

PLANNING AND
DEVELOPMENT

Wake BRT: Western Blvd Corridor Study

Appendix

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Wake BRT: Western Boulevard Corridor Study

Final Report

January 2021



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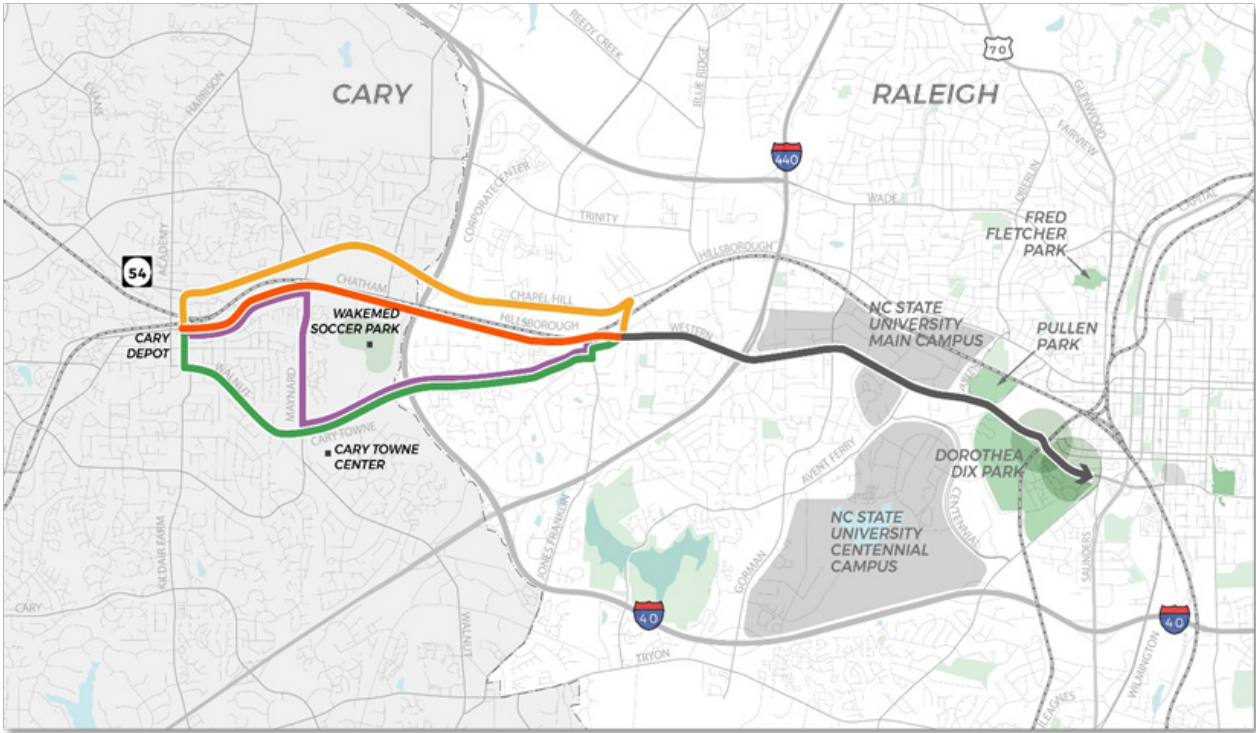
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INTRODUCTION

The Western Boulevard corridor in the City of Raleigh is a major East-West connector in the City and links downtown Raleigh and downtown Cary to destinations such as Pullen Park, Dorothea Dix Park and the North Carolina State University (NCSU) campus. The corridor is poised to transform with the introduction of new Bus Rapid Transit (BRT) service, with the Western Corridor being one of four corridors in Wake County identified in the Wake Transit Plan for BRT service to provide frequent and reliable urban mobility. This new frequent, reliable transit service will provide service every 10 minutes in peak periods and will provide an elevated transit experience with level boarding, unique system branding and off-board fare collection.



The Wake County Transit Plan identified potential corridors for future BRT connecting downtown Raleigh with downtown Cary, identifying Western Boulevard as the preferred route to a point near the intersection with Jones Franklin Road. To complete the corridor into Cary from Western Boulevard, the plan identified three alternatives including Chapel Hill Road Alternative, East Chatham Street/Hillsborough Road Alternative, and Cary Towne/Walnut Alternative. Following a proposal from the Town of Cary, the Wake BRT: Western Boulevard Corridor Study identified a fourth alternative, Cary Towne/Maynard Alternative, to be evaluated.

In early 2019, the City of Raleigh’s Urban Design Center launched the Wake BRT: Western Boulevard Corridor Study with the intention of bridging the gap between prior transit planning work, accomplished under a Major Investment Study (MIS), and future Project Development work (30% design and NEPA) for the Wake BRT: Western Boulevard Corridor. The goal of this study was to synthesize existing and recently adopted studies with further technical analysis around the land use capacity and urban form of the Western Boulevard Corridor to position this important transportation corridor for successful BRT implementation.

EXISTING CONDITIONS

Multimodal and Safety Analysis + Sidewalk and Bicycle Infrastructure Inventory

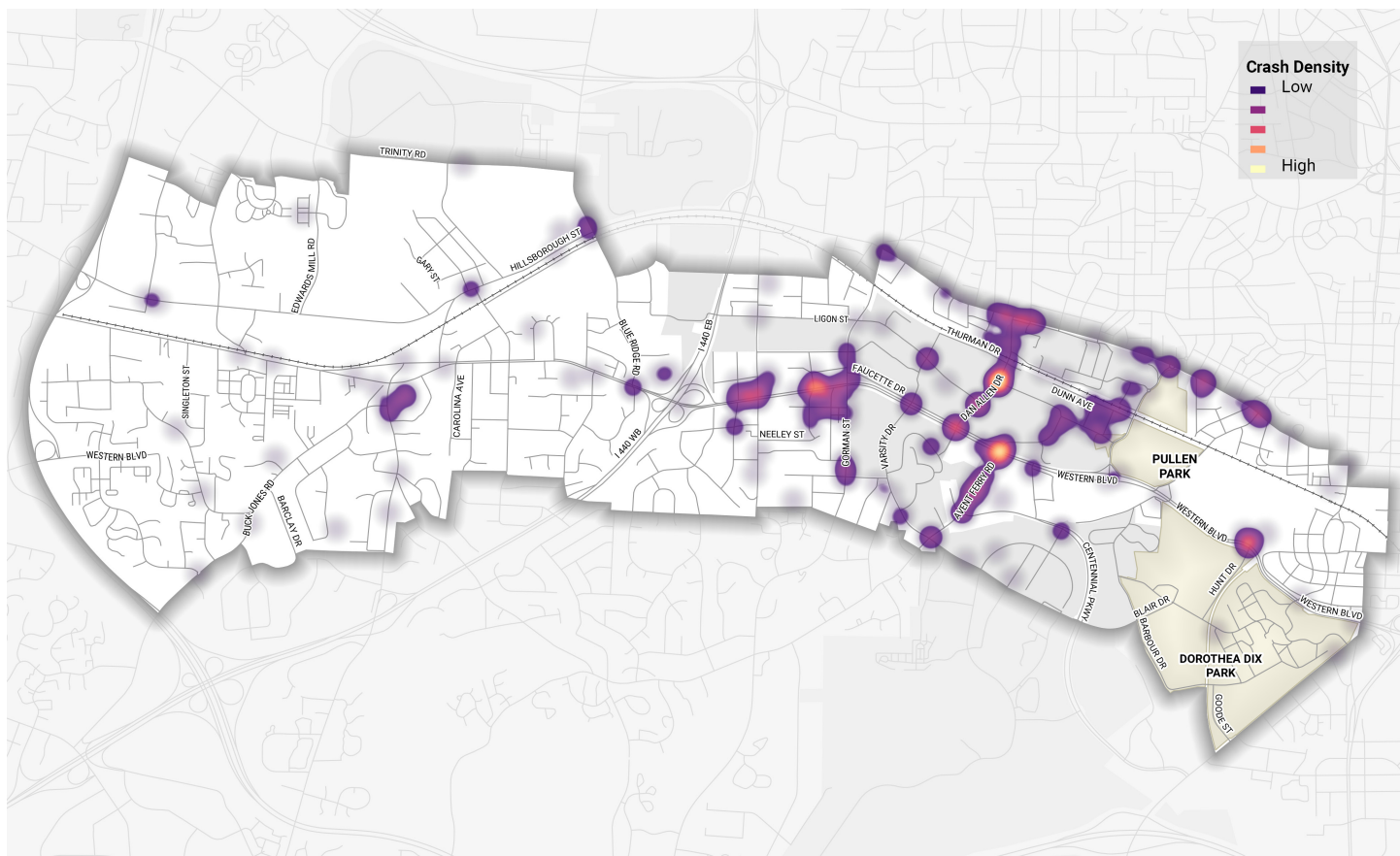
A Multimodal and Safety Analysis that studied the existing conditions surrounding bicycle, pedestrian and transit facilities along the corridor was conducted as part of the Wake BRT: Western Boulevard Corridor Study. This analysis highlighted several areas along the corridor that could benefit from proposed improvements.

A Sidewalk and Bicycle Inventory, conducted as part of the Multimodal Safety Analysis, highlighted several concerns. For pedestrians traveling along the corridor, it can be difficult to cross Western Boulevard. While Western Boulevard is separated by a median throughout the study area, it is important to note that the medians do not serve as functional or accessible pedestrian refuges at many of the crossings. Additionally, where curb ramps do exist, they are often not directional, not aligned with the crosswalk, or in a state of disrepair.

For bicyclists traveling along the corridor, multi-use paths exist along much of Western Boulevard, but key infrastructure gaps prevent bicyclists from safely and comfortably traveling along corridor. As the corridor moves west out of downtown Raleigh, the presence of multi-use paths drop off as well as the presence of other bicycle facilities such as bike lanes and shared lane markings. There are currently no bicycle facilities west of Jones Franklin Road or on either Hillsborough Street or Buck Jones Road.

A major concern for pedestrian and bicycle safety along the corridor is the rate of crashes along the corridor. Looking at combined bicycle and pedestrian crashes over a twelve-year period (2007-2018) revealed 496 total crashes, with fatal and disabling crashes at 7% of this total or 37 crashes. Pedestrian failure to yield and motorist drive out crashes were the most prevalent.

The findings of this analysis will inform the design of the future BRT service with the goal of creating a multimodal corridor which provides safe and functional facilities for all users; motorists, pedestrians, transit users and bicyclists.



EXISTING CONDITIONS

Transit and Demographic Analysis

Transit Review

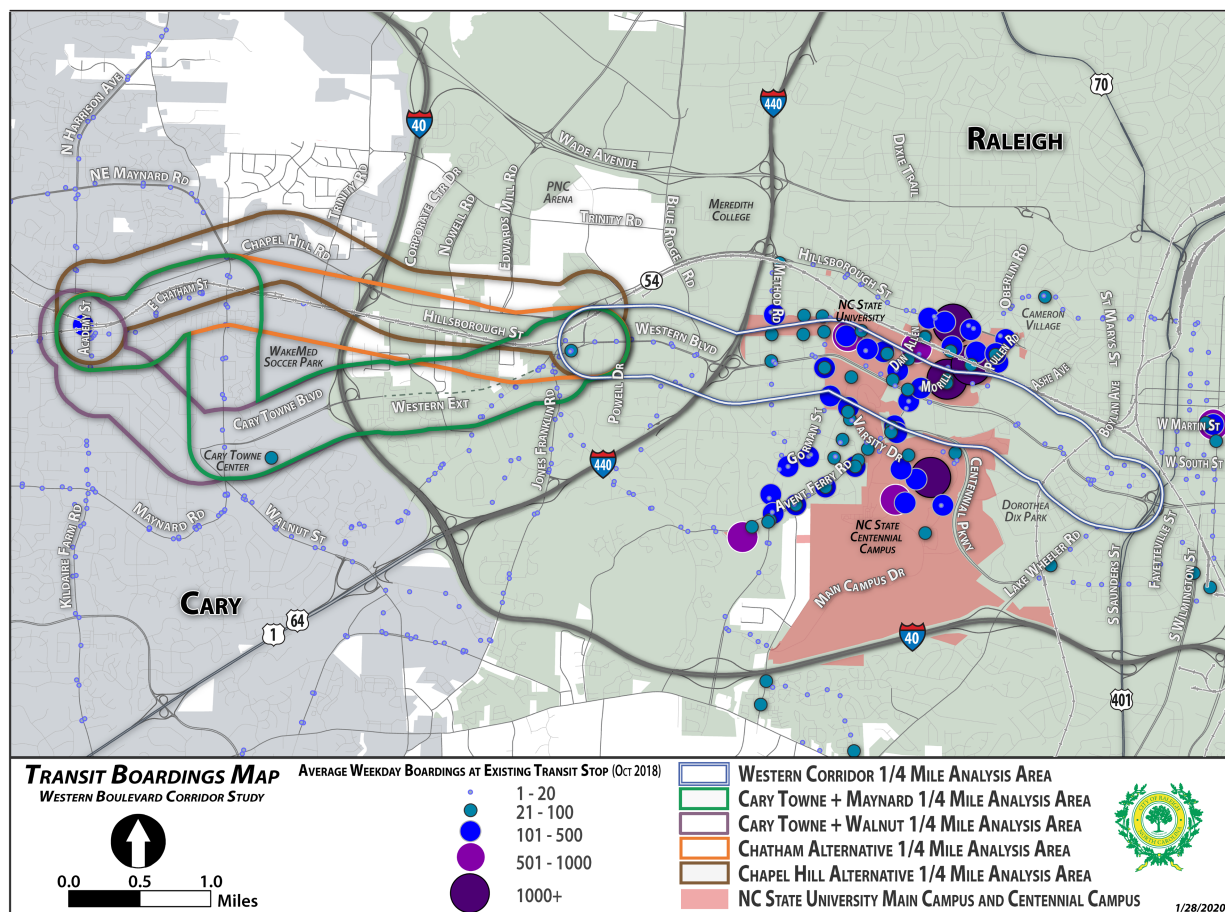
Currently GoTriangle, GoRaleigh, GoCary, and NC State's Wolfline all provide transportation and paratransit services along the corridor. To understand potential ridership of the BRT route in the corridor, ridership data from GoRaleigh, GoCary, GoTriangle and NC State's Wolfline from October 2018 was used to generate daily average for transit stops used. Once captured, transit stops boardings were tallied to determine ridership in a corridor. In total, there are 115 existing transit stops located within the quarter mile study area segment on Western Boulevard, and four alignment options for BRT. Below is the number of stops and average daily boardings for each agency in October 2018.

GoTriangle: There are 33 stops within ¼ mile of proposed station locations with a total average of 336 daily boardings.

GoRaleigh: There are 34 stops within ¼ mile of proposed station locations with a total average of 301 daily boardings.

GoCary: There are 26 stops within ¼ mile of proposed station locations with a total average of 232 daily boardings.

Wolfline: There are 15 stops within ¼ mile of proposed station locations with a total average of 5,012 daily boardings.



In addition to analysis of each agency, an analysis was conducted of potential ridership of each BRT alignment, and the percent of riders that board within a quarter mile of the alignment or a quarter mile of the proposed BRT station to assess the potential for ridership on the new BRT service. **The Cary Towne / Maynard Alternative sees almost 50% of existing transit boardings within a quarter mile of proposed stations, demonstrating the highest potential for BRT ridership.**

EXISTING CONDITIONS

Transit and Demographic Analysis

Demographic Analysis

A Demographic Analysis was conducted in order to better understand transit-dependency in various populations and to inform future public involvement processes.

Employment

Historic, existing and projected employment quantities were analyzed to understand potential ridership along the corridor segments. While the Chapel Hill Road Alternative study area segment has the largest existing employment of all four alternative corridor segments, its growth percentage is expected to grow the least by 2045. Between 2018 to 2045 employment projections, employment is expected to nearly triple in all four alternative corridor segments. Historic employment data was collected by the US Census, and projected employment data is from the Triangle Regional Model.

Corridor Segment	2010 Employment	2013 Employment	2018 Employment	Projected 2028 Employment	Projected 2040 Employment	Projected 2045 Employment
Cary Towne / Maynard	6,032	6,701	9,442	14,914	21,484	24,215
Chapel Hill Road	6,701	7,194	10,166	16,095	23,218	26,180
East Chatham / Hillsborough	9,442	5,542	8,834	15,406	23,299	26,582
Cary Towne / Walnut	14,914	4,668	6,614	10,498	15,160	17,099
Western	21,484	15,036	17,781	23,266	29,853	32,589

Disabled, Minority and Limited English Proficiency Populations

Disabled, minority, and Limited English Proficiency (LEP) populations are analyzed because these populations can benefit from transit and are sometimes reliant on transit for local and regional transportation. The ACS defines disability as a person with a serious difficulty with four basic areas of functioning – hearing, vision, cognition, and ambulation, self-care, and independent living. The ACS data defined any minority population as any non-white population. The ACS defines Limited English Proficiency as anyone above the age of 5 that can speak English less than “Very Well”. The table below displays disabled, minority, and LEP population data for the corridor segments based on the American Community Survey (ACS). These statistics indicate that the Cary Towne / Maynard Alternative would serve more disabled, minority, and LEP populations than any other alternative considered, and it generally has the largest density of those individuals.

Corridor Segment	Disabled Persons		Minority Population		Limited English Proficiency	
Cary Towne / Maynard	712	6.9%	5,429	52.9%	1,347	17.2%
Chapel Hill Road	406	6.9%	2,442	45.4%	548	13.0%
East Chatham / Hillsborough	456	7.3%	3,355	50.4%	824	16.1%
Cary Towne / Walnut	693	7.6%	4,172	47.5%	913	13%
Western	535	4.4%	4,640	38.4%	545	5.0%

EXISTING CONDITIONS

Transit and Demographic Analysis

Poverty

Poverty rates are analyzed to ensure transit connects these populations to amenities, education, and employment areas. Areas with the most poverty have the lowest rates of single occupancy vehicle use, and the highest usage of less costly travel modes including transit. Table 6 displays the percentage of people below, at least 50% under the Poverty Level, and between 100% and 149% under the poverty level.

Corridor Segment	Persons Below Poverty Level		Persons Under 50% of Poverty Level		Persons Between 100% and 149% of Poverty Level	
Cary Towne / Maynard	1,883	18.4%	1,082	10.6%	1,995	19.5%
Chapel Hill Road	685	12.8%	181	3.4%	716	13.3%
East Chatham / Hillsborough	1,290	19.4%	590	8.9%	1,267	19.1%
Cary Towne / Walnut	1,546	17.6%	803	9.2%	1,418	16.2%
Western	2,267	40.0%	1,223	21.6%	742	13.1%

Household Automobile Ownership

Vehicles per household rates are studied because households with fewer vehicles may rely on alternative forms of transportation including walking, bicycling, and using transit. Table 8 displays the percentage of households with one or no vehicles for the corridor segments. This data was collected by the US Census's American Community Survey and was provided at the Block Group level. Over ten percent of the households along the Western Boulevard study area segment have no vehicles. The location of the Block Groups with significant quantities of no vehicles is west of I 440 east of Jones Franklin Road.

