



Greater Triangle Commuter Rail Study
Durham Board of County Commissioners
September 3, 2019

Commuter Rail

VRE (Northern Virginia)



SunRail (Orlando)



TRE (Dallas – Fort Worth)



FrontRunner (Utah)



GO FORWARD
A COMMUNITY INVESTMENT IN TRANSIT

County Transit Plans



Wake Transit Plan: Four Big Moves

- In November 2016, Wake County voters approved a transit-dedicated half-cent sales tax investment.

1

CONNECT
the region

Building a 37 mile
commuter rail system
and regional routes



2

CONNECT
all Wake
County
communities

Expanding Bus
Service to all Wake
communities



3

PROVIDE
frequent,
reliable
urban
mobility

Implementing Bus Rapid
Transit and increasing
frequent network



4

ENHANCE
access to
transit

Community Funding
& Increased Rural On
Demand Trips



Existing Rail Corridor

Freight Rail – Heavy Rail

- Freight operation constitutes the movement of goods and cargo in freight rolling stock (e.g., boxcars, flatcars), which are typically hauled by diesel-powered locomotives.
- The North Carolina Railroad Company (NCRR) owns the 317-mile corridor and Class I freight rail provider Norfolk Southern operates and maintains the railroad through a long-term lease with NCRR



Intercity Rail – Heavy Rail, Shared Track

- Intercity transit mode services covering longer distances than commuter or regional trains
- The main provider of intercity passenger rail service in the U.S. is Amtrak
- Four intercity passenger service routes run on the North Carolina Railroad including the Carolinian and the Piedmont which are sponsored by NCDOT



The North Carolina Railroad is built for the service it currently offers

Added capacity, including commuter rail, would require additional infrastructure, including added tracks

Shared Corridor Key Requirements

Five key elements to ensure the highest safety standards and forward-thinking planning to achieve a highly successful commuter service plan in the region.



Norfolk Southern freight train and Virginia Railway Express commuter train, VA

- Demonstrated commitment to safety
- Detailed system capacity, dispatching, and operations
- Governance, structure, and commuter system reach
- Station design and planning
- Capital, operations, and maintenance costs

Major Investment Study



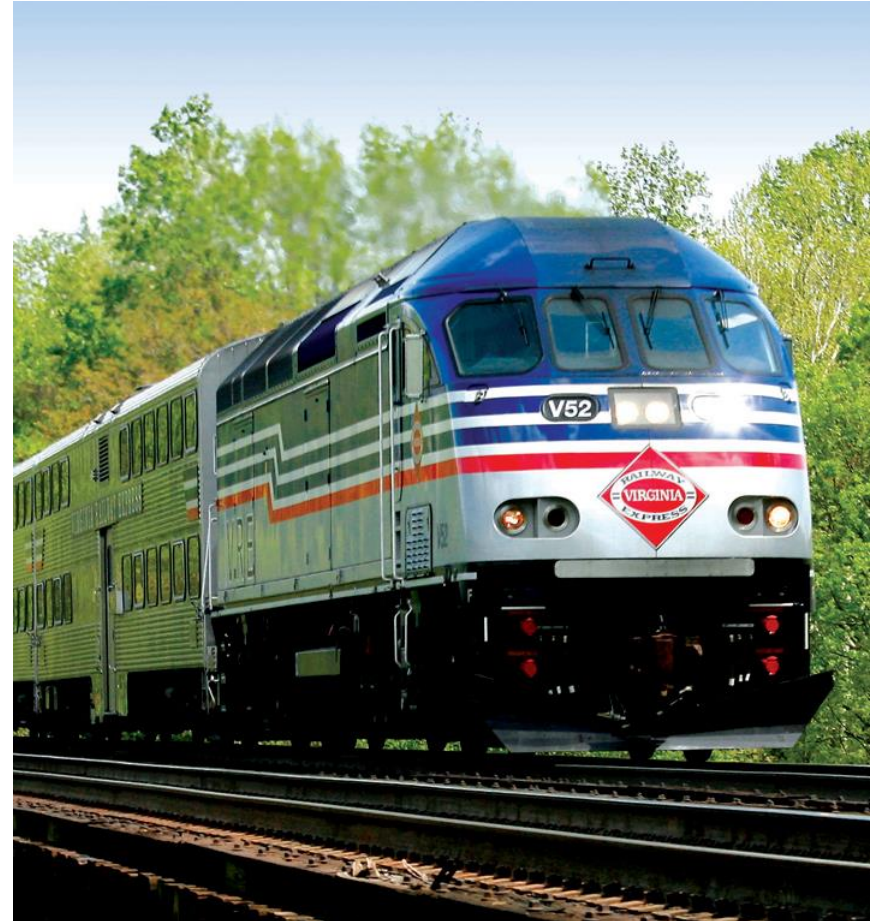
- Why the MIS was conducted
- What We Studied
- What We Learned
- What We Don't Know Yet
- Next Steps

