recreation, vehicle sales/rental, vehicle repair, car wash, and drive-through facilities), prohibiting non-urban frontages (Parkway and Detached), reducing required off-street parking for both residential and non-residential development (one space per unit as opposed to two and one space per 500 square feet for all non-residential buildings as opposed to one space per 400 square feet⁹), and requiring that buildings have a minimum of two stories. Specific design regulations related to the Transit Overlay District designation include more stringent block standards with maximum block perimeters of 2,000 feet (compared to 3,000 feet for mixed-use districts up to five stories) and dead-end streets are prohibited. In addition, remote parking that counts toward parking requirements is allowed within a greater distance in a Transit Overlay District.

The Transit Overlay District currently exists in the *UDO*, but not on the zoning map. To take effect, the overlay needs to be applied through rezoning, initiated either by the city or individual property owners. The passage of the 2016 transit sales tax referendum and subsequent planning mean that specific corridors and station areas are rapidly taking shape. Thus, applying the overlay will occur as a next step in the implementation of Raleigh's land use and transit policy alignment.

An alternate zoning tool that the City of Raleigh can leverage to support TOD is the Planned Development (PD) District. The PD District allows an applicant to modify certain required development standards for residential and mixed-used districts to address site-specific challenges or produce a development which offers more public benefits outlined in the *2030 Comprehensive Plan* than a development produced under typical standards. The PD District also offers applicants additional flexibility on certain development standards in return for projects with higher quality design. Once adopted, the PD District has the potential to be utilized to encourage not only TOD, but also eTOD.

2.4.1.2.3 Zoning Allowances for Reduced Parking and Traffic Mitigation

Eliminating or reducing minimum parking requirements, as well as establishing or reducing maximum requirements, are strategies that FTA considers transit-supportive and score a higher rating. The City of Raleigh *UDO* provides for vehicle parking reductions based on proximity to transit, affordable housing, senior housing, private car sharing programs, tree preservation, and shared parking.

A 10 percent reduction in the number of required parking spaces is allowed for uses with a main entrance within a walking distance of 1,320 feet of an operating transit stop or stops provided the stops are all within 1,320 feet walking distance of each other, with service from 6 AM to 8 PM where service intervals are no longer than 15 minutes during peak commute hours. However, this transit reduction does not apply in a Downtown District, Transit Overlay District, or Urban Frontage.

⁹ No parking spaces are required for the first 16 units of a residential building and no parking spaces are required for the first 10,000 square feet of commercial space, similar to the requirements associated with Downtown District (DX-) zoning.

Required parking for an affordable housing development may be reduced to a rate of one parking space for each unit. However, this affordable housing reduction applies only to required spaces for dwelling units.

A reduction in the number of required parking spaces for residential units is allowed where an active on-site car-sharing program is made available for the exclusive use of residents. The parking requirements for all dwelling units may be reduced by five spaces for each car-share vehicle provided.

Shared parking could also be requested to meet the minimum vehicle parking requirements for mixed-use projects or for multiple uses that are located near one another and which have different peak parking demands or operating hours. Those wishing to use shared parking as a means of reducing the total number of required spaces must submit a shared parking analysis.

In February 2017, the City of Raleigh released the *Downtown Development and Future Parking Needs Study*, which analyzed parking policies that supported economic development. Among its recommendations are to:

- Integrate parking planning into the larger Downtown business strategy context;
- Employ good urban design principles relative to parking facility design to better integrate parking infrastructure into the urban fabric – this includes criteria such as wrap around parking with retail / street-level activation, mixed-use parking development;
- Reinforce the importance of shared parking as a central component of the strategy; and
- Further study the impacts of parking minimums on different parts of Downtown.

In follow-up to this study, Raleigh is currently evaluating eliminating parking minimums and its current pricing strategy as a part of its *Parking Infrastructure and Pricing Strategy Changes* initiative. A finance expert has been hired by the city to head its parking department and develop a more strategic approach to pricing. The proposed on-street and off-street hourly and monthly account rates generated from the analysis seek to correct the incentive to park on-street all day and encourage use of transit, carpool/vanpool, and bicycling and walking. One recommendation is to increase the cost of parking downtown by 35 percent over two years.

2.4.1.3 Tools to Implement Transit-Supportive Plans and Policies

FTA bases this rating on an assessment of:

- Outreach to government agencies and the community in support of land use planning;
- Regulatory and financial incentives to promote transit-supportive development; and
- Efforts to engage the development community in station area planning and transit-supportive development.

The following summarizes the city's and county's transit-supportive land use planning tools.

2.4.1.3.1 Outreach to Government Agencies and the Community in Support of Transit-Supportive Planning

FTA encourages that outreach to stakeholders be conducted as part of comprehensive planning, zoning, and other public sector policies that set the framework for development. Stakeholder

outreach is critical to educate people about transit-supportive characteristics, and increase the chance of adoption and implementation of supportive comprehensive plans and zoning regulations.

Evidence of promotion and outreach activities by the City of Raleigh in support of station area planning, development, and growth management can be seen in four distinct efforts.

- 1 **Smart Growth America's [Planning for Successful and Equitable Revitalization in Raleigh](#):** Smart Growth America awarded the City of Raleigh with technical assistance for equitable TOD planning. Representatives of Smart Growth America met with city agency staff, community leaders, and residents in October 2016 for a two-day workshop under the Revitalization without Displacement program, supported through The PNC Foundation. The purpose of this site visit was to meet with Raleigh leadership and stakeholders to discuss specific recommendations and to initiate conversations between public, private, and nonprofit partners. The assistance culminated in a recommended action plan, including short-term (three to six months), medium-term (six to twelve months), and long-term (one to two years) actions, such as:
 - a Educate key players and potential partners about TOD;
 - b Reform plans, codes and policies to facilitate affordable housing production and preservation;
 - c Prioritize bicycle and pedestrian improvements through design standards and capital investments
 - d Designate staff to facilitate equitable TOD coordination and increase visibility;
 - e Create an assistance program for companies impacted by construction; and
 - f Enhance site-access and improve site viability to counter market conditions that hinder transit-oriented development.

- 2 **2030 Comprehensive Plan Update:** Raleigh's *Comprehensive Plan Update* is currently under adoption review by its City Council. Council hearings are scheduled for September 3 and October 1, 2019. A review draft was presented to the City Council on March 12, 2019, following public workshops in March 2015, in-reach, outreach, and public engagement between 2015 to 2017, and city review in 2018 and 2019. Residents were also invited to attend public meetings to learn about how the *Comprehensive Plan* addresses five areas: resiliency, housing, development transitions, transportation, and sustainability. The five public meetings were held between June 7 to July 11, 2019. To provide the public with alternative times to ask questions about the Update in a more informal setting, Raleigh City Planning staff will offer multiple [Ask a Planner](#) office hours before the public hearing on August 29, 2019.

- 3 **Raleigh BRT: Equitable Development Around Transit Plan:** The City of Raleigh held its first public meeting for its [Equitable Development Around Transit](#) planning effort on June 6, 2019 to kick off public discussion around two primary questions: (1) To what extent should Raleigh's future growth be centered on transit?; and (2) What should be the goal for housing affordability near bus rapid transit stations? Five stations were set up at the meeting to inform the public about the overall BRT system, the state of transit-supportive planning, planning for the city's and region's growth, ensuring equity and affordability as the city and region grows, and the status of design

of the New Bern Avenue BRT Project (Figure 17). The planning process involves broad community discussion about how to maximize improved transit while delivering an equitable and sustainable solution. In early fall 2019, there will be in-person and online workshops. In addition, city staff have given presentations to Citizen Advisory Commissions and other community groups between June and September, 2019.

- 4 **Wake Transit Corridor Land Use and Housing Planning:** TJCOG staff led a planning effort with participation from Cary, Garner, Morrisville, Raleigh, Wake County, CAMPO, GoTriangle, and the Research Triangle Foundation. This project started in the fall of 2017 and was recently completed with the publication of *Connecting the Dots: Linking Transit Investments, Development Decisions and Affordable Housing along Wake County's Bus Investment Corridors* in July 2019. The report focused on Wake County's BRT and frequent bus corridors, surveying the current landscape, highlighting approaches that have been successful elsewhere, and framing future regional discussions across jurisdictions and planning and transportation organizations. The intent of the report is to help local governments align County and Municipal housing and land use policies with the *Wake Transit Plan*, understand where current affordable housing is located in relation to transit corridors, understand how land use and affordable housing decisions are factored into state and federal transit funding decisions, use land use and affordable housing considerations for the selection and prioritization of BRT alignment choices, prioritize locations along the transit corridors where it could be important to preserve existing affordable housing or build new housing, and use updated socioeconomic data in the region's travel demand model used to generate transit ridership forecasts to ensure it reflects the latest community plan.

Figure 17. Display Board from June 6, 2019 Public Meeting on Raleigh BRT: Equitable Development Around Transit

RALEIGH BRT: EQUITABLE DEVELOPMENT AROUND TRANSIT
WELCOME!

Thank you for coming!
We're glad you can be part of this community conversation about future growth around transit and housing affordability. Here's a quick guide to today's event:

The Community Wall: On the side of the room, you'll see a space where you can place sticky notes for all to see. We want to know what excites you about BRT and what concerns you might have.

Stations: We have five stations, each with different information:

- 1) **BRT Corridors** - Learn about the overall BRT system
- 2) **Transit-Supportive Planning** - What does it look like to plan around transit?
- 3) **City and Regional Growth** - Raleigh's dynamic economy means we continue to grow
- 4) **Equity and Affordability** - Let's dive deeper into these core questions
- 5) **New Bern Avenue BRT** - Interested in the design for our first BRT line?

Presentation: We'll have a formal presentation that begins at 6:30PM. Otherwise, please feel free to spend as much time as you want at the stations.

Conversation: That's what we're here for - please share your thoughts and ask us any questions you have!

Food: Please enjoy!

VENUE MAP

Bus Rapid Transit (BRT) raleighnc.gov/BRT

Source: City of Raleigh

The *Land Use - Transit Policy Alignment White Paper* was developed in 2018 as a preliminary step in the process of aligning Raleigh's land use policy with the major transit investments coming as the *Wake County Transit Plan* is implemented. The *White Paper* had two goals: (1) To update Raleigh's land use policies and regulations to fully take advantage of the economic, environmental, and social equity benefits provided by transit investments; and (2) to consider what portion of the city's future growth should occur in the form of transit-oriented development and to create a framework for realizing that goal. The document was prepared by the Raleigh Department of City Planning, which, first, conducted an audit of existing regulations and policies that either encourage or hinder development around transit corridors. Next, it conducted an extensive literature review of land use research as it related to TOD. This review included a deep dive into the latest thinking and best practices regarding TOD, parking policy, housing economics, multimodal infrastructure, and more. City planning staff have, in conjunction with the transit planning process, been sharing information and compiling best practices with other local governments in the region. That collaboration informed the *White Paper's* recommendations and will continue through this process and beyond.

This *White Paper* presents a generalized road map for aligning Raleigh land use policy and regulation with expected transit provision. As "Next Steps", the *White Paper* recommended public engagement to include:

- **Kickoff** – A major kickoff event designed to introduce the city to the concepts of TOD.
- **TOD Overlay Focus Meetings** – As part of the process of applying or revising the TOD overlay, additional focused engagement could occur in smaller forums, including specialized

events, meetings with boards and commissions and Community Advisory Council (CAC) meetings.

- **BRT Framework Planning** – The *Equitable Development Around Transit* effort is underway, involving community discussion about how to maximize improved transit while delivering an equitable and sustainable solution. As provided earlier, the first public meeting was held in June 2019. Stakeholder presentations are currently underway with in-person and online workshops scheduled for early fall 2019. This process will involve policy decisions about the share of future growth to be accommodated along transit corridors. It would also create station typologies and a common station design framework.
- **Station and Corridor Planning** – Station area plans and transit corridor plans can refine land use, design, affordable housing goals, and more on a very localized and context-specific basis. The planning effort would mirror, at varying scales, area planning processes that many residents are already familiar with. They would include a range of events, from hands-on workshops to open-house style engagement.

These public engagement processes of the land use and transit policy alignment will include cooperation with partners, including the Town of Cary, GoTriangle, Wake County, N.C. State University and the Capital Area Metropolitan Planning Organization. Significant internal cooperation will involve multiple departments, including City Planning, Transportation (Office of Transportation Planning, GoRaleigh), Development Services, Housing and Neighborhoods, and the Office of Economic Development. Discussions will also occur with relevant boards and commissions, including the city’s Bicycle and Pedestrian Advisory Commission, Planning Commission, Raleigh Transit Authority, Appearance Commission, Raleigh Historic District Commission, Environmental Advisory Board and Development Services Advisory Committee.

Support for coordinating planning with transit investments from the public sector is present in local government agreements. One example of a local government agreement is the *Transit Governance Interlocal Agreement (ILA)*, authored by Wake County and entered into in October 2016 between Wake County, GoTriangle, and CAMPO. The *ILA* guides the *Wake Transit Plan’s* planning, funding, expansion and construction and the roles and responsibilities of each agency. Transit and TOD in Wake County is planned and provided by a variety of agencies including the City of Raleigh, Town of Cary, GoTriangle, Wake County, and CAMPO. Thus, the *ILA* requires implementation agreements to move projects and studies along efficiently. The agreements clearly identify a lead agency to facilitate the process, other agencies and entities needed for the project, how decisions will be made and what metrics will be used.

