GoTriangle
Board of Trustees
Wed, December 19, 2018 12:00 pm-2:30 pm

I. Call to Order and Adoption of Agenda

ACTION REQUESTED: Adopt agenda with any changes requested.
(1 minute Will Allen III)

II. Recognition

A. Board Member Recognition
(Will Allen III)

B. Introduction of New Hires
(1 minute Jeff Mann)

C. Announcement of Promotions
(1 minute Jeff Mann)

III. Public Comment
The public comment period is held to give citizens an opportunity to speak on any item. The session is no more than thirty minutes long and speakers are limited to no more than three minutes each. Speakers are required to sign up in advance with the Clerk to the Board.
(Will Allen III)

IV. Consent Agenda
Items listed on the consent agenda are considered as a single motion. At the request of any Board member, or member of the public, items may be removed from the consent agenda and acted on by a separate motion. Items pulled from the consent agenda will be placed at the beginning of the general business agenda for discussion and action. Any Board member wishing to remove an item from the consent agenda should advise staff in advance.

ACTION REQUESTED: Approve consent agenda.
(1 minute Will Allen III)

A. Minutes

ACTION REQUESTED: Approve draft minutes from November 28, 2018.

B. Minutes

ACTION REQUESTED: Approve draft closed session minutes from November 28, 2018.

C. Budget Ordinance Amendment 2018 0019

ACTION REQUESTED: Adopt budget ordinance amendment 2018 0019 (from the Wake Transit FY19 Q2 Amendment approved in November).

D. General Counsel Contract Amendment

ACTION REQUESTED: Approve GC employment agreement amendment #1 and adopt Resolution 2018 0012 establishing fixed nonelective contribution.

Resolution 2018 0012

V. General Business Agenda

Items listed on the general business agenda are for discussion and possible action. Such designation means that the Board intends to discuss the general subject area of that agenda item before making any motion concerning that item.

A. Items Removed from the Consent Agenda

ACTION REQUESTED: Discuss and take action on any items removed from the consent agenda.
(1 minute Will Allen III)

B. Operations & Finance Committee Report
(30 minutes Michael Parker)

1. Duke Energy Drainage Easements

   ACTION REQUESTED: Recommend that the Board authorize the conveyance of a temporary construction easement and permanent drainage easement to Duke Energy.

2. Global Signal Acquisitions Easement

   ACTION REQUESTED: Recommend Board adoption of a resolution authorizing a Grant of Easement to Global Signal Acquisitions IV LLC (GSA IV).

   Resolution 2018 0011

3. Vanpool Subsidy

   ACTION REQUESTED: Set a monthly vanpool subsidy at $450 for all vanpool groups traveling more than 35 daily commute miles and $350 for vanpool groups traveling 35 or fewer daily commute miles.

4. PMIS Procurement – e-Builder

   ACTION REQUESTED: Authorize the President/CEO to approve the e-Builder Service Agreement for an amount not-to-exceed $300,000.

5. Professional Services Contract Amendment – GEC Phase 3B

   ACTION REQUESTED: Authorize the President/CEO to increase the not-to-exceed amount for the GEC Phase 3B Contract with HDR Engineering Inc. by $900,000 for relocation design services for university-owned utilities.

C. Planning & Legislative Committee Report
(10 minutes Will Allen III)

1. BRT Evaluation Results - Wake MIS

   ACTION REQUESTED: Accept the BRT Evaluation Results.

   Wake Transit MIS - BRT Evaluation Results

VI. Other Business

A. General Manager's Report
(5 minutes Jeff Mann)

Contracts

1. Transit Operations Report

   (5 minutes Patrick Stephens)

2. D-O LRT Project Update
   (15 minutes John Tallmadge)

3. Wake Transit Update
   (5 minutes Stephen Schlossberg, Patrick McDonough)
4. Communications Update
   (5 minutes Mike Charbonneau)

B. General Counsel's Report
   (5 minutes Shelley Blake)

C. Chair's Report
   (5 minutes)

D. Board Member Reports

1. CAMPO Executive Board Representative
   (5 minutes Will Allen III)
2. DCHC MPO Board Representative
   (5 minutes)
3. Regional Transportation Alliance (RTA) Rep.
   (5 minutes Will Allen III)

VII. Adjournment
(Will Allen III)

GoTriangle Board of Trustees
Meeting Minutes
November 28, 2018

Board Room, The Plaza, 4600 Emperor Blvd., Suite 100
Durham, NC

Board Members Present:

Will Allen III
Sig Hutchinson
Wendy Jacobs
Vivian Jones
Mark Marcoplos
Michael Parker
Ellen Reckhow
Jennifer Robinson, Chair
Steve Schewel
Russ Stephenson (by phone)

Board Members Absent:

Valerie Jordan
Andy Perkins
Nina Szlosberg-Landis (excused)

Chair Ellen Reckhow officially called the meeting to order at 12:05 p.m.

I. Adoption of Agenda

Action: On motion by Allen and second by Jones the agenda was adopted. The motion was carried unanimously.

II. Recognition

A. Introduction of New Hires

President and CEO Mann announced the hiring of Patrice Jeffreys, Christopher O'Sullivan and Venus Ryan as Bus Operator I; Jose Miranda, Mechanic I; Precious Rogers, Accounting Intern and Nicole Shepherd and Danielle Stevenson, Paratransit Operator I.

B. Announcement of Promotions

Mann then announced the promotion of Angela Judge to Dispatcher/Operator from Bus Operator I.

C. Board Member Recognition

Board Chair Ellen Reckhow presented previous Board Chair Jennifer Robinson with a framed photograph of a GoTriangle bus at Cary Station in recognition of her service as Chair of the Board of Trustees from 2016-2018.

III. Public Comment

No comments.

IV. Consent Agenda

Action: On motion by Jones and second by Allen the consent agenda was approved. The motion was carried unanimously.

The following consent agenda items were approved:

- October 24, 2018 – Regular Session Minutes and
- Amendment to the General Counsel Employment Contract.

V. Presentations

A. TOD Guidebook Presentation

Patrick McDonough introduced Scott Polikov whose presentation is attached and hereby made a part of these minutes. A handout on the guidebook also is attached and hereby made a part of these minutes.

VI. General Business Agenda

A. Items Removed from Consent Agenda

None.

B. Operations & Finance Committee Report

1. Wake County Transit Plan – 10-Year Bus Operating and Capital Plan

Action: On motion by Schewel and second by Allen the Board approved the 10-Year Wake Bus Operating and Capital Plan. The motion was carried unanimously. The Plan is attached and hereby made a part of these minutes.

2. GoTriangle Short-Range Transit Plan

Action: On motion by Jones and second by Jacobs the Board approved the GoTriangle Short–Range Transit Plan. The motion was carried unanimously. The Plan is attached and hereby made a part of these minutes.

3. GoTriangle January 2019 Service Change Recommendation

Committee Chair Michael Parker reported the recommendation is to reallocate midday OnDemand service to the morning and evening peak times. He added that a long range plan will be brought in March for service within the Park.

Action: On motion by Jones and second by Hutchinson the Board approved changes to the GoTriangle OnDemand Service, removing midday service and increasing peak vehicles available from three to four. The motion was carried unanimously.

4. Wake Transit Community Funding Area Program Management Plan

Parker stated that the Wake Transit Plan allows funding for community pilots with a local 50% match. This plan details the application and approval process.

Action: On motion by Hutchinson and second by Allen the Board approved the Wake Transit Community Funding Area Program Management Plan. The motion was carried unanimously. The Plan is attached and hereby made a part of these minutes.

5. Town of Wake Forest - Use of Existing Town Expenditures in Community Funding Area Program

Parker said Wake Forest is the first applicant for the Wake Transit Community Funding Area Program and has requested that the current expenditure of funds on public transportation services be accepted as the match. CAMPO agreed that any jurisdiction may use existing funds to qualify as the necessary matching funds.

Action: On motion by Hutchinson and second by Schewel the Board approved the current expenditure of funds on public transportation service to qualify as necessary matching funds for new Wake Transit Community Funding Area Program applications. The motion was carried unanimously.

6. Wake Transit FY19 Q2 Amendment

Parker explained that the Wake Transit budget includes reserve of $4.3 million for BRT plans. The City of Raleigh has accepted sponsorship for BRT and the amendment transfers those funds to Raleigh.

Action: A motion was made by Allen and seconded by Stephenson to approve the designation of $4,315,545 from FY18 and FY19 adopted Wake Transit Plan reserves to the City of Raleigh as project sponsor for one or more Bus Rapid Transit (BRT) corridors.

Action: Upon vote, the motion was carried unanimously.

C. Personnel Committee Report

Committee Chair Will Allen III reported that anniversary awards were presented, the Committee received the Q3 EEO report, and discussed and recommended contribution to the 457 plan for the General Counsel.

VII. Other Business

A. General Manager's Report

A list of contracts approved by the President and CEO is attached and hereby made a part of these minutes.

Mann highlighted the following items:

- Accompanied the North Carolina Public Transit Association to Washington, DC to meet with a number of legislators during the three day trip.
- The bus operations team visited Proterra's Greenville, SC facility to finalize the order for two electric buses.
- The up-fit to GoTriangle's Raleigh Lane Street property for shelter construction is ongoing with shelters moving in soon.
- The GoTriangle-owned building at 412 Chapel Hill Street in Durham has been demolished. The site will be cleared in January. Reckhow encouraged staff to improve the appearance of that property with simple landscaping.
- Toured the LC Industries plant beside GoTriangle's offices at the Plaza. Many of these folks rely on transit every day.

1. Transit Operations Report

Patrick Stephens reported on his visit to the Proterra facility. He stated the purchase would come to the Board in January, with delivery of the buses in the September/October timeframe.

2. Durham-Orange Light Rail Transit Program Update

Kaitlin Hughes stated that the public comment period on the supplemental Environmental Analysis goes through November 30. She said the positive comments are generally referring to the overall project, with the negative comments more about a specific issue of concern. She said the rail operations maintenance facility (ROMF) is a common issue of concern, along with property acquisitions and noise.

John Tallmadge stated that the risk workshop is ongoing and staff will receiving the list of 80 risk items tomorrow along with the scoring of those. A draft report will be generated for the FTA. He stated that it has been determined that the project will need a risk refresh once the cooperative agreements are resolved. He added that this is to GoTriangle's advantage, with the refresh happening as risks are retired, and a new contingency level being assigned. Tallmadge warned that the outstanding issues with the railroads will have an impact on the contingency. Mann added there is concern about the compressed timeframe for the project and the volume of agreements needed with multiple parties.

Tallmadge then reported that agreements are being routed for signature with PSNC Energy, AT&T and NCCU. The Chapel Hill Town Council considers the agreement tonight and Durham, next week. UNC-Chapel Hill is wrapped up and Duke Energy is close. The agreement with the Veteran's Administration was signed last month, leaving only Duke University.

Tallmadge reported that staff continues to meet with representatives from the neighborhoods around the ROMF location. They have a number of concerns, foremost being noise from the facility, particularly at night. He stated that there are disagreements about the impacts and they want assurances as part of the text amendments in the rezoning. He said GoTriangle will have to operate within the City of Durham's noise ordinance, but the neighbors are not satisfied with these assurances. He added that staff is looking at changes to the design or the practices during construction or operations to address the concerns being raised and plans to continue meeting with these neighbors as design is completed and operating and construction plans are developed.

Tallmadge said meetings continue with Duke University officials. Mann stated that negotiations with NCRR also are progressing and Norfolk Southern has provided a draft agreement.

3. Wake Transit Update

Patrick McDonough reported that BRT has been handed off to GoRaleigh. Regarding commuter rail, he said the team is looking at station sites and impacts to the physical environment as well as service planning scenarios and evaluation of different levels of service. Mann stated that the project is schedule to enter project development by December 2019, but there is work to do in advance of that time.

Parker asked abbot the management plan. Mann responded that a draft plan has been submitted to CAMPO and other project partners for consideration.

Steven Schlossberg reported that the FY18 Wake Transit Annual Report is complete.

4. Communications Update

No report.

B. General Counsel's Report

No report.

C. Chair's Report

Chair Reckhow stated the December meeting is schedule for December 19. She requested an excused absence.

Action: On motion by Schewel and second by Robinson the Board approved an excused absence for Ellen Reckhow on December 19. The motion was carried unanimously.

Reckhow also reported that she is working with the NCRR Board Chair to schedule a meeting of the two boards, potentially on Thursday, January 17, following the GoTriangle work session.

D. Board Member Reports

1. CAMPO Executive Board Representative

Will Allen III reported there was a joint MPO meeting between CAMPO and DCHC. John Hodges-Copple reported on the travel market, with trips going from 870,000 in 2013 to 2 million in 2045. Jeff Mann gave a report on commuter rail.

CAMPO approved all the Wake Transit items approved by our Board today.

2. DCHC MPO Board Representative

Ellen Reckhow stated that the only transit- related item was a report by Patrick McDonough on the commuter rail project.

3. Regional Transportation Alliance (RTA) Representative

Will Allen III stated that he attended a special RTA event at Raleigh Union Station on the potential for BRT to stimulate economic development given by the Richmond, VA planning director.

4. Rail~Volution Conference

Reports from Will Allen III, Sig Hutchinson and Wendy Jacobs are attached and hereby made a part of these minutes.

VIII. Closed Session

A. NCRR Negotiations

Action: On motion by Parker and second by Jones the Board adjourned into closed session at 2:51 p.m. pursuant to NCGS §143-318.11(a) (a)(3), to consult with an attorney employed by the public body in order to preserve the attorney-client privilege.

Action: On motion by Parker and second by Jones the Board returned to regular session at 3:19 p.m. The motion was carried unanimously.

IX. Adjournment

Action: On motion by Parker and second by Allen the meeting was adjourned at 3:20 p.m.

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Ellen Reckhow, Chair

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2018 0019

GOTRIANGLE
FISCAL YEAR 2019
TRIANGLE TAX DISTRICT - WAKE CAPITAL FUND BUDGET ORDINANCE AMENDMENT

BE IT ORDAINED by the Research Triangle Regional Public Transportation Authority Board of Trustees, that pursuant to section 13.2 of Chapter 159 of the General Statutes of North Carolina, the following project ordinance is hereby adopted:

Section 1. It is estimated that the following revenues will be available in the **Triangle Tax District - Wake Capital Fund** for the fiscal year beginning July 1, 2018, and ending June 30, 2019:

Transfer from Wake Operating	$82,933,570
Total	**$ 82,933,570**

Section 2. The following amounts hereby are appropriated in the **Triangle Tax District - Wake Capital Fund** for the fiscal year beginning July 1, 2018, and ending June 30, 2019:

Capital Planning	
GoTriangle	$ 597,333
City of Raleigh	350,000
Commuter Rail Transit	0
GoTriangle	333,333
Reserve	1,363,038
Bus Rapid Transit	0
City of Raleigh	2,955,545
Bus Infrastructure	0
GoTriangle	2,930,624
City of Raleigh	1,905,000
Town of Cary	3,316,000
Bus Acquisition	0
GoTriangle	5,000,000
City of Raleigh	13,642,136
Reserve	1,200,000
Allocation to Wake Capital Fund Balance	49,340,561
Total	**$ 82,933,570**

Section 3. The GoTriangle General Manager, or his or her designee, is hereby authorized to transfer funds within appropriations under the following conditions:

A) No transfer may be made that changes the adopted allocations to fund balance.
B) All budget transfers will be reported to the Transit Planning Advisory Committee.
C) All increases to an appropriation, and all transfers between appropriations, must be reviewed by the Transit Planning Advisory Committee and approved by the CAMPO and GoTriangle governing boards.

Section 4: Triangle Tax District – Wake Capital Funds are appropriated pursuant to section 13.2 of Chapter 159 of the General Statutes of North Carolina; therefore, appropriations do not lapse at the end of the fiscal year and are available for duration of the project unless subsequently recommended for reallocation by the Transit Planning Advisory Committee and approved by the CAMPO and GoTriangle governing boards, or as specified in Section 5.

Section 5: GoTriangle Finance Department has authority to close projects and/or programs and reduce appropriations upon notification of project completion by the project sponsor. When actual revenues are available in projects to be closed or which are substantially complete, GoTriangle Finance may transfer savings to Triangle Tax District Wake Capital fund balance. These funds will be then available for future appropriations which require recommendation by the Transit Planning Advisory Committee and approval by the CAMPO and GoTriangle governing boards. This section applies to current and prior year appropriations. A list of project closeouts shall be provided quarterly to the Transit Planning Advisory Committee.