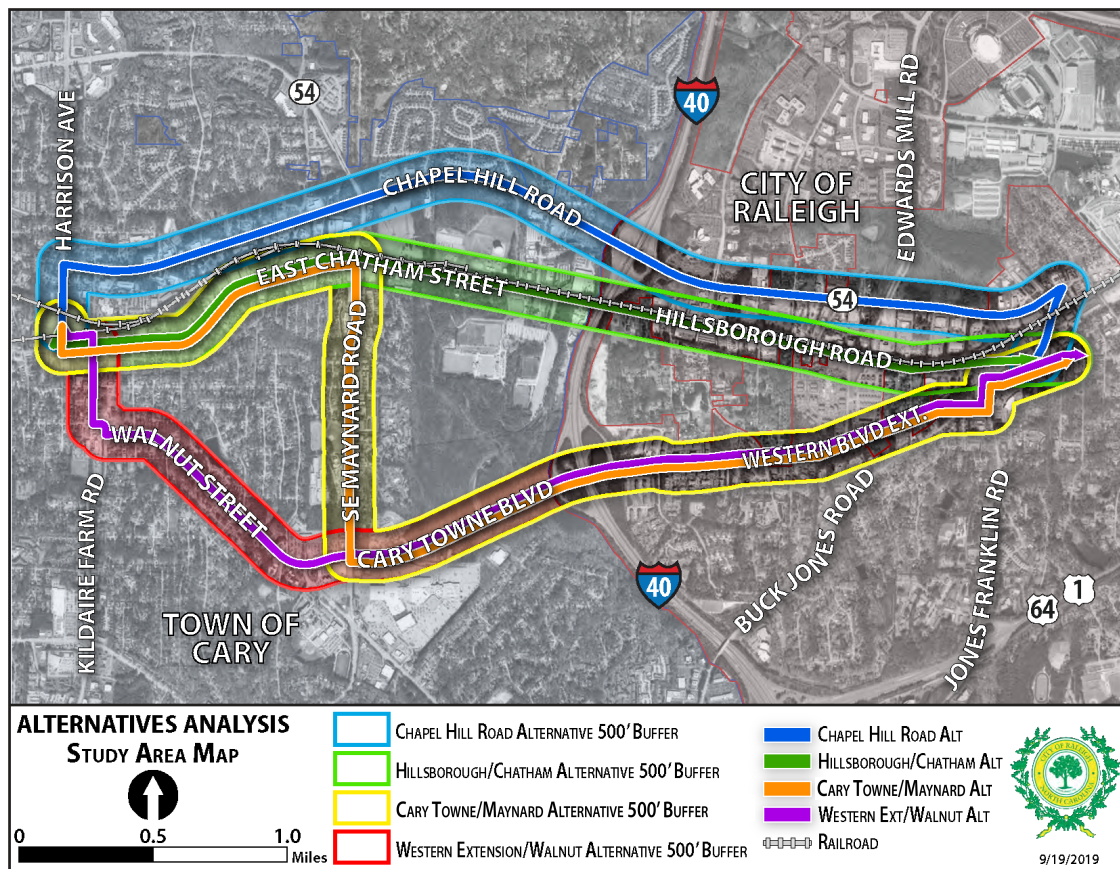
Corridor Segment	Households with 1 Automobile		Households with No Automobile	
Cary Towne / Maynard	1,701	44.3%	140	3.6%
Chapel Hill Road	812	39.2%	85	4.1%
East Chatham / Hillsborough	1,085	44.2%	90	3.7%
Cary Towne / Walnut	1,464	42.1%	150	4.3%
Western	883	41.2%	250	11.6%

EXISTING CONDITIONS

Critical Issues Memorandum (NEPA Red Flag Screening)

The purpose of the Critical Issues Memorandum was to provide a preliminary review of potential environmental resources within or adjacent to the Western Boulevard Corridor that may be affected by the implementation of the proposed BRT. This review was aimed at simplifying future analysis and documentation required by the National Environmental Policy Act (NEPA). The project study area for this review of potential environmental resources followed the the proposed transit alignments for all four BRT alternatives. Online databases were used to identify known resources within the project study area and provide an overview of the resources present within a 500-foot buffer of each BRT alternative.

Each alternative has environmental resources present along their route, but no alternative has a fatal flaw that would eliminate it from future analysis due to the presence of these resources. Below is a summary of the findings for each alternative.



Cary Towne / Maynard Alternative

- This alternative has the highest number of community resources present.
- This alternative has the potential for 10 residential relocations, due to the Western Boulevard Extension (a new, proposed roadway).
- There is the potential habitat for Threatened and Endangered Species with this alternative. Surveys will need to be completed and coordination held with USFWS during project development to determine the impact to these species and any other species of concern in the study area.
- There are a significant number of hydraulic features within this alternative. Mitigation may be required due to the potential impacts to these hydraulic features.
- A significant number of hazardous materials are located within the study area for this alternative. A geo-environmental assessment will be needed for further details of the potential impacts to the sites that contain hazardous materials.

EXISTING CONDITIONS

Critical Issues Memorandum (NEPA Red Flag Screening)

Cary Towne / Walnut Alternative

- This alternative has the most parks along the corridor and the most linear feet of greenway. Most of the linear feet of greenway runs parallel to the route.
 - This alternative has the potential for 10 residential relocations, due to the Western Boulevard Extension being a new, proposed roadway.
 - This alternative has the second highest number of historic resources present along the alternative, but unlike other alternatives the route runs through a National Register Historic District. This could require additional coordination to mitigate any potential impacts to the National Register Historic District.
 - There is the potential habitat for Threatened and Endangered Species with this alternative. Surveys will need to be completed and coordination held with USFWS during project development to determine the impact to these species and any other species of concern in the study area.
 - There are a significant number of hydraulic features within this alternative. Mitigation may be required due to the potential impacts to these hydraulic features.
 - A significant number of hazardous materials are located within the study area for this alternative. A geo-environmental assessment will be needed for further details of the potential impacts to the sites that contain hazardous materials.
-

East Chatham Street / Hillsborough Road Alternative

- This alternative has the highest number of historic resources present along the alternative.
 - This alternative has the highest number of hazardous materials/incidents. A geo-environmental assessment will be required to provide further details of the potential impacts to the sites that contain hazardous materials.
 - There is the potential habitat for Threatened and Endangered Species with this alternative. Surveys will need to be completed and coordination held with USFWS during project development to determine the impact to these species and any other species of concern in the study area.
 - There are hydraulic features within the this alternative but not as significant as the Western Boulevard Extension/Maynard Road and Western Boulevard Extension/Walnut Street alternative. Mitigation may be required due to the potential impacts to these hydraulic features.
-

Chapel Hill Road Alternative

- This alternative has the most linear feet of streams. Mitigation may be required due to the potential impacts to these hydraulic features.
- There is the potential habitat for Threatened and Endangered Species with this alternative. Surveys will need to be completed and coordination held with USFWS during project development to determine the impact to these species and any other species of concern in the study area.
- A significant number of hazardous materials are located within the study area for this alternative. A geo-environmental assessment will be needed for further details of the potential impacts to the sites that contain hazardous materials.

LOCALLY PREFERRED ALTERNATIVE

Alternatives Analysis Memo

After the completion of the Major Investment Study (MIS), the Wake BRT: Western Boulevard Corridor Study was initiated to continue the evaluation of BRT alignments with the goal of recommending a Locally Preferred Alternative (LPA). Existing conditions were analyzed to understand potential environmental resources and existing transit conditions and demographics along the alternatives. An Alternatives Analysis memorandum summarized the findings of these various existing conditions and walked through the process of determining the recommended LPA. This section summarizes the memorandum, discusses how alternatives were eliminated from consideration and summarizes evaluation categories analyzed for the alternatives highlighting the benefits of the LPA.

The four alternatives considered for the LPA included:

- **Chapel Hill Road Alternative**
- **Cary Towne / Maynard Alternative**
- **Cary Towne / Walnut Alternative**
- **East Chatham Street / Hillsborough Road Alternative**

At the beginning of the analysis, Walnut Street was examined as part of the Cary Towne / Walnut Alternative. Walnut Street is a 2-lane facility in an older, established neighborhood. This area has extremely limited development potential and possible right-of-way issues. Moreover, BRT routing along Academy Street did not align with the Town of Cary's vision for downtown as recent improvements on Academy Street have created a pedestrian friendly place between the Arts Center and E. Chatham, which does not allow right-of-way for a high frequency transit service. During the course of analysis, routing the BRT corridor along Walnut Street was deemed infeasible.

Furthermore, a right-of-way (ROW) analysis was conducted to understand the potential for incorporating dedicated BRT lanes and intersection designs. The North Carolina Railroad (NCRR) company has a rail line and 200 feet of associated right-of-way through the general study area, parallel to Hillsborough Road and East Chatham Street between Jones Franklin Road and SE Maynard Road in Cary. Existing right-of-way along Hillsborough Street and East Chatham Street is between 50-80 feet. There is a general concern of constructability when any proposed work falls within the railroad ROW. Due to the physical location of railroad, the ridership catchment area of this alternative will be limited, and development potential will also be restricted. Because of this rail conflict, the East Chatham Street / Hillsborough Road Alternative was taken out of consideration because it would be unlikely that any BRT infrastructure could be constructed within the NCRR right-of-way.

After eliminating East Chatham Street / Hillsborough Road Alternative and Cary Towne / Walnut Alternative, two alternatives remained for further evaluation:

- **Chapel Hill Road Alternative**
- **Cary Towne / Maynard Alternative**

These remaining two alternatives were analyzed based on a series of factors including adherence to existing plans, public input, right-of-way availability, transit propensity, travel time, future employment and population, and development potential. Each of these factors are summarized below.

Lower Rail Conflict

Chapel Hill Road Alternative has two railroad conflicts requiring a rail crossing with crossing gates. The first would be the proposed NCRR crossing on Hillsborough Street that links Western Boulevard to Chapel Hill Road. The second would be an NCRR crossing entering downtown Cary from the north. While the existing railroad is currently used for freight and Amtrak service, this NCRR rail line is the proposed corridor for the future commuter rail service that could potentially have up to 40 trains a day in each direction.

The Cary Towne / Maynard Alternative will potentially have a rail crossing conflict in downtown Cary at the CSX crossing on South Harrison Avenue. Generally, this rail line is used less frequently by Amtrak.

LOCALLY PREFERRED ALTERNATIVE

Alternatives Analysis Memo

Public Input

The Major Investment Study (MIS) conducted between 2017 and 2018 included public outreach for this corridor. Respondents from Raleigh expressed a strong preference for connecting Raleigh and Cary via Cary Towne Boulevard. The alternatives presented during that study did not include the Cary Towne / Maynard Alternative. However, since this modified alignment also runs primarily on Cary Towne, similar preference can be attested to the Cary Towne/ Maynard alignment.

The City of Raleigh held a community open house kickoff meeting for the Wake BRT: Western Boulevard Corridor Study on November 12, 2019. The purpose of the meeting was to introduce the project, share information on current conditions, relate potential BRT alignment options, and obtain initial community feedback. Input was sought on potential trip destinations and important activity centers in the corridor. The question regarding potential destinations was asked separately for locations in Raleigh and Cary. The Cary Towne / Maynard Alternative connects the largest number destinations the public indicated were important to access via BRT.

Existing Plans

The Adopted Capital Area Metropolitan Planning Organization (CAMPO) 2045 Metropolitan Transportation Plan (MTP) was examined to identify projects with the potential to affect the two alternatives.

The extension of Western Boulevard from Saddle Seat Drive to Buck Jones Road, as shown in the Raleigh Streets Plan, benefits the Cary Towne / Maynard Alternative because the alignment is planned to run along this section of Western Boulevard. Additionally, Edwards Mill Road is also planned to be extended over the railway line to the proposed Western Boulevard Extension. It should be noted that the current MTP mentions 2045 as the horizon year for these projects. For the feasibility of the Cary Towne / Maynard Alternative, the 2045 MTP will require an amendment to reflect the earlier delivery of these projects. Operation of the Wake BRT: Western Boulevard Corridor service from Raleigh to Cary is envisioned within the ten-year program of improvements under the Wake Transit Plan (by 2027).

The extension of Jones Franklin Road to Chapel Hill Road using a grade separation with the railroad is included in the MTP as a 2-lane facility in the horizon year of 2045. However, a proposed amendment to the Raleigh Comprehensive Plan to add this proposed extension was rejected by the Raleigh City Council, and the next edition of the MTP will likely be amended to reflect this deletion. The section of Chapel Hill Road from the proposed intersection with Jones Franklin Road extension to Corporate Center Drive is planned to be widened to 4 lanes, also with a horizon year of 2045. This project would require advancement to allow for implementation of the Chapel Hill BRT corridor.

Right-of-Way Availability

Overall, both alternatives have adequate right-of-way for potential dedicated BRT lanes. There are a few locations along each alternative where the available right-of-way gets constricted and additional right-of-way may be required for effective implementation of dedicated BRT.

Transit Propensity

The Cary Towne / Maynard Alternative reaches a higher number of zero and one-car households than the Chapel Hill Road Alternative.

The Cary Towne / Maynard Alternative serves a higher number of persons living in poverty than the Chapel Hill Road Alternative.

Future Employment and Population

The Cary Towne / Maynard Alternative serves more people and jobs than the Chapel Hill Road Alternative in 2018 and in 2045. Future projections do not include newly proposed large-scale developments such as Fenton and Cary Towne Center. These new developments may lead to the Cary Towne/Maynard alternative serving an even higher number of people and jobs in 2045 than the official projections.

LOCALLY PREFERRED ALTERNATIVE

Alternatives Analysis Memo

Travel Time

Travel time along the Cary Towne / Maynard Alternative is slightly higher than the Chapel Hill Road Alternative. This is partly because the difference in their lengths is 0.9 miles and mostly because Cary Towne/ Maynard alternative serves more stations than Chapel Hill alternative. Even though the end to end travel time is 10% higher in Cary Towne/ Maynard alternative, this difference will be too small for travelers to perceive.

Development Potential

Only the industrial parcels located between I-440 and I-40 render themselves to potential future development along the Chapel Hill corridor. However, current land use policy which advocates for preserving industrial land might restrict further development of these parcels. Alternatively, the Cary Towne / Maynard alternative connects Raleigh to the new planned developments at Fenton and Cary Towne Center, which include residences, workplaces and shopping centers. In this regard, the Cary Towne / Maynard Alternative ranks higher than the Chapel Hill Road Alternative.

NEPA Impacts

A NEPA screening was carried out for all the alternatives. There were a few concerns highlighted for both alternatives in the NEPA screening, however neither alternative contained a fatal flaw which would eliminate it from consideration.

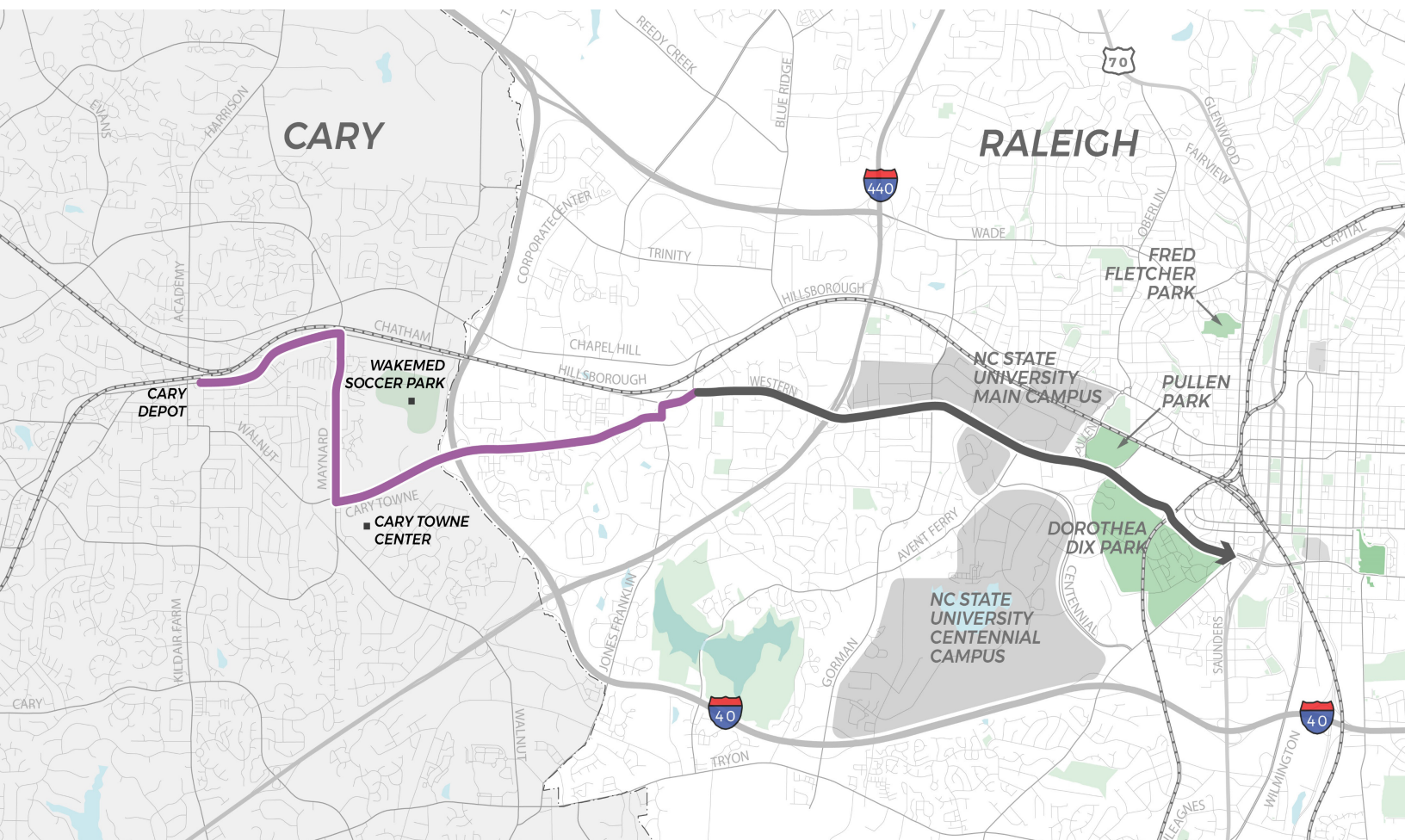
Qualitative Evaluation of Corridor Alternatives

Category	Cary Towne / Maynard	Chapel Hill Road
Lower Rail Conflict	↑	↓
Public Preference	↑	↓
Adherence with MTP projects in the corridor	↑	↓
Right-of-Way Availability	↔	↔
Transit Propensity	↑	↓
Population and Employment Within Catchment Area	↑	↓
Shorter Travel Time along the BRT corridor	↓	↑
Future Development Potential	↑	↓
NEPA Impacts	↔	↔
Overall	↑	↓

LOCALLY PREFERRED ALTERNATIVE

Alternatives Analysis Memo

The Cary Towne / Maynard Alternative performed better than the Chapel Hill Road Alternative in almost all categories evaluated.



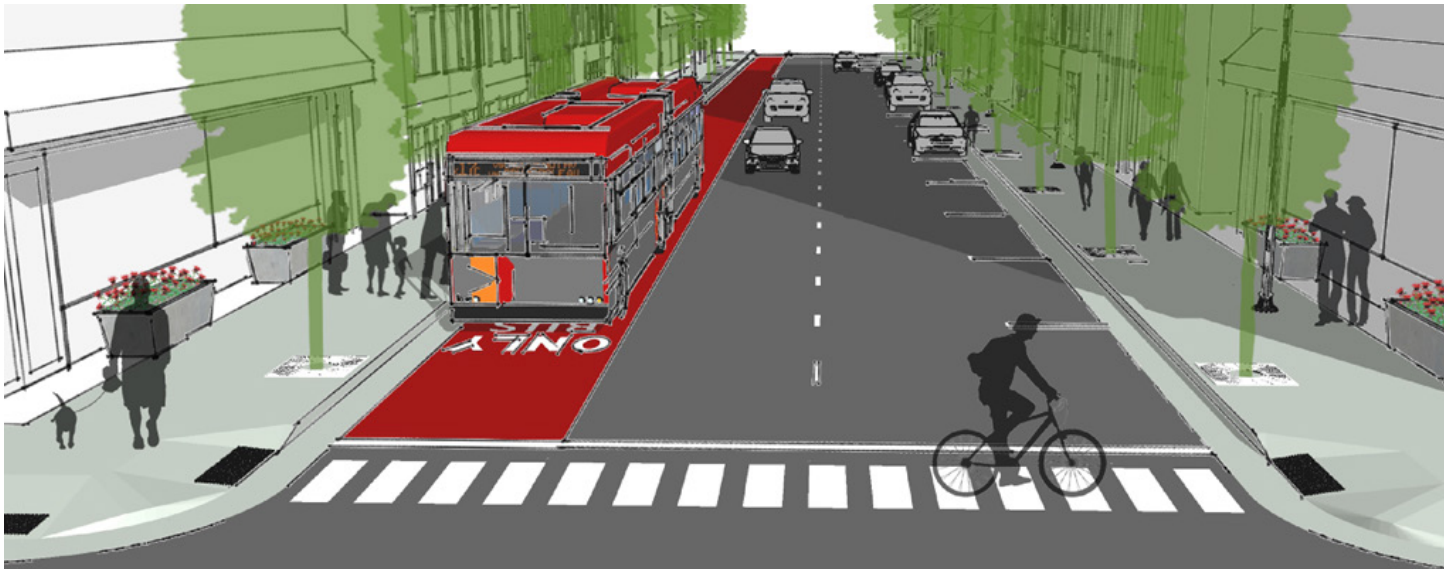
Based on this evaluation, the Cary Towne / Maynard Alternative is the most suitable alignment for BRT along the Wake BRT: Western Boulevard Corridor. Both the Town of Cary Council and Raleigh City Council endorsed this route as the LPA for the Western BRT corridor, and it was adopted by the Capital Area Metropolitan Planning Organization in November 2020.