Community Benefits Goals: The City of Raleigh is actively working on advancing the New Bern Avenue BRT project and is committed to continue to work with stakeholders, community advocates, and the general public to ensure a transparent and collaborative Project Development process. The project is not anticipated to create direct negative impacts on the corridor or adjacent communities; however, large infrastructure projects may generate significant community conversation. The City of Raleigh is currently working with stakeholders and members of the community along the New Bern Avenue corridor to address several areas of consideration. These include, but are not limited to, gentrification and displacement mitigation, community engagement and empowerment, and heritage preservation. The City is committed to continuing to work with the stakeholders and members of the community to address these concerns and achieve mutual consensus through direct

engagement activities and further discussion of tools to address these areas of community importance.

2.4.1.3.2 Regulatory and Financial Incentives to Promote Transit-Supportive Development

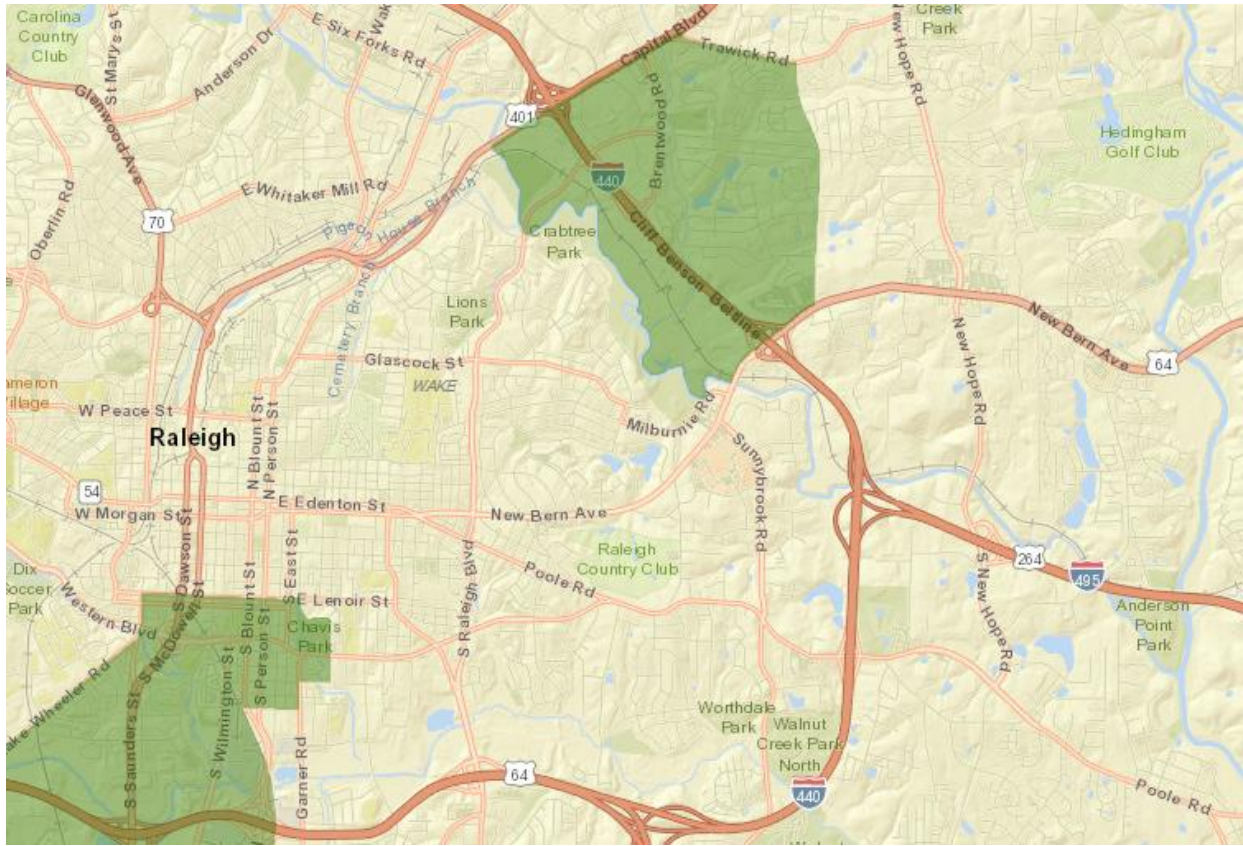
FTA seeks to fund CIG projects supported by incentives for transit-supportive development near stations or in corridors. Such regulatory and financial incentives may come in many forms, including:

- Density bonuses;
- Streamlined processing of development applications;
- Reduced or waived zoning requirements for traffic mitigation fees and in-kind contributions;
- Land assembly programs;
- Financial programs such as tax increment financing zones, tax abatement, or transit-oriented loan support; and
- Other economic development and revitalization strategies.

The City of Raleigh does not yet offer explicit programs or incentives to encourage TOD and does not employ financing mechanisms or offer incentives to developers to encourage TOD. However, they will be identified, reviewed and approved in the process of developing both the New Bern BRT project and the *Raleigh BRT: Equitable Development Around Transit* Plan. The *Land Use - Transit Policy Alignment White Paper* identifies regulatory issues for the city to consider in the near future, including zoning incentives for increased development in station areas. The City of Raleigh has already implemented voluntary zoning conditions for affordable housing. Specific incentives to be considered in the near future include density bonuses, housing fund subsidies, relaxation of regulations, expedited zoning reviews, or other measures.

These local incentives will likely leverage federal tax incentives associated with economic development in designated Qualified Opportunity Zones (QOZs), as established by the Tax Cuts and Jobs Act of 2017 (P.L. 115-97). Development within QOZs can take advantage of financing from Qualified Opportunity Funds. QOZs are located at both ends of the New Bern Avenue BRT Project alignment (Figure 18). Thus, development within the QOZs can take advantage of financing from Qualified Opportunity Funds and be equitably transit-supportive if paired with targeted local incentives.

Figure 18. Qualified Opportunity Zones (shaded in green) on the New Bern Avenue BRT Project Corridor



Source: [North Carolina Department of Commerce](https://www.commerce.nc.gov/)

2.4.1.3.3 Efforts to Engage the Development Community in Station Area Planning and Transit-Supportive Development

Outreach to developers, property owners, and financial institutions regarding characteristics of and opportunities for transit-supportive development may take forms such as invitations to participate in public planning processes, one-on-one meetings, or other educational activities. FTA also recognizes agencies’ joint development programs as an important strategy for promoting station area development.

As part of the New Bern Avenue BRT Project station area planning process, the City of Raleigh will go through an iterative process with stakeholders, including developers. This station area planning effort will define station areas and assess market readiness by asking what kind of station should a certain station area be given its regional context, as well as what the existing conditions that encourage or limit TOD are. Once these questions are answered, Raleigh can make decisions about the expected growth to be accommodated and directed to a given station, what kind of urban character it should have, and other key development issues.

GoTriangle developed a [Transit-Oriented Development Guidebook](#) for the Durham-Orange Light Rail corridor, drawing up development scenarios for the project’s 18 station areas. The guidebook’s blueprint provides a template for similar station development scenario analyses, potentially applicable to the New Bern Avenue BRT Project station areas, devising a possible future among

thousands of potential scenarios to best capture the opportunity that BRT brings to guide growth, expand access to opportunity, increase jobs and generate tax revenue that allows the region to invest in other goals.

GoTriangle is also establishing a joint development project, having released a Request for Qualifications for the development of the Raleigh Union Station Bus Facility site (Figure 19). The 1.76-acre site in Raleigh will include a unique bus transfer facility that will connect to the new downtown Raleigh Union Station. GoTriangle won a \$20 million federal BUILD grant for the facility, known as RUS Bus. GoTriangle will select a short list of respondents to advance to the Request for Proposal phase. The successful

Figure 19. Proposed Raleigh Union Station Bus Facility Site Concept



Source: [Raleigh Urban Design Center](#)

joint development partner will be chosen to deliver a mixed-use development program that is vertically integrated with the new bus facility on the RUS Bus Site. This effort is intended to serve as precedent for future joint development partnerships. Thus, a similar joint development program could be established for the New Bern BRT station locations once they are finalized.

2.4.2 Demonstrated Performance of Transit-Supportive Plans and Policies

Measures used to evaluate the demonstrated performances of transit-supportive plans and policies are:

- Performance of transit-supportive plans and policies; and
- Potential impact of the transit project on regional development.

The following summarizes plan performance and impacts.

2.4.2.1 Performance of Transit-Supportive Plans and Policies

This rating is based on demonstrated cases of development affected by transit-oriented policies and station area development proposals either in the corridor or elsewhere in the region. Project sponsors may provide evidence of successful developments and policies elsewhere in the municipality or region. However, greater weight will be given to examples within the same municipality, since this demonstrates favorable local market conditions as well as a willingness to implement adopted policies. The two items considered are performance of transit-supportive plans and policies, as measured through demonstrated cases of development affected by policies, as well as station area development proposals, and potential impacts of the transit investment on development, based on land available and the corridor economic environment.

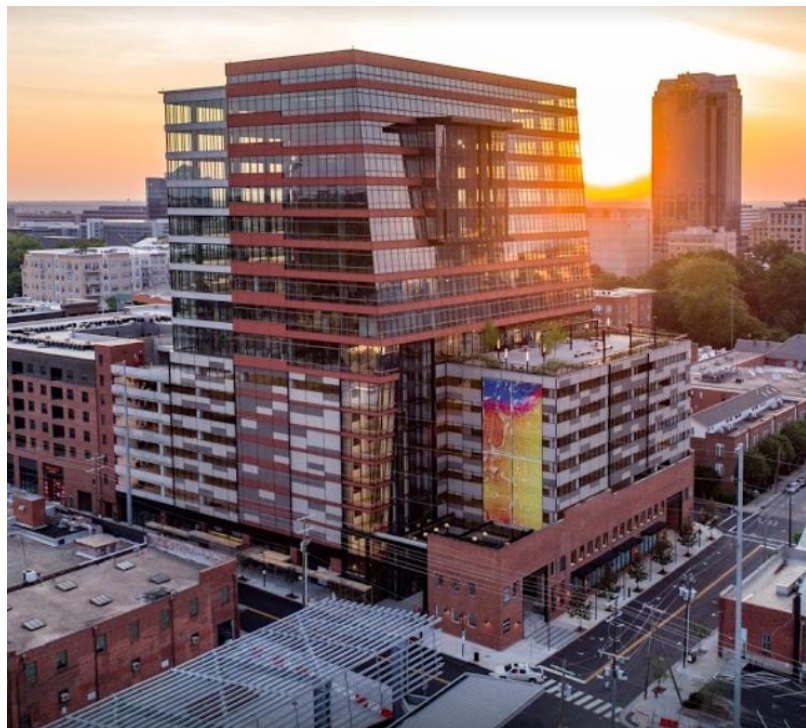
2.4.2.1.1 Demonstrated Cases of Development Affected by Transit-Supportive Policies

There are few recent development projects that have been successfully completed consistent with TOD principles in Raleigh and Wake County with higher densities and pedestrian-friendly design characteristics. As provided above, GoTriangle released a *Request for Qualifications* for the development of the 1.76-acre Raleigh Union Station Bus Facility site. Later this year, GoTriangle will select a short list of respondents to advance to the Request for Proposal phase. GoTriangle wants the development to:

- Expand transit choices by developing the bus facility as part of a multimodal campus;
- Create a complete, mixed-use community and provide for public space;
- Deliver affordable housing as a program component;
- Serve as precedent for future joint development partnerships; and
- Provide financial return to support operations.

The Raleigh Union Station Bus Facility site is across the street from [the Dillon](#), a completed mixed-use, transit-supportive development, the first of its kind in downtown Raleigh's rapidly-growing Warehouse District. Completed in 2018, the project includes an 18-story office tower with retail space and two six-story apartment buildings with an adjoining parking deck (Figure 20). The Dillon makes up an entire, 2.5-acre city block. At street level, the building complements the surrounding historic neighborhood and from a distance assumes a monumental presence in downtown Raleigh's skyline.