Section 6. Copies of the Budget Ordinance shall be furnished to the Clerk, to the Board of Trustees, to the Finance Officer, and to the Budget Officer of this Authority to be kept on file for their direction in the disbursement of funds. Copies shall also be furnished to representatives of the Agencies under Section 2. The Budget Ordinance shall be entered into the Board minutes.

ADOPTED THIS 19th DAY OF DECEMBER 2018.

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Ellen Reckhow, Board of Trustees Chair

ATTEST:

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Michelle C. Dawson, Clerk to the Board

2018 0012

RESOLUTION OF THE GOTRIANGLE BOARD OF TRUSTEES ESTABLISHING FIXED NONELECTIVE CONTRIBUTION

WHEREAS, the Authority previously adopted and currently maintains the Triangle Transit Authority, NC Deferred Compensation Plan for Public Employees 457 Governmental Plan and Trust (the "Plan"); and

WHEREAS, pursuant to Section 9.01 of the Plan, the Authority has reserved the right to amend the Plan from time to time; and

WHEREAS, pursuant the Section 1.19 of the Plan, the Authority may provide for certain Nonelective Contributions, as defined in Section 1.19 of the Plan; and

WHEREAS, the Authority deems it in its best interest to amend the Plan to provide for certain Nonelective Contributions for specified employees.

NOW, THEREFORE, BE IT RESOLVED, by the GoTriangle Board of Trustees that effective for the Plan Year (as defined in Section 1.25 of the Plan) beginning on January 1, 2018, Shelley Blake shall be entitled to an annual Fixed Nonelective Contribution pursuant to Section 1.19 of the Plan in an amount equal to 3% of his/her annual Compensation (as defined in Section 1.07 of the Plan).

BE IT FURTHER RESOLVED that effective for the Plan Year beginning on January 1, 2018, Saundra Freeman shall be entitled to an annual Fixed Nonelective Contribution pursuant to Section 1.19 of the Plan in an amount equal to 2.75% of his/her annual Compensation.

BE IT FURTHER RESOLVED that such annual Nonelective Contributions shall accrue each biweekly pay period and shall be contributed to each eligible employee's Account (as defined in Section 1.01 of the Plan) no later than the Friday following the end of the pay period.

BE IT FURTHER RESOLVED that such annual Nonelective Contributions shall be immediately 100% vested.

BE IT FURTHER RESOLVED that the proper officers of the Authority be, and they hereby are, authorized and directed to execute such documents and perform such acts as they, in their sole discretion, deem necessary and advisable to accomplish the intent of the foregoing resolutions, including, but not limited to, executing Plan amendments to add such Nonelective Contributions to the current Plan design and adopt conforming changes to other Plan provisions, including but not limited to applicable contribution limits, and facilitating the implementation of the foregoing resolutions in coordination with the Administrative Services Provider (as defined in Section 1.04 of the Plan.

ADOPTED THIS 19TH DAY OF DECEMBER 2018.

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Ellen Reckhow, Board of Trustees Chair

ATTEST:

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Michelle C. Dawson, Clerk to the Board

GoTriangle Board of Trustees
Operations & Finance Committee Meeting Minutes
November 28, 2018

Board Room, The Plaza, 4600 Emperor Blvd., Suite 100
Durham, NC

Committee Members Present:

Sig Hutchinson
Michael Parker, Committee Chair
Ellen Reckhow
Russ Stephenson (by phone)
Steve Schewel (arr. 10:43 a.m.)

Committee Members Absent:

Valerie Jordan
Andy Perkins Jr.

Other Board Members Present:

Will Allen III

Committee Chair Michael Parker called the meeting to order at 10:35 a.m.

I. Adoption of Agenda

Action: On motion by Reckhow and second by Hutchinson the agenda was adopted. The motion was carried unanimously.

II. Approval of Minutes

Action: On motion by Hutchinson and second by Reckhow the Committee approved the minutes of the October 24, 2018, meeting. The motion was carried unanimously.

III. GoTriangle Short-Range Transit Plan

Jon Dodson's presentation is attached and hereby made a part of these minutes. He stated there were no raised flags in the Title VI equity analysis.

Schewel arrived.

Action: On motion by Reckhow and second by Hutchinson the Committee voted to recommend Board approval of the GoTriangle Short-Range Transit Plan. The motion was carried unanimously.

IV. GoTriangle January 2019 Service Change Recommendation

Jon Dodson's presentation is attached and hereby made a part of these minutes. He stated that changes are being proposed to the OnDemand service which require Board approval. The proposal is to remove midday service and increase the peak vehicles available from three to four. This is a reallocation of existing

service hours to better reflect shuttle usage. The change will reduce customer wait times and reduce travel times during the peak. Other minor schedule changes do not require Board approval.

Dodson added that 61 responses were received from existing customers and two-thirds are in favor of reallocating hours from mid-day to peak for a more reliable peak period experience. He added that staff continues to work with Research Triangle Park to come up with long term solution. He stated that staff plans to bring a recommendation in the spring that will go into effect by August.

Action: On motion by Schewel and second by Reckhow the Committee voted to recommend Board approval of changes to the GoTriangle OnDemand Service: removing midday service and increasing peak vehicles available from three to four. The motion was carried unanimously.

V. Wake Transit Community Funding Area Program Management Plan

Laurie Barrett requested approval of the Wake Transit Community Funding Area Program (CFAP) management plan. She stated that Wake County municipalities were surveyed by the consultant who also conducted a peer review. Stakeholder meetings also were held. The program is modeled after the Locally Administered Projects Program (LAPP). Funding will start at $184,000 and increase by $250,000 each year until it reaches $2 million. It requires a 50% match by the applicant.

Reckhow asked if the funding can be renewed. Barrett responded yes.

Action: On motion by Hutchinson and second by Reckhow the Committee voted to recommend Board approval of the Wake Transit Community Funding Area Program Management Plan. The motion was carried unanimously.

VI. Town of Wake Forest - Use of Existing Town Expenditures in Community Funding Area

Steven Schlossberg brought a request from the Town of Wake Forest to allow current funds for the Wake Forest circulator to qualify as matching funds for the CFAP. He stated that the CAMPO executive board voted to allow current expenditures to qualify as matching funds for Wake Forest and all future applications.

Action: On motion by Hutchinson and second by Schewel the Committee voted to recommend the Board allow the current expenditure of funds on public transportation service to qualify as necessary matching funds for new Community Funding Area Program applications. The motion was carried unanimously.

VII. Wake Transit FY19 Q2 Amendment

Steven Schlossberg presented a minor amendment which allocates $4.3 million from reserve to the City of Raleigh for BRT sponsorship. He added that this was recommended by the TPAC and has been approved by CAMPO.

Action: On motion by Reckhow and second by Hutchinson the Committee voted to recommend the designation of $4,315,545 from FY18 and FY19 adopted Wake Transit Plan reserves to the City of Raleigh as project sponsor for one or more Bus Rapid Transit (BRT) corridors. The motion was carried unanimously.

VIII. Duke Energy Permanent and Temporary Drainage Easement

Gary Tober explained that Duke Energy had approached GoTriangle to request a temporary construction easement and permanent drainage easement along segment 15 of the CSX right-of-way, which is owned by GoTriangle. FTA initially denied our request for concurrence to convey the easement and we asked them to reconsider. Last week FTA stated they would approve the conveyance of the easement but Duke Energy has said it does not need the easement now. Tober requested authorization in case Duke Energy comes back.

Action: On motion by Hutchinson and second by Reckhow the Committee voted to recommend that the Board authorize the conveyance of a temporary construction and permanent drainage easement to Duke Energy.

IX. Adjournment

Action: On motion by Reckhow the meeting was adjourned at 11:22 a.m.

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Michael Parker, Committee Chair

Attest:

_____
Michelle C. Dawson, CMC
Clerk to the Board of Trustees

GO Triangle

Connecting all points of the Triangle

MEMORANDUM

TO: GoTriangle Board of Trustees

FROM: Real Estate

DATE: December 5, 2018

SUBJECT: **Duke Energy Permanent and Temporary Drainage Easement**

Strategic Objective or Initiative Supported

Action Requested

Authorize the conveyance of a temporary construction easement and permanent drainage easement to Duke Energy.

Background and Purpose

Duke Energy is requesting .037 acres for a temporary construction easement and .003 acres for a permanent drainage easement on the CSX right of way that was acquired by GoTriangle as part of the regional rail project. The easement will be part of the Mordecai 115 Sub storm water project. Duke Energy is offering $3013 for the permanent easement. The Operations and Finance Committee recommended approval on November 28, 2018. If the Board approves the conveyance, GoTriangle will submit an Incidental Use Request to the FTA.

Financial Impact

If Duke Energy decides to move forward with the acquisition of the easements, they have offered to compensate GoTriangle $3,013. This amount is consistent with other easements acquired by Duke Energy in close proximity to the GoTriangle property from the City of Raleigh and the State of North Carolina.

Attachments

- None

Staff Contact(s)

- Gary Tober, 919.485.7577, gtober@gotriangle.org

Connecting all points of the Triangle

MEMORANDUM

TO: GoTriangle Board of Trustees Operations & Finance Committee

FROM: Real Estate

DATE: December 6, 2018

SUBJECT: **Global Signal Acquisitions Easement**

Strategic Objective or Initiative Supported

Action Requested

Staff requests that the Committee recommend Board adoption of a resolution authorizing a Grant of Easement to Global Signal Acquisitions IV LLC (GSA IV).

Background and Purpose

When the Patterson's Mill property was condemned by GoTriangle for the Rail Operations and Maintenance Facility (ROMF), there were pre-existing easements on the property. Global Signal Acquisitions IV LLC operates a cell tower and has rights for utility and access purposes on this property. To confirm the pre-existing easement rights on the land now owned by GoTriangle for the ROMF – and as a pre-condition to agreeing to the release of the condemnation deposit to Patterson's Mill – GSA IV is seeking a Grant of Easement by GoTriangle for its cell tower, access and utilities.

Financial Impact

There is no funding in this transaction. The transaction confirms pre-existing easement rights held by GSA IV prior to the condemnation and reflects current conditions at the site.

Attachments

- Resolution 2018 0011

Staff Contact(s)

- Gary Tober, 919.485.7577, gtober@gotriangle.org
- Tom Henry, 919.485.7589, thenry@gotriangle.org

2018 0011

RESOLUTION OF THE GOTRIANGLE BOARD OF TRUSTEES AUTHORIZING EXECUTION OF A GRANT OF EASEMENT TO GLOBAL SIGNAL ACQUISITIONS IV LLC

WHEREAS, pursuant to N.C.G.S. §160A-619, GoTriangle took by eminent domain a certain parcel of land in Durham County (the "former Patterson's Mill property") for the purpose of constructing a Rail Operations and Maintenance Facility ("ROMF") in connection with the Durham-Orange Light Rail Transit Project; and

WHEREAS, a cell tower facility and associated access and utility infrastructure serving the cell tower existed on the former Patterson's Mill property prior to the eminent domain action and still presently exist on the site; and

WHEREAS, the cell tower facility and other associated property interests belong to Global Signal Acquisitions IV LLC ("GSA IV"), a Delaware limited liability company; and

WHEREAS, the Durham City Council approved a rezoning action on December 3, 2018, which will enable development of the ROMF, while also allowing the cell tower facility to remain on the former Patterson's Mill property; and

WHEREAS, GoTriangle is actively coordinating with GSA IV's operating agent, Crown Castle, on utility relocation designs and other matters to ensure that development of the ROMF is not disruptive to GSA IV's use of the area; and

WHEREAS, GoTriangle intends to confirm pre-existing easements owned by GSA IV on the former Patterson's Mill property in a conveyance involving no exchange of funds.

NOW, THEREFORE, BE IT RESOLVED, by the GoTriangle Board of Trustees that the GoTriangle President and CEO is authorized to execute a Grant of Easement to confirm GSA IV's pre-existing easements on the former Patterson's Mill property.

ADOPTED THIS 19TH DAY OF DECEMBER 2018.

_____
Ellen Reckhow, Board of Trustees Chair

ATTEST:

_____
Michelle C. Dawson, Clerk to the Board

GO Triangle

Connecting all points of the Triangle

MEMORANDUM

TO: GoTriangle Board of Trustees Operations & Finance Committee

FROM: Regional Services Development

DATE: December 13, 2018

SUBJECT: **GoTriangle Vanpool Subsidy**

Strategic Objective or Initiative Supported

This recommendation comes out of the work on the initiative to "Develop and Implement a Vanpool Business Plan (including strategies to improve fleet management, billing, reporting)." It supports the objectives 1.1 Increase number of customers served with sustainable transportation services and 1.5 Maintain cost-effectiveness.

Action Requested

Staff requests that the Committee recommend the Board set a monthly vanpool subsidy at $450 for all vanpool groups traveling more than 35 daily commute miles and $350 for vanpool groups traveling 35 or fewer daily commute miles.

Background and Purpose

In March 2018, the GoTriangle Board established a vanpool subsidy level of $400 for all vanpool groups traveling more than 35 daily commute miles and $300 for vanpool groups traveling 35 or fewer daily commute miles. This was based on a comparison of the current GoTriangle vanpool price schedule and the Enterprise price schedule. The subsidy levels were set in an effort to minimize price impacts on GoTriangle's customers and to make vanpool prices attractive to potential customers. The subsidy levels were also intended to encourage longer distance vanpool groups which have a more significant impact on emissions reductions. Finally, the levels were set at a level which is projected to be offset by future Section 5307 grant funds.

Since entering the contract with Enterprise this summer, we came to understand that there are several taxes that Enterprise is required to pay, including the GoTriangle vehicle rental tax of 5%, which raise the prices to customers higher than we had projected. As Enterprise has begun communicating with current vanpool groups, our staff and their staff are clearly hearing that the increase in Enterprise's pricing is a concern and may affect the retention of numerous vanpool groups.

We have discussed this with Enterprise representatives and they have agreed to offer their own $50 monthly subsidy to each vanpool for the first six months of operation, and then a $25 subsidy for the subsequent six months. GoTriangle does not have the legal authority to waive that tax for

any companies that are leasing vehicles in the three county service area. However, we can adjust the subsidy to compensate for the vehicle rental tax that will be levied on each vanpool.

Financial Impact

The additional costs of an increased subsidy would not have an significant net impact on our budget because the vehicle rental tax revenues associated with vanpools had not been assumed and they will be 5% of the monthly vanpool price which will range from approximately $990 to $1700, depending upon vehicle type and commute distance.

Attachments

- None

Staff Contact(s)

- John Tallmadge, jtallmadge@gotriangle.org, 919.485.7430
- Shelly Parker, mparker@gotriangle.org, 919.485.7439

Connecting all points of the Triangle

MEMORANDUM

TO: GoTriangle Board of Trustees Operations & Finance Committee

FROM: Capital Development, D-O LRT Project Team

DATE: December 13, 2018

SUBJECT: **Project Management Information System (PMIS) Procurement – e-Builder**

Strategic Objective or Initiative Supported

This item supports Strategic Objective Approach 1: Providing the skills, staffing, systems and technology needed to meet our objectives.

Action Requested

Staff requests that the Operations and Finance Committee recommend that the Board of Trustees authorize the President and CEO to approve the e-Builder Service Agreement, which includes the initial annual subscription fee and one-time setup fee, for the light-rail project for an amount not-to-exceed $300,000.

Background and Purpose

The light-rail project is a massive collaborative undertaking between GoTriangle and numerous consultants, contractors, and third parties. The project is currently being managed via a variety of mediums including: SharePoint, BlueBeam, numerous Excel workbooks, and Outlook. These systems do not function well together at a large scale, and do not provide the requisite business intelligence and process management to support a project of this scope efficiently as it moves into Construction.

GoTriangle tasked the Program Management Consultant (PMC) with researching potential replacements for these various systems. Numerous Project Management Information Systems (PMIS) applications offered potential solutions. The PMC investigated several possibilities and developed a long list to research further. Additional evaluation reduced the list to five choices which were assessed against project requirements: business process management, document management, cost management and integration, reporting capabilities, and general functionalities such as search, mobile access, and integration with various applications like Office, BlueBeam, and DocuSign. Based on these requirements, three systems were invited to provide additional information for consideration by the evaluation committee. Each of these vendors has General Services Administration (GSA) Schedule 70 pricing, through which GoTriangle can directly purchase software at pre-negotiated government rates.