LAND USE AND URBAN FORM

Zoning and Regulatory Analysis

Raleigh is a fast-growing city located in the fastest-growing region of the state. With a current population of nearly 465,000, an increase of approximately 15% since 2010 and 110% since 1990, the City is expected to continue to grow to 600,000 by 2030. Raleigh's economy has diversified and strengthened, and its cultural, dining, and nightlife scene has expanded to provide residents and visitors with engaging year-round activities. Growth of this magnitude makes planning for the future critically important to ensure that growth leverages existing and future assets such as transit and walkable neighborhoods without causing widespread displacement or negatively affecting local character.

While the city's transportation network is positioned to support future land uses, growth has put a strain on the overall transportation system. By 2035, Raleigh's roadway network is projected to become even more congested. Vehicle miles traveled and vehicle hours traveled are projected to increase by over 50% from 2005 levels, as will the total number of trips on Raleigh's road network.



This memorandum analyzed the city's zoning and regulatory policies and tools to understand the extent to which they encourage not only transit oriented development (TOD), but also equitable development around transit by aligning transit investments with the preservation of affordability for housing and small businesses and by enhancing access for low-income residents. The memorandum included:

- **A review of Raleigh's existing toolkit to encourage equitable TOD**, including policies, zoning provisions, and incentives focusing on TOD and affordable housing.
- **Best practices from communities nationwide** that have successfully fostered TOD, affordable housing, and the retention of existing residents and businesses.
- **Preliminary areas for exploration** focusing on potential changes to the City's zoning code and overall toolkit to spur equitable TOD. These initial areas of exploration were refined into recommendations to foster equitable development around transit, outlined in the Equitable Transit-Oriented Development guidebook published in July 2020.

Examining practices from around the country, the memorandum highlighted that there are a variety of strategies to implement equitable transit-oriented development. The cities that do so successfully tend to:

- Leverage existing organizations and non-profits to form partnerships for implementation and to serve as thought leaders;
- Offer financing and/or technical assistance in addition to prescriptive development standards; and
- Target a minimum of at least one program or policy that tackles TOD and affordability in tandem as opposed to standalone programs.

LAND USE AND URBAN FORM

Zoning and Regulatory Analysis

Preliminary Areas for Exploration

The City of Raleigh has taken important first steps to implement equitable TOD by proposing policies in its 2030 Comprehensive Plan that encourage TOD and affordability for both residents and businesses. The City has also established zoning mechanisms within its Unified Development Ordinance to enable equitable development around transit stops. The available mechanisms, however, fall short of encouraging the type of equitable TOD that the City strives for, and Raleigh's overall toolkit is currently too limited to be truly impactful. This landscape creates an exciting opportunity to determine how the City can utilize existing policies and programs and propose new ones to create thriving transit-oriented nodes while expanding affordable housing options and retaining and attracting businesses. The following table highlights the applicability of each of the above tools based on existing conditions and the political and regulatory environment in Raleigh along with key considerations. Each of these preliminary areas will be further explored and refined through the City's implementation of the Equitable Transit Oriented Guidebook.

Mechanism	Positive Factors	Constraining Factors	Potential Program Design	Key Considerations
Zoning Tools				
Incentive Zoning	<p>Widely used with many precedents to draw from.</p> <p>Can be incorporated as a facet of the TOD Overlay District, and function as a further inducement to delivering TOD and affordable housing in station areas.</p>	<p>Legal concerns.</p> <p>City staff do not want to create a program that encourages the development of affordable housing by making it more difficult and/or expensive to build market rate housing.</p> <p>City staff do not want to create a program that marginally moves the needle toward more affordable units.</p>	<p>Implement by-right zoning that aligns with current development standards, and then add a bonus density above and beyond the designation for the inclusion of affordable units at 60% or 80% AMI (avoid negotiated upzonings) within ½ mile of a proposed BRT station.</p>	<p>Must determine that this approach will pass legal challenges.</p> <p>Must determine how many additional market rate units are needed to subsidize the inclusion of affordable units at different levels of affordability, and how many stories this would add.</p> <p>Should development bonuses solely focus on affordable housing or other public amenities, such as open spaces, as well?</p>
Transit Overlay Zoning Districts	<p>Raleigh already has defined a Transit Overlay District.</p> <p>Appropriately restricts uses that conflict with goals for TOD.</p>	<p>Not currently mapped.</p> <p>Is dependent on the base zoning code, which may not always be best suited for TOD.</p> <p>Does not include a density bonus.</p>	<p>Modify the existing Transit Overlay District:</p> <ul style="list-style-type: none"> • Move away from a units/acre requirement • Remove parking requirements 	<p>Will it be feasible to create a standalone TOD Zoning District not tied to existing base zoning?</p>
Transit Supportive Zoning Districts	<p>Raleigh has expressed an interest in developing a framework to encourage incremental density and "missing middle housing" within walking distance of transit stations.</p>	<p>It may be challenging to enact incentive zoning, modifications to the Transit Overlay District, and a new Transit Supportive Zoning District.</p>	<p>Whether via an overlay or modifications to the base zoning, regulations could include:</p> <ul style="list-style-type: none"> • Eliminate minimum lot sizes • Revise low density residential designations to include duplexes, triplexes, quadplexes, and cottage courtyards, along with accessory dwelling units by right • Parking reductions 	<p>Is it feasible to enact a new zoning designation?</p> <p>Determining the level of density that is preferred between 1/4 mile and 1/2 mile from a transit station.</p>

LAND USE AND URBAN FORM

Zoning and Regulatory Analysis

Mechanism	Positive Factors	Constraining Factors	Potential Program Design	Key Considerations
Financing Mechanisms				
Tax Increment Financing	Synthetic TIFs are a viable option in Raleigh.	TIFs do not have a history of utilization in Raleigh. City staff are concerned about the viability of TIFs given the limited success of the Atlanta BeltLine TIF.	Implement a TIF district and leverage a portion of the generated increment to either 1) contribute to an affordable housing fund or 2) serve as gap financing for projects with an affordable housing component.	Which department would operate the TIF district? Does Raleigh have a preferred approach for program design or is the City interested in exploring different ways that a TIF could be enacted? Are there any legal concerns? Would Raleigh be interested in allowing increment sharing if more than one district is established? How much development would need to occur for the TIF to generate a significant increment that could be used for affordable housing projects?
Land Acquisition	Raleigh is set to launch a citywide land acquisition program to purchase land along transit corridors for affordable housing. Voters approved this Affordable Housing Bond in November 2020.	Capacity of City staff to launch a new program. Escalating cost of land in a robust market.	Purchase land for disposition to affordable housing developers through competitive process. Set up a revolving loan fund to offer capital to private developers to purchase land along transit corridors for affordable housing.	Which department will administer this program? Will the City purchase land itself and offer to developers or set up a fund to incentivize private developers? Would the City consider offering other city-owned land to developers for affordable projects?
Tax Abatement and Tax Relief Programs	Abatement and tax relief programs tend to be successful in encouraging new development and/or reducing displacement, and abatements can be effective in guarding public resources with an appropriate “but for” test.	Tax abatement programs are not legal in North Carolina, but programs could be designed as a grant. There may be limited capacity to run either an abatement-like program or a tax relief program.	Offer a grant in the amount equivalent to a 10-year property tax abatement for the inclusion of affordable units in developments along transit corridors. Reduce property taxes for socially vulnerable populations along transit corridors as an anti-displacement solution.	If the City chose to explore a grant program, would the City want to encourage the development of TOD generally, or affordable housing in developments near transit? What is the appropriate grant amount to offer to encourage desired uses? The amount equivalent to a 10-year property tax abatement? 20 year? If the City chose to explore a property tax relief program, what populations would it apply to? What should be the income threshold to qualify and what would be the percent reduction? How could the programs be funded?

LAND USE AND URBAN FORM

Zoning and Regulatory Analysis

Mechanism	Positive Factors	Constraining Factors	Potential Program Design	Key Considerations
Business Assistance Fund	<p>There is a desire to reduce the impact to small business owners during transit construction and the displacement of business owners once implemented.</p> <p>The City of Raleigh already offers incentives to business owners.</p>	<p>There may be limited capacity for a Department to run a new program.</p> <p>Capitalizing the program such that it can be a useful resource for multiple businesses may be challenging.</p> <p>Legal concerns.</p>	<p>Design a process for offering grants to small business owners during transit construction to offset potential losses from reduced visitation.</p>	<p>How can the City generate funding to contribute to a new business assistance fund?</p> <p>What is the appropriate amount to offer small business owners?</p> <p>Should the program be limited to owners that earn less than a specific amount of revenue each year?</p>
Comprehensive Programs				
Comprehensive Programs	<p>A branded program could elevate Raleigh to the forefront of the equitable TOD conversation nationwide.</p>	<p>There may be limited capacity for an existing Department to spearhead an effort to establish a comprehensive program bundling multiple resources.</p>	<p>Bundle together the proposed citywide land acquisition and public-private partnership programs with the existing support for developers pursuing 4% tax credits to encourage equitable TOD.</p>	<p>Which department should run this multifaceted program?</p> <p>How should zoning mechanisms be tied into a comprehensive program?</p>
Public Private Partnerships	<p>Raleigh currently leverages public private partnerships for the development of affordable housing.</p>	<p>There may be limited capacity for a Department to run a new program.</p>	<p>Operationalize a program to encourage public private partnerships between the City and private developers where the City could pay for public amenities such as stormwater and open space requirements or parking to help make development feasible.</p>	<p>What types of incentives would most encourage private developers to enter into public private partnerships with the City?</p> <p>Which department should run this program?</p> <p>How will the City raise money to provide these incentives to developers?</p>

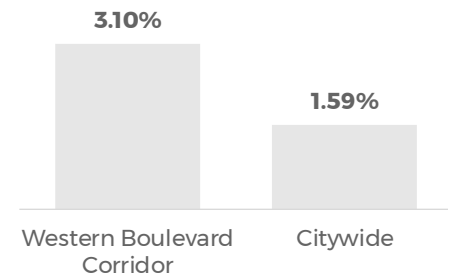
LAND USE AND URBAN FORM

Market Analysis

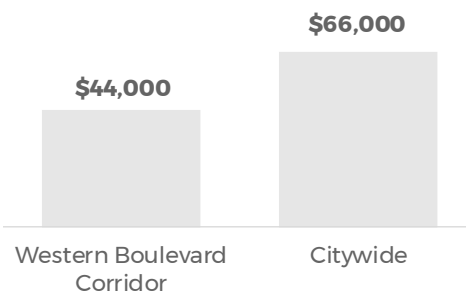
The market analysis explores current market conditions and future potential for residential, office, and retail uses along the corridor by identifying demand drivers for each use and the relative feasibility of delivering the different uses within different segments of the corridor. Understanding the existing conditions and potential for change within the corridor and within distinct areas of the corridor is essential to laying the groundwork for integrated land use and transportation planning that accounts for the people who live, work, and travel in the corridor. The analysis is a critical step in identifying catalytic development sites and development capacity, and to prepare a redevelopment strategy to ensure that future opportunities fully leverage the BRT system. The redevelopment strategy will identify where BRT stations maybe located given development opportunities to maximize ridership.

The analysis draws upon a synthesis of third party socioeconomic and real estate data for the corridor and the city, complemented by stakeholder conversations with developers and brokers active in the Raleigh market. These conversations allowed members of the development community to provide feedback on Western Boulevard as a location for new development and to gauge their perspectives on its potential to accommodate transformative mixed-use projects given the provision of new transit and place-making infrastructure and amenities. Analysis and findings in the market analysis were also informed by national best practices in transit-oriented development and supportive land use regulations. Below is an overview of the Market Analysis findings.

*Annual Growth Rate for Residents
(2019 - 2040)*



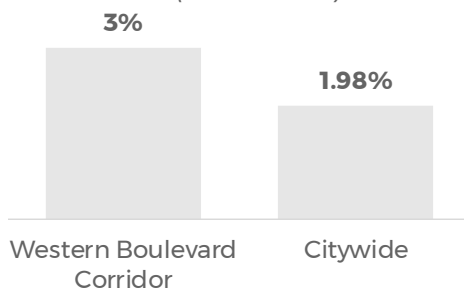
*Median Household Income
(2019)*



Poverty

Over 30,000 residents live along Western Boulevard, with over one-third of the population located near NC State University and nearly half between the ages of 20 and 34. Median household income for residents along the corridor is less than citywide median household income, a higher percentage of households do not own cars, and a higher percentage of the population has a relatively short commute time. These statistics likely reflect the significant university student population residing along this corridor.

*Annual Growth Rate for Workers
(2019 - 2040)*



Office

Over 30,000 residents live along Western Boulevard, with over one-third of the population located near NC State University and nearly half between the ages of 20 and 34. Median household income for residents along sub-markets in close proximity to downtown are beginning to see high densities, with higher density projects of up to 20 stories being planned. This represents a shift in the stock from stick-built to concrete construction with structured parking. The opening of BRT will accelerate the transition of the corridor from a low-rise residential housing market to a mid- and even high-rise market and will most likely help extend the area that sees higher densities to nodes further from downtown.

Retail

With the opening of a BRT system, the corridor is poised for new ground floor, transit-oriented retail that draws local residents attracted to mixed-use environments. Re-positioning of existing assets and co-locating residential and office development with retail centers as part a transit-oriented development strategy could support existing retail and facilitate the success of new retail concepts.

LAND USE AND URBAN FORM

Catalytic Area Redevelopment Strategy Memo

Station Area Types

Downtown



Downtown center of commercial, civic, and cultural activities with regional destinations. A regional employment center.

Emerging Urban Center



Larger mixed-use centers of commercial and community activities.

Neighborhood Center



Smaller centers that generally focus on providing services for the local community, where commercial areas are largely confined to a single intersection.

Campus



Regional employment centers consisting of a medical or university campus.

Park



City park with entrance next to a BRT station that serves as a regional destination.

As part of the Wake BRT: Western Boulevard Corridor Study, the project team conducted an analysis of the Corridor's Transit Oriented Development (TOD) Potential. Based on the nine catalytic growth nodes identified in this analysis, the City of Raleigh designated three growth nodes. These nodes were chosen because they represent diverse development contexts, are particularly catalytic to the future of the Corridor, and include sites that pose significant questions related to the future development character of the corridor. Each of these growth nodes was assigned a Station Area type from the ETOD guidebook. Three examples are shown below.

- The node that surrounds the intersection of **Western Boulevard and Method Road/Kent Road** is a Neighborhood Center Station Area along a retail/commercial strip. This area can support higher density residential uses with neighborhood-serving retail and community services along Western Boulevard. This node also contains office and community mixed-use development opportunities owing to its proximity to I-440 and North Carolina State University's Main Campus.
- The node that surrounds the intersection of **Western Boulevard and Blue Ridge Road** is an Emerging Urban Center Station Area that serves as a community mixed-use center with potential for higher-density development west of I-440. This may include densities of up to 8 stories on the former K-Mart site via the TOD Overlay density bonus policy. The K-Mart site offers a significant opportunity for transformative mixed-use development and commercial activity in this node.
- The node that surrounds the intersection of **Western Boulevard, Hillsborough Road, and Jones Franklin Road** is an Emerging Urban Center Station Area and community mixed-use district. This node has the potential to support moderate to medium-density residential and commercial uses, particularly on and around the Harris Teeter. Mixed-use development will serve the Fairview Acres and Fairview Hills residential neighborhoods as well as neighborhoods around Jones Franklin Road intersection.

For each growth node, a redevelopment strategy was developed that includes:

- Policies, financing tools, and/or physical investments to realize the potential identified in the TOD Scenario.
- A description of the total amount of square footage and types of development that are likely to be feasible.

LAND USE AND URBAN FORM

TOD Precedents Book

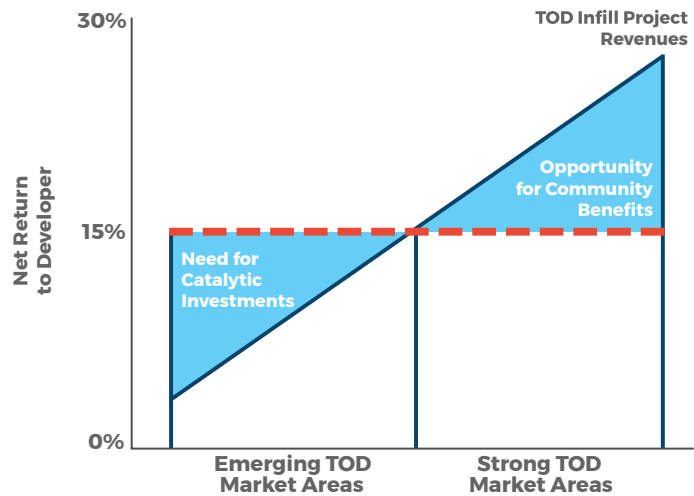
The Transit-Oriented Development (TOD) Precedent Book gives guidance to developers who want to participate in the dynamic evolution of Raleigh's BRT corridors. Increasingly, Raleigh's BRT corridors will be conduits of economic and community activity – as BRT and transit-oriented development connect a complementary mix of homes, jobs, and other destinations with fast reliable affordable transportation.

TOD offers unique advantages to developers but is not without challenges. For this reason, the book focuses on “lessons learned.” The book explains why TOD locations enjoy more market demand than auto-dependent locations and describes critical factors for market-based success. Lessons learned have been derived from TOD case studies and literature. Case studies selected capture

places where original conditions are like Raleigh's BRT corridors today. The lessons learned consider how TOD development came to be, and describe important features for economic feasibility and community benefits.

The book builds on Raleigh's Equitable Transit-Oriented Development (ETOD) Guidebook. The ETOD Guidebook encourages future growth around transit with an emphasis on equity and affordability. Once implemented, BRT will connect Raleigh residents to jobs, housing options, education, health care, and other needs, with reliable speed and without a car. The ETOD Guidebook recognizes that there are many economic, social and environmental benefits of building near BRT.

Real Estate Market Needs and TOD Investment Needs



The Precedent Book is broken into the following sections to support developers pursuing opportunities for TOD around the Raleigh BRT Corridors.

WHY invest in TOD?

- » Strong Market Demand
 - Easy Regional Access
 - Walkable Neighborhoods
 - Community-Centered Lifestyle
- » Higher Development Yields
 - Compact Development
 - Reduced Driving and Parking
 - Flexibility in Meeting Demands
- » Policy Incentives
 - Zoning Tools
 - Equity Fund
 - Land Partnerships and Affordable Housing Fund
 - Neighborhood Stabilization
 - Equitable Participation

WHAT are the types of TOD?

- » Station Area Types (see previous page)
- » Site Size

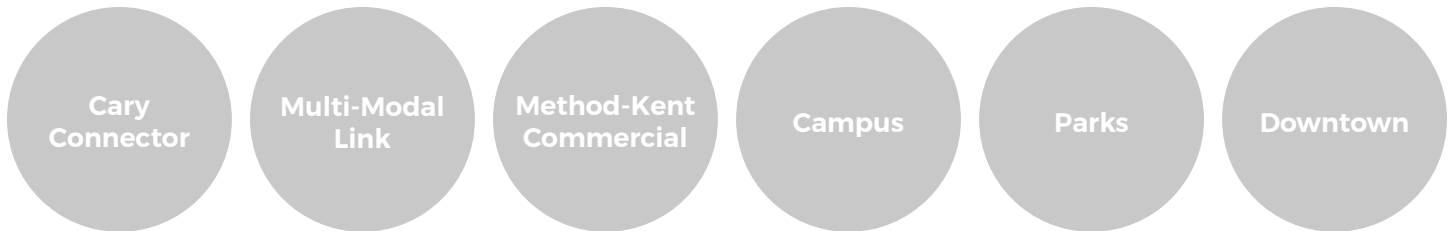
HOW to successfully build TOD?