Why Conduct a Major Investment Study?

- Begin commuter rail project refinement ahead of decision to enter Federal pipeline
- Study potential service scenarios
- Evaluate potential station location characteristics
- Conduct preliminary screening of human and natural environment along the corridor
- Inform next phase of study

What We Studied

- Reviewed peer commuter rail systems
- Created evaluation framework
- Examined station candidate zones
- Tested service scenarios for ridership productivity



What We Learned

- CRT would be faster than the bus, and competitive with auto commuting

Table 7 | CRT/Bus Travel Time Difference (without walk time)

CRT travel time - Bus time (without walk time)						
	West Durham	Downtown Durham	MetroCenter RTP	Downtown Cary	Raleigh Union Station	Downtown Garner
West Durham		-4	-34	-71	-24	-82
Downtown Durham	-6		-23	-61	-15	-72
MetroCenter RTP	-31	-17		-26	-15	-62
Downtown Cary	-37	-23	-18		-9	-36
Raleigh Union Station	-36	-18	-16	-25		-32
Downtown Garner	-77	-42	-59	-35	-14	

Example: from West Durham to Raleigh Union, CRT saves 24 minutes compared to the bus

What We Learned

- Four station zones stand out for transit support

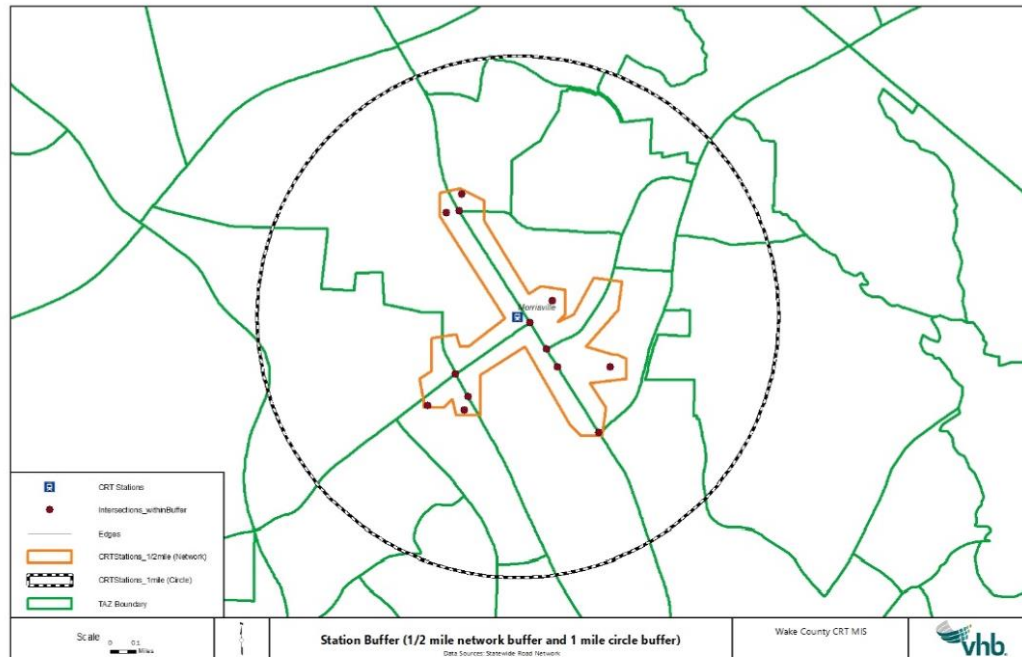
Table 31 | Station Candidate Zones Rating Matrix