On October 22, 2018, the three vendors presented their solutions to the evaluation committee, which is comprised of members from GoTriangle, the Construction Management Consultant (CMC) and the PMC. Members of the evaluation committee had follow-up conversations with the vendors to address additional questions, then met on November 2, 2018, to conclude the evaluation. The committee was able to come to a consensus on e-Builder and the decision was made to proceed, contingent on a final meeting with e-Builder to address issues raised by the CMC. E-Builder provided acceptable responses to the CMC's questions, as well as assurances that additional improvements would be forthcoming in future enhancement updates. As such, GoTriangle is ready to move forward with e-Builder procurement.

For reference, e-Builder is the PMIS solution used by the Charlotte Area Transit System (CATS) Blue Line Extension project team, and is in use by many other transit agencies and government entities delivering major capital programs across the country.

The next step in the process is to negotiate scope and pricing for one-time setup costs with e-Builder. E-Builder has provided a draft Service Agreement based on a preliminary scope that outlines an estimate of one-time setup costs, as well as annual subscription fees. One-time setup fees are expected to be approximately $65,000 based on the required scope. The annual subscription fees are based on the average annual capital program spending for the light-rail project; the initial annual fee is expected to be between $186,000 and $211,000. Should GoTriangle choose to expand e-Builder use to other projects in the future, the annual subscription fee could increase based on the change in average capital program spending. At each renewal period, e-Builder may increase the annual subscription fees up to Consumer Price Index (CPI) plus two percent (2%), or five percent (5%), whichever is greater. Should early contract termination be necessary, that year's subscription fee is forfeit, but as long e-Builder receives written notice of termination 60 days prior to renewal, no additional subscription costs are incurred.

GoTriangle is also negotiating a scope for PMIS implementation to be performed by the PMC. If an amendment to the PMC contract amount to incorporate these services, staff will bring a request to the board in early 2019.

Financial Impact

Funding for this is available in the approved FY 19 Budget which includes approximately $900,000 for the light-rail project's PMIS procurement and implementation;, therefore no budget amendment is required. The funding source is the Western Triangle Tax District.

Attachments

- Draft e-Builder Scope of Service

Staff Contact(s)

- John Tallmadge, 919-485-7430, jtallmadge@gotriangle.org
- Katharine Eggleston, 919-485-7546, keggleston@gotriangle.org

Connecting all points of the Triangle

MEMORANDUM

TO: GoTriangle Board of Trustees Operations & Finance Committee

FROM: Capital Development, D-O LRT Project Team

DATE: December 13, 2018

SUBJECT: **Professional Services Contract Amendment – GEC Phase 3B**

Strategic Objective or Initiative Supported

This item supports Strategic Objective 1.1: Increase number of customers served with Sustainable Transportation Services.

Action Requested

Staff requests that the Operations and Finance Committee recommend that the Board of Trustees authorize the President and CEO to increase the not-to-exceed amount for GEC Phase 3B of the Professional Services Contract with HDR Engineering Inc. (HDR) for General Engineering Consultant (GEC) Services for the light-rail project by $900,000 for relocation design services for university-owned utilities.

Background and Purpose

On July 28, 2017, the Federal Transit Administration (FTA) admitted the light-rail project into the Engineering Phase of the FTA New Starts Program. The FTA has since acknowledged GoTriangle's intent to pursue a Full Funding Grant Agreement (FFGA) for the project in September 2019.

On July 27, 2016, the Board of Trustees authorized the General Manager to execute Phase 1 of a Professional Services Contract with HDR for GEC Services for the light-rail project. The term for Phase 1, Design Feasibility Studies and Financial Planning, was up to three (3) months, in an amount not to exceed $500,000.

On December 14, 2016, the Board of Trustees authorized the General Manager to execute Phase 2, which included a continuation of the Phase I Scope as well as additional tasks determined to be necessary to further the design baseline prior to advancing the Final Design. The term for Phase 2, Design Feasibility Studies, Supplemental Engineering, and Advanced Permitting, was up to five (5) months, in an amount not to exceed $6,000,000.

On May 24, 2017, the Board of Trustees authorized the General Manager to execute Phase 3, which encompasses those components of the Final Design of the project identified in the Phase 3 Scope. The term for Phase 3 runs through June 30, 2020, is funded at an amount not to exceed $75,000,000. As of June 30, 2018, the Phase 3 unspent balance is approximately $37,000,000.

On September 26, 2018, the Board of Trustees authorized the General Manager to execute Phase 3B, Additional Final Design Services. The Additional Final Design Services identified in the previous Contract Amendment included changes to the scope of design services required to accommodate significant changes in the design and engineering of the light-rail project that were identified since the beginning of Phase 3, Final Design.

This memorandum describes the proposed request to add further Additional Final Design Services to Phase 3B up to $900,000 for the design of university-owned utilities.

Responsibility for the relocation of the university-owned utilities has been recently coordinated with the universities as part of the process that will culminate in execution of the Cooperative Agreements. In both cases – for the University of North Carolina at Chapel Hill (UNC) and for Duke University – it has been agreed that it will be most expeditious and advantageous to both parties for GoTriangle to design and perform the relocations. This is the same model already in effect for utilities owned by public entities (i.e., water and sewer owned by the Orange Water and Sewer Authority [OWASA] and City of Durham), in which the GEC is performing the design, and the GoTriangle construction contractors will perform the relocations. The alternative would be for the universities to perform the design and relocations themselves or with their own contractors with reimbursement by GoTriangle; this approach would introduce additional schedule risk and additional burden on university staff.

As a result, GoTriangle seeks to engage the GEC to perform the utility relocation design for the university-owned utilities. The GEC will incorporate the utility relocation designs into the contract documents for the Civil West and Civil East construction contractors. This work must begin soon in order for the university-owned utility relocations to appear on the 90% plans, which for Civil West (UNC) are due in May 2019 and for Civil East (Duke University) are due in August 2019.

Financial Impact

Funding for this Contract Amendment is available in the approved FY19 Budget which includes approximately $62 million for professional services related to the light-rail project, therefore no budget amendment is required. The funding source is the Western Triangle Tax District.

Staff Contact(s)

- John Tallmadge, 919-485-7430 jtallmadge@gotriangle.org
- Saundra Freeman, 919-485-7415, sfreeman@gotriangle.org

GoTriangle Board of Trustees
Planning & Legislative Committee Meeting Minutes
November 28, 2018

Board Room, The Plaza, 4600 Emperor Blvd., Suite 100
Durham, NC

Committee Members Present:

Will Allen III, Committee Chair
Wendy Jacobs
Vivian Jones
Mark Marcoplos
Jennifer Robinson

Committee Members Absent:

Nina Szlosberg-Landis (excused)

Committee Chair Will Allen III called the meeting to order at 2:20 p.m.

I. Adoption of Agenda

Action: On motion by Robinson and second by Jones the agenda was adopted. The motion was carried unanimously.

II. Approval of Minutes

Action: On motion by Jones and second by Robinson the minutes of the July 25, 2018, meeting were approved. The motion was carried unanimously.

III. BRT Evaluation Results - Wake MIS

Action: On motion by Jones and second by Robinson the Committee voted to recommend that the Board accept the BRT Evaluation Results. The motion was carried unanimously.

IV. Downtown Raleigh Study BRT Alternative Scenario

No presentation.

V. Adjournment

Action: Chair Allen adjourned the meeting at 2:21 p.m.

_____
Will Allen III, Committee Chair

Attest:

_____
Michelle C. Dawson, CMC
Clerk to the Board of Trustees

GO Triangle

Connecting all points of the Triangle

MEMORANDUM

TO: GoTriangle Board of Trustees Planning & Legislative Committee

FROM: Regional Services Development, Planning and TOD Group

DATE: November 19, 2018

SUBJECT: **BRT Evaluation Results from Wake Transit Major Investment Study (MIS)**

Strategic Objective or Initiative Supported

1.1 Increase number of customers served with sustainable transportation services

Action Requested

Staff requests that the GoTriangle Planning and Legislative Committee recommend that the GoTriangle Board accept the BRT Evaluation Results as part of the Wake Transit MIS.

Background and Purpose

The Major Investment Study (MIS) conducted a high-level analysis of the 20-miles of BRT infrastructure defined by the Wake Transit Plan. The Plan identified BRT corridors connecting to downtown Raleigh from the north (via Capital), south (via Wilmington), east (via New Bern) and west (via Western).

The primary finding of the BRT Evaluation is that all four corridors are viable and promising corridors for Bus Rapid Transit implementation. All potential concept alignments within each of the four corridors were evaluated in order to understand strengths and weaknesses relative to each other against selected criteria, as well as how the four corridors themselves compare to one another.

Using the results of the BRT Evaluation, and having been designated the BRT Project Sponsor by CAMPO, GoRaleigh will lead the next steps in the process to identify the first corridor or combination of corridors to proceed to Project Development.

At the time of the P&L Committee and Board of Trustees receiving this item, the Transit Planning Advisory Committee (TPAC) recommended the BRT Evaluation Framework Results on October 23, 2018 for acceptance by the Wake Transit governing boards. The CAMPO Executive Board accepted the BRT Evaluation Results during its Executive Board Meeting on November 14, 2018.

Financial Impact

None

Attachments

- BRT Evaluation Results Document

Staff Contact(s)

- Patrick McDonough, (919) 485-7455, pmcdonough@gotriangle.org
- Steven Schlossberg, (919) 485-7590, sschlossberg@gotriangle.org

Major Investment Study (MIS)

BRT Evaluation Results

Wake Transit Plan

GO FORWARD

A COMMUNITY INVESTMENT IN TRANSIT

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1 Introduction

The Wake Transit Plan Major Investment Study (MIS) conducted an in-depth analysis of the 20 miles of Bus Rapid Transit (BRT) infrastructure defined by the Wake Transit Plan. The Wake Transit Plan identified BRT corridors connecting to downtown Raleigh from the north (via Capital), south (via Wilmington), east (via New Bern), and west (via Western). Using these corridors as a starting point, the MIS identified potential alignment concepts along each of the corridors, described in detail in Chapter 2. The 20 miles of BRT infrastructure were divided into 14 potential segments including all alignment concepts, each of which was evaluated against metrics identified in the MIS BRT Evaluation Framework.[1]

All potential concept alignments within each of the four corridors were evaluated in order to understand strengths and weaknesses of each of the variants within the four corridors, as well as how the four corridors compare to one another. The evaluation results present a three-tiered relative rating of each segment against each evaluation metric, where "Tier 1" represents higher performance and "Tier 3" represents lower performance. It is important to emphasize that, as these are relative ratings, a Tier 3 rating does not imply that a segment is unfit for BRT infrastructure. The results of the evaluation framework are designed to inform the selection of a preferred alignment within each of the four corridors and also inform the decision about the order of implementation of the segments that make up the 20 miles of BRT infrastructure that will be constructed in Wake County. The MIS evaluation indicated that each of the corridors and alignment options are viable for a successful BRT project.

Key Findings of Evaluation Process: All Four Corridors are Good Candidates for BRT Investments

Future ridership levels warrant investment

Dedicated bus lanes are possible in all corridors

No fatal flaws were found

[1] The MIS BRT Evaluation Framework was adopted by the Wake Transit governing boards in June 2018.

ADJUSTMENTS TO EVALUATION FRAMEWORK

The project team made several adjustments to methodology laid out in the evaluation framework, and narrowed the total evaluation metrics from nineteen described in the evaluation framework to fifteen final metrics. The majority of these adjustments occurred after gaining a more thorough understanding of the outputs produced by the Triangle Regional Model version 6 (TRMv6), which was used for ridership projection. Figure 1 describes how the methodology used to produce the evaluation results differs from the adopted evaluation framework.

Figure 1 Evaluation Framework Methodology and Applicable Adjustments

Category	Metric	Proposed Methodology	Adjustment
Speed & Reliability	Speed improvement	Calculate the change in average speed in the corridor by comparing existing bus speeds to anticipated BRT speed.	None
	Reliability	Calculate percent of corridor length in each direction that has transit-only ROW.	Removed. Conceptual corridor design and costing assumptions included 100% transit-only ROW on all segments, thus this metric did not provide any basis for comparison.
Supporting Bus Network Connections	Potential corridor connections	Determine the number of planned bus routes that could use a portion of the infrastructure (qualitative assessment).	None
	Potential corridor utilization	Determine the number of planned peak buses per hour that could use a portion of the infrastructure, based on set of routes identified in the measure above.	None
Connectivity	Connections to frequent transit	Determine the number of planned routes that will operate at least every 15 minutes that provide a transfer opportunity with the corridor.	None
	Connections to commuter rail	Determine the number of planned commuter rail stations that intersect the corridor.	Removed. Commuter rail station locations have not yet been identified and downtown alignments for BRT in Raleigh and Cary, where the highest potential for connections exist, are being evaluated as part of separate planning efforts..
	Ease of access	Calculate the intersection density within ½-mile of the corridor, excluding interstates and ramps.	None
Equity	Affordable housing access	Calculate the ratio of legally binding affordability restricted housing units to all housing units within ½-mile of corridor.	None

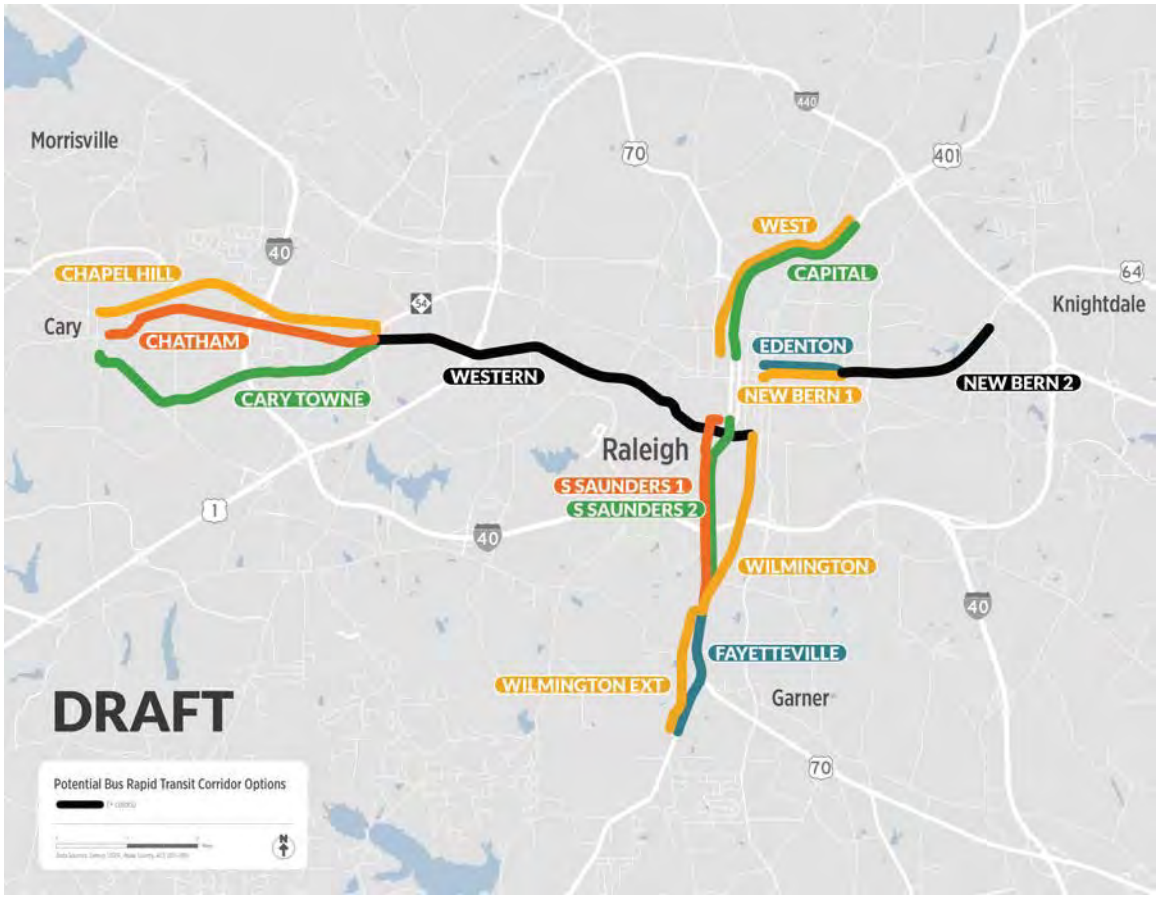
Category	Metric	Proposed Methodology	Adjustment
	Minority access	Calculate the ratio of minority residents to all residents living within ½-mile of corridor. Definition of minority will be consistent with TRM definition.	None
	Transit dependent access	Calculate the ratio of zero vehicle households to all households located within ½-mile of corridor	None
Transit Supportive Land Use	Total People + Jobs served	Calculate the total number of residents and jobs within ½-mile of corridor.	None
	Concentration of People + Jobs	Calculate the number of residents and jobs within ½-mile of corridor divided by the ½-mile network buffer around the corridor.	None
	Economic development potential	Quantitative assessment based on inputs such as planned developments and community visions for future development, and/or CommunityViz suitability scores	Used CommunityViz suitability scores only.
Sustainability	VMT reduction	Calculate the reduction in Vehicle Miles Traveled (VMT) that would result from implementation of a BRT corridor.	Removed. The ridership modeling approach used as part of the MIS did not produce this output.
	Environmental impact	Quantitative assessment of potential negative impacts on existing features due to construction of BRT infrastructure.	None
Constructability	Constructability	Qualitative assessment of elements that may cause construction to be more difficult, including ease of right-of-way acquisition, need for structures, and intersection/interchange operations.	None
Ridership & Cost Effectiveness	New transit trips	Calculate the change in corridor ridership by comparing the projected ridership to ridership on segments of existing routes in the corridor.	Removed. The ridership modeling approach used as part of the MIS did not produce this output.
	Operating cost per passenger trip	Divide the predicted daily operating cost by the predicted daily ridership (2045) of BRT service and non-branded corridor service.	While all other metrics were produced for individual segments, this was produced for each of the four directional corridors.