- » TOD Lessons Learned
 - Advance a Shared Vision
 - Form Partnerships
 - Leverage Incentives
 - Tailor TOD to Market Demands
 - Respect the Neighborhood Context
 - Create a Great Public Realm
 - Maximize Development
 - 8. Program a Mix of Uses
 - 9. Be Flexible in Identifying Sites for TOD
- » Case Studies
 - Saltillo Railyard Development (Austin, TX)
 - Clarendon Market Common (Arlington, VA)
 - Campus TOD, Virginia Commonwealth University & Medical Center (Richmond, VA)

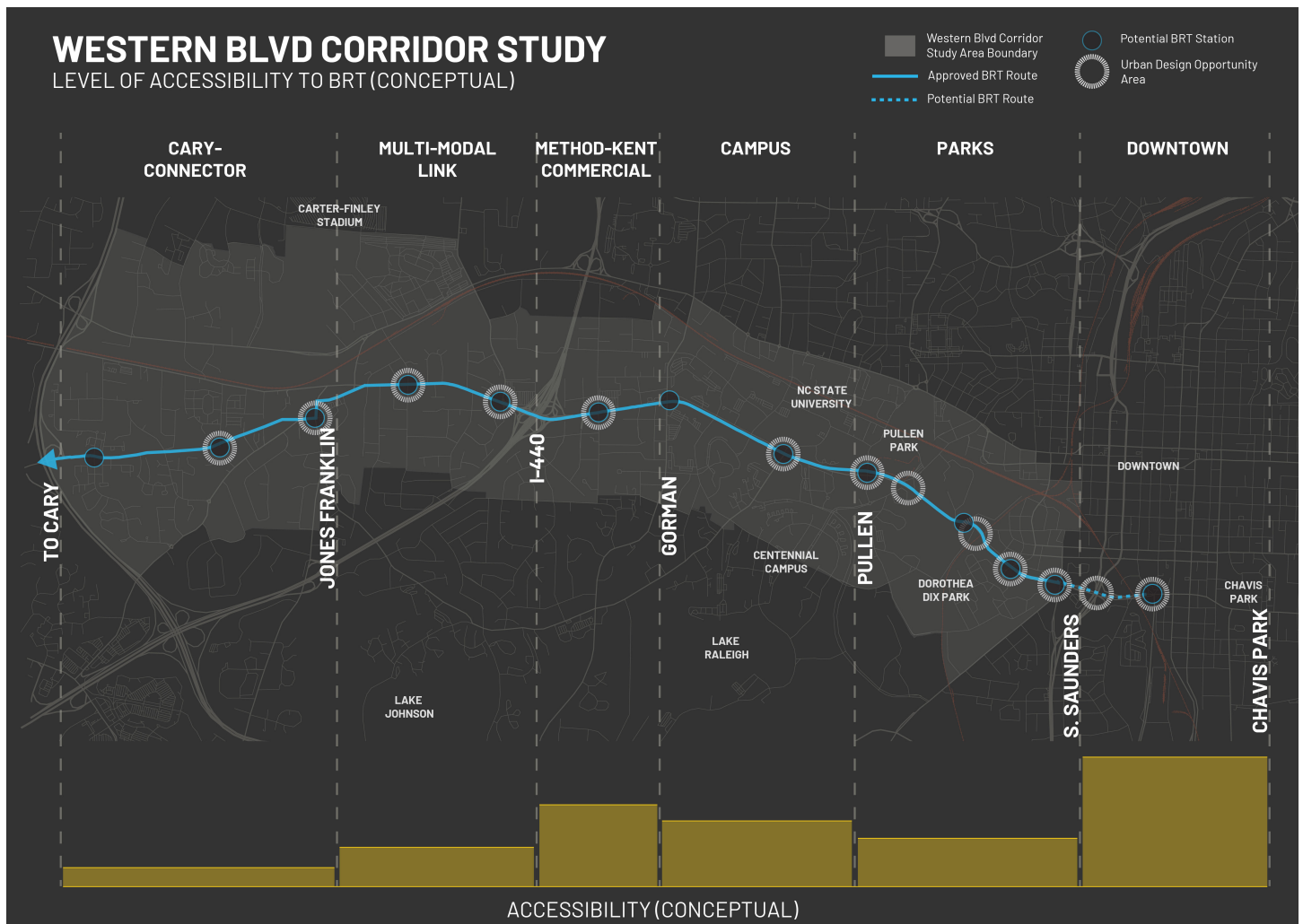
LAND USE AND URBAN FORM

Mobility Considerations for Character Zones

An essential outcome of the Wake BRT: Western Boulevard Corridor Study is to create a plan for BRT service between downtown Raleigh and downtown Cary, while leveraging BRT as a catalyst to create a vibrant corridor through development opportunities. Six character zones are identified along the corridor based on existing context and overarching attributes of the area. Those six character zones are:



Recommendations for development and mobility along Western Boulevard have been generated as part of the Mobility Considerations for Character Zones memorandum to both identify consistent attributes as BRT is implemented along with key differences as context transitions through the corridor. While Western Boulevard is the focus area for most of the study, the following considerations emphasize mobility to, from, and across the corridor and proposed BRT stations throughout the study area (1/2 mile from Western Boulevard). Mobility considerations may be related to connectivity, walkability, bikeway facility types, curbside management, trip-chaining transitions, station access, and key non-motorized connections. The memorandum presents mobility considerations for the entire Western Boulevard BRT corridor along with each character zone.



LAND USE AND URBAN FORM

Mobility Considerations for Character Zones

Corridor-Wide Expectations

Changing context along Western Boulevard between downtown Raleigh and downtown Cary presents a range of opportunities and challenges for mobility to and from proposed BRT stations; however, the ability for people of all ages and abilities to move along the corridor is paramount. While differences for nonmotorized mobility within each character zone are highlighted in detail within the memorandum, there are key expectations that remain consistent for users traveling along Western Boulevard - for a short segment or in its entirety. These include:



Safe mixing zones



Wayfinding for major destinations and greenway connections



Two park-and-ride lots located along the corridor



ADA accessible pedestrian facilities and curb ramps on both sides of the street



New or upgraded on- and/or off-street bikeways (separated bike lanes, shared use paths, greenway trails)



Upgrades to corridor crossings



Connections to other transit services such as Wolfline, GoRaleigh, GoCary, and GoTriangle

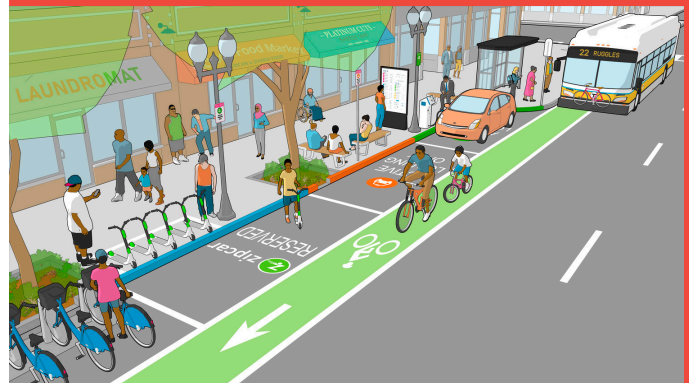
Considerations for

The memorandum reviews each character zone and provides the following for each:

- **Defining Characteristics:** community destinations, current land use, and travel patterns that distinguish the character zone from one another.
- **Mobility Vision:** future-looking ideas of how people can travel within the character zone when BRT is implemented.
- **Accessibility:** how the frequency and legibility of connecting to, from, and across Western Boulevard changes between character zones as a result of implementing the mobility vision.
- **Existing Conditions:** what the character zone looks like today in terms of bicycle and pedestrian infrastructure, parking, and safety.
- **Mobility Opportunities:** opportunities to move the character zone towards the mobility vision.
- **Key Connections:** specific recommendations that enhance existing or create new crucial connections to Western Boulevard and are essential for BRT implementation. Note that these will not provide all facilities necessary for a priority bicycle and pedestrian network.

In addition to considerations for each character zone, the memorandum explores tools for implementation including:

- Unified Development Ordinance (UDO)
- Street Design Manual
- Road Resurfacing Schedule
- Capital Improvement Program (CIP)
- Greenway Master Plan Update
- BikeRaleigh Plan Update
- Complete Streets Implementation Program



PUBLIC INVOLVEMENT

Kickoff Meeting

157

Attendees

429

Online
Survey
Respondents

The City of Raleigh held a community open house kickoff meeting on November 12, 2019, to introduce the project, share information on current conditions, relate potential BRT alignment options, and obtain initial community feedback.

Participants had multiple options to provide feedback and comment via a community comment wall, comment map, voluntary demographic survey, event exit survey, and online survey. Key questions asked during this meeting and in the online survey were:

1. If BRT service were provided along Western Boulevard, where would you go using the service?
2. Are there any other locations that you would use BRT to travel to along Western Boulevard between downtown Raleigh and Hillsborough Street that aren't listed on the map? If so, what are they?
3. If BRT services were provided along Chapel Hill Road, E. Chatham, or Cary Towne Boulevard, where would you go using this service?
4. Are there any other locations along Chapel Hill Road, E. Chatham Street, or Cary Towne Boulevard you would like to go using the BRT service?

As a part of Phase 2 of the Western Boulevard Bus Rapid Transit (BRT) project, the City of Raleigh hosted a Virtual Engagement (VE) site. While originally planned to be an in-person public meeting, this phase of engagement was conducted virtually due to public health concerns arising from the COVID-19 pandemic. The VE site included information on the Western Boulevard BRT corridor project and opportunities for public engagement. The site launched on September 15, 2020 and remained live until October 19, 2020.

The VE site featured 5 pre-recorded videos explaining project concepts and opportunities. On September 30, the project team conducted a live question and answer session to address public questions and comments regarding the Wake BRT: Western Boulevard Corridor Study. This Q&A session, attended by 33 citizens, was recorded and posted on the VE site for viewers to watch afterwards.

The site also featured an overview of the Catalytic Transit-Oriented Development (TOD) Areas. Participants were invited to share their input and land use visions for the TOD areas via an online survey.

What We Heard:

"Density is key. Bring some fresh development patterns to this under-utilized corridor!"

"Dix Park should be a major draw for transit ridership. The BRT should be promoted, not only as a service for quick commuting, but as one's gateway to leisure following the workday as well!"

"A bike and pedestrian/greenway is vital in addition to the proposed bus rapid system. The link between Cary Towne Blvd and Jones Franklin/Western Blvd."

"Please have focus groups that involve low-income stakeholders and leaders within those communities."

"I'd like to see the work here produce some real ideas about how to create strong connections from surrounding neighborhoods to Western Blvd."

"Please add Citrix Cycle docks along the route and more in a half-mile radius of each station to provide additional last-mile options."

Virtual Engagement

2,075

Site Visits

Online Survey:

96

Participants

571

Question
Responses

189

Comments

46

Email
Subscriptions

PLANNING AND
DEVELOPMENT

Wake BRT: Western Blvd Corridor Study

Urban Design - Existing
Conditions Summary

May 2021

Transportation and Transit

Integrating facilities for bicycling, walking, and existing transit service will be a critical component of the success of the Western Boulevard Corridor and transit-oriented development (TOD). A broad inventory of existing conditions was developed to provide a solid foundation for the development of the corridor study along Western Boulevard. A Multimodal Safety Analysis, conducted by the consultants, analyzed pedestrian crossings, bicycle facilities, sidewalks, and bus stops within a half mile of Western Boulevard. This analysis highlighted several areas along the corridor that could benefit from improvements.

Sidewalk Infrastructure

A sidewalk inventory, conducted as part of the Multimodal Safety Analysis, highlighted several concerns. While Western Boulevard is separated by a median throughout the study area, the medians do not serve as functional or accessible pedestrian refuges at many of the crossings. Additionally, where curb ramps do exist, they are often not directional, not aligned with the crosswalk, or in a state of disrepair.

Map 1 shows existing sidewalks within a half mile of Western Boulevard. The corridor itself has sidewalks or multiuse paths on both sides of the street up until the Hillsborough Street/Buck Jones Road intersection. However, many sidewalks on cross streets do not continue across Western Boulevard which makes crossing the corridor difficult. Often, at intersections where curb ramps and crosswalks exist, they do not lead to continued sidewalks on the other side of the corridor. Major cross

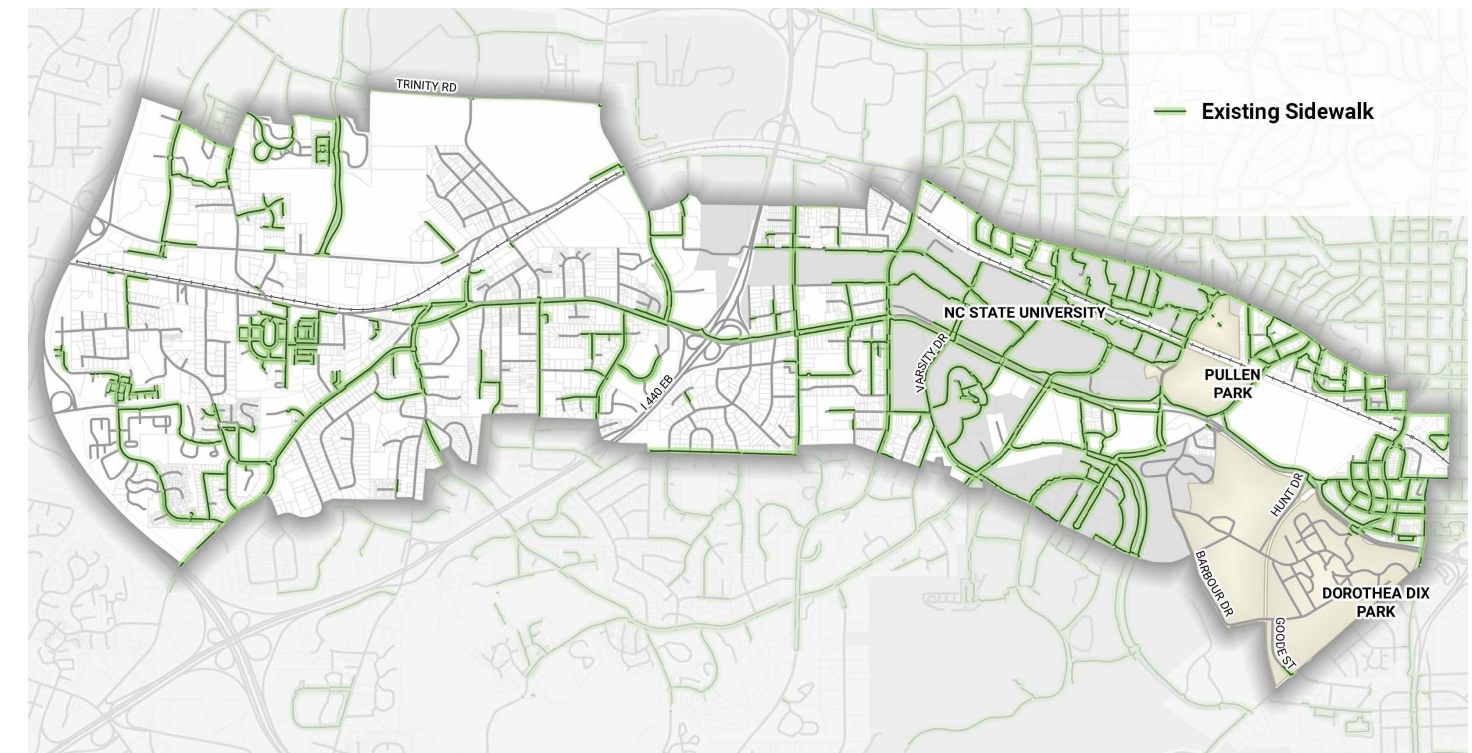
streets including: Boylan, Ashe, Blue Ridge, Powell, and Jones Franklin all have sidewalks on one or both sides that do not continue across Western Boulevard.

Bicycle Infrastructure

Multiuse paths currently exist along much of Western Boulevard, but key infrastructure gaps prevent bicyclists from safely and comfortably traveling along corridor (**see Map 2.**) As the corridor moves west out of downtown Raleigh, the presence of multiuse paths and bicycle facilities drops severely. Pre redesign and construction, crossing the I-440 interchange was particularly dangerous. There are no bicycle facilities west of Buck Jones Road.

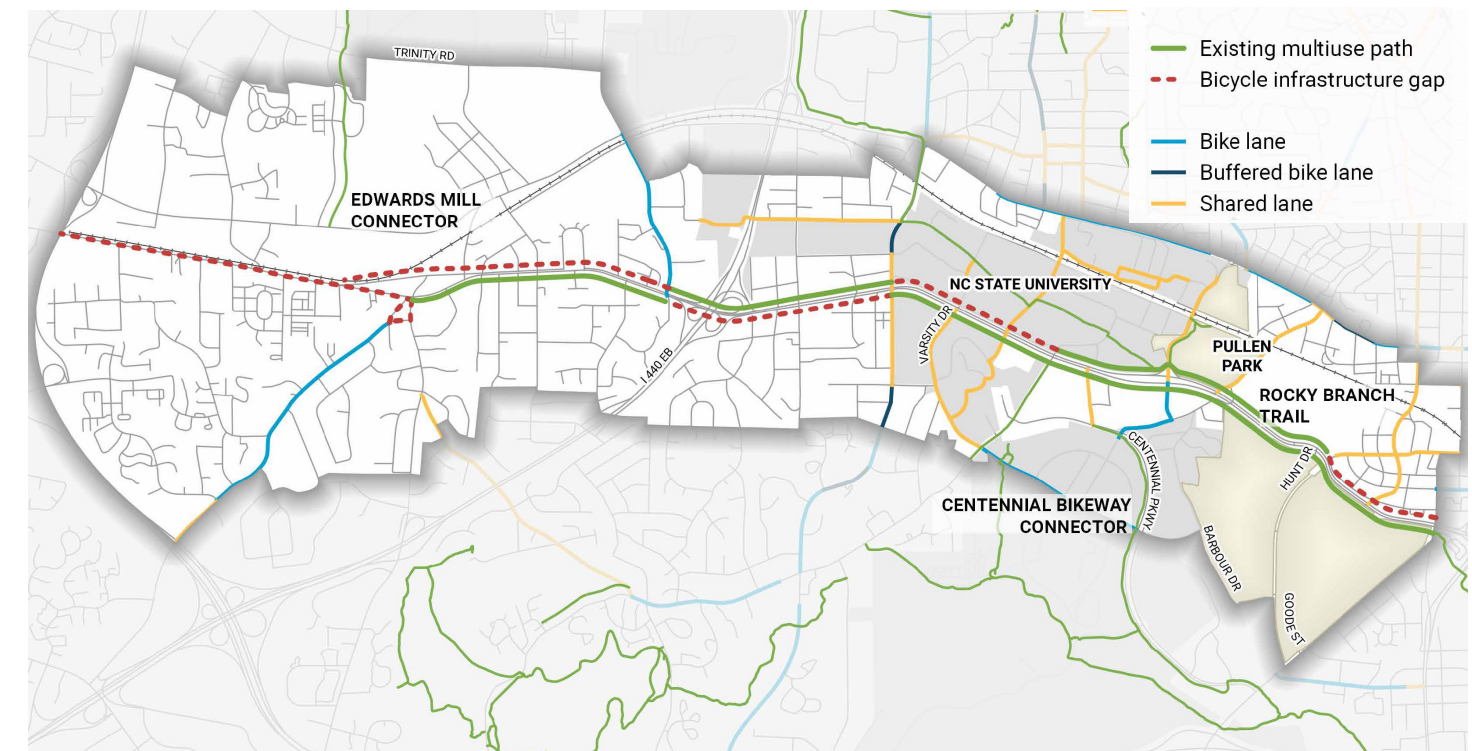
Where multiuse paths do exist along Western Boulevard, it is important to note that the width and quality of the path varies significantly. Paths are overgrown on many sections and are often no wider than a standard sidewalk. This makes it difficult for bicyclists to pass pedestrians who may also be using the path. Intersections along Western Boulevard also present a barrier to bicycle connectivity along and across the corridor. People who use the bike lanes perpendicular to Western Boulevard may still be unable to reach the bike lanes on the other side of the corridor because of the difficult or uncomfortable intersection crossings. Ultimately the existing bicycle infrastructure within the study area offers strong potential for multiple connections across and along Western Boulevard but will require key infrastructure improvements to make the corridor safe and comfortable for people on bicycles.