Figure 20. The Dillon



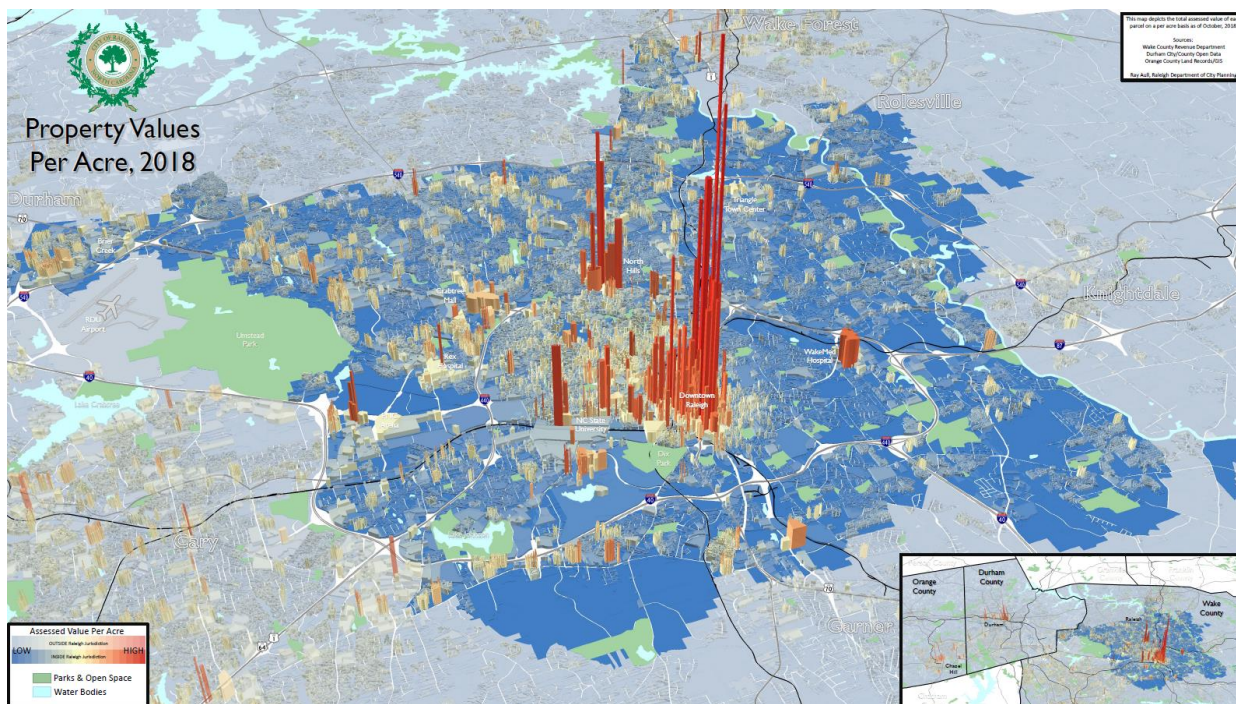
The Dillon is a recent example of development driven by Raleigh's transit-supportive plans and policies and significant infrastructure investments such as the multimodal transportation center and improved bus transit, which will render downtown the destination point for thousands of daily commuters.

Source: Flyboy Photo & Media

Downtown Raleigh is the densest office market in the Raleigh-Durham region. It generates approximately 7.3 percent of the property tax base while occupying less than one-half percent of all developable property within Raleigh (Figure 21). In 2015, an estimated 54,600 employees occupied over 5 million square feet of commercial office space and 5.7 million square feet of governmental

office space. Approximately one-third of the employment base is governmental; as a capital city, the downtown area houses four layers of government: city, county, state, and federal. The major nodes of office space are oriented between Wilmington Street and Salisbury Street, with the state government occupying the majority of the northern half of downtown. The private sector populates the southern half of downtown. Downtown also has a growing residential base. As of 2017, there were 5,700 multi-family units located within downtown, with the housing typology ranging from college dormitories to luxury condominiums, and many other housing types in-between.

Figure 21. Raleigh Property Values Per Acre, 2018



Source: City of Raleigh

New public and private development projects are projected to increase downtown’s vitality, provide new uses and services, and transform the skyline. According to the *2030 Comprehensive Plan*, these new developments are projected to infuse approximately \$1.05 billion of investment into downtown and will support additional housing, retail, service, and entertainment uses in the future.

Growing interest in downtown was a motivating factor for the creation of Raleigh’s [Downtown Plan](#) in 2015. It envisions a series of catalytic project areas where new, higher-value developments would be appropriate and desirable. Many of these project areas are co-located with major public investments by the city. Examples of public investments include the construction of Raleigh Union Station, renovation of the GoRaleigh Station at Moore Square, and reconfiguration of the Peace Street/Capital Boulevard interchange. These infrastructure improvements help to create functional and attractive places for private sector development.

There has also been steady redevelopment activity in the historic core of downtown Raleigh. Through historic preservation and adaptive reuse, buildings of one- and two-stories are accommodating active ground-floor uses, such as retailers, bars, and restaurants. More than two dozen such buildings are either being restored or have been within the last five years. These projects indicate a confidence

that downtown Raleigh will continue to emerge as a destination, currently for dining and entertainment, but ultimately for retail.

Another recent TOD example in Raleigh is the new Peace development, just blocks away from Seaboard Station. It is more than a mixed-use project serving a fast-growing population in the center of a booming metropolis. It's a project that represents building community and addressing issues of its most basic needs by offering the area its first downtown grocer. It's a story of delivering a complex project in an uniquely situated site requiring innovative design solutions for site specific challenges.

Earlier this year, the City of Raleigh approved a proposed 40-story tower at the corner of Peace Street and Capital Boulevard. It is part of an ambitious plan to turn the northern entrance of downtown into a hub of office and residential projects. It will provide a new Northern Gateway to Downtown Raleigh and is leading the way for development in the area. The tower would be the third phase of the Smokey Hollow project. The first phase includes 55,000 square feet of retail and is currently under construction (Figure 22). Altogether, the three phases will add hundreds of apartments and hundreds of thousands of square feet for office and retail.

Figure 22. Peace Development Rendering



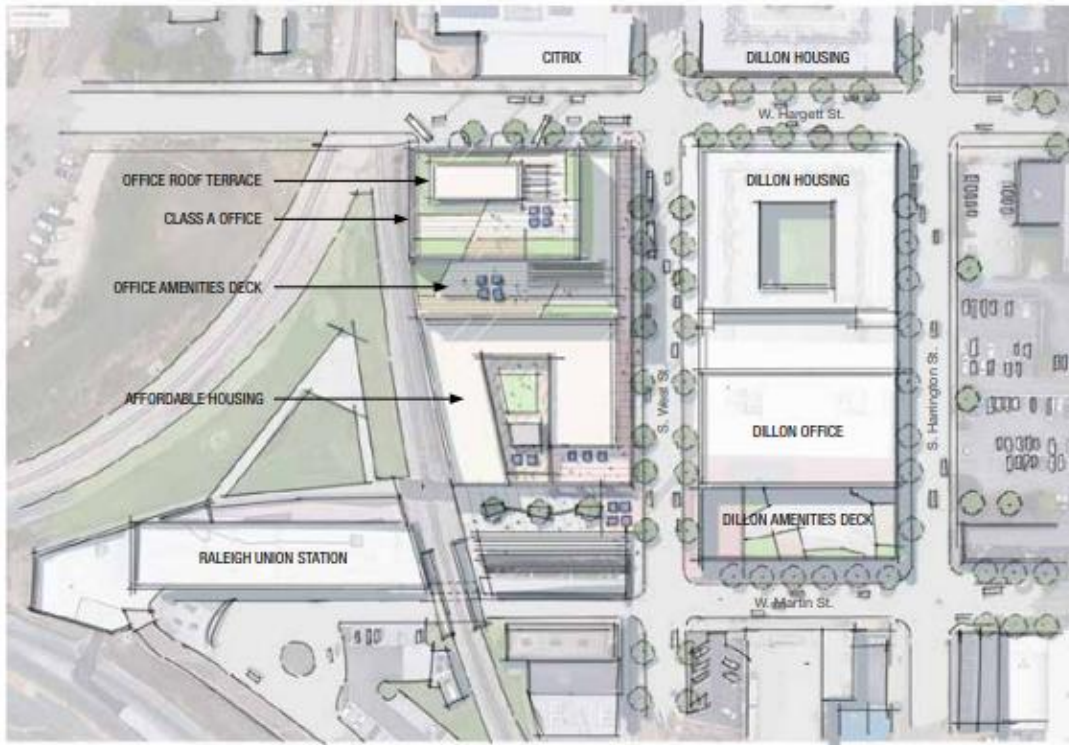
Source: [Cline Design Associates](#)

2.4.2.1.2 Station Area Development Proposals and Status

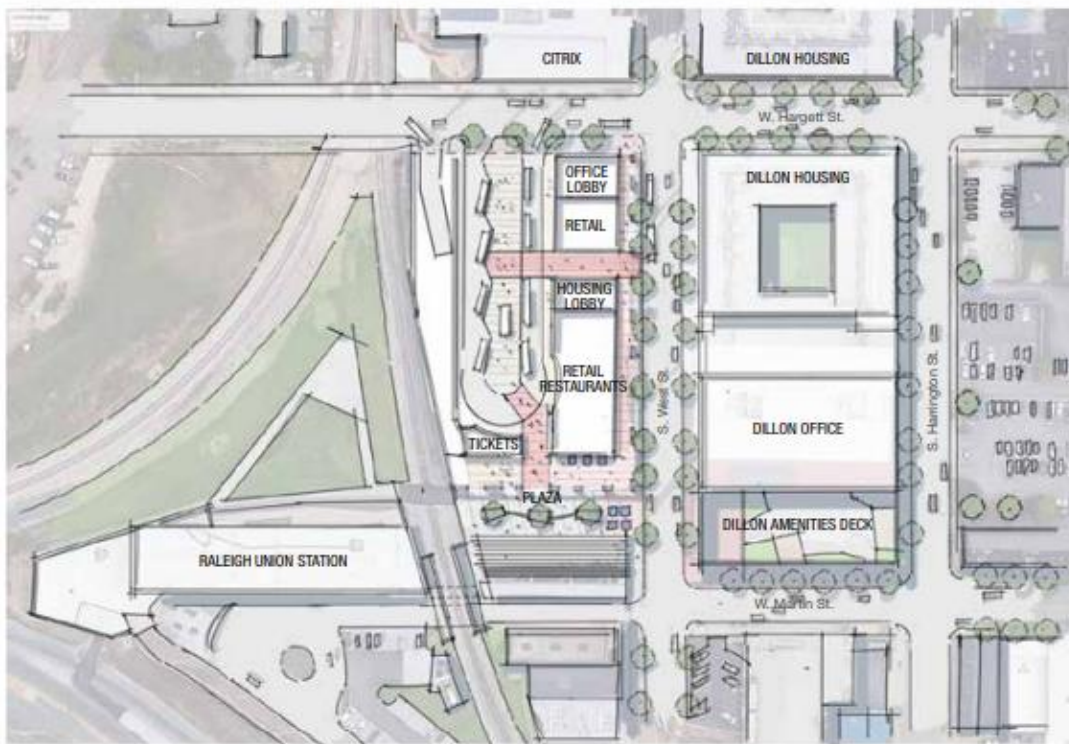
Responses to GoTriangle's *Request for Qualifications* for the Raleigh Union Station Bus Facility site joint development were due in March 2019. One proposal from Kane Realty Corporation and their affordable housing partner, DHIC, proposed to house a mix of uses in the development and preserve warehouse elements of the existing buildings. Their proposal sought to activate West Street as a popular venue for dining and entertainment and anchor the development with an industrial office tower overlooking an urban plaza (Figure 23).

The recently-completed [Southern Gateway Corridor Study](#) is an example of visioning for transit-supportive development in Raleigh for a transformed South Wilmington Street. Figure 24 shows current conditions of the street and the future vision for it, which clearly illustrate the transit-oriented character of the development. It includes additional housing opportunities, improved public realm, comfortable pedestrian amenities, and vibrant placemaking and design. This visioning is planned for New Bern Avenue to leverage the *New Bern Avenue Corridor Study* (Figure 25) and spur actual development in station areas consistent with transit-supportive policies and design principles.

Figure 23. Proposal for GoTriangle's Raleigh Union Station Bus Facility Site Joint Development



Development Context



Transit Plaza

Source: [DHC](#)

Figure 24. Southern Gateway Plan

Current Conditions



South Wilmington Street today is characterized by a lack of pedestrian activity and the potential for significant infill development.

Future Vision



The Southern Gateway plan, completed in 2016, envisions a series of walkable nodes linked by a bus rapid transit line (images above and left).

- Future Area Planning Needs**
- Western Boulevard
 - New Bern Avenue
 - Capital Boulevard (north of 440, for possible BRT extension)
 - Midtown (for frequent bus routes, possible BRT extension)

Source: City of Raleigh Land Use - Transit Policy Alignment White Paper

Figure 25. Proposed BRT Cross Section and 3D Renderings



Source: New Bern Avenue Corridor Study

2.4.2.2 Potential Impact of Transit Investment on Regional Development

This rating is based on land available and the corridor economic environment based on (1) the adaptability of station area land for development and (2) the corridor economic environment. Higher ratings are associated with significant land being available for new development or redevelopment at transit-supportive densities, a favorable corridor economic environment, and transit-supportive plans and policies in place or proposed that are expected to facilitate significant changes.

2.4.2.2.1 Adaptability of Station Area Land for Development

The amount of land near transit stations that is vacant or available for redevelopment is assessed to determine the potential impact of transit investment in regional development, as well as the amount of development anticipated or permitted for these areas based on existing zoning or actual proposals. A project serving a completely built-up, but low-density, area with little or no redevelopment potential receives a lower score than projects serving significant amounts of vacant land covered by zoning that allows transit-supportive densities. Built-up areas with already high density that allow for continued high density and the conversion of development sites to higher densities will receive higher ratings too.