	Connectivity (1/2-Mile Road Network Buffer)		Equity (1/2-Mile Road Network Buffer and 1-Mile Straight-Line Buffer)								Transit Supportive Land Use (1/2-Mile Road Network Buffer)		Parking Access	
Station	Transit Connectivity	Ease of Access	Affordable Housing	Minority Access		Low-Income Households		Transit Dependent Access		Total People + Jobs	Concentration of People + Jobs	Parking Opportunities	Parking Cost	
				1/2-Mile Buffer	1-Mile Buffer	1/2-Mile Buffer	1-Mile Buffer	1/2-Mile Buffer	1-Mile Buffer					
West Durham	3	2	1	3	3	2	3	1	1	1	1	1	2	
Downtown Durham	3	3	2	3	3	2	2	2	2	3	3	1	3	
East Durham	2	3	3	3	3	3	2	2	3	2	1	1	1	
Bethesda	1	1	1	3	3	1	1	1	1	1	1	3	1	
North RTP	1	1	1	3	3	1	1	1	1	1	1	2	1	
MetroCenter RTP	1	1	1	3	3	1	1	1	1	1	1	2	1	
Morrisville	1	1	1	3	3	1	1	1	1	1	1	3	1	
West Cary	1	1	1	2	2	1	1	1	1	1	1	1	1	
Downtown Cary	1	3	2	2	2	1	1	1	1	2	1	1	1	
West Raleigh	1	2	1	3	2	2	1	1	1	1	2	1	1	
NC State West	1	1	1	2	2	2	2	1	3	1	1	1	1	
NC State	3	2	1	1	2	2	2	3	3	3	3	1	3	
Raleigh Union Station	3	3	2	2	3	2	2	1	3	3	3	1	3	
South Raleigh	1	1	1	3	3	1	2	1	3	1	1	1	1	
Garner	1	2	2	3	3	1	1	1	1	1	1	2	1	
East Garner	1	1	1	3	3	1	1	1	1	1	1	3	1	

What We Learned: Land Use

- Many station areas need significant connectivity improvements

Figure 2 | Station Candidate Zones Buffer



What We Learned: Ridership

- Fewer stops and faster running times does not lead to higher ridership
- Low frequency peak-only service has higher riders per hour, mostly due to significantly limiting departure time choices

What We Don't Know Yet

- Cost
 - Need specific RTC modeling results to recommend an infrastructure package, that can then be cost estimated
 - Coordinate with railroads to agree on RTC modeling inputs and what outputs mean
- Ridership
 - Need refined ridership estimates using both local TRM and FTA Stops model
- Rating
 - Have not evaluated project against full FTA criteria
 - Cost estimate and refined ridership estimates required to do this effectively
- Final Station locations, Detailed Needs of Railroads
- Agreements – no legal framework for agreements yet

Current Study (2019)

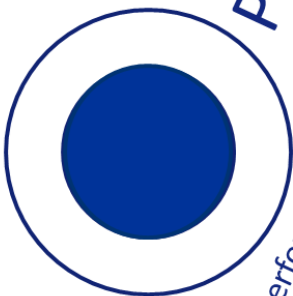
- Expanded Study Area – Mebane to Selma
 - Service Scenarios
 - Capacity Constraints and Improvements
 - Capital and Operating Cost Estimates
 - Ridership and Revenue Estimates



Study Outcomes

The purpose of this study is to give decision-makers the analytical data needed to decide whether there is a project the partners feel comfortable moving forward to the next phase of development.