MAP 1 MAP OF EXISTING SIDEWALKS



Map created by WSP

MAP 2 MAP OF EXISTING BICYCLE INFRASTRUCTURE



Map created by WSP

Bicycle and Pedestrian Crashes

Available crash data from 2007-2018 was used for this analysis to determine if there were any patterns established that may impact safety recommendations from the study. A major concern for pedestrian and bicycle safety along the corridor is the rate of crashes recorded along the corridor. Looking at combined bicycle and pedestrian crashes from 2007-2018 revealed 496 total crashes, with 7%, or 37 crashes, fatal or disabling. Pedestrian failure to yield and motorist drive out crashes were the most prevalent. A motorist drive out crash may be due to driveway or intersection conflicts. Sight distance barriers may increase the likelihood of this type of crash and may need more review as new bikeway infrastructure is planned and implemented.

The specific location of each crash provides an understanding of how crashes are dispersed throughout the study area (see **Maps 3 and 4.**) Some areas have higher densities of overall crashes and could benefit from specific recommendations to change or upgrade design characteristics to increase safety. Additionally, there are some crashes that may not be directly related to street design such as alcohol-related crashes. Thirty-six of the crashes reported were alcohol-related and three of those crashes included a fatality.



Boylan Ave. intersection.



An individual on a motorized wheelchair navigates the sidewalk near the Buck Jones and Jones Franklin intersection.



Blue Ridge Rd. intersection.

MAP 3 MAP OF PEDESTRIAN CRASHES



Map created by WSP

MAP 4 MAP OF BICYCLE CRASHES



Map created by WSP

Transit

A transit analysis was completed to understand the existing transit conditions along the corridor. Currently GoTriangle, GoRaleigh, GoCary, and NC State’s Wolfline all provide transportation and paratransit services along the corridor.

An analysis was conducted of transit ridership of each existing route, and the percent of riders that board within a quarter mile of the route or a quarter mile of the proposed BRT station (see Map 6.) The Western Boulevard alignment was incorporated into all four alignment alternatives to get a complete picture of the ridership along the entire corridor for all four alternatives. In total, there are over 100 existing transit stops located within the quarter mile study area segment on Western Boulevard, and the four alignment options. Of the over 100 existing transit stops, 83 of these stops are located within a quarter mile radius of the proposed BRT station locations.

GoTriangle’s route 300, which connects downtown Raleigh to downtown Cary sees almost 50% of its boardings within the BRT corridor or within a quarter mile of the proposed stations for this alternative. Additionally, the Cary Towne Boulevard/ Maynard Road alignment has the largest percentage of GoCary boardings of all four alignments analysis because it follows the existing GoCary route 6.

The Wolfline service at NCSU sees robust ridership with an average of 5,000 boardings per day in October 2018. It is reasonable to expect NCSU campus visitors and residents

will enjoy the BRT connection provided between campus and downtown Raleigh and downtown Cary.

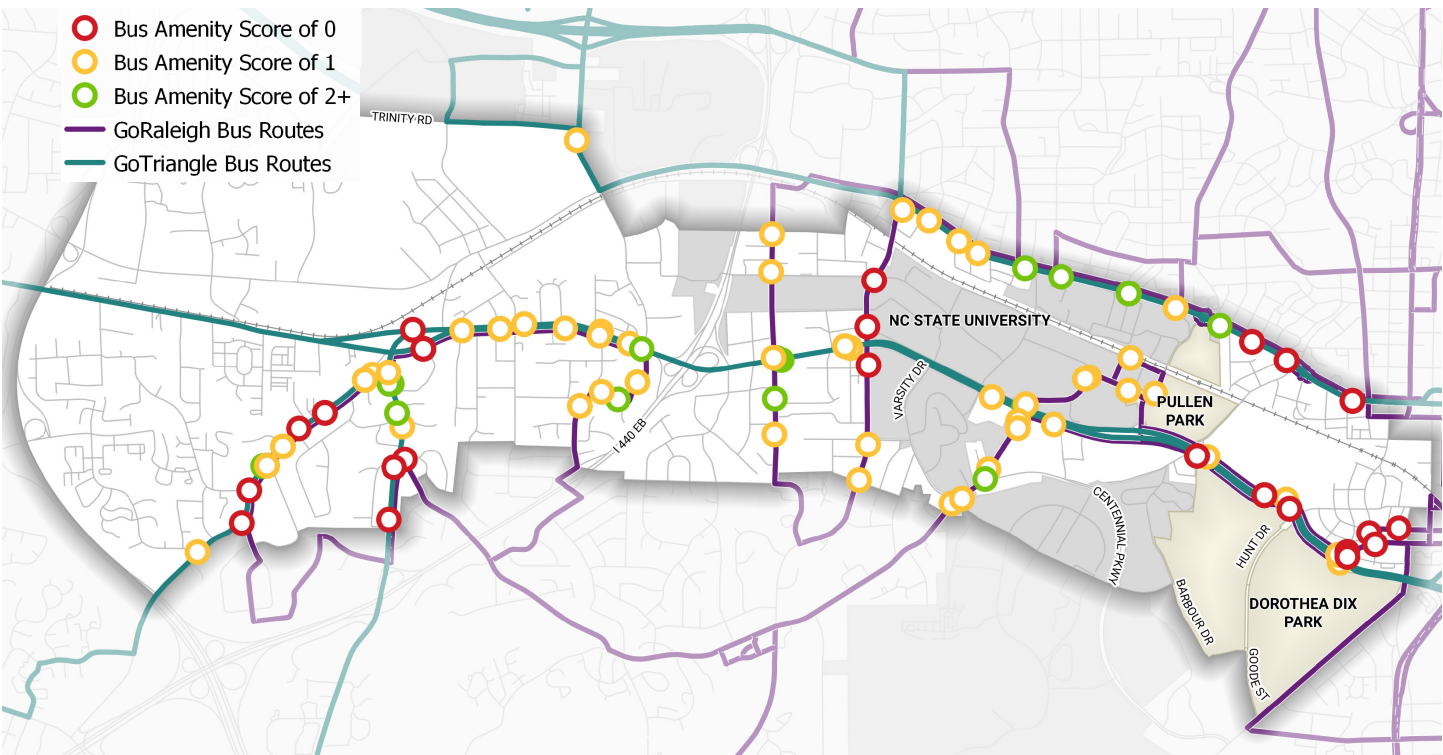
While no other sites compare to the existing ridership seen at NCSU, Cary Towne Center, Cary Depot, and downtown Raleigh all have relatively high existing ridership. There is no existing ridership in certain areas along the Cary Towne Boulevard/Walnut Street alignment and Chapel Hill Road alignment.

Overall, most bus stops within a half mile of Western Boulevard do not include complete amenities, many lacking benches and lighting (see Map 5.) Adding these key features to bus stops throughout Western Boulevard would increase the comfort of transit users and complement the integration of future BRT into the corridor’s transit network.

The findings of the analysis will inform the design of the new service with the goal of creating a multimodal corridor which provides safe and functional facilities for all users—motorists, pedestrians, transit users, and bicyclists.

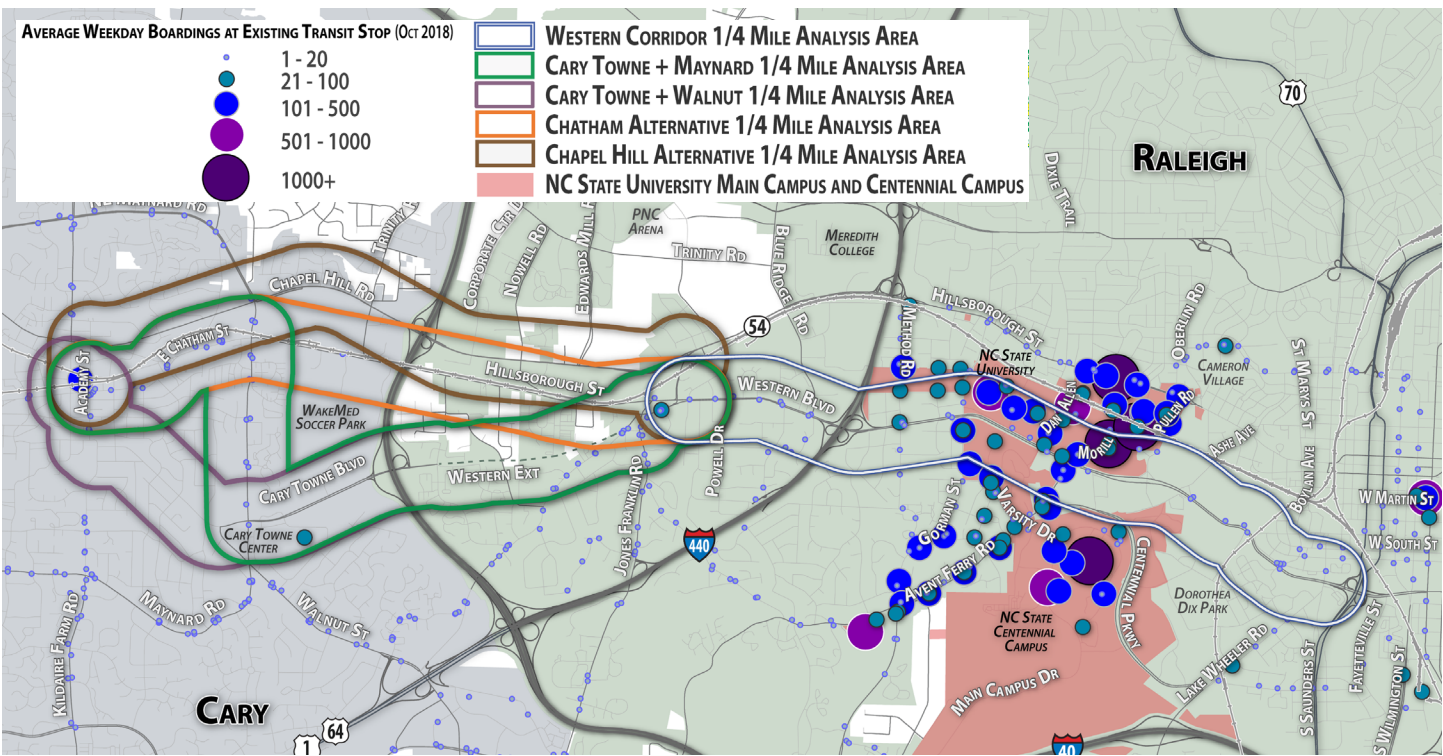
The recommendations listed within Chapter 4 - Overall Recommendations include proposed connections for streets, bicycle facilities, and greenways that will offer solutions to bridge the current infrastructure gaps and enhance overall access to the BRT corridor.

MAP 5 MAP OF TRANSIT STOPS



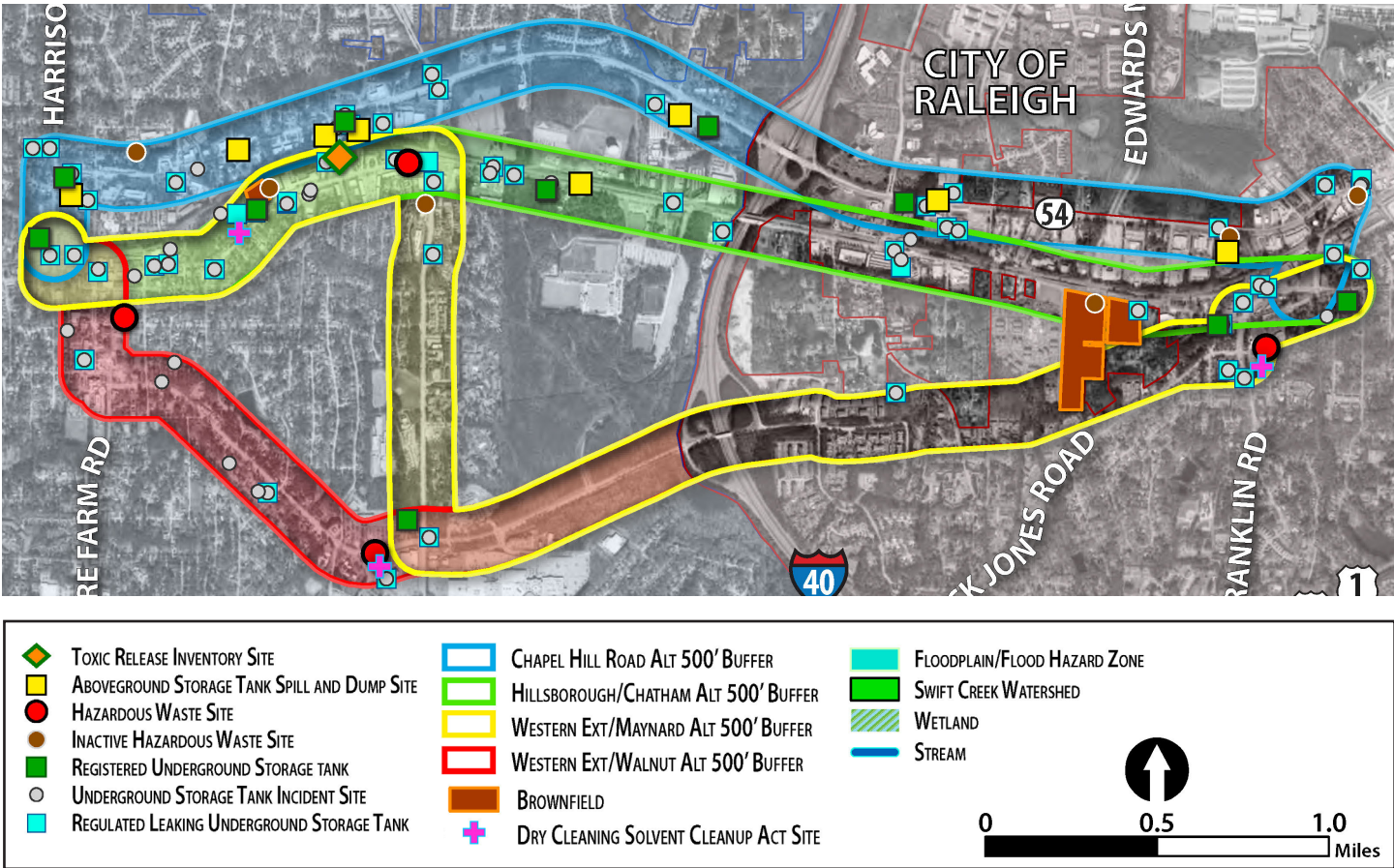
Map created by WSP

MAP 6 TRANSIT BOARDINGS MAP

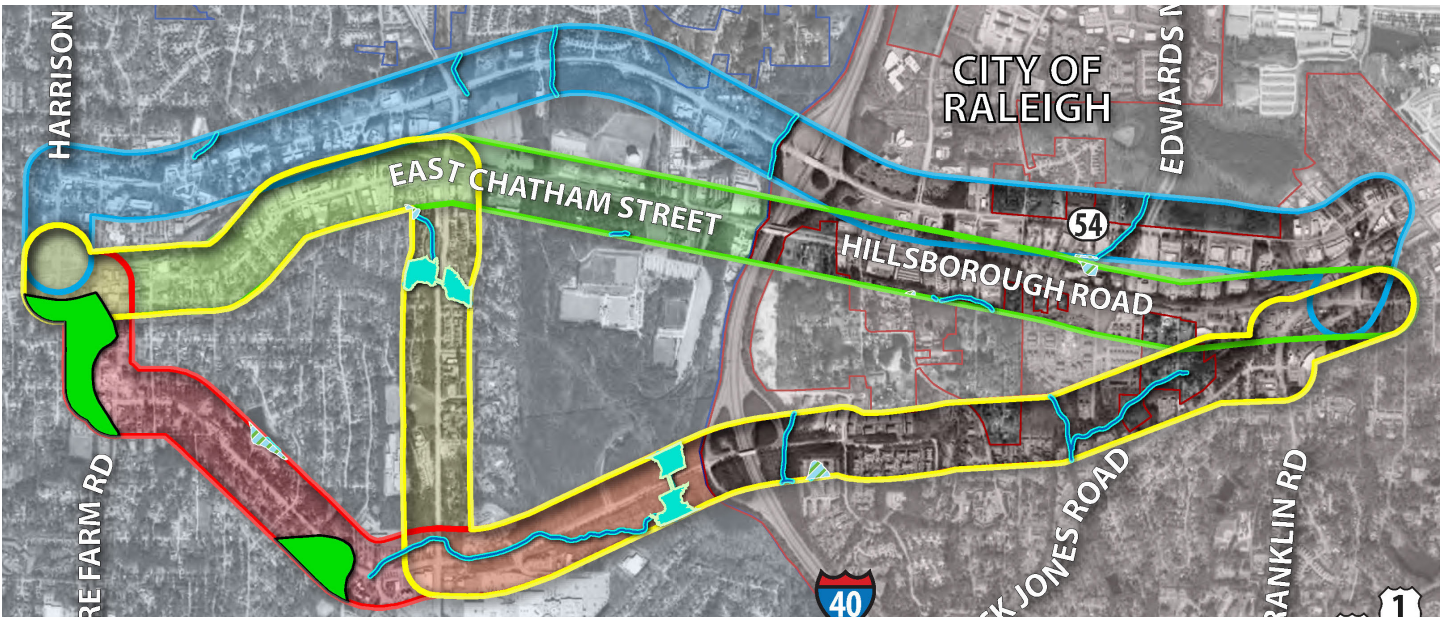


Map created by WSP

MAP 7 HAZARDOUS FEATURES MAP



MAP 8 HYDRAULIC FEATURES MAP



Environmental Protection screening maps. Maps created by WSP.

Environmental Screening

The environmental screening provided a preliminary review of potential resources within or adjacent to the Western Boulevard Corridor that may be affected by the implementation of the proposed Bus Rapid Transit (BRT). The environmental screening looked at all four alignments (see Maps 7 and 8.)

All four of the alignments had similar environmental resources present, including there being potential habitat for Threatened and Endangered Species, the presence of

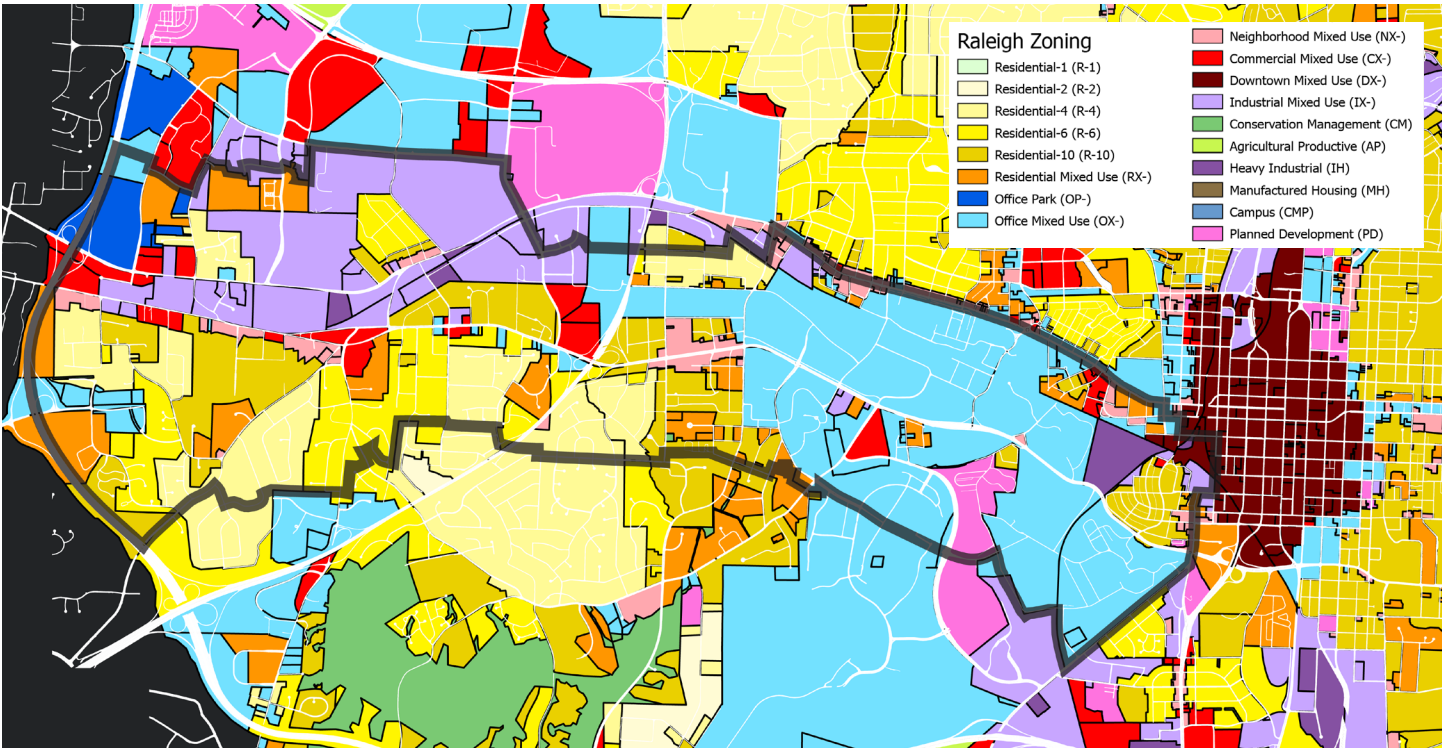
hydraulic features, and the presence of historic resources.