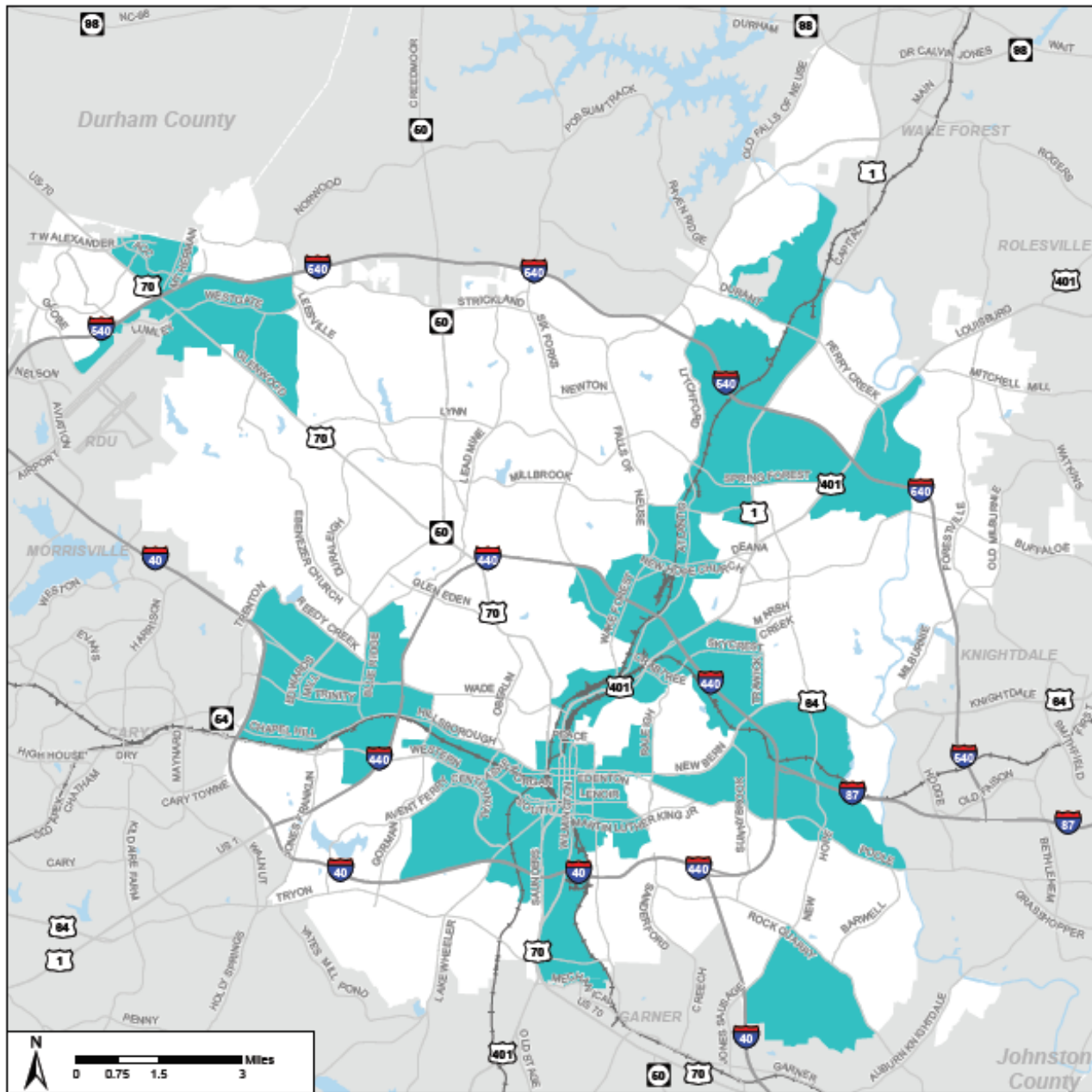
Raleigh's *2030 Comprehensive Plan* identifies economic development target areas. These are areas that demonstrate the most need for economic development intervention and that also present opportunities for economic development. Areas shaded in blue on Figure 26 correspond to geographies, measured in block groups, that meet one or both of the following criteria:

- Census Block Groups in which 40 percent or more of the Block Group are zoned for non-residential uses, and that are considered high poverty¹⁰ or are adjacent to high poverty block groups; and
- Census Block Groups in which 40 percent or more of the Block Group are zoned for industrial use.

The map is based upon quantitative analysis and is intended to provide the city with an identification of under-performing areas that can benefit from economic development activities.

¹⁰ High poverty is defined as 40 percent or more of individuals living below the poverty line in a census compared to an overall rate of 15 percent for the city.

Figure 26. Target Areas for Economic Development



Economic Development Target Area

Source: 2030 Comprehensive Plan

A large portion of the New Bern Avenue BRT Project corridor is within economic development target areas. As such, the City of Raleigh will implement Action ED 5.2 of its Comprehensive Plan Update to facilitate economic development plans and projects for targeted areas, such as the New Bern Avenue BRT Project corridor, that have not participated in the city’s economic expansion.

2.4.2.2.2 Corridor Economic Environment

New Bern Avenue has long served as the eastern gateway into Raleigh and contains a wealth of cultural, institutional and architectural history that contributes to the roadway’s identity as Raleigh’s Cultural Corridor. Established in 1792 by the William Christmas Plan for Raleigh, New Bern Avenue is one of the four original ceremonial roadways radiating out from the North Carolina State Capitol. New Bern Avenue is classified as a Secondary Arterial Thoroughfare in the *2030 Comprehensive Plan* and serves as a major east-west commuting route into Downtown Raleigh. The current roadway cross-section is a four-lane median divided roadway from I-440 to Poole Road and operates as a bifurcated one-way pair from Poole Road to the State Capitol.

The corridor provides a historical time line for the physical development of the city’s neighborhoods and institutions from the early 1800s to today. Over time, this eastern gateway into Raleigh has become tarnished due to aging infrastructure, declining economic conditions, and the loss of the terminating view from New Bern Avenue of the State Capital building.

The “Historic Urban” area extends from Downtown Raleigh past Swain Street to Raleigh Boulevard. The corridor is lined with street trees and sidewalks on both sides and the character of the adjacent historic neighborhoods are aesthetically pleasing and comfortably scaled (Figure 27). The streets are wide and one-way. The presence of many intersections and occasional on-street parking do little to reduce the traffic speed. The Tarboro Street intersection with New Bern-Edenton is the first activity node and acts as a gateway to the College Park and Idlewild neighborhoods, and St. Augustine’s College.

The “Suburban Residential” character area begins at Raleigh Boulevard and extends east to Donald Ross Drive. The character changes dramatically at the start of this district where a planted median divides east- and west-bound traffic (Figure 28). The landscaped single family homes of the Longview Gardens neighborhood dominate the corridor to the

Figure 27. Historic Urban Area of the New Bern Avenue Corridor



Source: City of Raleigh New Bern Corridor Study Final Report

Figure 28. Suburban Residential Area of the New Bern Avenue Corridor



Source: City of Raleigh New Bern Corridor Study Final Report

Figure 29. Medical Campus Area of the New Bern Avenue Corridor



Source: City of Raleigh New Bern Corridor Study Final Report

north. Each roadway section includes a two-lane ribbon pavement and gravel shoulders with grassed swales. No sidewalks are provided even though numerous bus stops and high-use pedestrian paths exist along the road shoulders. While not pedestrian friendly, the mature trees and landscaped median make this area pleasant and attractive. This district contains a significant landmark, the Milner Memorial Presbyterian Church, which sits on a high point with large, mature trees and a landscaped front lawn.

Crossing the King Charles intersection, the Longview Shopping Center is the corridor's second activity node. While aging and in poor condition, the shopping center provides, retail, services and restaurants that are in short supply along the corridor. East of the shopping center, the residential development pattern along both sides of the corridor is set far away from the street. Landscaping is the dominant feature and forms a narrow edge to the study area.

The "Medical Campus" character area extends from Donald Ross Drive to Crabtree Creek. The park-like quality of the previous area changes into the offices and commercial buildings associated with the WakeMed campus (Figure 29). The planted median dominates the view along what continues as an auto-oriented arterial, with sidewalks reappearing sporadically on the southern edge of the roadway. Approaching the high point of the district, the corridor's final and largest landmark appears. The WakeMed main building and its associated campus sit high in the landscape and dominate the surrounding development.

The medical center, in conjunction with the Wake County Human Services and Wake Technical Community College campus buildings, create the substance of an important and very busy activity node along the New Bern Avenue BRT Project. Even though the area medical services attract a large number of employees and visitors, very few commercial services are conveniently available in the immediate area.

Raleigh's *2030 Comprehensive Plan Update's* Urban Form Map (Figure 11) identifies the New Bern Avenue BRT Project corridor as a "Transit Emphasis Corridor" with the "Downtown Center" on one end and a "City Growth Center" on the other. The real estate market is likely to support TOD in the corridor due to these designations.

The New Bern Avenue BRT Project corridor is a Transit Emphasis Corridor because it was identified in the *Wake County Transit Plan* and programmed for a much higher level of bus service, including frequent buses, improved stop amenities, a more complete pedestrian network, and potentially traffic signal priority for transit. A hybrid approach to frontage is recommended.

The area of the New Bern Avenue BRT Project corridor within the City Growth Center is where significant infill development and redevelopment are anticipated in the future. The section of the New Bern Avenue BRT Project corridor within the Downtown Center is ripe for continued transit-supportive development.

Despite its relatively small size, downtown Raleigh has emerged as the largest urban center in the region. Regional growth patterns are shifting eastward, placing downtown closer to the center of the region's urbanized land mass as projected to 2030. The prevailing development model in downtown Raleigh continues to be mixed-use, with some combination of for-sale residential condominiums, office space, and ground-floor retail space. Year after year, each successive project allocates a greater portion of the building's ground-floor to active uses. That trend is indicative of an increasingly positive outlook regarding the market for retail in downtown Raleigh. Additionally, newer residential

projects have also increased in size; residential projects completed within the past three years averaged about 70 units per development, whereas the residential projects currently under construction average about 125 units per development.

The upward trend in downtown Raleigh's revitalization has resulted in significant economic, fiscal, civic, and cultural gains. Strong job growth, commercial and residential development, and significant public projects have helped downtown establish a competitive edge and become a model for transit-supportive development that could be replicated along the New Bern Avenue BRT Project corridor.

2.4.3 Affordable Housing

FTA also measures the plans, policies and incentives in place to preserve or increase the amount of affordable housing in the project corridor. Items considered when evaluating this include:

- Evaluation of corridor-specific affordable housing needs and supply;
- Plans and policies to preserve and increase affordable housing in region and/or corridor;
- Adopted financing tools and strategies targeted to preserving and increasing affordable housing in the region and/or corridor;
- Evidence of developer activity to preserve and increase affordable housing in the corridor; and
- The extent to which local plans and policies account for long-term affordability and the needs of very- and extremely-low income households in the corridor.

2.4.3.1 Evaluation of Corridor-Specific Affordable Housing Needs and Supply

According to FTA, the first step in planning for affordable housing is to document affordable housing supply and needs. A needs assessment evaluates the demand for affordable housing and compares it to the supply of housing.

The *2030 Comprehensive Plan Update* evaluated the housing experiences of city residents and found that lower income residents of the city have a greater housing need than those of higher incomes. Table 6 shows that 33,610 renter households with incomes below 80 percent of area median income (AMI) were paying more than 30 percent of household income on housing (rent and utilities), while 17,890 additional renter households with incomes less than 80 percent AMI were paying more than 50 percent of their income to cover these costs. Combined, in 2015, approximately 51,500 renter households in Raleigh with incomes below 80 percent AMI were cost burdened.

Homeowners, too, are experiencing cost burdens. Table 6 shows that 13,520 homeowners with incomes less than 80 percent AMI were paying more than 30 percent of income on housing costs; and 6,405 homeowners with incomes less than 80 percent AMI were paying over 50 percent of income on housing. Combined, in 2015, approximately 19,925 Raleigh homeowners with incomes less than 80 percent AMI were cost burdened.

Table 6. City of Raleigh Income by Cost Burden

	Renter Households		Homeowners	
	Cost Burden > 30%	Cost Burden > 50%	Cost Burden > 30%	Cost Burden > 50%
<= 30% AMI	14,600	12,980	3220	2760
> 30% <= 50%	11,970	4,280	3510	1935
> 50% <=80%	7,040	630	6790	1710
> 80% <= 100%	815	120	2965	315
> 100%	610	160	4105	425
Total Households Cost Burdened	35,035	18,170	20,590	7,145

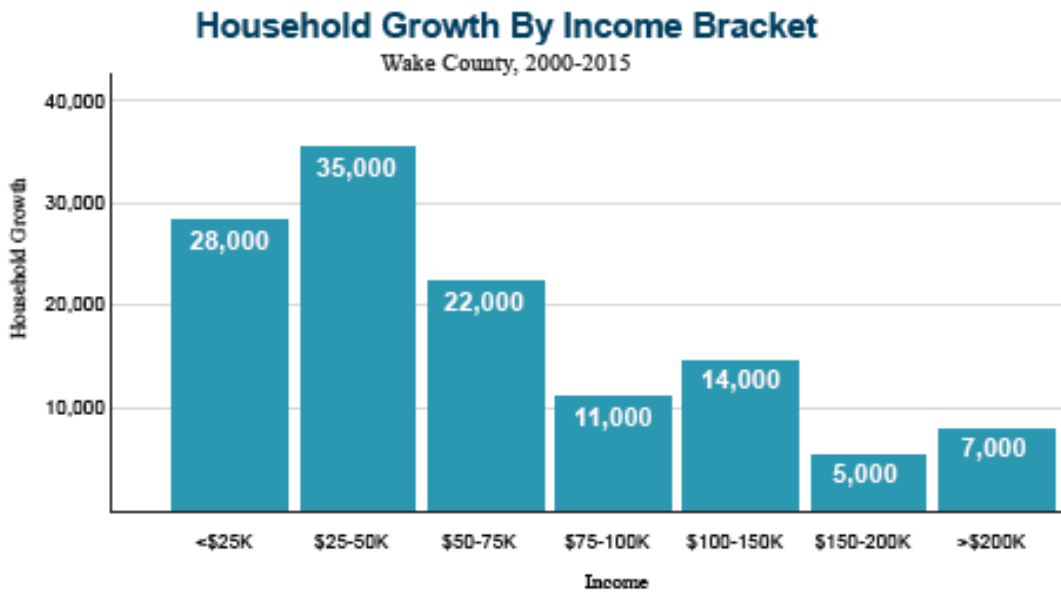
Source: 2030 Comprehensive Plan & Comprehensive Housing Affordability Strategy data, HUD, from 2009—2013 ACS

There are 10,766 units of publicly-assisted affordable housing within the city, including traditional housing units and apartments developed by for-profit housing developers with federal low-income housing tax credits. Including Housing Choice Vouchers managed by the Raleigh Housing Authority (RHA), the most current (2016) estimate of assisted affordable housing units totals nearly 14,635 units in the city, about 8 percent of Raleigh’s total housing supply.