Category	Metric	Proposed Methodology	Adjustment
	Capital cost per passenger trip	Divide the predicted total capital cost by the predicted daily ridership (2045) of BRT service and non-branded corridor service.	While all other metrics were produced for individual segments, this was produced for each of the four directional corridors.

2 Corridor Alternatives

The Wake Transit Plan identified four distinct corridors that comprise 20 miles of BRT infrastructure: Capital, Wilmington, New Bern, and Western. As part of the MIS, concept alignments for these four corridors were developed, resulting in a total of 14 segments, shown in Figure 2. Note that segments referred to as Western and New Bern 2 do not have alternative alignment options and are shown in black. All other segments have at least one parallel alternative, displayed with different colors. In addition, the MIS did not analyze segments of BRT infrastructure that will be implemented in downtown Raleigh and downtown Cary. Downtown alignments in each case will be determined by downtown studies that will be completed following the conclusion of the MIS. This section describes each of the segment options analyzed as part of the evaluation framework.

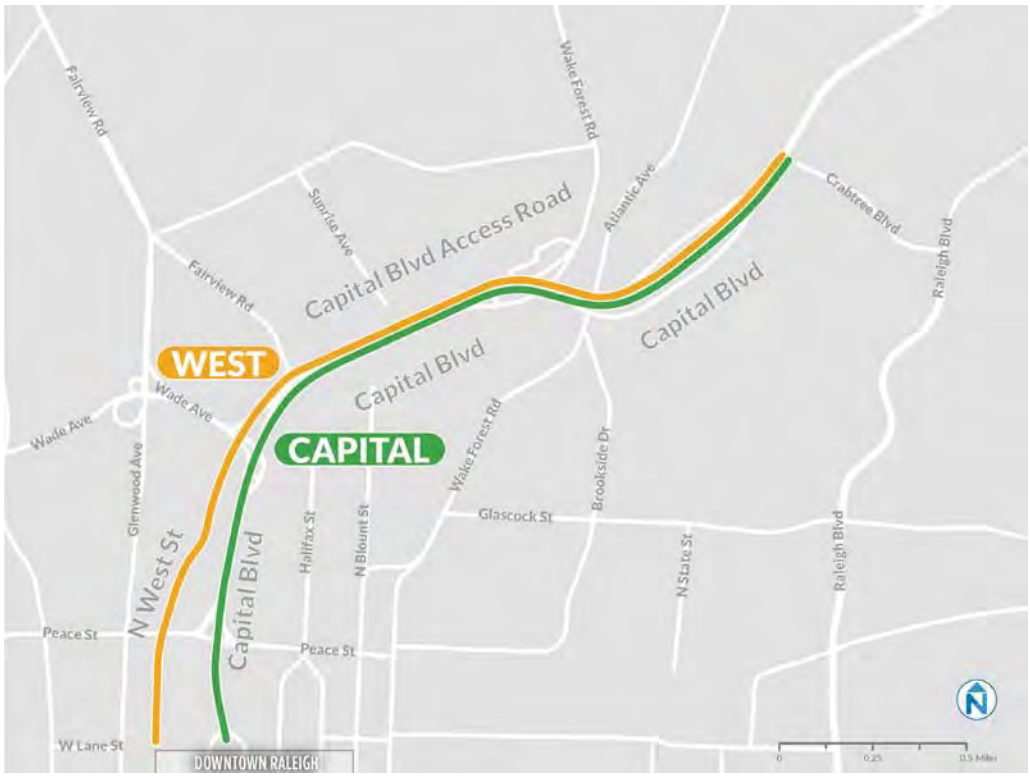
Figure 2 Potential BRT Corridors and Segments



CAPITAL CORRIDOR (NORTH)

The Capital corridor extends from the northern area of downtown Raleigh from Lane Street north to Crabtree Boulevard. The Capital corridor is divided into two segments: West and Capital (shown in Figure 3). These segments are roughly parallel between Lane Street and Wake Forest Road, but would both operate on the same right of way between Wake Forest Road and Crabtree Boulevard.

Figure 3 Capital Corridor and Segments



West

The West segment would operate on West Street between Lane Street and Wade Avenue. The segment would also operate on the Capital Boulevard Access Road between Wade Avenue and Wake Forest Road. North of Wake Forest Road, the segment would operate on Capital Boulevard. The West segment is roughly 2.6 miles in length.

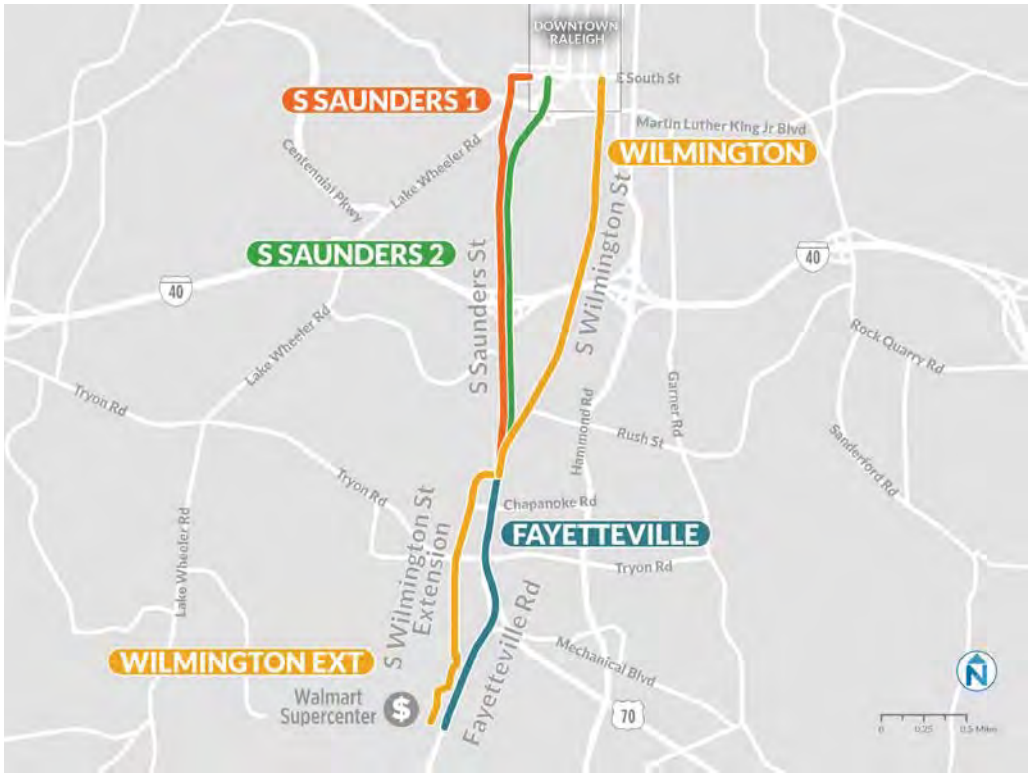
Capital

The Capital segment would operate entirely on Capital Boulevard between Lane Street and Crabtree Boulevard. This segment is approximately 2.5 miles in length.

WILMINGTON CORRIDOR (SOUTH)

The Wilmington Corridor extends from the southern area of downtown Raleigh from South Street to Purser Drive. The Wilmington Corridor is divided into five segments: S Saunders 1, S Saunders 2, Wilmington, Wilmington Ext, and Fayetteville (shown in Figure 4).

Figure 4 Wilmington Corridor and Segments



S Saunders 1

The S Saunders 1 segment would operate on South Street from West Street to S Saunders Street and continue down S Saunders Street until the interchange with S Wilmington Street. This segment is approximately 2.4 miles in length.

S Saunders 2

The S Saunders 2 segment would operate on a similar alignment as S Saunders 1. The primary difference is S Saunders 2 would operate on McDowell St between south of South Street. The two segments would operate on the same alignment south of the intersection of McDowell Street and S Saunders Street. This segment is approximately 2.4 miles in length.

Wilmington

The Wilmington segment would operate roughly parallel with the two S Saunders segments to the east. This segment would operate on Wilmington Street between South Street and the interchange of Wilmington Street and S Saunders Street. This segment is approximately 2.4 miles in length.

Wilmington Ext

The Wilmington Extension segment would operate on a roadway that is not currently constructed, but was illustrated in the Southern Gateway Plan. This new roadway alignment would operate as a southern extension of the existing Wilmington Street, adjacent to the west of Fayetteville Street. This segment

would operate between the interchange of Wilmington Street and Fayetteville Street to Purser Drive. This segment is approximately 1.8 miles in length.

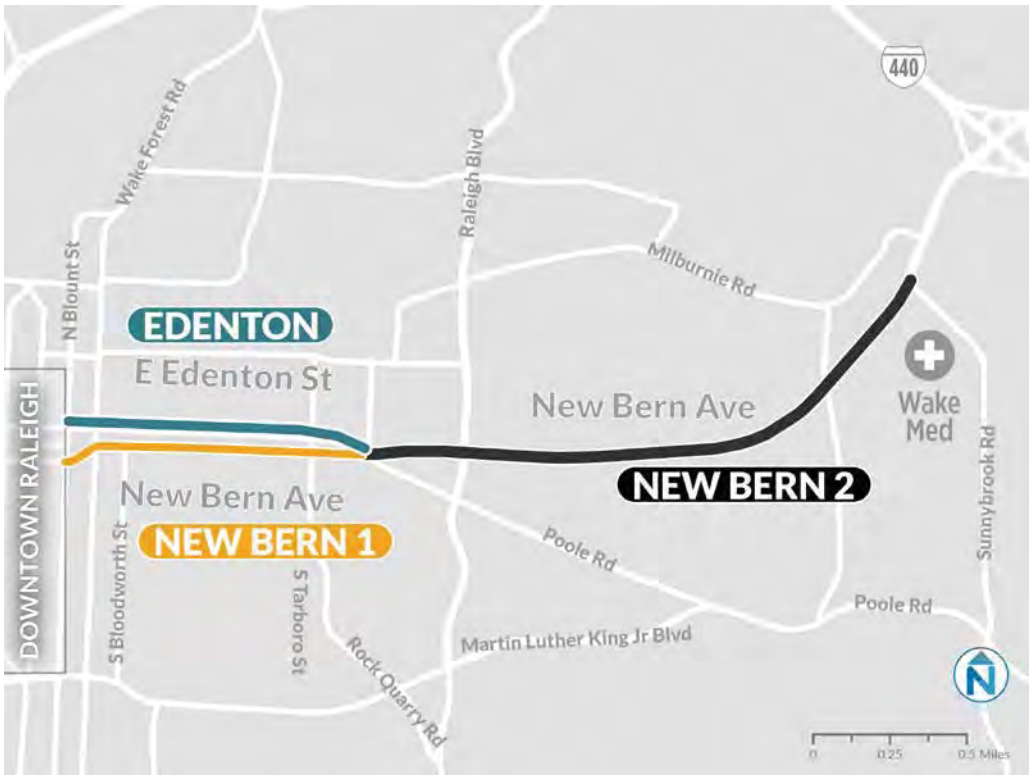
Fayetteville

The Fayetteville segment would operate on Fayetteville Road between the interchange of Wilmington Street and Fayetteville Road to Purser Drive. This segment is approximately 1.7 miles in length.

NEW BERN CORRIDOR (EAST)

The New Bern Corridor extends east from downtown Raleigh to the Wake Med Campus. This corridor is comprised of three segments: Edenton, New Bern 1, and New Bern 2 (shown in Figure 5).

Figure 5 New Bern Corridor and Segments



Edenton

The Edenton segment would operate on Edenton Street between Blount Street and Poole Road. This segment is approximately 1.0 mile in length.

New Bern 1

The New Bern 1 segment would operate roughly parallel to the Edenton segment, along New Bern Avenue from Blount Street to Poole Road. This segment is approximately 1.0 mile in length.

New Bern 2

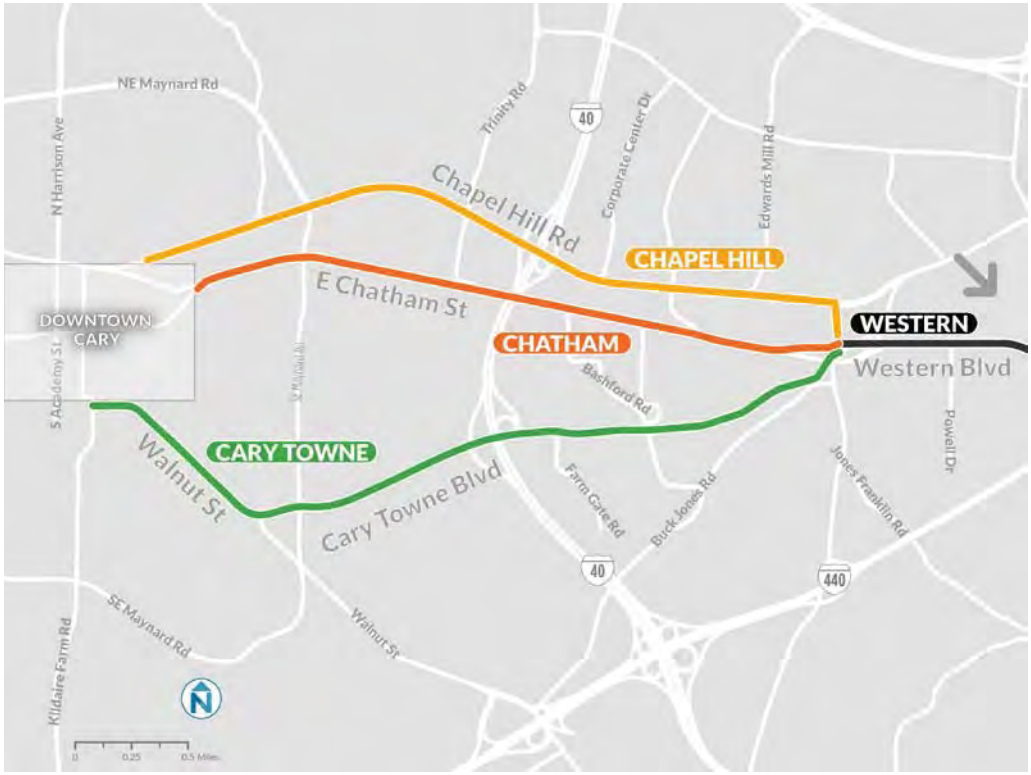
The New Bern 2 segment would operate on New Bern Avenue between Poole Road and the Wake Med Campus at Sunnybrook Road. This segment is approximately 2.0 miles in length.