- The Western Boulevard Extension/ Maynard Road alignment has the highest number of community resources present. A more detailed environmental analysis and mitigation would be conducted as part of the The National Environmental Policy Act (NEPA). NEPA requires federal agencies to assess the environmental effects of their proposed actions prior to making decisions.

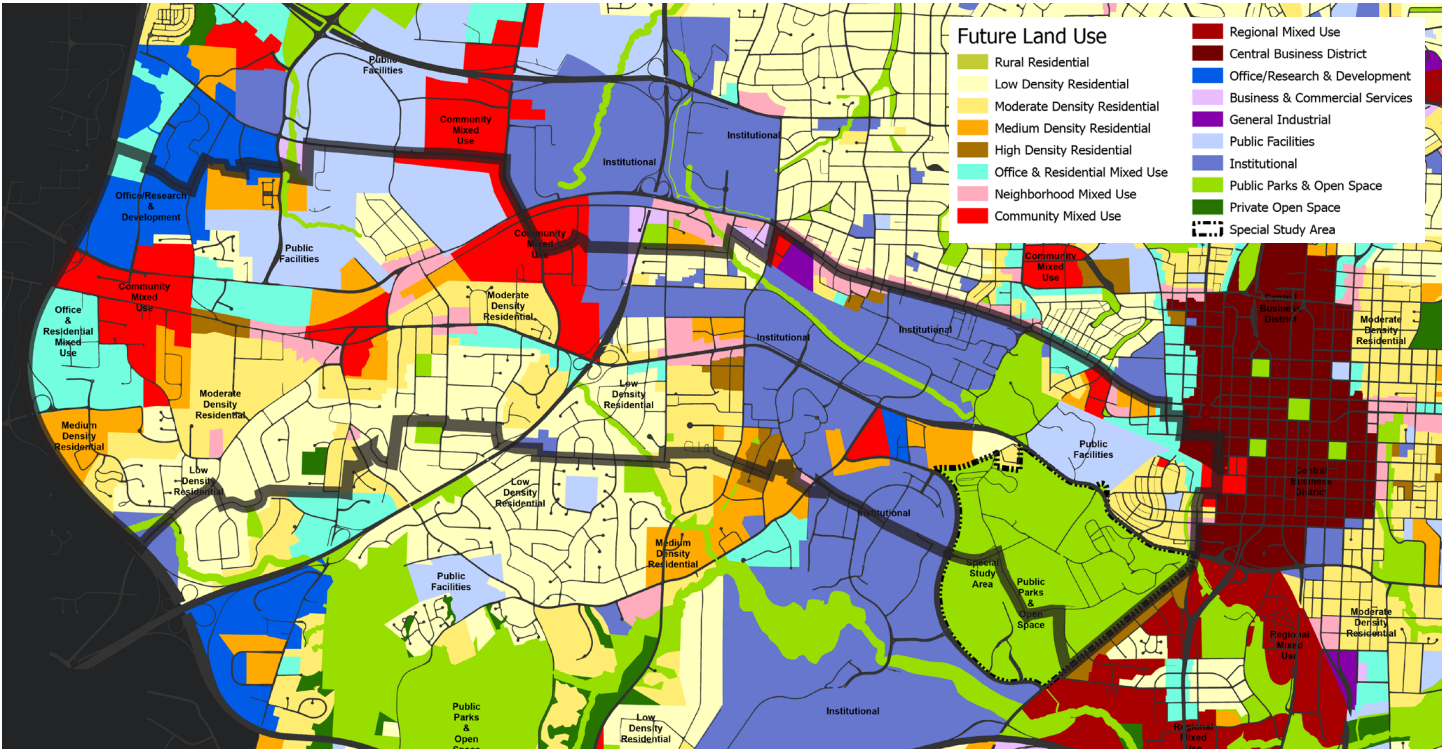


The new extension will connect where the existing, west segment of Western Blvd. curves into Saddle Seat Drive, creating a new intersection. Image Source: Google Maps

MAP 9 ZONING



MAP 10 FUTURE LAND USE MAP



Current Zoning

The Existing Zoning map (see Map 9) highlights the current zoning along the corridor, that is dominated by three types of districts: Office Mixed-Use, Industrial Mixed-Use and Residential (various residential districts). Much of the NCSU campus, both to the north and south of Western, is classified as Office Mixed-Use, which is unlikely to change in the foreseeable future. West of the NCSU campus, it quickly transitions to predominately residential uses. The area between Hillsborough and Chapel Hill Roads, contains a large swath of Industrial Mixed-Use which often follows the North Carolina railroad.

The consultant team looked at the City of Raleigh’s zoning and regulatory policies and tools to understand the extent to which they encourage not only transit-oriented development (TOD), but also equitable development around transit. The analysis looked at aligning transit investments with the preservation of affordability for housing and small businesses and enhancing access for low-income residents. A detailed zoning and regulatory tools memo is available for review upon request. Details are summarized in the WSP Final Report Summary available in the appendix document.

Future Land Use

The Future Land Use Map (FLUM) highlights the possible future land use along the corridor (see Map 10.) Similar to the existing zoning map, there are some areas dominated by a single land use, but there is a greater diversity of land uses further west along the corridor. Much of the corridor near downtown Raleigh is dominated by Institutional and Public Parks and Open Space uses, due to NCSU and Dorothea Dix Park. West of NCSU’s campus

and south of Western Boulevard is predominately low-density residential but begins to shift to various mixed uses west of Jones Franklin Road. This is in line with other developments that are being planned in that area, particularly within the Town of Cary jurisdiction.

Development and Market Analysis

Understanding the existing conditions and potential for change along, and in distinct areas around, the corridor is essential to laying the groundwork for integrated land use and transportation planning.

There are over 30,000 residents who live along Western, with over one-third of the population located near NCSU and nearly half between the ages of 20 and 34. Compared to citywide averages, residents along the corridor have a lower median household income, a higher percentage do not own cars, and a higher percentage have a relatively short commute time.

Low-rise style apartments predominate along the corridor, with mid-rise and student housing near NCSU. The office market along the corridor is limited in size and lacks a strong pipeline of future development. Recently completed office buildings cluster around Centennial Campus and the Raleigh Corporate Center complex on Chapel Hill Road. Retail primarily consists of sit-down and fast-food restaurants and convenience-oriented stores such as dollar stores, grocery stores, and hair salons that meet the everyday needs of local residents. Given significant and diverse retail centers such as The Village District (formerly Cameron Village) within a 10-minute drive of the corridor, the area faces considerable competition in becoming a shopping destination for the region.

Residential

Sub-markets in close proximity to downtown Raleigh are beginning to see high densities, with higher density projects of up to 20 stories being planned. This represents a shift in the stock from stick-built to concrete construction with structured parking. The opening of BRT along Western Boulevard will help accelerate the transition of the corridor from a low-rise residential housing market to a mid- and even high-rise market and will most likely help extend the area that sees higher densities to nodes further from downtown Raleigh.

Office

The opening of a new BRT route along Western Boulevard will most likely make Centennial Campus and the Raleigh Corporate Center office complex more attractive, with the addition of a shuttle from the BRT line to each campus or innovative placemaking that draws riders to each node. BRT, however, will most likely not create new office nodes along the corridor given well-performing and robust nodes in downtown Raleigh and other nearby areas.



An example of a recent office project in Raleigh Corporate Center.
Source: Highwoods Properties

Retail

With the opening of a BRT system, the corridor is poised for new ground floor, transit-oriented retail that draws local residents attracted to mixed-use environments. Re-positioning of existing assets and co-locating residential and office development with retail centers as part a transit-oriented development strategy could support existing retail and facilitate the success of new retail concepts within mixed-use buildings.



An example of luxury condos closer to downtown Raleigh.
Source: Monarch Realty Co.



An example of low-rise apartments west of I-440. These units are primarily marketed to students. Source: Redpoint Raleigh



A snapshot of retail and residential businesses located within the Mission Valley Shopping Center

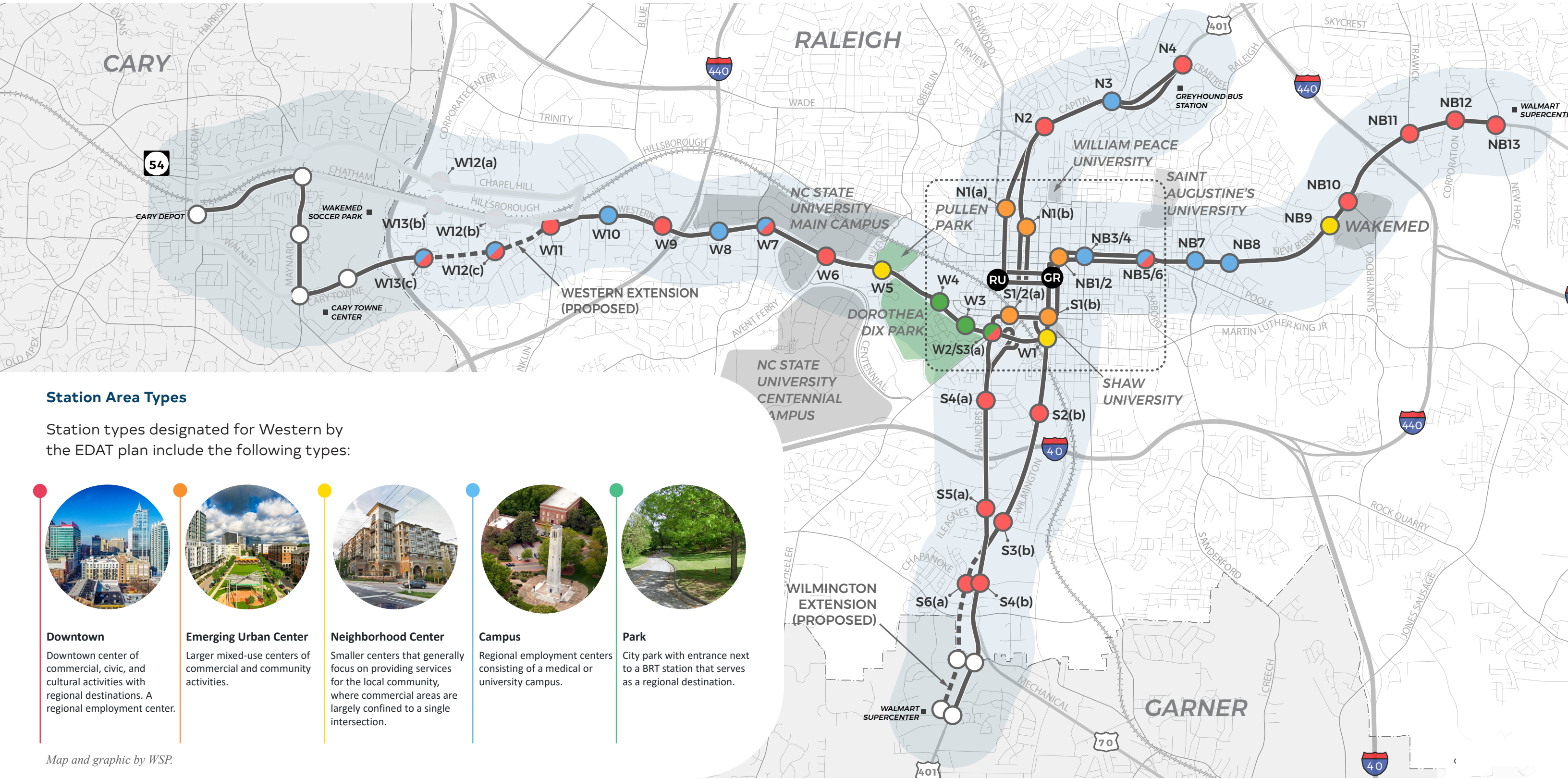


Grocery stores and fast-food restaurants populate the edges of Western Blvd. between Gorman St. and I-440.

TABLE 1 MARKET TYPES ALONG WESTERN BLVD.

MARKET TYPE	CONTEXT/ OBSERVATIONS	OPPORTUNITIES	CHALLENGES
Residential	Strong population growth, high rents and home values, and prevalence of mid-rise housing near NCSU and downtown Raleigh	Proximity to jobs center	Limited walkability
	Lower density, car-oriented market further from downtown Raleigh	High demand for housing	I-40, I-440, railroads act as physical barriers
Office	Strength of Centennial Campus	Robust pipeline of housing market in near future	
	Large, robust office market between I-440 and I-40	Strong growth potential near NC State Campus	Lack of developable sites along corridor
Retail	Auto-oriented retail and aging strip malls along corridor	Proximity to NC State and downtown Raleigh	Current market represents a small sliver of competitive office market
	Cluster of independent retailers near downtown Raleigh, just off the corridor	Opportunity for redevelopment of sites like Mission Valley or Kmart site	Higher rents near downtown may threaten the viability of some smaller retailers
		Large student and employee population near NC State	Redevelopment of auto-oriented retail is likely longer term
			Limited walkability

MAP 11 STATION AREA TYPES



Land Use Capacity Analysis Summary

The land use analysis portion of the Wake BRT: Western Boulevard Corridor that falls within the City of Raleigh jurisdiction includes the alignment along Western Boulevard from the intersection of Western Boulevard and Lake Wheeler Road near downtown Raleigh to the boundary with the Town of Cary near I-40. The scope of the land use analysis portion of this study extends to a ½ mile buffer along the three proposed Bus Rapid Transit (BRT) alignments. These three alignments all include Western Boulevard from downtown Raleigh up until the intersection with Jones Franklin Road. From the intersection with Jones Franklin Road the three alternatives then include Chapel Hill Road, Hillsborough Street, and Western Boulevard Extension until I-40 boundary.

Building on the market analysis and zoning and regulatory analysis conducted along the corridor, the land use capacity analysis produced growth projections for the corridor, identified a set of soft sites that comprise development opportunities within the corridor, divided the corridor into a series of growth nodes, and developed projections for the amount of residential and commercial development that will occur in each node by 2040 based upon the available land, market trajectory, and likely development typologies feasible. Catalytic TOD sites were identified that have the potential for increased land use intensity and density. A detailed land use capacity analysis memo is available for review upon request. Details are summarized in the WSP Final Report Summary available in the appendix document.

Growth Projections

Growth projection analysis undertaken for the Equitable Development Around Transit (EDAT) Study were refined to create two scenarios, a Baseline Scenario and Transit-Oriented Development Scenario, for Western Boulevard’s future growth and capacity (see Figure 1.) The Baseline Scenario represents a moderate pace of development along the corridor and the Transit-Oriented Development (TOD) Scenario represents a higher pace of development along the corridor.

Soft Site Analysis

This analysis expanded the selection of ‘soft sites,’ or underutilized sites in the study area that were previously identified in the EDAT Study. The team examined development opportunities on a site by site basis and recommended a final selection of parcels that are positioned for redevelopment in the coming decades and would meet the City’s goals of encouraging transit-oriented land uses. The soft site analysis focuses on the Western Boulevard Extension alignment and therefore leaves out soft site parcels located along the northern two alignments that were included in the EDAT Study. These soft sites include commercial properties near the Raleigh Corporate Center and industrial sites between Hillsborough Street and Chapel Hill Road.

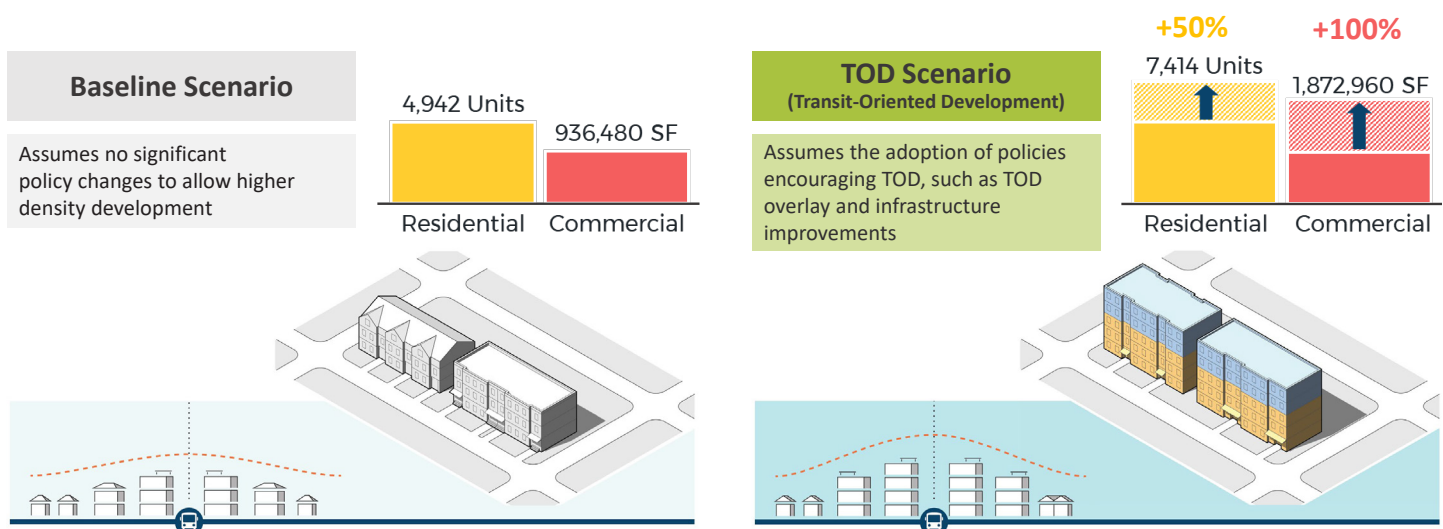
Growth Nodes

With input from the City, the team divided the corridor into nine growth nodes that are more fine-grained than the four high-level sub-markets defined to date in the market analysis. Each of the nine growth nodes represents a zone along the corridor with different development characters and opportunities.

Growth Capacity Analysis

Projections for the amount of residential and commercial development that will occur in each node by 2040 based on their zoning, market trajectory, and development potential were developed. Two sets of projections for each node were developed to correspond with the Baseline Scenario and Transit-Oriented Development Scenario.

FIGURE 1 TRANSIT-ORIENTED DEVELOPMENT, GROWTH PROJECTION GRAPHIC



Graphic by WSP

TRANSIT-ORIENTED DEVELOPMENT (TOD) PRECEDENT BOOK

CITY OF RALEIGH

DECEMBER 2020



CITY OF RALEIGH

**TRANSIT-ORIENTED
DEVELOPMENT (TOD)
PRECEDENT BOOK**

DECEMBER 2020

ACKNOWLEDGMENTS

The Transit-Oriented Development Precedent Book was prepared by WSP USA, on behalf of the City Planning Department and through a collaborative process.



1 INTRODUCTION

Raleigh is the fastest-growing city in North Carolina and one of the fastest-growing regions in America. With a population of more than 470,000 in 2018, Raleigh (the City) is expected to reach 600,000 by 2030. As Raleigh and Wake County continues to grow, traffic congestion will also increase. Recognizing the role of transit in serving the needs of a growing population, Wake County voters approved a plan in November 2016 for focused investment in public transit, which includes building approximately 20 miles of Bus Rapid Transit (BRT) lines. Increasingly, Wake County's BRT corridors will be conduits of economic and community activity – as BRT and transit-oriented development connect a complementary mix of homes, jobs, and other destinations with fast reliable affordable transportation.