Pre-Planning



Perform
Alternatives
Analysis



Develop Concepts



Perform
Preliminary
Operations Analysis



Obtain Local
Funding
Commitment



Planning



Screen and Identify
Alternatives for
Further Study



Test and Refine
Alternatives



Obtain Concept
Concurrence and
Initial Agreements

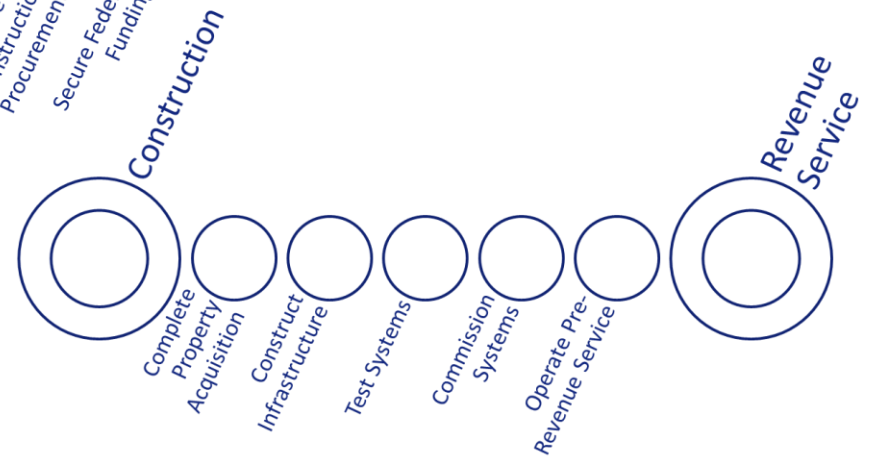
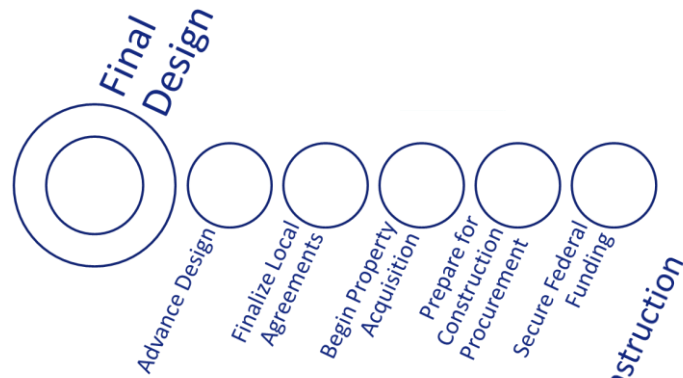
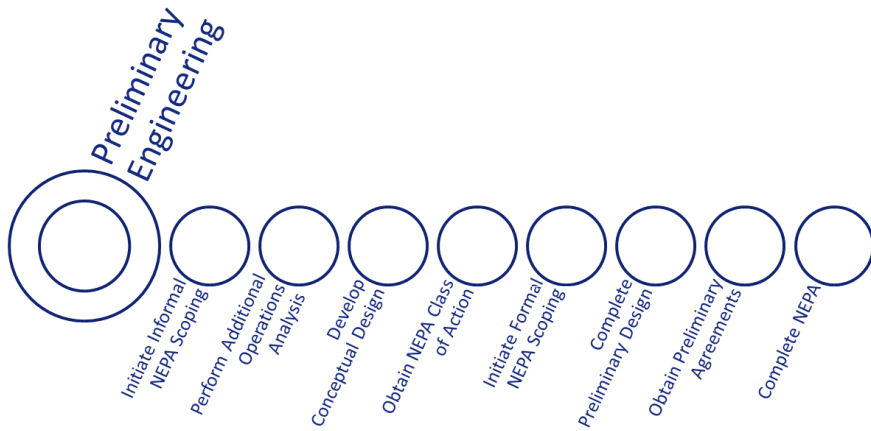


Adopt Preferred
Alternative



GO FORWARD

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Learn more at **GoForwardNC.org**

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