WESTERN CORRIDOR (WEST)

The Western Corridor is the longest proposed corridor, connecting downtown Raleigh to downtown Cary. This corridor is comprised of four segments: Western, Cary Towne, Chatham, and Chapel Hill (shown in Figure 6 and Figure 7).

Figure 6 East Segment of the Western Corridor

Figure 7 West Segments of the Western Corridor



Western

The Western segment is the longest segment in this evaluation. It would operate on Western Boulevard between Wilmington Street and Hillsborough Street. This segment is approximately 4.8 miles in length.

Cary Towne

The Cary Towne segment would provide access to downtown Cary by operating on Cary Towne Boulevard and Walnut Street between Hillsborough Street and Kildaire Farm Road. A portion of this alignment between Buck Jones Road and Western Boulevard would operate on the Western Boulevard Extension, a roadway that is not currently constructed. This segment is approximately 3.9 miles in length.

Chatham

The Chatham segment would operate on Chatham Street between the intersection of Chatham Street and Hillsborough Street and the intersection of Chatham Street and Cedar Street. This segment is approximately 3.1 miles in length.

Chapel Hill

The Chapel Hill segment would operate on Chapel Hill Road between the intersection of Western Boulevard and Hillsborough Street and the intersection of Chapel Hill Road and Durham Road. This segment is approximately 4.1 miles in length.

3 Results

SEGMENT RESULTS

Thirteen of the fifteen final evaluation metrics were applied to the fourteen potential BRT segments while the final two metrics were applied to each of the four directional corridors. The following section describes each evaluation metric, calculation methodology, rating tiers, and findings.

Speed Improvement

Enhanced transit infrastructure including dedicated transit lanes, transit signal priority, and queue jumps allow the BRT system to bypass existing congestion, reduce intersection delay, and results in faster, more reliable travel times. Improving average speeds and reducing delay on transit routes can encourage additional ridership and improve public perceptions of transit.

Metric: Increase in Average Speed (Miles per Hour) Due to Reduction in Signal Delays

This metric measures only intersection delay, not the impacts of stop spacing, off-board fare payment, or any other feature. The speed improvements related to stop spacing, dedicated running way, off-board fare payment, etc. were assumed to be consistent across segments, as stipulated by the BRT Design Standards,[2] and thus did not create a useful point of comparison. Intersection delay, and reducing and/or avoiding it, is the only speed factor where segment-specific operating conditions created measurable differences.

This analysis used existing signalized intersection delay at every intersection in each segment to assess the projected reduction in delay as a result of the proposed transit infrastructure improvements. The reductions in intersection delay were combined for each segment to determine total travel time savings related to the improvements. Travel time savings were then used in conjunction with segment length to determine the projected average speed for each segment. Projected speeds were compared to existing speeds to determine the increase in average speeds for each segment. Segments were sorted into tiers with higher average speed increases placed in higher tiers.

Increase in Average Speed	Rating
More than 5 MPH	Tier 1
2 to 5 MPH	Tier 2
Less than 2 MPH	Tier 3

[2] The BRT Design Standards and Performance Measures were adopted by the TPAC in May 2018

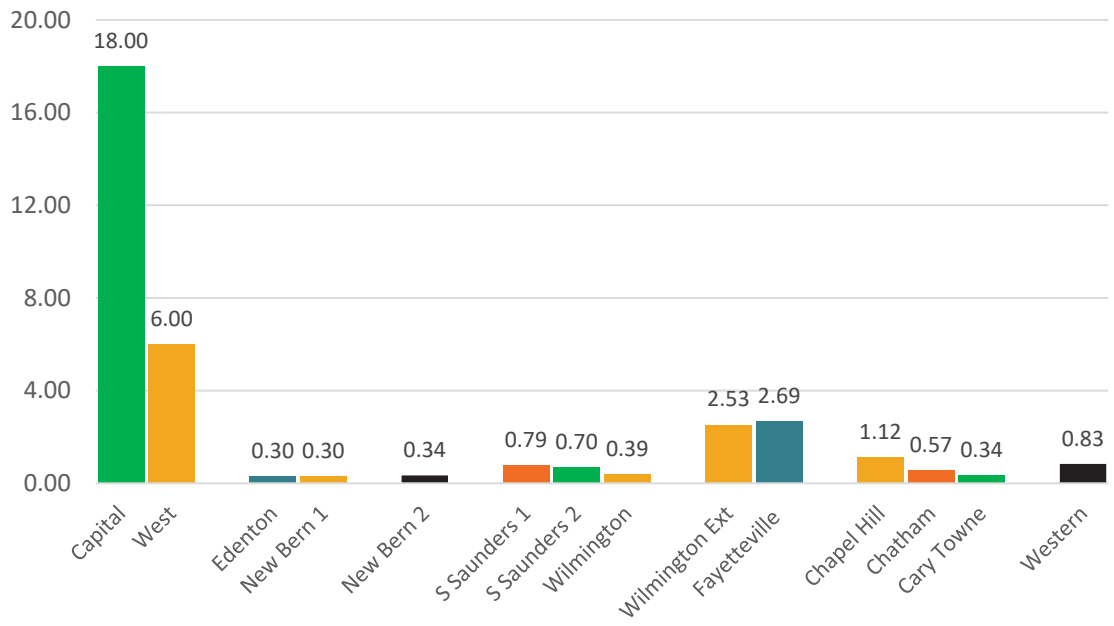
Findings

The results of the speed improvement analysis are shown in Figure 8. Two segments, Capital and West, have projected average speed increases of over five miles per hour. The speed improvements for the Capital and West segments are significantly higher than other segments because the underlying routes are shifted from a neighborhood arterial (Wake Forest Road) to a limited stop, separated busway. While the other segments receive smaller speed improvements by reducing intersection delay, Capital and West are projected to experience sustained speed improvements throughout the length of the segments.

The results for this analysis are based on existing levels of congestion, informed by 2017 morning and afternoon traffic counts. The S Wilmington Ext and Fayetteville segments have a higher existing level of congestion than the other segments and subsequently have a higher average speed improvement, 2.53 and 2.69 miles per hour respectively. As population and employment in the City of Raleigh and throughout Wake County continue to grow, congestion is expected to worsen, and these average speed improvements are likely to increase further.

The Western segment has a relatively low average speed improvement of 0.83 miles per hour; however, it contains two of the most heavily congested individual intersections in the analysis. During the PM Peak Period, the Westbound intersections of Western & Gorman and Western & Method have existing delays of over four minutes each with delay reductions of 38.8 seconds and 42.7 seconds, respectively. This illustrates that improvements at individual intersections may be more significant than the average speed improvement metric suggests.

Figure 8 Speed Improvement in Miles per Hour due to Reduction in 2017 Signal Delay



Potential Corridor Connections

Infrastructure improvements associated with BRT systems can be extended to existing transit routes operating on the same corridor. If existing routes can be modified to have access to dedicated right-of-way, queue jumps, and/or transit signal priority that is implemented as part of the BRT infrastructure, a wider range of Wake County transit services will benefit from the investment.

Metric: Shared Corridor Routes

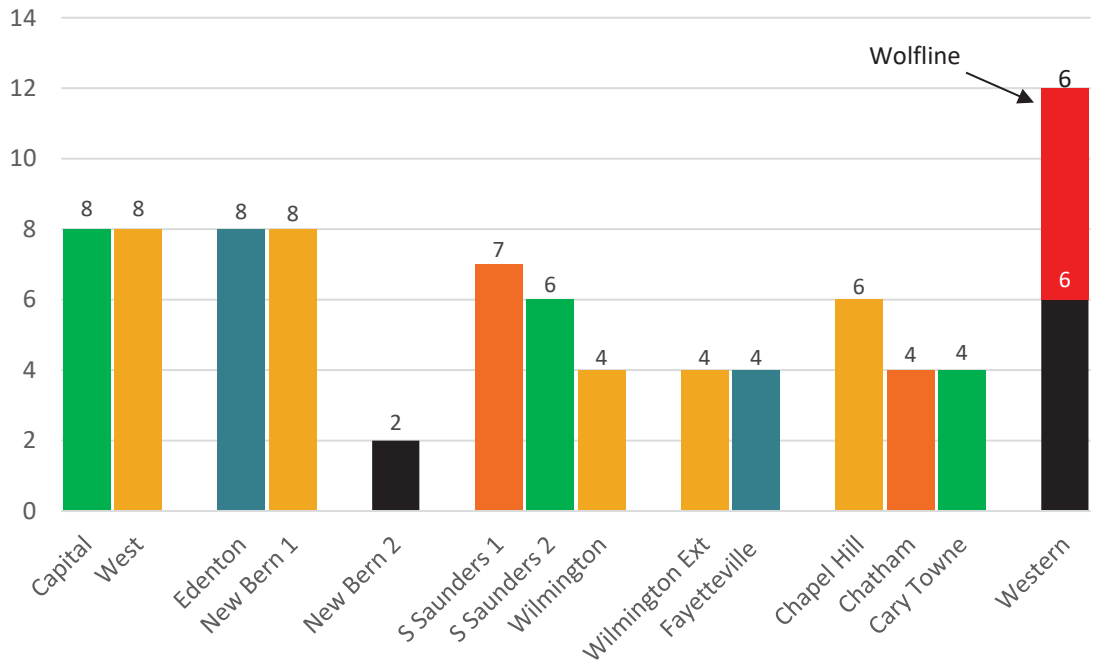
This metric indicates the potential for BRT infrastructure to provide enhancements to the larger bus network. For each potential segment, the number of planned routes operating on the same corridor was identified and segments were sorted into tiers. Segments with a higher number of shared corridor routes have a higher potential benefit for these routes and are placed into higher tiers.

Shared Corridor Routes	Rating
More than 8	Tier 1
5 to 8	Tier 2
Fewer than 5	Tier 3

Findings

One segment, the Western Segment, has more than eight shared corridor routes, placing it in Tier 1. Developing BRT infrastructure on the Western segment would provide the potential for up to 12 other transit routes to utilize the infrastructure, significantly more than any other segment (Figure 9). Six of the twelve routes on the Western segment are operated by GoRaleigh, while the remaining six are Wolfline routes (shown in red). Eight segments have between five and eight shared corridor routes. The Capital, West, New Bern 1, and Edenton segments would provide potential utilization for up to eight additional transit routes. All segments would provide potential shared usage for at least two additional routes.

Figure 9 Number of Shared Corridor Routes



Potential Corridor Utilization

While existing bus routes have the potential to share BRT infrastructure, these impacts will be more significant for routes with more frequent service. For example, BRT infrastructure that could be utilized by a bus route that provides 15-minute service will have greater benefits than BRT infrastructure that could be utilized by two different hourly bus routes. Assessing the potential corridor utilization for each segment adds additional context to the potential benefits of the BRT infrastructure.

Metric: Shared Corridor Peak Buses

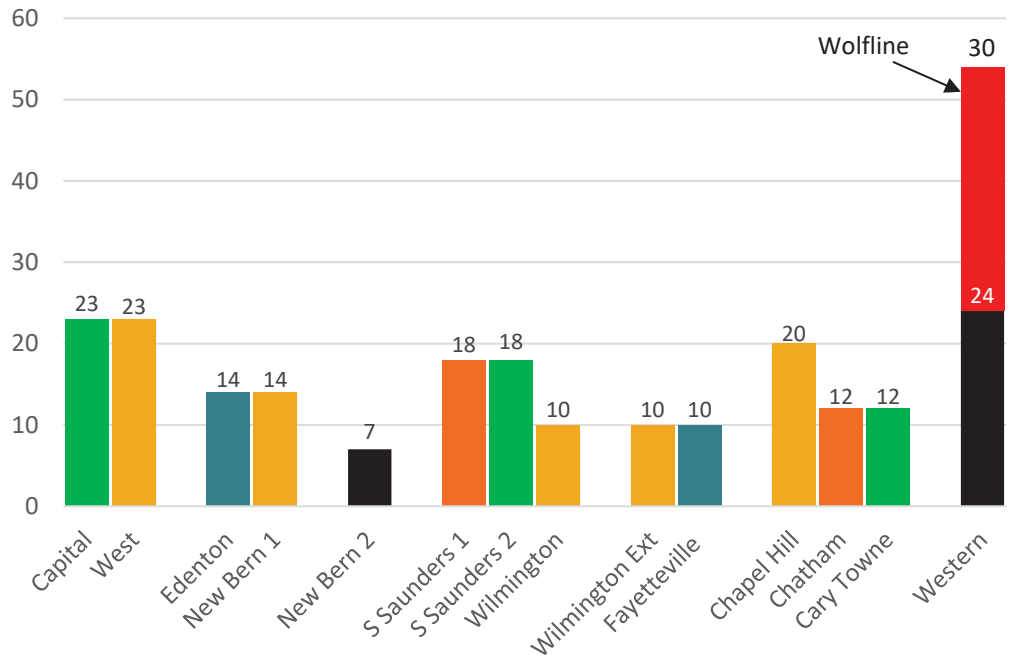
This metric is similar to the previous metric, but focuses on quantifying the number of buses during the peak period (as opposed to the number of routes) that would benefit from access to time-saving infrastructure. For each potential segment, the number of planned peak period buses operating on the same corridor was identified and segments were sorted into tiers. Segments with a higher number of peak period buses operating on shared corridors have a higher potential benefit for these routes and are placed into higher tiers.

Shared Corridor Peak Buses	Rating
More than 25	Tier 1
11 to 25	Tier 2
Fewer than 11	Tier 3

Findings

The results for potential corridor utilization closely mirror those for potential corridor connections, shown in Figure 10, with only the Western Segment having more than 25 peak period buses. Developing BRT infrastructure on the Western segment would provide the potential for up to 54 peak hour buses to access the time-saving infrastructure, again, the most of any segment. Wolfline routes account for 30 of the peak hour buses on the Western segment (shown in red), while GoRaleigh routes account for 24 peak hour buses. Five segments have between 11 and 25 buses per hour on shared corridor routes. Capital and West are relatively high with 23 buses per hour each, followed by Chapel Hill with 20 buses per hour. S Saunders 1 and 2 have the potential for 18 buses per hour to access the infrastructure. Every segment would provide the potential for at least seven peak hour buses to utilize the shared infrastructure.

Figure 10 Number of Shared Corridor Peak Buses



Connections to Frequent Transit

BRT functions best if the investment will create and strengthen connections and access to other transit routes. In particular, connections to frequent routes (defined as those that operate at least every 15 minutes) are important because riders experience minimal wait times when transferring. High connectivity between potential BRT alignments and planned frequent transit routes has the potential to increase the attractiveness of service and provide greater regional accessibility for riders.

Metric: Intersecting Frequent Transit Network Routes

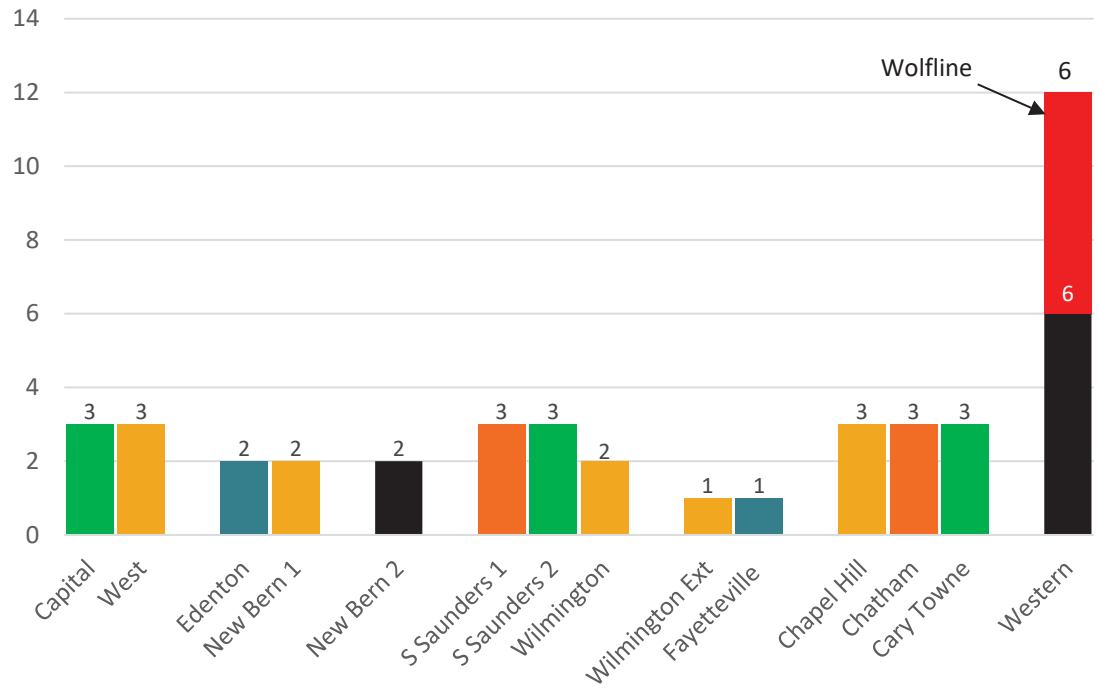
This metric will indicate the degree to which a potential BRT corridor will integrate with the planned Wake County Frequent Transit Network. For each potential segment, the number of planned high-frequency routes operating on the same corridor or an intersecting corridor was identified and segments were sorted into tiers.