Many residents of the city struggle to even find housing. RHA shows a total of almost 8,000 families on the waiting list for public housing or Housing Choice Vouchers. The 2016 Point-in-Time (PIT) count of persons meeting HUD’s definition of homeless yielded 818 persons in the city who were homeless. Supplemental data from Wake County’s school system showed over 2,500 students living in motels/hotels and local knowledge by homeless service providers identifies persons and families “doubled up” with relatives or friends. Neither group meets the HUD definition so the real homeless need is greater than the official PIT count of 818.

Considering these numbers, Raleigh’s existing affordable housing challenge becomes apparent. Recent demographic trends suggest that the challenge will be even greater in the city’s future. Figure 30 shows that the greatest household growth in Wake County in the period 2000—2015 was among lower income households. Figure 31 shows Raleigh’s housing opportunity index, which is declining as median home sales prices have grown.

Figure 30. Household Growth by Income

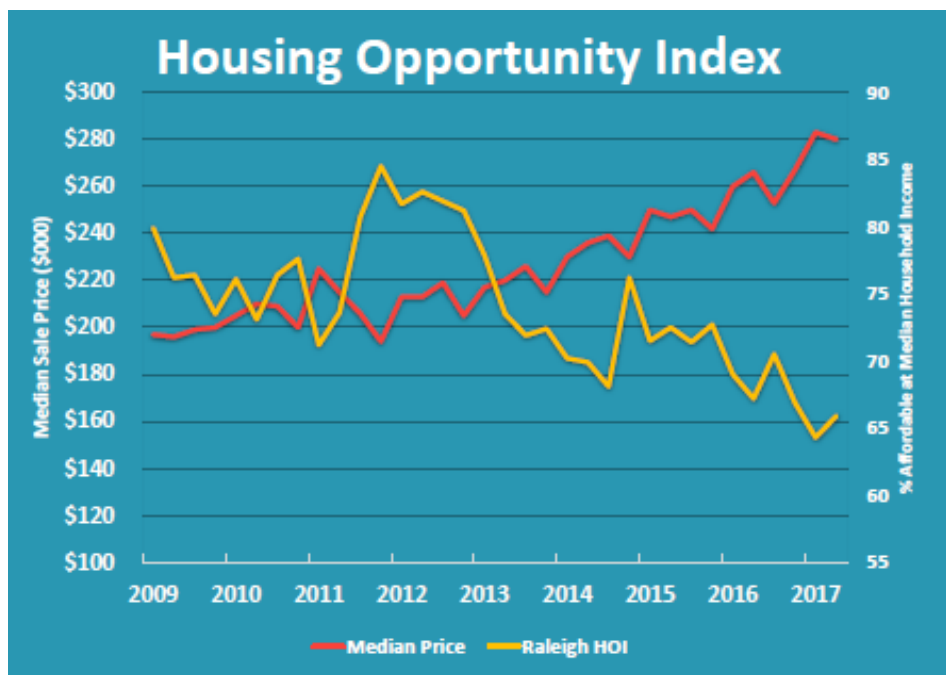


Note: Incomes are not adjusted for inflation over time.
Sources: Social Explorer, U.S. Census, HR&A Advisors

Source: 2030 Comprehensive Plan

The City of Raleigh's *Land Use – Transit Policy Alignment White Paper* identified as a key issue the assessment of how much subsidized housing can and should be located within planned TODs, and how much housing is needed. The 2035 population projection included in the *2030 Comprehensive Plan* estimates the city could see an increase of 160,000 residents, to about 600,000 total. Raleigh currently has about 190,000 total housing units, according to the U.S. Census Bureau. If Raleigh maintains an average household size of 2.5, the city would need an additional 64,000 units to support growth without further straining the housing supply. That is a 33 percent increase in housing in less than two decades.

Figure 31. Raleigh Housing Opportunity Index



Source: 2030 Comprehensive Plan

Given that Raleigh's road networks are already busy, ensuring adequate mobility involves building a significant portion of this residential development around transit. Raleigh's current Transit Overlay District overlay requires a minimum height of two stories, and significantly more dense development is likely needed in many TOD areas. One outcome of the *Equitable Development Around Transit* planning process will be an estimate of how many new units can be accommodated in these areas.

TJCOG is a regional planning agency serving the Research Triangle region, including Wake County, Durham County, and Orange County. Its principal activities include regional planning and coordination around the quality and accessibility of affordable and workforce housing, including data collection and analysis as well as providing technical assistance to the region's municipalities.

As part of its affordable housing efforts, TJCOG collects data on Legally-Binding Affordability Restricted housing units from multiple sources throughout the region, including affordable housing nonprofits, commercial data providers, and the National Housing Preservation Database. TJCOG reviews the data to eliminate duplicates, exclude units that serve households at above 60 percent of Area Median Income (AMI), and correct apparent errors. TJCOG provided this data to GoTriangle for its September 2018 application for rating of the Durham-Orange Light Rail Transit Project in FTA's Capital Investment Grant (CIG) program and updated and recertified the data in March 2019 for GoTriangle's submission to FTA for the project's Full Funding Grant Agreement.

In the same way, TJCOG performed this same analysis and certification for the New Bern Avenue BRT Project. TJCOG's affordable housing unit analysis indicated that there are 1,228 legally binding affordable housing units within a ½ mile radius of proposed station locations along the New Bern Avenue BRT Project corridor. These affordable housing units represent approximately 23 percent of the total housing units within the ½ mile radius of the Project's stations. Throughout Wake County, only three percent of total housing units are legally binding affordability restricted (14,043 of 411,632 total units). Therefore, the ratio of affordable housing units within the Project's station areas relative to the county at large is 6.65.

2.4.3.2 Plans and Policies to Preserve and Increase Affordable Housing in Region and Corridor

The City of Raleigh and its regional partners have considered and adopted affordable housing policies in advance of station area planning, taking advantage of the opportunity to plan for affordable housing preservation *before* the transit project is built when it may be possible to acquire property or apply protections at a lower cost.

The *Wake County Affordable Housing Plan* (October 2017) identified strategies to preserve and produce affordable housing and address the growing housing crisis in Wake County, and engaged local municipalities grappling with the same issues on a smaller scale. Five core principles guided the creation of the plan:

- 1 Realize Maximum Benefit from Public Resources** – maximize efficient use of public subsidy, including land;
- 2 Support Overall Housing Growth** – use land use policy to support housing production that keeps pace with population growth and includes a proportionate share of affordable housing;
- 3 Focus on Populations in Greatest Need** – focus limited county resources on serving the populations in greatest need of affordable housing;

- 4 **Pursue Context-Appropriate Solutions** – ensure that recommended tools respond to the diverse market conditions and regulatory frameworks that exist across Wake County; and
- 5 **Use Housing as a Platform for Economic Opportunity** – provide housing in high-opportunity areas that provide access to high-frequency transit and other essential services to support economic opportunity for residents and deconcentrate poverty.

Wake County’s plan seeks to harness county and municipal capacity and deploy a set of recommended tools to address residents’ housing needs. The tools are grouped within three strategies:

1 Land Use Policy

- a Establishment of Affordable Housing Overlays
- b Expanded Accessory Dwelling Units

2 Leveraged Programs

- a Acquisition & Preservation Fund
- b Affordable Housing Preservation Warning System & Annual Report
- c Enhanced County Rental Production Loan Program
- d “Familiar Faces” Supportive Housing Pilot
- e PSH Provider & Funder Capacity-Building
- f Affordable Mortgage Program

3 Additional Public Resources

- a New Local Funding Sources for Affordable Housing
- b Public Land Disposition Requirements

These tools focus on addressing the unmet affordable housing need of Wake County residents by increasing housing supply. By pursuing the tools, the County and the municipalities can act to both increase the production of affordable housing and reduce the loss of existing affordable housing.

The City of Raleigh’s *FY 2016-2020 Affordable Housing Improvement Plan* (October 2015) sought to increase the supply of affordable housing and further neighborhood revitalization. It outlines seven “options” to address the City’s housing needs in a more aggressive fashion:

- 1 Expand the use of the 4% Tax Credit for Affordable Housing Allocated through the North Carolina Housing Finance Agency;
- 2 Site Acquisition Assistance for Affordable Rental Development: Provide Financial Resources;
- 3 Infill Homeownership Development Program: Provide Financial Resources;
- 4 Affordable Rental Preservation/Creation through 0% Forgivable Loans to Developers;
- 5 Downtown Neighborhoods Revitalization Plans for Specific Areas of Focused City Investment;
- 6 Homeless Coordinated Intake Center and Expansion of Housing Supply: Creation of an Intake Center and Providing More Permanent Supportive Housing; and
- 7 Permanent Affordable Housing Funding Source: Find Sustaining Sources of Funding.

The City of Raleigh has an *Affordable Housing Location Policy* (adopted September 2015) that sets forth desired outcomes relative to the creation or preservation of affordable multi-family rental

housing with the overall goal of affirmatively furthering fair housing choice for all residents. Specific objectives of the Policy include:

- To increase the supply of affordable housing in underserved locations near employment and commercial centers;
- To encourage the development of affordable housing near existing and proposed transit services;
- To provide for affordable housing in and near downtown Raleigh and in neighborhoods having approved revitalization plans; and
- To prevent further concentrations of minority and low-income persons and subsidized housing.

The Policy applies to any multi-family rental development that is funded in whole or in part by the City of Raleigh or requires the approval of City Council with the following exemptions:

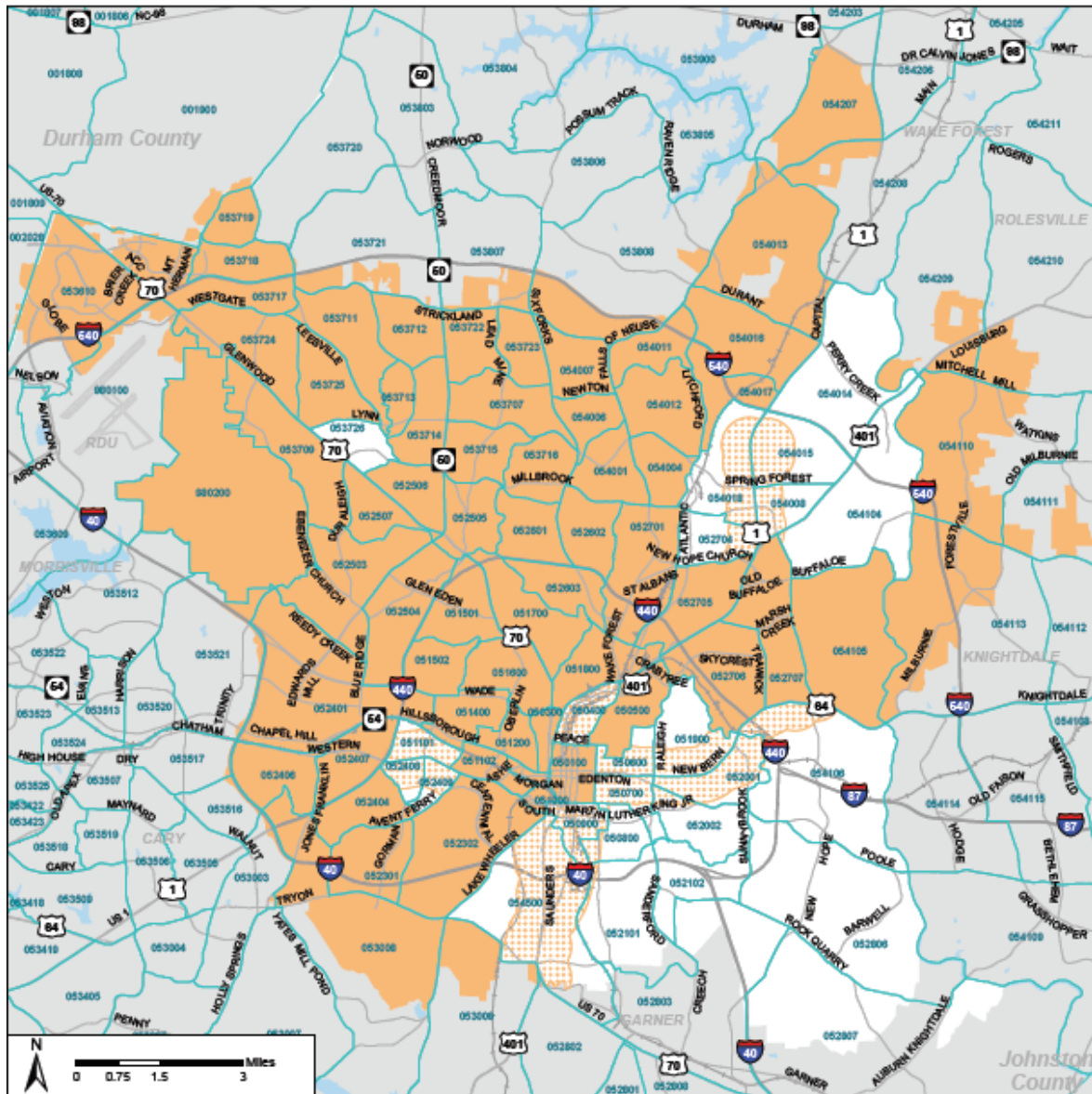
- The rehabilitation of existing units;
- Developments serving elderly or disabled populations; and
- The replacement of affordable rental units lost to demolition or conversion subject to a determination by the Housing and Neighborhoods Department and subsequent approval by City Council that the proposed replacement housing will serve the same market area or neighborhood.