The City published the Equitable Transit-oriented development (ETOD) Guidebook in 2020, which outlines a path for planning future growth around transit with an emphasis on equity and affordability. Once implemented, BRT will connect Raleigh residents to jobs, housing options, education, health care, and other needs, with reliable speed and without a car. The ETOD Guidebook recognizes the significant economic, social and environmental benefits of building near BRT, provides a vision for sustainable growth and is accompanied by a “Policy Toolkit” to encourage ETOD. The Guidebook recommends public policies and investments to attract private investment with zoning incentives, financing tools, and housing affordability programs to advance equitable development. By focusing on considerations associated with private investment, this book complements the public actions described in the Policy Toolkit with lessons learned to assist developers who may not be familiar with TOD.

The TOD Precedent Book (the book) builds on the ETOD Guidebook and provides guidance to developers who want to participate in the dynamic evolution of Raleigh’s BRT corridors. Transit-oriented development (TOD) offers unique advantages to developers but is not without challenges. For this reason, this book focuses on lessons learned. This book explains why TOD locations enjoy more market demand than auto-dependent locations, and describes critical factors for market-based success and opportunities to apply Equitable TOD principles. Lessons learned have been derived from TOD case studies and literature. Case studies selected capture places where original conditions are similar in context to the BRT Corridors of Wake County. The lessons learned consider how TOD development came to be, and describe important features for economic feasibility and community benefits.

BRT and TOD

While TOD has been traditionally associated with rail transit, Bus Rapid Transit (BRT) is in a position to lead the next frontier of transportation systems, primarily due to its relatively low cost-to-benefit ratio and ability to provide service at levels comparable to other fixed guideway systems.

The Cleveland Health Line has often been credited as one of the most successful BRT systems in the country, having spun off approximately \$9.5B in private and institutional development within walking distance of the corridor. When planning for TOD around BRT stations, there are additional considerations that should be taken into account - mostly due to the zone of influence and perceptions of bus-based systems on market demand. A BRT Station with a similar context and market demand will generally support a similar amount of development as a rail station.

HOW TO USE THIS BOOK

This book includes lessons learned from successfully built TODs to assist those who are interested in development along Wake County BRT Corridors. Key components of this Precedent Book are organized into five sections:

- 1. Introduction
- 2. Why Invest in TOD?
- 3. What are the Types of TOD?
- 4. How to Successfully Build TOD
- 5. Case Studies

TOD Precedent Book

The Precedent Book was prepared to support the development community interested in pursuing opportunities for TOD around the Wake County BRT Corridors.

Introduction

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2 WHY INVEST IN TOD?

TOD real estate investments offer advantages when compared with auto-reliant locations.

STRONG MARKET DEMAND

Differences in real estate value are often explained with a simple adage: “location, location, location.” This is especially true in the case of TODs, where location demand can be thought of in three different ways:

EASY REGIONAL ACCESS

When choosing where to locate, residents and business people want to get what they need with relative ease. The market places greater value on locations with greater travel options and reduced travel costs – as measured in time and money – especially for trips to central business districts and employment-focused activity centers. Reduced travel costs also enhance affordability in TODs.

As the nation’s metropolitan areas continue to grow, real estate demand will continue to rise for locations that offer convenience, save money, and enhance quality of life. For Raleigh, Wake County’s Transit Investment Strategy Report (2016) found that congestion along major corridors can be expected to worsen significantly and will lead to growing demand for fast reliable alternatives to car travel.

As transit service increases travel options for residents and employees, it reduces travel costs for trips to the central business district and regional destinations – and market demand increases.

A WALKABLE NEIGHBORHOOD

TODs offer convenient local access to daily activities, such as getting groceries, walking to school, and enjoying parks. Local destinations bring “location-efficient” value to the homes and jobs that are within walking distance. In Raleigh and throughout the country, real estate markets show higher demand for residential and employment districts that offer shops, services and amenities. Walk-to conveniences add value and reduce use of private cars and average driving distance when they are used, in addition to providing health and environmental benefits from reduced vehicle emissions and miles traveled.

COMMUNITY-CENTERED LIFESTYLE

TOD’s value-add is more than better regional and local access. TODs mix residential uses and employment with commercial conveniences, recreational open space, and other community amenities. TOD planning and design creates a whole community where many if not most activities take place close to home or work.

TODs stress pedestrian-friendly routes to encourage car-free transit and local trips, and the quality of walking environments adds value in and of itself. The “2013 Community Performance Survey” from the National Association of REALTORS® showed 60 percent of respondents favored diverse, walkable communities that are closer to employment. Through urban design and land use mix, TODs are more attractive to home-buyers, renters, and employers, than developments that segregate land uses and rely on private cars for most trips.

HIGHER DEVELOPMENT YIELDS

TODs are generally more compact than auto-reliant developments, and with a greater intensity and diversity of use within a walkable district, that can result in higher returns on investment and a wider range of real estate products.

COMPACT DEVELOPMENT

High market demand for and limited supply of TODs justify investments of higher residential density and higher commercial intensity than auto-reliant locations. In Raleigh, zoning recommendations allow for and encourage more residential density and commercial intensity in exchange for housing affordability and/or transit-accessible jobs. Specifically, the TOD Overlay includes an “affordability bonus,” which would allow additional building height in exchange for affordable housing units, and an “employment bonus” that allows more building height for job-generating uses.

REDUCED DRIVING AND PARKING

People who live or work in TODs drive less and require less parking than their auto-reliant counterparts, translating into reduced transportation-related expenses and more income being available to its residents. Some banks go so far as to offer TOD households more favorable “location-efficient mortgages.” Right-sizing parking ratios to actual performance increases the potential for higher densities. Developers who do so can serve more development with less parking. Because parking can comprise a large part of a development site, reductions in parking can significantly boost development yield and also reduce development costs. This is especially true for development projects that rely on structured parking.

FLEXIBILITY IN MEETING DEMANDS

TODs will have residential and commercial uses, which can also be thought of as real estate “products.” Residential products may include a mix of apartments, townhouses, and detached single-family home products, and of which each may appeal to different type of household in terms of tenure, size, and affordability. Commercial uses may include office buildings, research and development, lodging, entertainment, and retail.

Developers can use TOD’s mixed-use platform to their advantage. For example, day care and restaurants may be more successful near office buildings, and office buildings near day care and restaurants may have lower vacancy rates. Such synergies can translate into more market demand and investor interest.

In larger TOD projects where there is a greater mix of uses and independent development parcels, product diversity also helps manage risk, as different product types will follow different market cycles — the ups-and-downs of market demand. To illustrate, multifamily housing may be a more successful investments venture than a single-family investment, or vice versa. Furthermore, market shocks can come unexpectedly and product diversity reduces market risk.

POLICY INCENTIVES

The City of Raleigh is working to provide policy support for equitable TOD around transit. The ETOD Guidebook provides a “Policy Toolkit” with the following elements:

ZONING TOOLS

The Toolkit recommends zoning overlay zones to encourage compact, walkable mixed-use communities while expanding affordable housing options. It provides an “affordability bonus” and “employment bonus” that allows additional building height in exchange for affordable housing units or job-generating uses respectively. Because people in TODs drive less, the Toolkit also recommends that parking requirements be reduced.

EQUITY FUND

The recommended Equity Fund would capture a part of new tax revenue from TODs and reinvest the revenue within TODs. Equity Funds could be used for affordable housing, public art, and pedestrian & bicycle safety improvements.

LAND PARTNERSHIPS AND AFFORDABLE HOUSING FUND

The Toolkit recommends that the City play a proactive role in acquiring and preparing land for development and partnering with developers, non-profits, and land trusts, to achieve deeper levels of affordability. The City’s existing Housing Fund can be expanded to provide low-interest loans to develop affordable housing within TODs.

NEIGHBORHOOD STABILIZATION

The Toolkit recommendations seek to minimize displacement of residents and businesses as TOD development occurs, with building rehabilitation assistance, anti-predatory real estate education, tenant legal assistance, and small business assistance.

EQUITABLE PARTICIPATION

The Toolkit calls for local worker participation in BRT construction, equitable homeownership tax assistance, and giving priority to existing residents when creating new residential units.

3 WHAT ARE THE TYPES OF TOD?

STATION AREA TYPES

The ETOD guidebook presents 5 Station Area Types defined by different land uses and development scales.

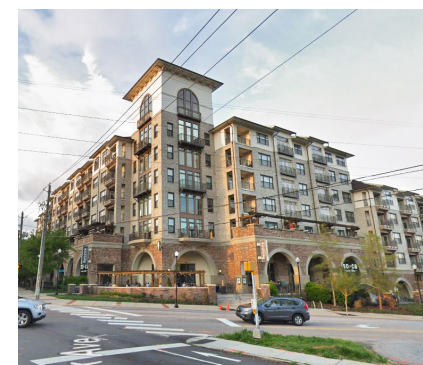
- **Downtown**
- **Emerging Urban Center**
- **Neighborhood Center**
- **Campus**
- **Park**

Given the unique context for downtown development and limited opportunities to grow in the Park station area type, case studies in this book focus on the following three Station Area Types that are common along the Western Boulevard corridor within the planned Wake County BRT system. These types of opportunities are based on existing conditions and an assessment of appropriate future scale.



Emerging Urban Centers

Emerging Urban Centers are TODs that are expected to become mixed-use activity centers with a concentration of commercial and community activities, such as retail, entertainment, office, cultural uses, and government services. Residential uses are also expected in Emerging Urban Centers. While the market will ultimately determine the height of new buildings, heights up to 12 stories – or 20 stories – are expected in the core area of Emerging Urban Centers with much lower heights at Station Area edges.



Neighborhood Centers

Neighborhood Centers are TODs that are expected to have a residential focus, along with local-serving commercial and community uses. Neighborhood Centers may be up to 7 stories in the core area of the Station Area, with careful transitions down to 3 or 4 stories at the edge where it meets existing residential areas.



Campus TODs

Campus TODs are near and expected to complement a medical or university campus. As such, they are expected to be regional employment centers comprised of some combination of office, research & development, medical, and institutional uses. Local-serving retail, restaurants, and services would serve these uses. Building heights among Campus TODs will dependent needs of each institution.

SITE SIZE

While the overall principles are consistent, there are specific approaches that are more relevant than others depending on parcel size. Larger development sites allow projects with more product mix, such as residential, commercial, and community uses. Larger sites allow different uses to be mixed horizontally. Smaller “infill” sites offer less opportunity for horizontal mix, although vertical mixing of housing or office over ground-floor shops is possible.

The ideal TOD site is part of a connected street grid comprised of walkable blocks. Larger parcels, typically associated with more suburban sites can be adopted to support TOD by breaking up larger parcels into a smaller development sites. This is a proven strategy for creating successful TOD on larger parcels and can be part of a strategy to create a unique sense of place where none existed before.

4 HOW TO SUCCESSFULLY BUILD TOD

DEVELOPMENT CHALLENGES TO TOD

There are many positives to developing TOD, but developers should also be aware of some of the challenges to building and developing TOD. While they are becoming more common, there are structural impediments to financing mixed-use development. Most banks and investors are risk-averse and are more familiar with more-common auto-centric patterns of development. Banks may not be familiar with TOD and may be able to finance a single structure with both residential and commercial uses. As a condition of financing, they may require developers to apply higher parking requirements than are necessary for TOD.

TOD is experienced differently than more common highway style development, because TOD is focused on the public realm and around a walkable environment design of buildings. Details such as an active streetscape and interesting corners are much more important in TOD than developers may be accustomed to.

Because TOD by definition must be walkable to transit, there may be more competition for desirable development parcels. In areas with more intense development requiring larger parcels, assembly of smaller parcels over time may be required. Assemblages will need to be accounted for in development schedules and will require a longer-term outlook than some developers may be accustomed to.

While TOD may require less parking per occupant, higher density TOD may require structured parking, which may increase the cost of development or create design challenges that require parking to be screened from view from the street.

Finally, TOD is associated with densities relatively higher than the surrounding non-TOD neighborhoods. These neighbors often oppose relatively higher density development as their first response to news of TOD. Getting these stakeholders to support development may require additional outreach and engagement than a more typical lower density development would.

TOD LESSONS LEARNED

What does it take to develop successful transit-oriented development? The following principles encapsulate basic market-based essentials for TOD, based on lessons learned. These lessons learned are meant to be a reference for property owners who may be considering TOD opportunities, or developers who have made a commitment to TOD and want to enjoy higher returns and minimize risks.

This section will discuss the following Lessons Learned for building TOD:

1. **Advance a Shared Vision**
2. **Form Partnerships**
3. **Leverage Incentives**
4. **Tailor TOD to Market Demands**
5. **Respect the Neighborhood Context**
6. **Create a Great Public Realm**
7. **Maximize Development**
8. **Program a Mix of Uses**
9. **Be Flexible in Identifying Sites for TOD**



The Market Common at Clarendon was completed after almost a decade of collective visioning between Arlington County and the local community.

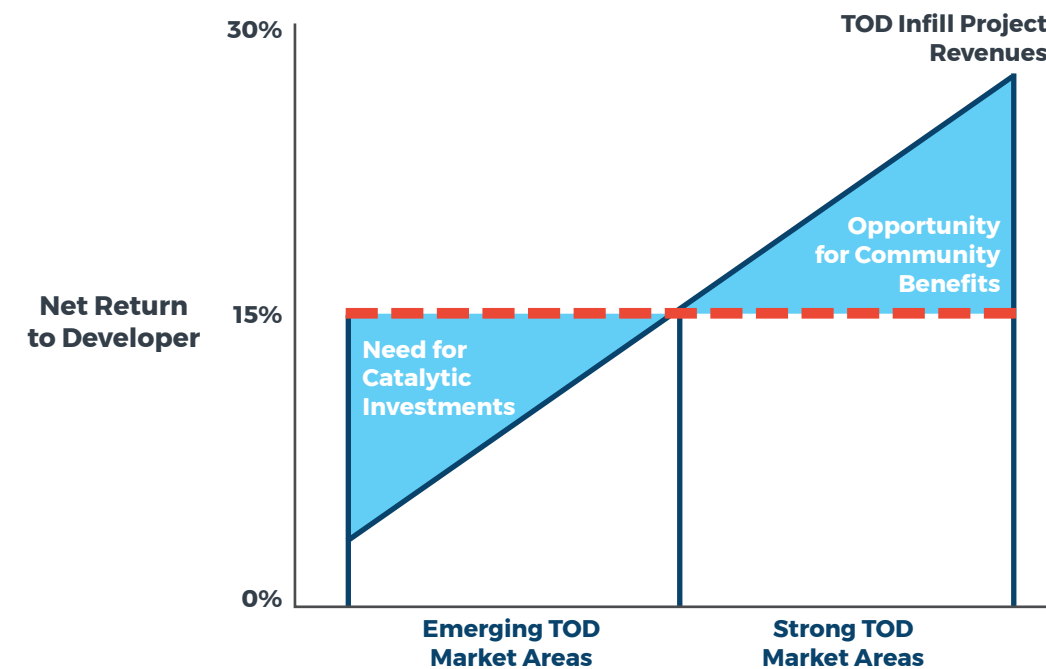
Source: <https://www.antunovich.com/projects/master-planning/the-market-common-clarendon>

ADVANCE A SHARED VISION

Experience has shown that plans for TOD can require persistence and perspective. Often, governments play a vital role in initiating a vision for TOD and its benefits, but developers serve as catalysts for advancing the shared vision to make it real. This is especially true when a developer controls a site large enough to serve as a catalyst by changing perceptions of what's possible is ambitious.

In suburban areas, transit-oriented development means the transformation of low density sites to more compact, integrated, and intentional patterns of development. In suburban Arlington County, Virginia, market success of transit-oriented development was preceded by long-range planning that set the stage for TOD followed by a developer's engagement of community and financial stakeholders.

Real Estate Market Needs and TOD Investment Needs¹



¹ <http://ctod.org/pdfs/2008MTCFinancingTOD.pdf>

Arlington's Clarendon Market Common redeveloped a vacant suburban shopping center that was flagged by the local government as an opportunity but required a developer to seize the opportunity and work through community concerns while simultaneously satisfying programmatic goals and design requirements of financial investors. After Market Common's success, the community's long-range vision embraced even higher density near transit, which paved the way for more infill projects.

In urban areas, transit-oriented development means shifting perspectives about areas that have been passed over after years of neglect. In East Austin Texas, where a changing economy led to a decline of industrial uses and general disinvestment, support for mixed-use redevelopment coalesced around a bold vision for the neighborhood.



Virginia Commonwealth University reoriented itself along the BRT corridor to make way for TOD to frame the corridor.

Source: Beyond DC (CC BY-NC 2.0), <https://www.flickr.com/photos/beyonddc/29494657217/in/album-72157624088413711/>

The City of Austin and Metro Austin came together to redevelop an abandoned railyard (East Austin's largest opportunity site) based on a long-range vision with community buy-in for the larger district. Developer commitment to the railyard site was accompanied by commitments by several other developers on nearby sites – and yielded the creation of a dynamic mixed-use urban district.

For institutions like universities and medical centers, transit-oriented development offers an opportunity to develop a more cohesive campus and more recognizable identity. As institutions grow, TODs can serve as gateways, both physical and symbolic, as transit stations are regional arrival points where development by institutions can announce their presence. This was done in Richmond Virginia, where Virginia Commonwealth University reoriented its campus away from the main road to frame the road with new BRT and create a new mixed-use boulevard.



Cleveland State University has a dedicated Healthline BRT stop, and encourages students to utilize its service to reach destinations throughout the corridor.

Source: Cleveland State University, <https://www.csuohio.edu/sustainability/transportation>

In Cleveland Ohio, the Cleveland Clinic medical center and Cleveland State University took advantage of a similar opportunity to orient their institution's growth toward BRT stations. Complementary growth followed, as research & development companies, residential developers, retailers, and hoteliers recognized synergies with these institutions and located to form more complete urban districts.

FORM PARTNERSHIPS

Public-private partnerships can be used to enhance project feasibility and attain higher levels of community benefits. As a vision is developed, it can be used as a vehicle for aligning necessary actions among agencies and other partners. A successful partnership plays to the strengths and abilities of each member. Private developers bring investment capital and know-how, attend to consumer demographics and preferences, and call out market-based "bottom lines." Public partners oversee regulatory decisions and organize infrastructure investments.

Where the effects from community requirements on development feasibility are unclear, the community can retain a trusted real estate market expert to guide decisions, and a developer can offer to reimburse the community for such work. For example, Berkeley California adopted affordable housing requirements but community members were reluctant to allow buildings over 10-stories in height. An economic analysis by an independent consultant explained the effects of building height on development feasibility, such that community decision makers decided to allow taller buildings so that development with affordable housing would be feasible.

Non-profit organizations also play a role to develop affordable projects within TOD, as well as promote job training and small business development. In Minneapolis-Saint Paul, Minnesota, a partnership of philanthropic organizations was formed to promote affordable housing and equitable economic development along the region's principal transit corridors. With funding from the regional government, the partnership facilitated land acquisition to develop low-income housing, support job training, and assist local entrepreneurs.

LEVERAGE INCENTIVES

Public agencies can agree to fund public improvements and other public benefits, and pay for them using taxes or fees on development after it occurs, using "value capture financing" to reduce developers' upfront cost burden. In Atlanta, Georgia, value-capture financing was employed for environmental remediation of TOD opportunity sites and to fund TOD infrastructure improvements. In Denver, Colorado, value capture financing was used for the historic restoration of Union Station and for redevelopment of surrounding land by assembling parcels and constructing infrastructure.

TAILOR TOD TO MARKET DEMAND

Because return on investment is essential for developer participation, TOD needs to be adapted to reflect market demand, parcel control, and construction cost realities. In this respect, TOD opportunities are not all equal. In some locations, market demand is high enough for a project to accommodate every aspiration a developer and community may have as far as densities, open space, development impact fees, and other community contributions.

Charlotte, North Carolina, has experienced considerable market driven investment along its LYNX light rail transit network. A case in point is Charlotte's South End district, where incremental infill development has transformed an underutilized commercial area into an urban center. Initially, residential development followed a low-rise garden- apartment format with surface parking. More recent development includes a mid-rise mixed-use development complete with on-site amenities, structured parking, and 120-foot-tall residential towers. Project densities have risen as developer confidence in the area has grown, demonstrating the importance of understanding and building to meet market demand.