Intersecting Frequent Transit Network Routes	Rating
More than 3	Tier 1
2 to 3	Tier 2
Fewer than 2	Tier 3

Findings

The number of high frequency transit routes intersecting each segment is shown in Figure 11. All segments feature connections to at least one frequent transit route, however, only one segment has more than three intersecting Frequent Transit Network Routes. The Western Corridor segment has connections to 12 different high frequency routes, significantly more than any other segment. Six of the high frequency transit routes connecting to the Western segment are Wolfline routes (shown in red), while six are GoRaleigh routes. Wilmington Extension and Fayetteville each have one connection to a high frequency route, while all other segments have connections to two or three.

Figure 11 Number of Connecting High Frequency Transit Routes



Ease of Access

Most transit riders begin and/or end their trip as pedestrians, walking some distance to or from the bus stop. Ridership on BRT is likely to be higher in places that people can easily and conveniently access the station from the surrounding neighborhood. Areas where the street network is made of small blocks are easier for pedestrians and bicyclists to traverse because destinations can be accessed without out-of-

direction travel. Areas with large blocks and circuitous roadways are less accessible because they often do not provide a direct path to a destination.

Metric: Intersection Density

This metric measures the density of intersections within a ½-mile of each segment to identify the pedestrian accessibility of the area surrounding each segment. The ½-mile buffer is measured using the street network, not straight line distance in order to incorporate natural and built barriers into the analysis.

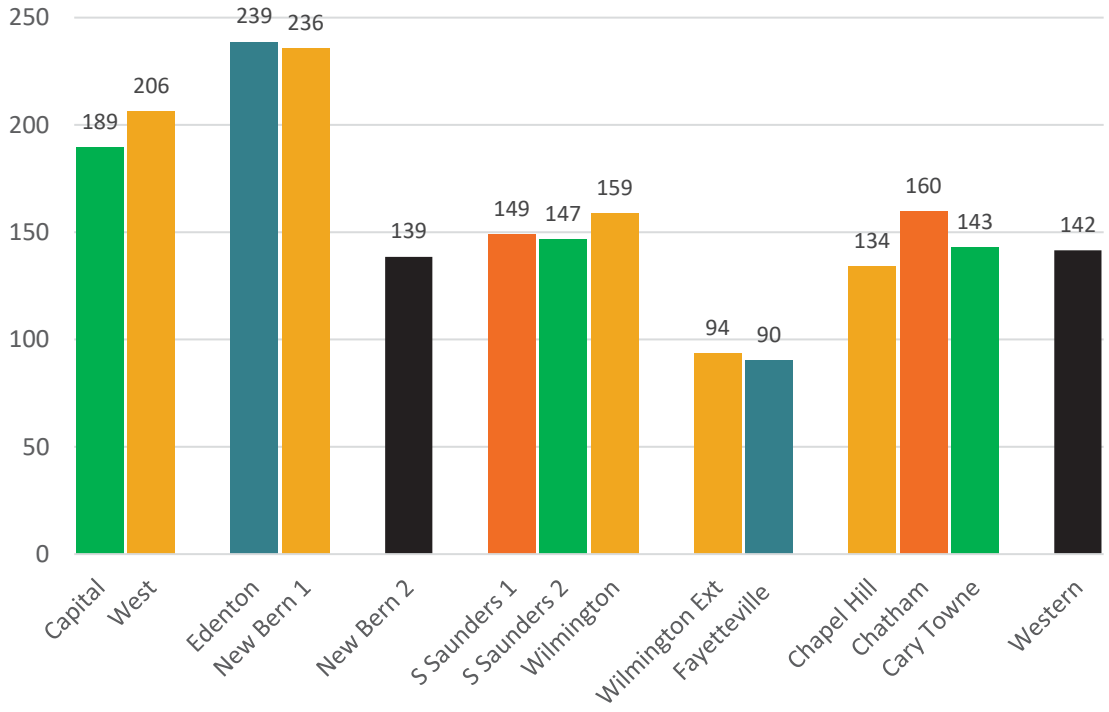
Intersections per Square Mile	Rating
More than 160	Tier 1
95 to 160	Tier 2
Fewer than 95	Tier 3

Findings

Intersection density is a common way to measure the accessibility of the road network surrounding the corridor and therefore the number of potential pedestrian and bicycle connections. For each potential segment, the density of intersections within a ½-mile buffer surrounding the segment was identified and segments were sorted into tiers. Segments with a higher intersection density within a ½-mile buffer of the segment are placed into higher tiers.

The density of intersections within a ½-mile buffer of each segment is shown below in Figure 12. Four segments have an intersection density of 160 intersections per square mile or higher. Eight segments contain between 95-160 intersections per square mile. Edenton and New Bern 1 have the highest intersection density, with over 235 intersections within ½-mile of both segments. The Capital and West segments also have high intersection densities with 189 and 206 intersections, respectively. The Wilmington Ext and Fayetteville segments have the lowest intersection density with fewer than 100 intersections for both segments. All segments have at least 90 intersections per square mile.

Figure 12 Intersections per Square Mile within ½ Mile



Affordable Housing Access

Locating BRT near affordable housing units can have significant long-term benefits for residents, lowering their transportation costs and connecting them to greater regional job accessibility. The FTA Guidelines for Land Use and Economic Development Effects refer to "legally binding affordability restricted housing" as units with a lien, deed of trust, or other legal instrument attached to a property and/or housing structure that restricts the cost of the housing units to be affordable to renters and/or owners with incomes below 60 percent of the area median income for a defined period of time.

Metric: Percent of Legally Binding Affordable Housing

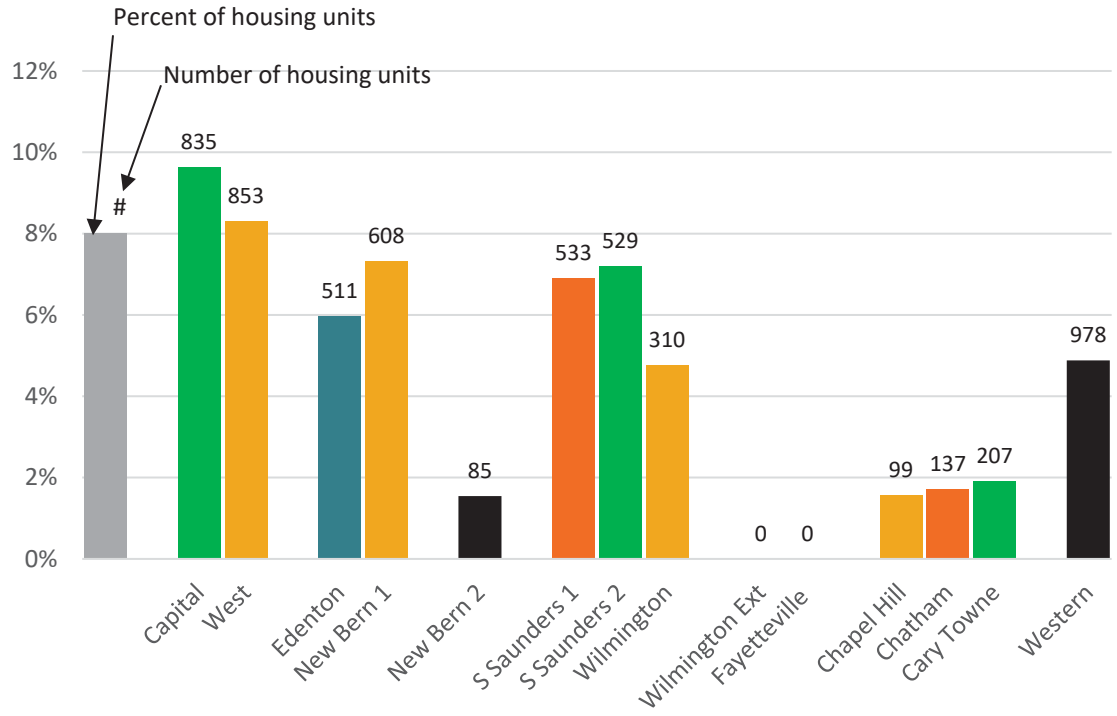
This evaluation assesses the percent and the total number of legally binding affordable housing units located within ½-mile buffer of each segment using TJCOG Affordable Housing Inventory data from the National Housing Preservation Database (Figure 12). The ½-mile buffer is measured using the street network, not straight line distance in order to incorporate natural and built barriers into the analysis. Segments with a higher percentage of affordable housing would provide greater access to these residents and are placed into higher tiers.

Percent of Legally Binding Affordable Housing	Rating
More than 6%	Tier 1
2% to 6%	Tier 2
Less than 2%	Tier 3

Findings

Five segments have higher than 6% of legally binding affordable housing located within ½-mile buffer of the segment: S Saunders 1, S Saunders 2, New Bern 1, West, and Capital. The Capital and West segments have the highest percentage of affordable housing units and among the highest number of affordable units with both segments containing over 800 units. The Western segment has the highest number of legally binding affordable housing units, but only accounts for 5% of the total housing units along the segment. There are no legally binding affordable housing units within ½-mile of either the Wilmington Ext or the Fayetteville segments.

Figure 13 Percent and Number of Legally Binding Affordable Housing Units within ½ Mile



Minority Access

Wake County is committed to investing in a way that ensures regional equity and access to opportunities. Investment in BRT can help historically disadvantaged populations connect with jobs, educational opportunities, and social services throughout the region. Locating BRT infrastructure in neighborhoods with high concentrations of minority populations can have significant long-term benefits for residents, lowering their transportation costs and connecting them to greater regional job accessibility.

Metric: Percent Minority Population

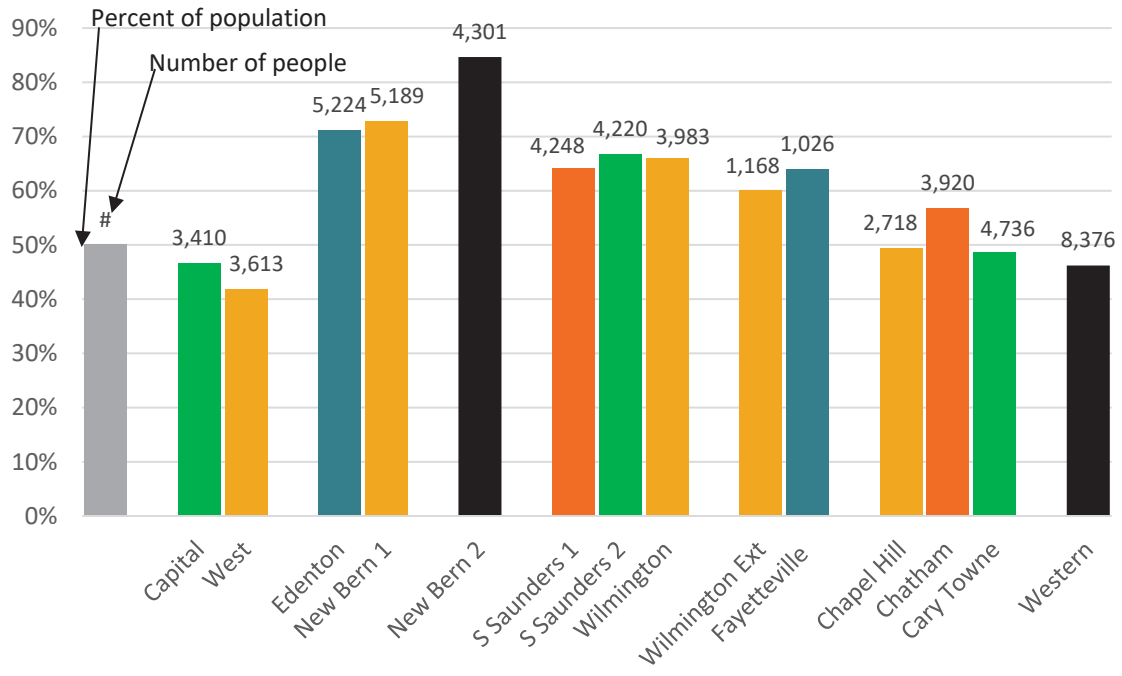
This analysis utilizes 2015 American Community Survey data to assess the percent of the population within ½-mile buffer of each segment that is classified as a Title IV Minority. The ½-mile buffer is measured using the street network, not straight line distance in order to incorporate natural and built barriers into the analysis. Segments with a higher concentration of minority populations are placed into higher tiers.

Percent Minority Population	Rating
More than 70%	Tier 1
50% to 70%	Tier 2
Less than 50%	Tier 3

Findings

Three segments have higher than 70% minority populations: Edenton, New Bern 1, and New Bern 2. The New Bern 2 segment has the highest percentage of minority population with 85% of residents within ½-mile of the segment identifying as a Title IV Minority. Edenton and New Bern 1 also have generally high percentages of minority residents with 71% and 73%, respectively. The Western segment has the highest total number of minority residents with over 8,000 residents identifying as a Title VI Minority. However, this only accounts for 46% of the population.

Figure 14 Percent and Number of Minority Population within ½ Mile[3]



Transit Dependent Access

BRT can particularly benefit households that do not have regular access to a vehicle by providing a reliable and fast connection to the region. Locating BRT in areas with a high transit-dependent population can ensure regional accessibility for vulnerable populations. Zero-vehicle households also often align with

[3] Minority population is defined by Title VI classifications

households with low income and are more likely to use transit. The FTA uses the ratio of zero vehicle households in a corridor to evaluate eligibility for potential BRT funding.

Metric: Percent of Zero-Vehicle Households

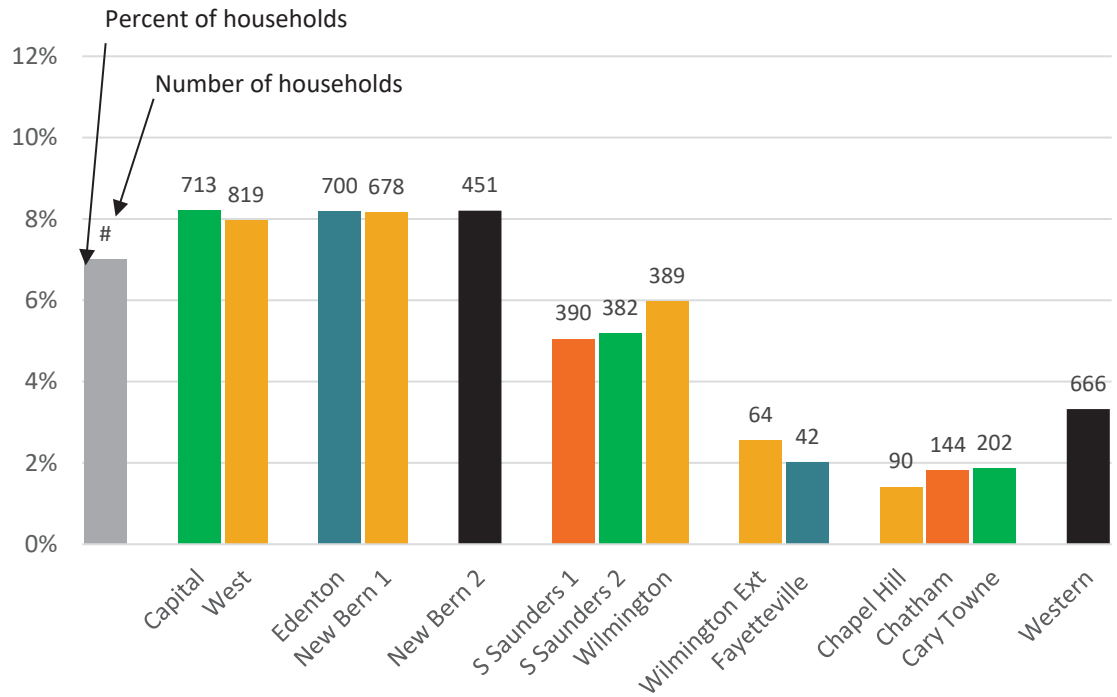
This analysis uses 2015 American Community Survey data to determine the percent of zero-vehicle households located within a ½-mile buffer of each segment. The ½-mile buffer is measured using the street network, not straight line distance in order to incorporate natural and built barriers into the analysis. Segments with a higher concentration of zero-vehicle households are placed into higher tiers.