As a means of implementing the Policy, geographic exceptions were identified. Newly constructed subsidized multi-family housing developments are not allowed in census tracts having a concentration of minority or low-income persons or subsidized rental housing, except in areas that meet geographic exceptions. This geographic exception applies to:

- Developments located within a one-half mile radius of a proposed rail or BRT station;
- Development located within one-half mile of a transit stop served at intervals of 15 minutes or better in each direction throughout the day;
- Developments located within the boundaries of the Downtown Element in the Comprehensive Plan; or
- Developments which are implementing elements of a mixed-income neighborhood revitalization plan approved and funded by City Council.

Figure 32 shows the location of areas meeting geographic exceptions and affordable housing opportunity areas. The New Bern Avenue corridor is entirely within a geographic exception area due to the New Bern Avenue BRT Project that is currently under development.

Figure 32. Affordable Housing Location Policy Map



- Affordable Housing Opportunity Area
- New Subsidized Multi-Family Housing Not Allowed in Census Tracts Where:
 - Minority Population Exceeds 50%, or
 - Households in Poverty Exceeds 30%, or
 - Subsidized Units Exceed 8% of Total Units
- Area May Meet Geographic Exceptions
- Census Tract Boundaries

Source: 2030 Comprehensive Plan Update

To advance the *Affordable Housing Location Policy*, the City of Raleigh has already implemented voluntary zoning conditions for affordable housing. In addition, the city’s *2030 Comprehensive Plan*

Update includes a number of its own policies and actions to preserve and increase affordable housing. These include:

Policy / Action Number	Policy Title	Policy Description
H 1.1	Mixed-income Neighborhoods	Promote mixed-income neighborhoods throughout the city, particularly within high-density development at employment centers, downtown, within NRSAs, and along transit corridors, including the New Bern Avenue corridor.
H 1.2	Geographic Dispersal of Affordable Units	Promote dispersal and production of affordable housing units throughout all areas of the city using the city’s Housing Location Policy adopted in 2015
H 1.4	Affordable Housing Design	All housing, including subsidized affordable and market rate housing, should be designed so that it blends with the context of the neighborhood in which it is located, emphasizing quality design and appearance
H 1.5	Scattered Site Infill	Support small, scattered-site residential developments on infill lots where appropriate and where design respects the neighborhood scale and context.
H 1.8	Housing for Zoning	Ensure that zoning policy continues to provide ample opportunity for developers to build a variety of housing types, ranging from single-family to dense multi-family. Keeping the market well-supplied with housing will moderate the costs of owning and renting, lessening affordability problems, and lowering the level of subsidy necessary to produce affordable housing. In areas characterized by detached houses, accommodations should be made for additional housing types while maintaining a form and scale similar to existing housing.
H 1.9	Housing Diversity	Promote housing diversity and affordable housing choices for households at 60 percent of AMI or below in the immediate area around transit corridors, including the New Bern Avenue corridor.
H 2.1	Permanent Funding Source for Housing	Maintain permanent local funding to help produce and preserve affordable housing units
H 2.5	Removing Housing Barriers	Examine regulatory and policy barriers to affordable housing development while still maintaining Raleigh’s high-quality development standards
H 2.6	Long-term Affordability	Ensure that newly created for-sale and rental affordable housing units developed with city financial assistance remain affordable for more than 20 years through a Community Land Trust, developer agreements with 40- to 60-year affordability periods, or similar mechanisms
H 2.7	Affordable Set-asides in Projects	Encourage a 20 percent minimum set-aside of affordable housing units in housing or mixed-use projects involving city-owned properties
H 2.9	Housing on Public Sites	Use available city-owned sites for affordable housing

Policy / Action Number	Policy Title	Policy Description
H 2.10	Incentives on Private Sites	Incentivize private developers to create new affordable housing on privately-owned sites through city funding
H 2.11	Site Assembly for Housing	Continue to acquire vacant and substandard residential lots and assemble into standard lots for new affordable or mixed-income housing
H 2.12	Minimize Displacement	Minimize residential displacement resulting from redevelopment activity and provide replacement housing
H 2.13	Transit Accessibility	Preferentially locate affordable housing in areas with good access to transit services and/or locate transit in areas currently occupied by subsidized affordable housing
H 2.14	Transit Availability	Expand public transit to serve housing in all parts of the city
H 2.15	Affordable Units in TODs	Provide zoning and financial incentives for inclusion of affordable housing near transit stations, particularly for persons with disabilities
H 2.16	Existing Housing	Encourage reinvestment and maintenance of the existing housing stock to prevent the conversion of affordable housing units to market-rate units, including funding the city's housing rehabilitation programs
Action H 1.1	Affordable Rental Program Expansion	Continue to create new programs to implement the 2015 Affordable Housing Location Policy that will provide incentives to private developers to preserve lower-cost rental communities in Raleigh instead of demolishing or converting them to upscale rental housing.
Action H 1.6	Housing Variety	Study housing policy and regulation with a focus on infill development and the accommodation of housing types, such as duplexes, small apartments, and townhouses in areas where they are not currently permitted.
Action H 2.12	Monitoring of Expiring Subsidies	Track existing rental housing units with federal expiring use subsidy contracts or affordable rents to mitigate the loss of these units.
Action H 2.13	Foreclosure Acquisition	Consider establishing a program to advance funds for the acquisition foreclosed or other existing properties for the purposes of providing long-term affordable housing.
Action H 2.14	Impact Fee Relief	Develop a funding mechanism to pay impact fees imposed on affordable housing units and provide capital grants to reduce land acquisition and site development costs in developments that serve very low-income households, particularly in downtown
Action H 2.17	Land for Affordable Housing	Create a program to purchase and "bank" vacant land or land that can be redeveloped to support affordable housing
Action H 2.23	Additional Affordable Housing Tools	Explore creating additional affordable housing using vehicles (such as a Community Land Trust, deed restrictions, and long-term shared equity appreciation mechanism) to assure long-term or permanent affordability of housing
Action H 2.24	Zoning for Mixed Income	Develop zoning provisions for transit-oriented development that promote housing diversity and affordable housing choices available to households at 60 percent of AMI or below in the immediate area around transit corridors, including the New Bern Avenue corridor.

The *Land Use – Transit Policy Alignment White Paper* identifies potential future affordable housing tools for Raleigh to consider, including:

- **Density Bonuses** – To provide affordable units as part of new development, density bonuses allow additional height or density in exchange for the provision of affordable units.
- **Unbundling Parking from Rent** – Unbundling the price of parking from the price of rent allows residents the option to save money by owning fewer cars. Employers are encouraged to provide a payout to employees who do not drive to work to allow them the choice of taking an alternate mode of travel, including transit. Raleigh can actively promote this strategy by awarding additional grant money to affordable housing units that agree to unbundled pricing.

The current *Raleigh BRT: Equitable Development Around Transit* planning effort will identify affordable housing goals near BRT in order to facilitate the improvement of equity through transit, including the New Bern Avenue BRT Project . The transit-supportive plan will recognize that affordability is a challenge in Raleigh and that transit projects must address key equity issues, such as maintaining and enhancing affordability, ensuring accessibility to the service from existing residential areas, minimizing displacement from rising real estate values, and improving opportunity and job access through transit and planning around transit. Its goal will be to use BRT to achieve more equitable and sustainable places. End-products of the planning process will include a city policy for affordability around transit, as well as tools to meet affordability goals from 2020 onward.

2.4.3.3 Adopted Financing Tools and Strategies Targeted to Preserving and Increasing Affordable Housing in the Region and Corridor

Affordable housing goals in the New Bern Avenue BRT Project corridor, Raleigh, and Wake County are supported through financial mechanisms targeted at maintaining and increasing affordable housing. While not a financing tool, the *Wake County Affordable Housing Plan* recommends that municipalities use a Project Location Scorecard. One prioritization factor on this scorecard is the location of a project within a half-mile of transit corridors. The scorecard is used to guide affordable housing investments.

The City of Raleigh has a goal of creating 570 affordable housing units a year over 10 years (2016 – 2026). There are four programs it uses to meet this goal: (1) zero percent deferred down payment assistance with homeownership of up to \$20,000; (2) neighborhood revitalization (citizen engagement, master planning, site planning, infrastructure development, new sidewalks and curbs, and new construction of affordable housing, parks, transit stops, employment opportunities, and greenway connections); (3) creation of rental developments; and (4) owner-occupied loans in order to bring homes up to proper living standards.

In 2016, the Raleigh City Council increased the ad valorem tax rate by one cent per \$100 valuation for the purpose of creating and preserving affordable rental housing. This generates approximately \$6 million annually. The intent of the new revenue is to increase the supply of affordable housing and preserve low-cost units that might be lost to conversion to market rate housing. The city's practice is to use these funds to solicit both 9 percent and 4 percent tax credit proposals from affordable housing developers annually, and provide low-interest loans to assist with the financing. Accordingly, in January 2019, Raleigh published a *Notice of Availability of Funds for Gap Funding Rental Development Program, 2018-19 Tax Credit Developments* to the attention of Low Income Housing Tax Credit

(LIHTC) developers regarding funds available in the form of low interest loans and land acquisition grants. Eligibility for a land acquisition grant is partly based on developments near future transit improvements.

Of note are two proposed measures that will have the effect of supporting the availability of affordable housing in the New Bern Avenue BRT Project corridor and other key transit corridors in Raleigh:

- 1 **Affordable Housing Bond:** A proposed bond is being evaluated by the City Council to generate funding for both TOD and affordable housing on the October 2019 ballot. If approved, the half-cent to one-cent increase in the property tax rate would generate between \$37.7M to \$75.5M. The allocation of this funding would be as follows:
 - 30 percent toward a new citywide land acquisition program to purchase land along transit corridors;
 - 25 percent to increase the funding that the city currently offers developers pursuing affordable housing tax credit projects to cover the financing gap;
 - 25 percent toward a new citywide program to establish public-private partnerships to create affordable housing;
 - 10 percent toward the city's existing homeowner rehabilitation program; and
 - 10 percent toward the city's existing down payment assistance program;
- 2 **Land Acquisition Program:** Raleigh has proposed launching a citywide land acquisition program to purchase land along transit corridors for affordable housing should the bond that is currently under consideration be approved.

2.4.3.4 Evidence of Developer Activity to Preserve and Increase Affordable Housing in the Corridor

The performance of affordable housing policies is demonstrated through actual provision of housing by private and public developers. In federal FY 2018, the City increased the supply of affordable housing by spending \$950,000 of HOME funds for 88 affordable rental units and another \$2,750,000 in local resources for an additional 310 affordable units (for a total of 398 units). In addition, \$587,549 of local funds were invested in six single-family rehab loans, supplementing the \$664,463 in HOME funds for another eight rehabs, and \$151,377 in CDBG funds for one City-owned rental unit (for a total of 15 rehabs). In addition, \$63,133 was provided to eight Limited Repair loans, as was \$142,527.92 in local bond funds for another 13 (for a total of 21 loans). The City spent a total of \$760,000 in HOME second mortgages to enable 38 low-income families to purchase their first house in the City and \$61,525 CDBG funds in first-time homebuyer counseling.

Two examples of recent affordable housing development include:

The Raleigh Millbank Apartments – A recently-completed, large affordable housing rehabilitation project at 1500 Raleigh Boulevard, the Raleigh Millbank apartment complex provides 229 upgraded units for the city’s affordable housing stock. In 2016, Denver-based Steele Properties LLC responded to a Raleigh Housing and Neighborhoods Department’s Request for Proposals to provide gap financing for developers applying for tax credits for affordable housing. Steele received \$2 million in City bond proceeds to help fund the acquisition and rehabilitation costs of the project. Steele Properties also received about \$20 million in tax-exempt bonds from the North Carolina Housing Finance Agency. The renovation included new roofs, windows, HVAC systems, plumbing and electrical improvements, as well as new kitchens and bathrooms. During the internal renovation process residents were temporarily provided with hotel accommodation paid for by Steele. The development has project-based vouchers and tenants continue to only pay 30 percent of their income for rent. It provides 115 two-bedroom and 114 three-bedroom units to individuals or families earning less than 60 percent of AMI.

Figure 33. Raleigh Millbank Apartments



Source: [Raleigh Affordable Housing](#)

East College Park – The East College Park neighborhood is an established community adjacent to Saint Augustine University with access to public transit, major employers, and the downtown corridor. It is located along the New Bern Avenue BRT Project corridor, south of Washington Terrace and is bounded by Hill Street on the west, Oakwood Ave. on the north, Raleigh Boulevard on the east, and New Bern Avenue on the south. Raleigh is facilitating the development of 98 single-family homes and 51 townhome units with 60 percent buyer income restricted homes (limits defined by HUD guidelines) and 40 percent of the homes with no buyer income restriction. Homeowners are required to use the home as a primary residence and will also be subject to a 10 year deed restriction. Construction formally began in January 2018. Each of the five builders has a different construction timeline and their own floorplans (a sample from one builder, CB Pugh Enterprise is shown in Figure 34). Infrastructure updates to water lines, sewer lines, and storm drains were completed prior to the groundbreaking.

Figure 34. East College Park Sample Residential Floorplan



Source: [Raleigh Affordable Housing](#)

The City of Raleigh continues to collaborate with affordable housing developers, providing zoning incentives or exemptions as necessary. Raleigh has established a standing committee called the Development Services Advisory Committee. Members of the committee are drawn from the development industry and help initiate process improvements.

2.4.3.5 Extent to Which Plans and Policies Account for Long-Term Affordability and Needs of Very- and Extremely-low Income Households

To preserve the benefits of the transit investment for low and moderate income households, the City of Raleigh plans to consider legally binding affordability restriction in the transit corridor over the long-term following the project's opening. There are a number of different ways that long-term affordability can be assured, including commitments tied to the receipt of Low-Income Housing Tax Credits, HOME or other HUD funds, payment in lieu of taxes (PILOT) agreements, and other legal instruments tied to the receipt of Federal, state, local and/or private funds/financing.

In June 2018, the Board of Commissioners adopted a penny increase in the County's property tax rate for housing, or approximately \$15 million a year, targeted to help preserve and increase affordable housing units in Wake County. The first year of funding was used to commit gap funding for 563 new units, (partnering with the City of Raleigh for 354 of these units), providing homeless veterans housing, and contributing funds to create the County's first full-service women's shelter that will offer 37 more beds for single women experiencing homelessness (this shelter is located directly on the New Bern BRT Corridor). As this is recurring funding, County funds are available to invest in increasing the supply of legally binding affordable housing units in the County, helping formerly homeless men, women, and families find transitional and permanent supportive housing, and to support efforts to prevent homelessness county-wide.

Raleigh's *2030 Comprehensive Plan Update* includes two policies that will facilitate the city's efforts to account for the long-term affordability and needs of very- and extremely-low income households:

- 1 Policy H 2.1, Permanent Funding Source for Housing** – Maintain permanent local funding to help produce and preserve affordable housing units; and
- 2 Policy H 2.6, Long-term Affordability** – Ensure that newly created for-sale and rental affordable housing units developed with city financial assistance remain affordable for more than 20 years through a:
 - a Community Land Trust,
 - b Developer agreements with 40- to 60-year affordability periods, or
 - c Similar mechanisms.

3 LOCAL FINANCIAL COMMITMENT CRITERIA

This section presents the following items to evaluate and rate local financial commitment:

- a completed Local Financial Commitment template;
- a comprehensive financial plan and supporting documentation including a 20-year cash flow model submitted electronically in excel format with formulas included rather than just hardcoded numbers; and
- a completed financial submittal checklist.

Additional information is presented in the *Wake Bus Rapid Transit (BRT): New Bern Avenue Project Small Starts Financial Plan* (Financial Plan) included as an attachment to this report.

The estimated rating for the New Bern Avenue BRT Project’s Local Financial Commitment criteria based on the FTA guidance is shown below in Table 7, while the FTA Small Starts Finance Template is presented on the following pages.

Table 7 Local Financial Commitment Estimated Rating

Measure	Value Used in Rating	Estimated Rating
Local Financial Commitment	Qualified for a simplified financial assessment	High

3.1.1 Local Financial Commitment Template

SMALL STARTS FINANCE TEMPLATE			
PROJECT NAME:		Wake Bus Rapid Transit: New Bern Avenue Project	
Total Capital Cost of Project in Constant 2017 Dollars (from the SCC Main Worksheet)		\$63,631,642	Total Capital Cost of Project in YOE dollars (including finance charges, costs of Project Development and construction): (from SCC Main Worksheet)
			\$71,453,200
Section 5309 Small Starts Funding Anticipated (YOE \$):		\$35,050,540	Section 5309 Small Starts Share of Project Cost:
Estimated Cost of Project Development (YOE \$):		\$6,213,132	49.1%
Total Finance Charges Included in Capital Cost (include finance charges that are expected prior to either the revenue operations date or the fulfillment of the Section 5309 Small Starts funding commitment, whichever is later in time): (from SCC Main Worksheet)			
Other Federal Capital Funding Sources			
(Non-5309 Small Starts Funds such as FTA Section 5307, Surface Transportation Program (STP), Congestion Mitigation and Air Quality (CMAQ), etc.)		Type of Funds	Dollar Amount (YOE)
			% of Total Capital Cost
1. CMAQ Funds		Federal Formula Appropriation	\$604,606
2.			0.0%
3.			0.0%
4.			0.0%
State Capital Funding Sources			
(Funds provided by State agencies or legislatures such as bonds, dedicated sales tax, annual legislative appropriation, transportation trust funds, etc.)		Type of Funds	Dollar Amount (YOE)
			% of Total Capital Cost
1. (Example: State Transportation Fund)			0.0%
2.			0.0%
3.			0.0%
4.			0.0%
Local Capital Funding Sources			
(Municipal, City, County, Township, or Regional funding such as bonds, sales tax, legislative appropriation, transportation trust funds, etc.)		Type of Funds	Dollar Amount (YOE)
			% of Total Capital Cost
1. Wake Transit Tax Proceeds		Cash / Bonds	\$32,535,907
2. City of Raleigh (Bonds)		Bonds	\$3,110,994
3. City of Raleigh (General Funds)		Cash	\$151,152
4.			0.0%
Private Sector/In-kind match/Other			
(Donations of right-of-way, construction of stations or parking, or funding for the project from a non-governmental entity, business, or business assoc.)		Type of Funds	Dollar Amount (YOE)
			% of Total Capital Cost
1.			0.0%
2.			0.0%
3.			0.0%
TOTAL NON-SECTION 5309 FUNDING (YOE dollars)		\$36,402,659	50.9%
QA/QC CHECK: TOTAL CAPITAL COSTS LESS SEC. 5309 FUNDING LESS NON-SEC. 5309 FUNDING (SHOULD EQUAL \$0)		\$0	---

SMALL STARTS FINANCE TEMPLATE (page 2)

Small Starts Project Financial Commitment			
Other Federal Sources (Linked from page 1)	Specify Whether New or Existing Funding Source	Specify Status of Funds -- Committed, Budgeted, or Planned (See notes below)	Identify Supporting Documentation Submitted to Verify Funding Source If a public referendum is needed, provide the anticipated date
1. CMAQ Funds	Existing	Committed	FTA Award - 5307 CMAQ FLEX - TSP
2.			
3.			
4.			
State Sources (Linked from page 1)			
1. (Example: State Transportation Fund)			
2.			
3.			
4.			
Local Sources (Linked from page 1)			
1. Wake Transit Tax Proceeds	Existing	Committed	Wake Transit Work Plan
2. City of Raleigh (Bonds)	Existing	Committed	City of Raleigh Bond Proceed Funding Memo
3. City of Raleigh (General Funds)	Existing	Committed	New Bern Ave Multimodal Improvements - Funding Agreement
4.			
Private Sector/In-kind Match/Other (Linked from page 1)			
1.			
2.			
3.			

SMALL STARTS FINANCE TEMPLATE (page 3)

Innovative Financing Methods				
(Unconventional sources of funding which may include TIFIA, State Infrastructure Banks, Public/Private partnerships, Toll Credits, etc.)				
Innovative Funding Source	Anticipated Funding Amount		Identify Supporting Documentation Submitted	
Summary Information from the Operating Finance Plan				
Small Starts Project Annual Operating Cost in the Opening Year (YOE\$):	\$2,469,526	Total Transit System (including Small Starts Project) Annual Operating Cost in the Opening Year (YOE\$)		\$118,382,829
Proposed Sources of Operating Funds (Proposed sources of operating funds that are anticipated to support operating expenses of the transit system including the Small Starts project in the opening year.)	Dollar Amount	Type of Funding Source	Committed, Budgeted or Planned	Specify Whether New or Existing Funding Source
Article 43 1/2 Cent Local Option Sales Tax	\$101,633,572	Financial Assistance from local sales tax	Committed	Annual
Vehicle Rental Tax	\$4,863,400	Financial Assistance from vehicle rental tax	Committed	Annual
\$7.00 Vehicle Registration Tax	\$7,349,186	Financial Assistance from vehicle registration tax	Committed	Annual
\$3.00 Vehicle Registration Tax (Transfer from Wake Tax District)	\$3,148,074	Financial Assistance from vehicle registration tax	Committed	Annual
Farebox	\$1,388,597	Fares	Committed	Annual
Total	\$118,382,829			
Transit System Operating Characteristics				
Current Systemwide Characteristics (Can be the same data as reported to the FTA for the National Transit Database)	Number/Value	Future Transit System with Small Starts Project (Systemwide characteristics at completion of the Small Starts Project)		Number/Value
Farebox Recovery Percent	13.47%	Farebox Recovery Percent		35.06%
Number of Buses	96	Number of Buses		213
Number of Rail Vehicles	-	Number of Rail Vehicles		-
Average Fare	\$0.77	Average Fare		\$0.77
Average Age of Buses	6.33			
Average Age of Rail Vehicles	-			
Revenue Miles of Service Provided	6,137,896	Revenue Miles of Service		9,223,983
Revenue Hours of Service Provided	521,036	Revenue Hours of Service		673,629

3.1.2 Financial Plan

A complete Financial Plan is attached to this submission. The purpose of the Financial Plan is to document the financial capacity of GoRaleigh to construct, operate and maintain the New Bern Avenue BRT Project under the Federal Transit Administration's (FTA) Section 5309 Capital Investment Grant Program.

The Financial Plan will assist GoRaleigh, FTA, other local officials, and the general public in understanding and evaluating the agency's financial capacity to implement the project. Included in the Financial Plan is a review of GoRaleigh's recent financial history and current financial condition, documentation of the projected capital and operating costs and proposed revenue sources for the New Bern Avenue Project, and review of the key assumptions underlying the cost and revenue projections.

The Financial Plan is a required component of FTA's Capital Investment Grant Program which provides discretionary federal funding for major fixed guideway transit projects. As a result, this Financial Plan has been written to meet the requirements of the FTA's 2019 *Reporting Instructions for the Section 5309 Capital Investment Grant Program, Small Starts*. Moreover, this Plan is consistent with FTA's streamlined financial evaluation process as – per FTA guidance - the project sponsor can demonstrate “a reasonable plan to secure funding for the local share of capital costs or sufficient available funds for the local share; the additional operating and maintenance cost of the proposed Small Starts project is less than five percent of the project sponsor's current system-wide operating budget; and the project sponsor is in reasonably good financial condition.”