Percent of Zero-Vehicle Households	Rating
More than 6%	Tier 1
5% to 6%	Tier 2
Less than 5%	Tier 3

Findings

Five segments contain more than 6% of zero-vehicle households: West, New Bern 1, Edenton, New Bern 2, and Capital. The Capital, West, Edenton, New Bern 1, and New Bern 2 segments all have a similarly high percentage of zero-vehicle households at approximately 8%. The West and Capital segments have the highest total number of zero-vehicle households with 819 and 713 households, respectively.

Figure 15 Percent and Number of Zero-Vehicle Households within ½ Mile



Total People + Jobs Served

The number of people living and working along transit corridors can indicate potential ridership levels and likelihood of sustaining the investment over time. Total population and employment indicates the degree to which transit-supportive land uses are in place.

Metric: Total Combined Population and Jobs

This analysis assesses the total combined population and jobs projected within a ½-mile buffer of each segment for the year 2045. The ½-mile buffer is measured using the street network, not straight line distance in order to incorporate natural and built barriers into the analysis. Segments with a higher number of combined population and jobs are placed into higher tiers.

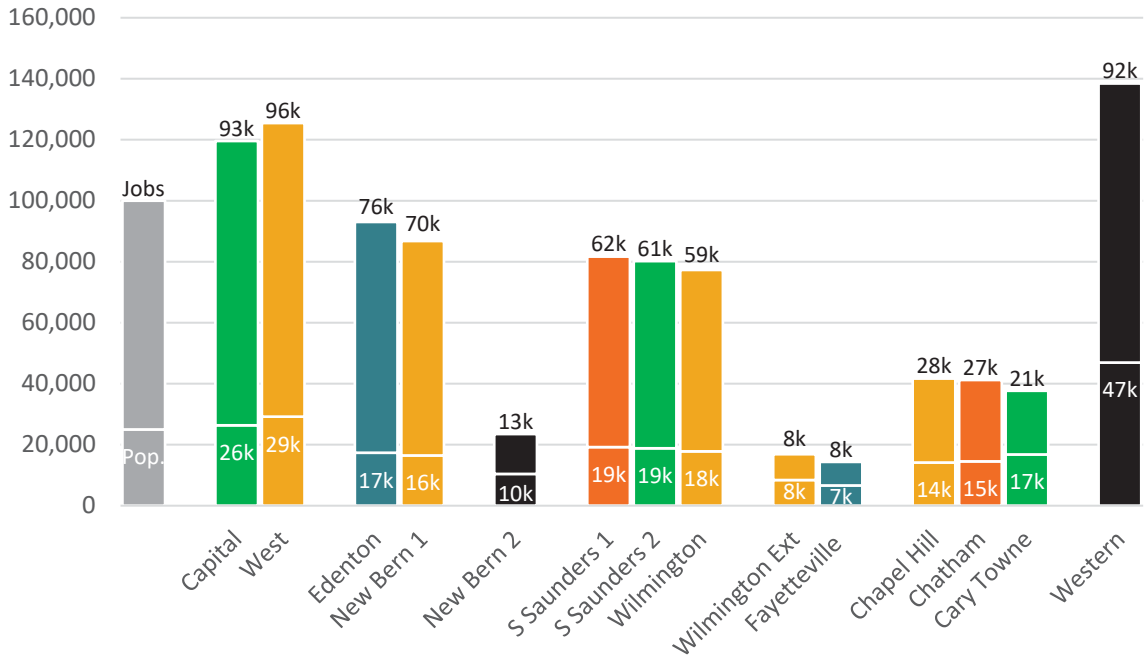
Total Combined Population and Jobs	Rating
More than 100,000	Tier 1
50,000 to 100,000	Tier 2
Fewer than 50,000	Tier 3

Findings

Figure 16 shows the projected 2045 jobs (top bars) and population (bottom bars) within ½-mile of each respective segment. Three segments have a total combined population and jobs over 100,000: Capital, West, and Western. The Western segment has a significantly higher projected 2045 population than any of the other segments with nearly 47,000 projected residents compared to 29,000 projected residents for West, the next highest segment. The Western segment also has a high number of projected employment for 2045 with over 91,000 anticipated jobs. The Western segment ranks third in projected employment behind the Capital and West segments, which have over 93,000 and 96,000 projected jobs, respectively. Similarly, the Western, West, and Capital segments have the three highest total projected 2045 population and employment, with approximately 138,000, 125,000, and 120,000, respectively.

The New Bern 2, Wilmington Ext, and Fayetteville segments all have relatively low total projected 2045 population and employment with a total of fewer than 25,000 combined population and jobs for all three segments.

Figure 16 Total Projected 2045 Population and Jobs within ½ Mile



Concentration of People + Jobs Served

By developing land at higher residential densities and a higher percentage of mixed uses, more origins and destinations are located within walking, bicycle and transit proximity. While the total number of people and jobs is important to understand the scale of impact for a potential BRT corridor, this metric ensures that shorter corridors with dense development are considered positively, even if the total number of people and jobs may not be as high as a longer, less dense corridor.

Metric: Density of Combined Population and Jobs

This analysis assesses the combined density of population and jobs per acre projected within a ½-mile buffer of each segment for the year 2045. The ½-mile buffer is measured using the street network, not straight line distance in order to incorporate natural and built barriers into the analysis. Segments with a higher density of combined population and jobs per acre are placed into higher tiers.

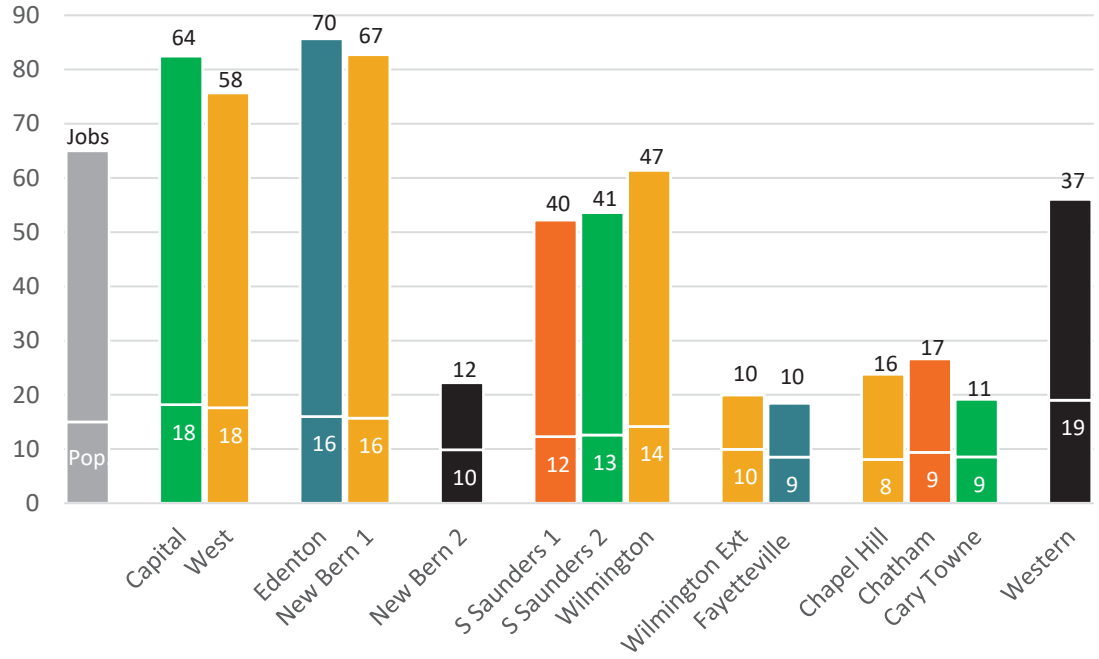
Combined Population and Jobs per Acre	Rating
More than 75	Tier 1
30 to 75	Tier 2
Fewer than 30	Tier 3

Findings

Figure 17 shows the projected 2045 jobs (top bars) and population (bottom bars) per acre within ½-mile of each respective segment. Four segments have a combined density of more than 75 residents and jobs per acre: West, Capital, New Bern 1, and Edenton. In addition to high total projected 2045 populations, the Western, Capital, and West segments also have high concentrations of projected population with over 18 people per acre projected for 2045. The projected concentration of employment for 2045 remains high for the Capital and West segments, with 64 and 58 jobs per acre, respectively. However, the concentration of jobs is relatively low for the Western segment with 37 jobs per acre. Edenton and New Bern 1 have the highest projected concentration of employment for 2045 with 70 and 67 jobs per acre, respectively.

New Bern 2, Wilmington Ext, Fayetteville, Chapel Hill, Chatham, and Cary Towne all have relatively low concentrations of projected employment for 2045. All six segments are projected to have fewer than 20 jobs per acre.

Figure 17 Projected 2045 Population and Jobs per Acre within ½ Mile



Economic Development Potential

Transit and infrastructure improvements can foster additional economic development and growth in the area surrounding the transit system. Surrounding land uses, existing development intensity, and geographic considerations can play a role in the potential economic development of these areas. Identifying segments with a high development potential helps maximize future growth and provides higher accessibility to people and destinations.

Metric: Suitability Index Score

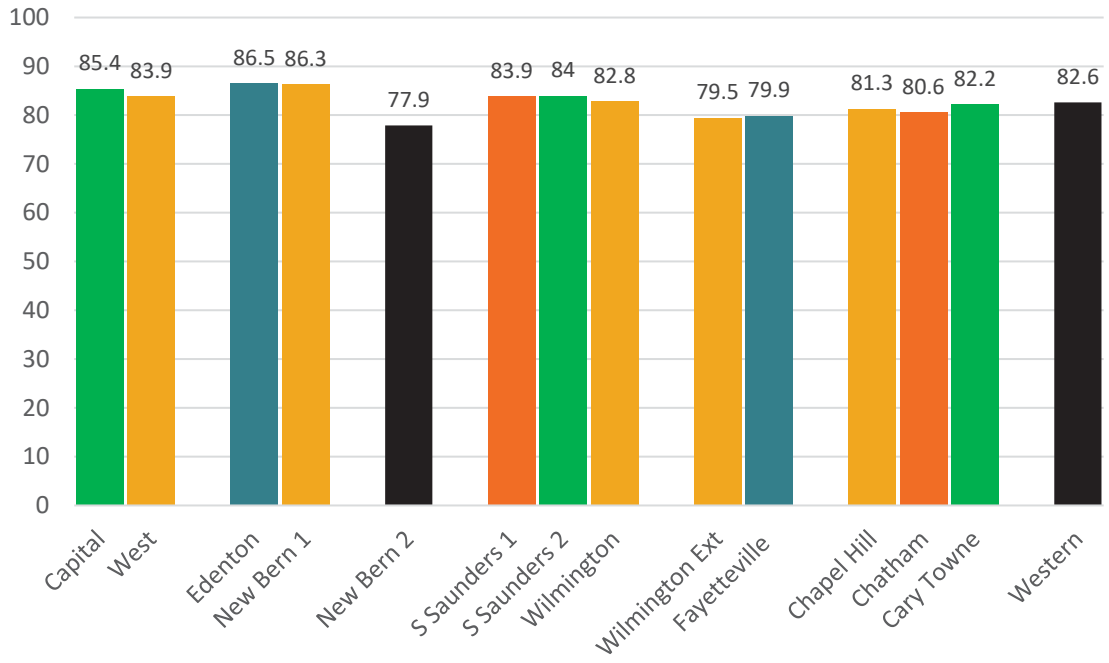
A normalized Suitability Index Score was developed to assign a quantitative score related to economic development potential. This score utilizes TJCOG and MPO data to account for current and future roadways and intersections, city and regional activity centers, anchor institutions, high frequency transit corridors and station areas, identified emerging growth areas, and development constraints. Segments with higher Suitability Index Scores are placed into higher tiers.

Suitability Index Score	Rating
Higher than 75	Tier 1
50 to 75	Tier 2
Lower than 50	Tier 3

Findings

All fourteen segments scored above 75 in the Suitability Index. Capital, New Bern 1, and Edenton scored particularly high, above 85 (shown in Figure 18). New Bern 2 was the lowest scoring segment with a score of 77.9.

Figure 18 Suitability Index Score



Environmental Impact

The proposed BRT corridors traverse areas of Wake County that are home to different environmental resources (both natural and community). Identifying these resources and the potential impacts of each BRT corridor is important for understanding the future project development and permitting process,

defining design constraints, and ensuring that impacts to these resources are minimized to the maximum extent practical. Each corridor alternative was evaluated in its entirety, as a full project with logical termini, to present an accurate comparison between the proposed alternatives.

Metric: Overall Resource Impact Rating

A high-level review of potential impacts to existing environmental resources was conducted based on resources identified through publicly-available sources and the conceptual alignments of each BRT corridor. Once all the impacts were ranked for each segment, a weighted average for each corridor was calculated and placed into a rating tier—Tier 1 (low impact to resources), Tier 2 (medium impacts to resources), and Tier 3 (high impacts to resources).

Overall Resource Impact Rating	Rating
Lower than 1.6	Tier 1
1.6 to 1.7	Tier 2
Higher than 1.8	Tier 3

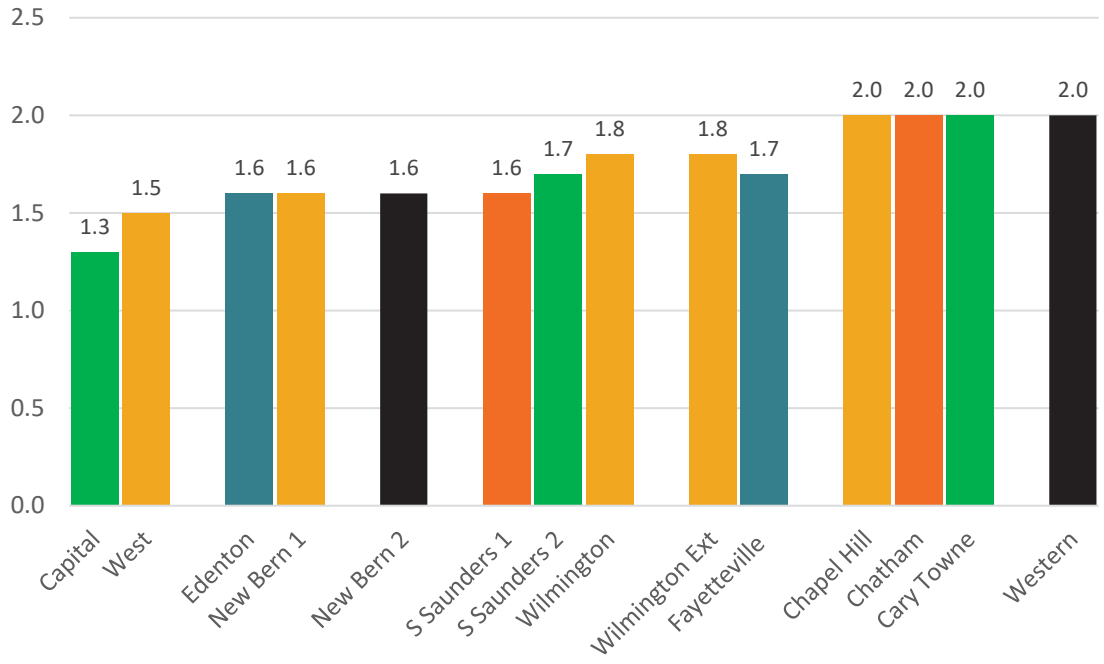
Resources evaluated for potential impacts include (see further detail in the Existing Conditions Report):

- Other infrastructure (wastewater treatment plants, transmission pipelines, utilities)
- Number of suspected/known hazardous material sites
- National register or eligible sites, districts, or other historic properties;
- Community facilities (EMS/fire/police stations, hospitals, libraries, churches, schools, cemeteries)
- Wetlands
- Approximate number of stream/tributary crossings
- Floodplains; critical water supply watersheds
- Riparian buffer rules
- Parks, greenways, open space, game lands, land and water conservation fund properties
- Acres of right-of-way (ROW) needed

Findings

Both Capital and West alternatives are rated as Tier 1. The Capital Boulevard corridor alignments do not require a significant amount of ROW and impact a limited number of community resources. New Bern 1, New Bern 2, and Edenton are rated Tier 2, with numerous community and historic resources present along the corridor that could potentially be impacted with the proposed alignment. The Western Boulevard alternatives are rated Tier 3—Western, Chapel Hill, Chatham, and Cary Town. These alignments require more ROW acquisition; some portions of the alignment on new location; potential impacts to several community resources; and potential utility concerns. S Saunders 1, S Saunders 2 and Fayetteville are rated Tier 2, while Wilmington and Wilmington Ext are rated Tier 3 due to the amount of ROW needed. Other variables that support the higher tier rating include existing potential hazardous material sites and community resources.