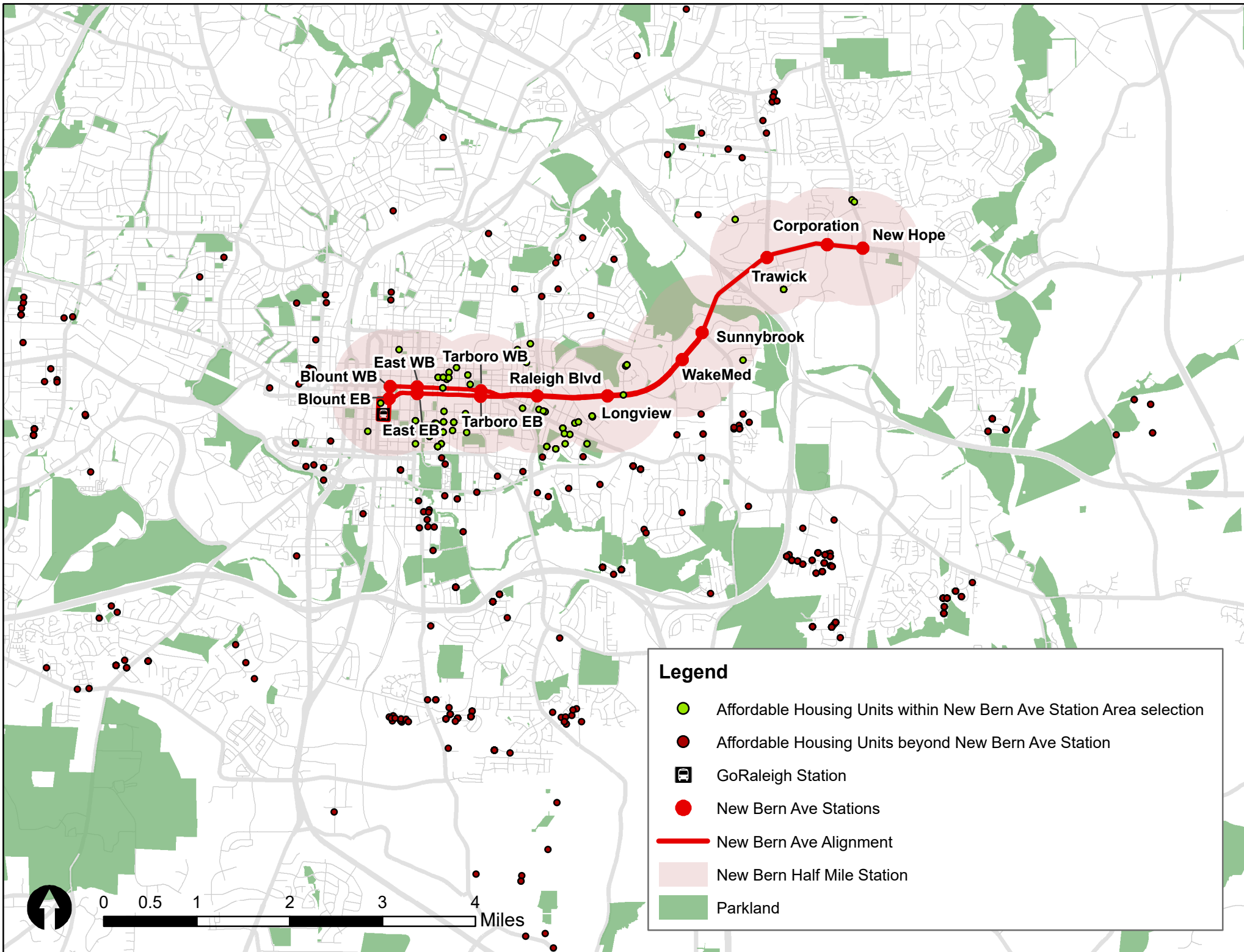
This Financial Plan therefore presents:

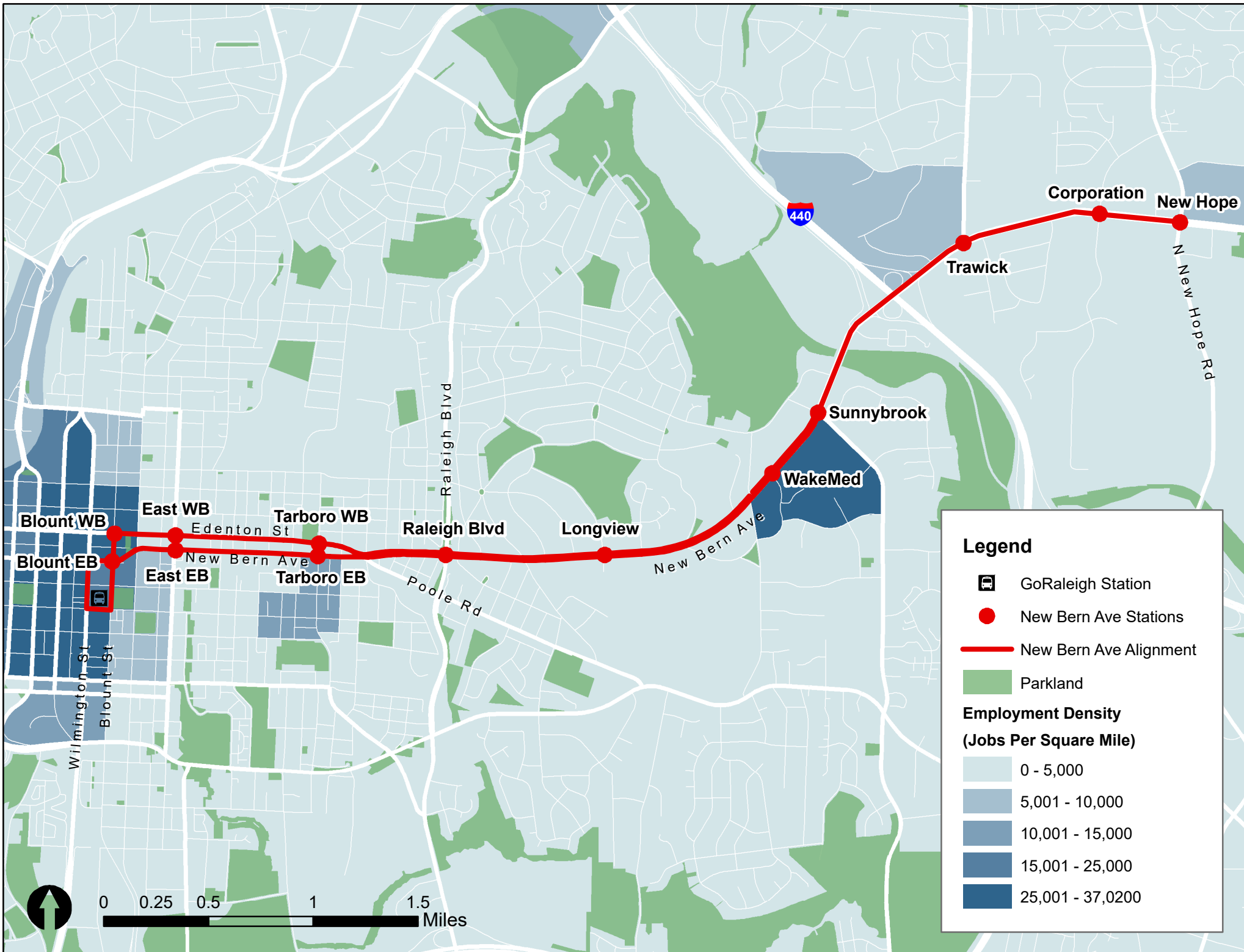
- A completed Small Starts Finance Template;
- A detailed plan to secure funding for the local share of project costs that includes the sources, amount, and steps needed to secure funding commitments;
- A detailed operating and maintenance cost estimate;
- The current budget documenting that the project's operating and maintenance costs would constitute no greater than five percent of current system-wide operating and maintenance costs;
- A discussion of the major risk factors that may affect the Financial Plan, sensitivity analysis, and mitigation strategies to address these risks; and
- Three years of audited financial statements documenting the financial health of the project sponsor.

3.1.3 Local Financial Commitment Checklist










LOCAL FINANCIAL COMMITMENT CHECKLIST	Included (check one)		Reason Why Information Has Not Been Provided
	Yes	No	
20-year cash flow statement (in year of expenditure dollars) including capital and operating financial plans (provided both electronically and in hardcopy). The 20-year cash flow must begin with the current year, and clearly show: revenues and expenses for the project separated from those for the remainder of the transit system; level of service assumptions; and the debt service schedule for all existing and planned debt.		X	We have provided a streamlined financial plan which does not require a 20-year cash flow statement
Detailed written description/discussion of all assumptions used in the financial plan including: Federal/state/local/debt proceeds funding assumptions Average fare assumption Average weekday ridership assumptions Debt coverage requirements/assumptions Assumptions used in the calculation of operating expenses for each mode (i.e. -- vehicle miles, vehicle hours of service provided, etc.)	X		
Project Description and Project Finance Template	X		
Capital cost estimate for the proposed project (in year of expenditure dollars) in the FTA standardized cost category worksheet format	X		
Sensitivity Analysis (spreadsheet calculations as well as narrative summary)		X	Narrative is included, but not spreadsheet calculations as this is a streamlined financial plan
Supporting Documentation Including:			
Background information and description of the New Starts fixed guideway project, including project status	X		
Historical revenue and expense data (minimum of 5 years required for all data, at least 10 years required for major funding sources that comprise more than 25% of the capital funding for the project or the overall transit system operation)	X		
Commitment letters, contracts, agreements, legislative referendums or other documents demonstrating local share commitment of non-Federal	X		
Enacting legislative documents for tax referenda	X		
Joint development agreements, or description and supporting documentation of other innovative financing techniques, if applicable	X		
Annual Operating and Capital Budgets for the past 3 years	X		
Audited Financial Statements and Compliance Reports for the past 3 years	X		
Annual Reports/Comprehensive Annual Financial Reports (CAFR) for the past 3 years	X		

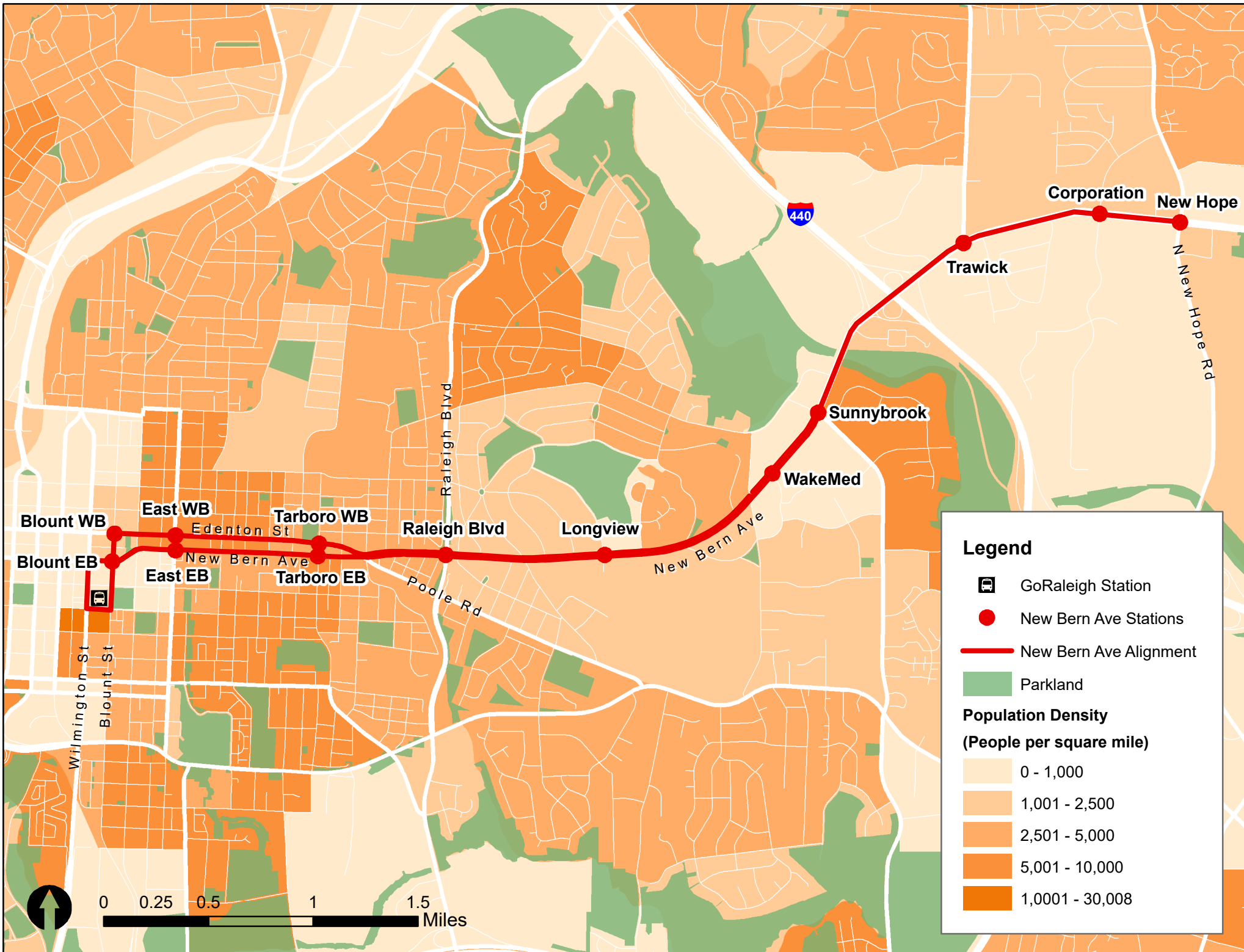
Background information and description of the transit agency, including organizational structure and grantee enabling legislation	X		
TIP, STIP and Short Range Transit Plan (SRTP), if available (please provide only relevant pages of these documents)	X		
Regional Long Range Transportation Plan (please provide only relevant pages)	X		
Sponsoring Agency's Capital Improvement Program Document	X		
Bus and Rail Fleet Management Plans including fleet replacement schedules	X		
Latest bonding prospectus/credit facility documents (credit lines, commercial paper, etc.)	X		
Local development, demographic and economic studies used in preparing the financial plan, plus documentation supporting efficiency or productivity gain assumptions	X		
Other materials (if any), please describe:			





Legend

-  GoRaleigh Station
 -  New Bern Ave Stations
 -  New Bern Ave Alignment
 -  Parkland
- Employment Density
(Jobs Per Square Mile)**
-  0 - 5,000
 -  5,001 - 10,000
 -  10,001 - 15,000
 -  15,001 - 25,000
 -  25,001 - 37,0200



Blount WB

East WB

Tarboro WB

Raleigh Blvd

Longview

WakeMed

Sunnybrook

Trawick

Corporation

New Hope

Blount EB

East EB

Tarboro EB

Raleigh Blvd

Poole Rd

New Bern Ave

Edenton St

New Bern Ave

Wilmington St

Blount St

Raleigh Blvd

440

N New Hope Rd



Wake BRT: New Bern Avenue