Figure 19 Corridor Resource Impact Ranking



Constructability

Constructability is a measure to define the ease and efficiency of constructing dedicated running way in each of the four BRT corridors. For the purposes of this assessment, dedicated BRT lanes were assumed for the entire length of each corridor, with some minor exceptions. Assuming full dedicated lanes allows for an assessment about where potential costly treatments might be necessary. The purpose of this metric is to assess which of the corridors would be easier to construct, and thereby implement.

Metric: Constructability

The constructability metric is a qualitative assessment of potential building challenges. Natural and physical barriers, such as bodies of water, railroads and other grade-separated crossings, highway bridges and interchanges, major drainage structures, and the need for roadway widening were all elements that were considered. A bus lane that requires major structure construction or reconstruction, for instance, will be more difficult to implement from both a cost and schedule perspective. In addition, a factor considered for constructability was existing traffic volumes on affected roadways. For example, constructability is likely to be more difficult on a roadway with 70,000 ADT (Average Daily Traffic) than a roadway with 15,000 ADT.

Qualitative Rating	Rating
Few areas of potential reconstruction or adjustment to existing infrastructure	Tier 1
Potential for minor adjustments to roadway and/or structures	Tier 2
Potential major reconstruction of structures New structures and/or grade-separation required	Tier 3

Findings

The New Bern and S. Wilmington corridors are rated as Tier 1. There are few major structures necessary, and much of these alignments can be built within existing roadway widths. Even where roadways must be widened to accommodate dedicated running way, it is likely that these could be added with minimal challenges. Traffic volumes are relatively low as well.

The Capital, West, S Saunders 1, S. Saunders 2, and Fayetteville segments are rated as Tier 3, which reflects extensive major structural work required and potential water features, as well as high traffic volumes. On Capital and West, adding a bus lane through the interchange with Wake Forest and Atlantic will be challenging given space and traffic volumes. A railroad bridge needs to be widened as well. For the S Saunders segments, bus lanes cannot be constructed through the congested I-40 interchange without major structural changes. Likewise, the Fayetteville segment would require the reconstruction of an existing interchange to add a bus lane.

The remaining alternatives – Western, Chapel Hill, Chatham, and Cary Town all were rated as Tier 2, indicating that they had some structural elements and challenges, but to a lesser extent than those in Tier 3.

CORRIDOR RESULTS

The following two metrics were derived from each of the four directional corridors rather than at the segment level.

Operating Cost per Passenger

While all four BRT corridors have existing bus service that may predict the size of the potential ridership market, BRT infrastructure and service levels can alter the future ridership market share. BRT requires a significant capital investment, but that investment should be repaid by faster transit, lower operating costs, and ultimately higher ridership. It is important to understand how ridership will respond to both the operating and capital investment. Each corridor alternative was evaluated for its efficiency in ongoing operations to present a comparison between the proposed alternatives.

Metric: Operating Cost per Passenger

Operating cost per passenger is a measure of the on-going efficiency of providing service on a BRT corridor. The operating assumptions for the BRT corridors are consistent with those found in the Bus Plan and assume service every 10 minutes during weekday peaks and 15- to 30-minute service at all other times. CAMPO's regional travel demand model, the TRMv6, was used to predict the relative ridership potential of each BRT corridor, using the approved 2027 highway and transit network as well as the 2045 socioeconomic data from the MTP scenario. Once all the relative operating costs per passengers were developed, each corridor was placed into a rating tier—Tier 1 (lowest operating cost per passenger), Tier 2 (average operating cost per passenger), and Tier 3 (higher operating costs per passenger).

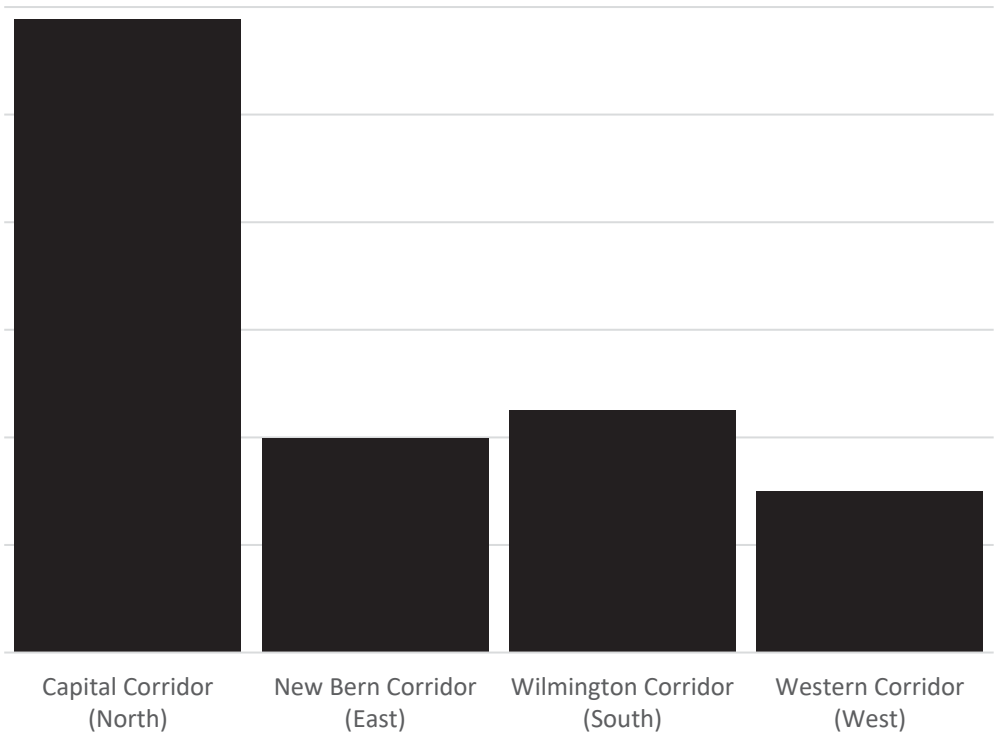
Qualitative Operating Cost/Passenger Rating	Rating
Lower than average	Tier 1
Average	Tier 2
Higher than average	Tier 3

Findings

The Capital corridor had the highest predicted operating cost per passenger of the four corridors. A contributing factor is that the dedicated BRT route on this corridor extends several miles further north beyond the infrastructure. However, it also reflects the limited ridership potential along Capital Boulevard between Lane Street and Crabtree Boulevard.

The Wilmington and New Bern corridors had comparable operating costs per passenger, while the Western Corridor had the lowest operating costs per passenger. While the Western corridor is the longest, it also includes three major ridership generators (downtown Cary, NCSU, and downtown Raleigh), which cause overall corridor ridership on Western to be significantly higher than any other corridor, and defray the operating cost.

Figure 20 Relative Operating Cost Per Passenger



Capital Cost per Passenger

With several exceptions, the Western, Capital, New Bern, and Wilmington corridors all assume dedicated running way along the entire corridor length. Some corridors have more challenging features and require a higher level of capital investment to fit in dedicated running way. It is important to understand how the ridership market will respond to the overall level of capital investment. Each of the four corridors was evaluated to understand the relative capital cost per passenger carried, and the comparative differences between each corridor.

Metric: Capital Cost Per Passenger

Capital cost per passenger is a measure of the return on investment of the infrastructure in a BRT corridor. The capital cost assumptions for the BRT corridors are consistent with the BRT Design Standards developed as part of the MIS and include amenities such as off-board fare payment, stations with real-time information, shelters, level boarding platforms, and dedicated running way. CAMPO's regional travel demand model, the TRMv6, was used to predict the relative ridership potential of each BRT corridor, using the approved 2027 highway and transit network as well as the 2045 socioeconomic data from the MTP scenario. Once all the relative capital costs per passengers were developed, each corridor was placed into a rating tier—Tier 1 (lowest operating cost per passenger), Tier 2 (average operating cost per passenger), and Tier 3 (higher operating costs per passenger). Costs vary within each corridor depending on the combination of segments that are ultimately selected for BRT Infrastructure. For this reason, those corridors with multiple alignment alternatives (all but New Bern) are shown with a range of potential capital cost per passenger.

Qualitative Capital Cost/Passenger Rating	Rating
Lower than average	Tier 1
Average	Tier 2
Higher than average	Tier 3

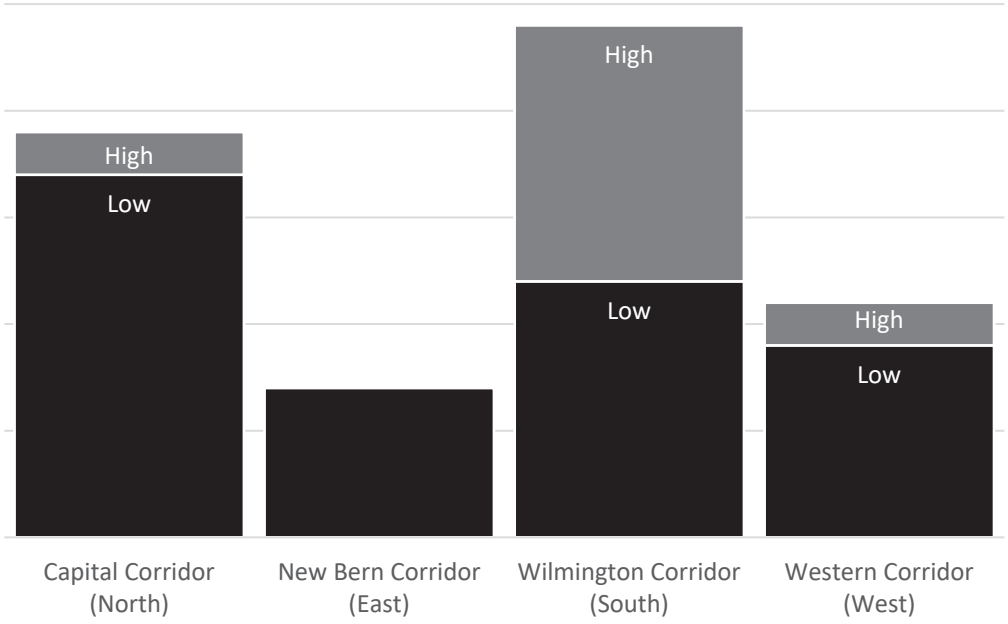
Findings

The New Bern corridor has the lowest predicted capital cost per passenger of the four corridors. The New Bern corridor has the lowest predicted capital costs and has the second highest predicted ridership of the corridors.

The Capital and Wilmington corridors have the highest predicted capital cost per passenger of the four corridors. Both corridors require extensive capital investments, such as new interchanges or reconstructing railroad bridges that cause average costs to be higher than the remaining corridors. The final alignment of both the Capital and Wilmington corridors can have a significant effect on the predicted capital cost per passenger, as shown in Figure 21.

The Western corridor's predicted capital cost per passenger falls in between the New Bern corridor and the Capital and Wilmington corridors.

Figure 21 Relative Capital Cost Per Passenger



SEGMENT AND CORRIDOR SUMMARY

Figure 22 shows a summary of the ratings of all segments against each metric. The results show that differentiation between parallel segment alternatives is less prominent than differentiation between each corridor. Segments that are closer to downtown Raleigh, such as Capital, West, Edenton, and New Bern 1 tend to have more Tier 1 ratings than segments further away, such as Wilmington Ext, Fayetteville, Chapel Hill, Chatham, and Cary Towne. It is important to emphasize that the tier ratings are not intended as a "score" that can be summed up to find the best segment. No weighting was applied to any of the individual metrics. However, some metrics may be more important than others when ultimately making a decision about the preferred alignment option, or the order of implementation of the corridors.

Figure 22 Segment Rating Matrix

Evaluation Metric	Capital	West	Edenton	New Bern 1	New Bern 2	S. Saunders 1	S. Saunders 2	Wilmington	Wilmington Ext	Fayetteville	Chapel Hill	Chatham	Cary Towne	Western
Speed Improvement	1	1	3	3	3	3	3	3	2	2	3	3	3	3
Potential Corridor Connections	2	2	2	2	3	2	2	3	3	3	2	3	3	1
Potential Corridor Utilization	2	2	2	2	3	2	2	3	3	3	2	2	2	1
Connections to Frequent Transit	2	2	2	2	2	2	2	2	3	3	2	2	2	1
Ease of Access	1	1	1	1	2	2	2	2	3	3	2	2	2	2
Affordable Housing Access	1	1	2	1	3	1	1	2	3	3	3	3	3	2
Minority Access	3	3	1	1	1	2	2	2	2	2	3	2	3	3
Transit Dependent Access	1	1	1	1	1	2	2	2	3	3	3	3	3	3
Total People + Jobs served	1	1	2	2	3	2	2	2	3	3	3	3	3	1
Concentration of People + Jobs	1	1	1	1	3	2	2	2	3	3	3	3	3	2
Economic Development Potential	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Environmental Impact	1	1	2	2	2	2	2	3	3	2	3	3	3	3
Constructability	3	3	1	1	1	3	3	1	1	3	2	2	2	2
Operating Cost per Passenger	3		2			2					1			
Capital Cost per Passenger	3		1			3					2			

CONTRACT WORK ORDERS FOR NOVEMBER 2018
(under $100K)

Contract #	Contractor (or subject if no contractor listed)	Contract Amount	Subject	Comments	President & CEO Date Executed (Jeff Mann)	General Counsel Date Executed (Shelley Blake)
18-107	Water, Sewer and Stormwater Services	-	Utility Extension Agreement	To extend water and sewer to serve the rail operations and maintenance facility, which is outside of the city limits but has been petitioned for annexation.	11/5/18	11/5/18 (signed by Karen Porter)
18-108	Lease Amendment	$84,880.69		Provides for a Lease Amendment. Landlord and Tenant agree to extend the term of the original lease through midnight 2/28/2019. The Monthly lease rate for the extended term shall be $84,880.69.	11/7/18	11/6/18 (signed by Karen Porter)
18-041A	A/E On-Call Services	-	Master Agreement	Provides for a Master Agreement with WSP. Contractor shall perform work pursuant to authorized issued task orders. Term of agreement shall be for three (3) years with options to renew for up to an additional two (2) years.	11/7/18	11/6/18 (signed by Karen Porter)
17-058	Fundraising Consultant Services	-	Amendment Three	Consultant shall receive an estimated one percent (1%) of gross revenue.	11/7/18	11/6/18 (Signed by Karen Porter)
18-100	Services Farrington Road Properties	$91,975.00		Contract is for the demolition of the properties located at 4815, 5009 and 5015 Farrington Road, Durham, NC. The project had an estimated cost of the contract amount. The contract award amount is $39,600.	11/20/18	
18-041L	A. Morton Thomas & Assocs. Inc. (AMT)	-	A/E On-Call Services Master Agreement	Provides for a Master Agreement with A. Morton Thomas and Assocs., Inc. (AMT). Contractor shall perform work pursuant to authorized issued task orders. Term of agreement shall be for three (3) years with options to renew for up to an additional two (2) years.	11/20/18	11/15/18
18-041G	Clark Patterson Engineers	-	A/E On-Call Services Master Agreement	Provides for a Master Agreement with Clark Patterson Engineers, Surveyors and Architects P.C. dba CPL. Contractor shall perform work pursuant to authorized issued task orders. Term of agreement shall be for three (3) years with options to renew for up to an additional two (2) years.	11/20/18	11/15/18