In Kansas City Missouri, the market for TOD has followed the region's investments in rapid bus and light rail transit. In the historic River Market district, high density infill projects are evidence of the investment value that can be achieved by respecting the local context and market. Marketing materials for 531 Grand and boast of views of Kansas City's downtown skyline, and close proximity to the City Market's restaurants, bars and stores - seemingly marketed to attract young professionals and empty-nester tenants who are increasingly increasing their transit use.

While market demand is high enough to drive development in many areas, other areas may have insufficient market demand to make development feasible unless project costs are contained.

RESPECT THE NEIGHBORHOOD CONTEXT

One size does not fit all. While there are common design principles for TOD, successful TOD design is project specific - responding to market demands but also considering the physical context for the development. In many places, TOD will be constructed in a station area that is undergoing change with the arrival of transit, meaning current and future conditions may not be the same. The mix of uses, building scale and detailing, pedestrian routes to and from the project, and the location and character of open space and parks near the proposed TOD should be considered and influence the design of the TOD project. Since TOD is typically denser than areas further from the station, transitioning from a higher to lower density context can be an especially important strategy to maintain the character of existing neighborhoods and reassure current residents that their concerns are heard.



To better integrate the development into the surrounding low-density neighborhood, Townhomes at the edge of the development were designed to face the street similar to the existing single family homes across the street to maintain the neighborhood fabric.

Source: <https://www.antunovich.com/projects/master-planning/the-market-common-clarendon>

An example of this is the Clarendon Market Common. The project faces a busy retail street, but its adjacent neighbors on the side and rear of the project are residential neighborhoods of single-family detached homes. Retail uses are oriented to the commercial street with mid-rise residential towers above. A zone of townhouse scaled heights and densities transition from the mid-rise towers to the single-family homes. The townhouses face landscaped mews that connect the mixed-use core of the development to the adjacent neighborhood. These rows of townhouses are capped with an end unit that faces the single-family homes across the street, mimicking the scale and density of the homes.



Arlington County and the community believed it was critical to have a great public realm at the center of the Market Commons that anchors the development and provides a quality open space.

Source: <https://www.antunovich.com/projects/master-planning/the-market-common-clarendon>

CREATE A GREAT PUBLIC REALM

Transit-oriented development works – and sells best when it makes a great place. Most TODs feature residential products with less private open space than single-family homes or even garden apartments. Meaningful and usable open space such as parks and even sidewalks, and the design of them, take on greater importance than in traditional suburban development. With TOD development, street activation is crucial. Transit-oriented development relies on the quality of the pedestrian experience for success, and it is not enough to bring together a mix of uses together near transit, if people don't want to walk.

Street connections and infrastructure conditions to and from the transit station are also critical for TOD success. Recognizing this, Florida's Department of Transportation (FDOT) developed a handbook of "Transit and Complete Streets Practices." A context classification system provides a framework for arriving at complete streets solutions that are appropriate to local context and linking the reader to best practices for street design.

The better the pedestrian experience along streets and paths, the more successful the TOD in meeting buyer expectation for walkable communities. Paths next to walls or parking lots can feel alienating, so parking can be placed behind or under buildings instead. Paths lined by storefronts or other active uses attract more activity and have windows that put "eyes on the street."

In Clarendon Market Commons, retail storefronts and residential mid-rise buildings are focused around a central, publicly accessible open space. This "green" is programmed with passive and active spaces; hard and soft surfaces to allow for varied programming and uses. A children's playground attracts both residents and visitors to create a true gathering place for the community at the heart of this TOD.^{1 2}

MAXIMIZE DEVELOPMENT

Meeting targets for financial returns means optimizing development yield within the physical and financial limits imposed by zoning regulations and building codes. Many TOD apartment buildings are the maximum height allowable when using less expensive wood frame construction: four stories of wood frame construction, and five stories with fire-resistive wood or steel studs. Often this less expensive form of residential construction is placed above a first floor with concrete construction (sometimes called a "concrete podium"). A concrete podium in buildings with vertical mixed-use are often accompanied by ground-floor shops that face the street and a parking garage or parking structure midblock.

¹ <https://grandboulevard.net/projects/multi-modal-corridor-plan>

² https://www.fdot.gov/docs/default-source/transit/documents/FDOTCO_ANationalSynthesisofTransit-inCompleteStreets_FinalReport_20180508.pdf



Block A of Plaza Saltillo includes a concrete podium that integrates a grocery store and parking under the residential portion of the building.

Source: <https://jhparch.com/projects/plaza-salttillo>

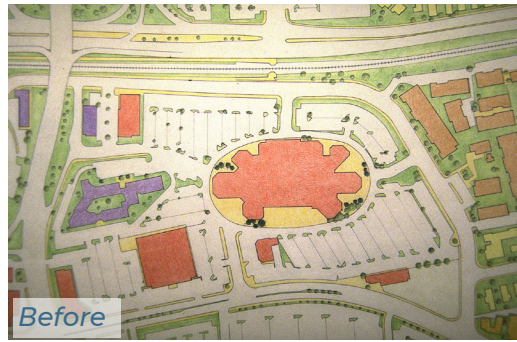
The case studies featured illustrate this point. In East Austin Texas, residential apartments are built above a concrete podium used to line the principal street with storefronts while placing access to parking garages and service/loading areas on side streets; similar construction is used at the Clarendon Market Common. Costs associated with vertical mixed-use can be reduced if the parking structure stands separate from the residential building, such as wrapping residential wood-frame construction around a midblock parking structure. Residential projects may exceed heights permitted than if less expensive residential construction is used, but taller buildings must then rely on more expensive concrete and steel-frame construction – and are generally reserved for project locations where higher rates of return can justify higher construction costs.

Development intensities can also be increased by right-sizing on-site parking to reflect TOD parking demand. People who want to drive less are especially interested in TOD, and TODs are associated with lower parking rates and fewer vehicle miles driven. Less parking means lower construction costs (especially when parking is below grade or in a parking structure), or more development for the same amount of parking, which can be pivotal for development feasibility. Right-sized parking can provide more physical space and financial capacity, which can make a marginal project feasible or deliver more community benefits.

Because TODs offer convenient alternatives to the car, developers and municipalities can work to make parking more efficient with implications for developer costs and yields. Urban Land Institute’s “Shared Parking” was first published in the 1990s and explains how to accurately estimate the parking demand for projects with a mix of land uses. Since parking demand for particular uses vary by time-of-day, some parking spaces can be shared and a project’s overall amount of parking can be less.

PROGRAM A MIX OF USES

A successful TOD district will contain a mix of uses. For the developer, portfolio diversification makes for good investments, and land use diversification makes for more vibrant TODs. People from every part of the economic spectrum like to live near transit and local destinations, and employers recognize that business locations with urban amenities can attract more qualified employees. Different housing types will appeal to people at different stages of their life and different incomes. By diversifying real estate products, developers can appeal to multiple market segments simultaneously, which allows for faster market absorption and greater resilience if a specific market softens.



"The Crossing" replaced the aging Old Mill Shopping Center, bringing a diverse range of housing options next to a commuter rail station, including single-family units built for Phase 1.

Source: Calthorpe Associates

In Mountain View California, an aging shopping center with commuter rail access, was redeveloped as a high-density residential neighborhood with diverse product types called "the Crossing." Because of an economic downturn, the first residential product built and sold were detached single-family homes on small lots. Attached single-family townhouses were next in line. By the time single-family products had sold, the real estate market for multi-family apartments had returned, and this product type was built in the project's final phase.

Market success also depends on the right mix of uses. TOD offers flexibility for projects that are more-or-less residential, office, retail, or other use. Within each TOD, the proportion of each use will vary depending on local market and demographic factors. Also recognize that it's often important to mix uses horizontally. Even if they are mixed, different land uses and different real estate products may need to be designed, financed, and constructed separately.



BE FLEXIBLE IN IDENTIFYING SITES FOR TOD

Sites that are appropriate for TOD may be limited. To support TOD, a parcel must be within walking distance to transit. Greenfield sites unencumbered by existing development will be limited. Many parcels within the station areas will already be developed but with access to transit and may now be primed to be redeveloped to higher densities and better uses.

Another strategy is to redevelop surface parking lots with TOD. Auto-centric development comes with large parking requirements, almost always provided in surface parking lots. The reduced parking requirements for TOD may allow for surface lots to be redeveloped, or the higher values associated with TOD may justify replacing surface parking with structured parking, freeing up land for TOD. It may be possible to keep existing uses and still develop a portion of a parcel for TOD.

In Tysons, VA, many of the parcels being developed for TOD contain existing uses that will remain, and it is the surface parking lots that are being redeveloped as TOD. As part of the entitlement and approvals process, developers are allowed to reduce parking requirements over time. This recognizes that it may take time to shift the preferred travel mode from single occupant vehicles to transit; that in the short term, lease agreements often require property owners to provide minimum parking ratios that exceed the lower levels associated with TOD and that lenders may have their own parking requirements that developers must meet as a condition of getting financing.

While smaller sites can support TOD, larger sites may offer the potential for an anchor development with a greater mix of uses. In many of the station areas, large parcels under single ownership may not be available meaning development parcels will need to be assembled from smaller parcels. This may be challenging, as it will extend development schedules, making it more difficult to time development to meet market demands and adding another level of uncertainty to the project.

There may be opportunities for the City of Raleigh, the public, and land owners to assess areas along the corridors where the assemblage of smaller parcels into a larger site could facilitate and achieve TOD visions. Transit agencies and municipalities can acquire land, assemble small parcels, and make those sites available for development through public-private joint development activities. Development projects may depend on infrastructure, parks, or other public investments for which a developer can't afford up front. In places where return-on-investment makes projects too risky, municipalities can increase development activity by working with land owners and developers to reduce upfront costs or defer development fees.

5 CASE STUDIES

This chapter will dive into a few examples of built TODs across the country that were successfully implemented for a variety of reasons. As the previous chapter discussed the principles necessary for how to successfully build TOD, this chapter provides real-world examples of these principles being applied in relatively similar markets to that of Raleigh, and in particular the Western Corridor. The case studies presented in this chapter provide some lessons learned for how those interested in developing TOD:

- Incorporating Affordable Housing, Public Space, and Retail Critical to neighborhoods such as grocery stores.
- Unique ways of consolidating parking and screening it from the public right of ways.
- The Importance of a Collective Vision and Working with communities to ensure the retail options reflect local needs, such as incorporating a grocery store
- Leveraging Design Guidelines to manage the potential conflict between higher density TODs and surrounding lower-density neighborhoods by diversifying the real estate product and tapering building heights
- Collaboration with local institutions for more integrated TODs.

SALTILLO RAILYARD REDEVELOPMENT - AUSTIN, TX



Source: <https://www.endeavor-re.com/properties/salttillo-retail/>

Project data

- Site area: 10 acres
- Residential Units: 800
- Affordable Units (%): 15%
- Retail Gross Leasable Area (SF): 110,000
- Office Gross Leasable Area (SF): 150,000
- Landscaped or Open Spaces: 1 acre

GENERAL STUDY

Saltillo is a 6-block 10-acre project that has contributed to the urban renaissance of the East Austin district, where vacant and underutilized land is being transformed into a vibrant urban district. Principally through redevelopment and adaptive re-use of industrial properties, East Austin now features a vibrant mix of residences, businesses, restaurants, and retail, connected by streets lined by building fronts.

The Saltillo site has served as a catalyst for public and private interest in making East Austin more urban and transit-oriented. Named after Austin's sister city, Saltillo, Mexico, the site's potential as a larger opportunity in an Emerging Urban Center was recognized by decision-makers early on. Austin's transit agency, Capital Metro, acquired the abandoned railyard in 1995 as it acquired rights-of-way for a regional Light Rail Transit (LRT) system. Since then, the Saltillo railyard site has been remade and has served as a catalyst for remarkable transformation and intensification of East Austin.



Looking west to Downtown Austin, the former railyard lays underutilized years before development was set to begin

Source: Andrea Calo, <https://austin.curbed.com/2018/9/19/17861438/plaza-salttillo-neighborhood-development>

PUBLIC-PRIVATE PARTNERSHIP

Public decision-makers used the site acquisition to promote a transit-oriented vision for the Saltillo site and surrounding area. In 2006, shortly after voters authorized funding for MetroRail construction, Capital Metro and the City of Austin hired a consultant team to develop a master plan for the former railyard site. As the master plan of the former railyard site progressed, the City of Austin worked with community members and stakeholders to develop the Saltillo Station Area Plan for an area about four times as large as the Saltillo redevelopment area.

In 2010, the MetroRail Red Line began operations with a station at Plaza Saltillo on the northeast corner of the redevelopment site. The station's opening was accompanied by the creation of a community activity center comprised of a renovated historic depot and new public plaza.

In the decade after the Red Line opened and with the adoption of the Saltillo Station Area Plan, private investment flowed into the area. In 2013, a request for proposals for developers was issued with four principal goals:

1. Increase transit ridership,
2. Generate long-term revenue and optimize value of assets,
3. Create and promote equitable mixed-use and mixed-income communities around transit, and
4. Respond to the community's vision and values.

PLANNING AND DESIGN

The Station Area Plan was adopted in 2008 and accompanied by a "Regulating Plan," a zoning overlay district with development parameters, which included an inclusionary requirement for affordable housing.

The Endeavor Real Estate Group was selected by Capital Metro and, in 2016, they entered into a master development agreement with a 101-year land lease. The agreement was soon revisited, however, as Endeavor sought a height exception for a seven-story office tower to be leased by Google, which Austin's City Council conditioned upon Endeavor's payment of \$600,000 into the City's affordable housing fund.



The Saltillo site plan highlights the connection to transit and the core anchor tenants that serve the neighborhood.

Source: <http://www.plazasalttillo.com/construction-updates/>

The 6-block 10-acre Saltillo project is remarkable for its mix of land uses within an urban format. The project contains:

- 800 apartments (15% affordable to households with the area's Family Median Income),
- A 7-story office tower (totaling 150,000 square feet),
- A Whole Foods grocery store (35,000 square feet),
- A Target department store with CVS Pharmacy,
- A health club,
- Small shops and restaurants, and
- A small park and pedestrian paseos.

East 5th Street connects the north edge of all blocks in the project and extends to the Plaza Saltillo MetroRail station. East 5th Street is the main address for the project's retail and restaurants, except that Whole Foods also faces the Interstate 35 frontage road along the project's west edge for access and visibility. On the ground-floor, parking garages are located behind shops, except where the Whole Foods and Target require more floor area. Parking garage entrances and service zones are situated on cross streets that extend into the site.



An 8-story office tower sits above an urban-Target, providing a strong tenant & ridership base

Source: <https://www.endeavor-re.com/properties/salttillo-retail/>

Residential uses extend four stories above ground-floor shops. This vertical arrangement maximizes Type V wood-frame residential under most building codes and avoids higher constructions per-square-foot costs associated with more than four floors of residential use.

The Saltillo project also features mobility infrastructure and programs. The project features walkable access to the Plaza Saltillo MetroRail station, placing it within minutes of downtown Austin, its convention center, and other regional destinations. The project features reserved car-sharing spaces, bike sharing, secure bicycle parking, electric vehicle charging stations, as well as on-site parking.

FINANCIAL FEASIBILITY

The 10-acre Saltillo project could only be attained after careful proforma financial analysis by Endeavor Real Estate Group of potential project income and costs, and negotiation of terms with Capital Metro based on such analysis. While this type of financial analysis would be proprietary, it probably covered a similar methodology as the financial report contained within the Saltillo Station Area Plan.

The Saltillo Station Area Plan was accompanied by a financial analysis by real estate economists that examined proposed land uses from a product market feasibility standpoint. The Station Area's ability to attract Austin's "creative class" was viewed as critical for demand for urban-style housing and employment space, within a walkable diverse neighborhood with cultural, commercial, and recreational destinations.

The analysis examined market demand for potential TOD uses, as reflected in comparable sale prices and lease rates. The analysis also considered if the cost of new transit-oriented development, including land, construction, parking, and financing would allow developers to make a profit based on market sales prices and level of demand. Finally, the analysis considered the capacity of development to support investments in new public infrastructure, streetscape, open space improvements, and affordable housing, while maintaining market feasibility.

The financial analysis determined that TOD projects would have higher construction costs than less dense projects, and that higher yields and public actions might be needed to enhance the feasibility of TOD projects. Specifically, the Station Area Plan recommended:

- Allowing denser TODs to stimulate developer interest,
- Parking districts or other solutions to reduce or share the high-cost of structured parking, and
- Assembling small parcels into larger development sites such as through direct public action.



The Plaza Saltillo Station Plan, drafted in 2008, was implemented in 2013.

Source: Larry D. Moore, CC BY-SA 3.0. https://commons.wikimedia.org/wiki/File:Plaza_saltillo_station_2012.jpg

A principal challenge cited by the financial analysis is that, where market support for development is less strong, TODs may require high density for financial feasibility. Consequently, conditioning high-density development on the provision of affordable housing may be a disincentive for private developer participation, in the absence of financial incentives. The capacity of TOD to support affordable housing or other costs – while remaining feasible – may merit consideration as it depends on a variety of factors.

PUBLIC IMPROVEMENTS

For the Saltillo Station Area Plan, the financial feasibility analysis determined that most promising potential source of funding for public improvements was Tax Increment Finance (TIF). TIF uses the additional increase in property taxes resulting from new development, which does not increase taxes for existing property owners. Other potential public finance sources included developer impact fees, a public improvements funding district, and Federal and State grants.

CLARENDON MARKET COMMON - ARLINGTON, VA



Source: <https://www.mccafferyinc.com/portfolio/market-common%C2%AE-clarendon>

Project data

- Site area: 9.4 acres
- Townhome Units: 87
- Multi-Family Units: 300
- Retail Gross Leasable Area (SF): 240,000
- Office Gross Leasable Area (SF): 100,000
- Parking Spaces: 1200
- Open Space: .5 acres

GENERAL STUDY

Clarendon Market Common is located on 10 acres in the Clarendon neighborhood of Arlington, Virginia, on a major bus corridor and just one block away from a Washington Area Metro Station. Clarendon Market Common illustrates how to transform an aging suburban retail center – with big box and surface parking – into a new neighborhood with welcoming walking environments framed by multi-story mixed-use buildings.

In 1994, site conditions were described as “amorphous,” as 60% of the site was asphalt. Today, the centerpiece of the project is a linear park surrounded by 240,000 square feet of prime retail, including prominent national retailers such as Pottery Barn, Williams-Sonoma, Barnes & Noble, and Apple Computer. Market Common also includes 300 apartments, 87 townhomes, and 100,000 square feet of office space.



To better integrate the development into the surrounding neighborhood, townhomes were used to taper the density down into the existing residential area

Source: <https://www.antunovich.com/projects/master-planning/the-market-common-clarendon>

PUBLIC RECOGNITION OF OPPORTUNITY

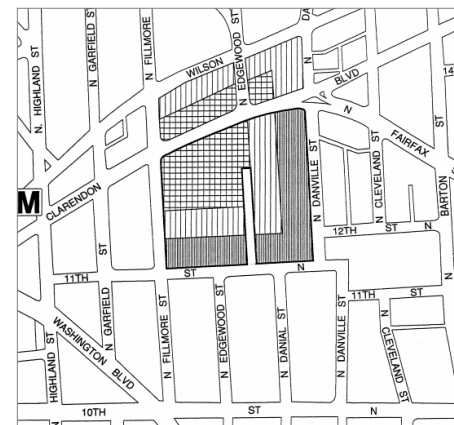
Clarendon Market Common opened in 2001 and was developed by McCaffery Interests. The project came about through a decision-making process that involved Arlington County officials, Clarendon community members, and the developer. In 1994, Arlington County adopted the East Clarendon Special Coordinated Mixed Use District Plan for the project site, which had been vacated in 1993 by Sears Roebuck.

This Plan described the desired future character as an urban village and contained urban design options, one of which suggested retail along Clarendon Boulevard and extending into the site. The 1994 Plan also indicated building heights up to 80 feet in the northwest corner of the site – closest to the Metro station – stepping to only 35 feet along the eastern and southern edges near single-family homes.



An aerial view of the Market Commons and surrounding context (2020)

Source: google maps (2020)



One of the key successes from the development was the developer leaning into the planning work and incorporating urban design recommendations from the Clarendon Mixed Use District Plan. The map above demonstrated the transition from the more dense mixed-use core of the site down into a more traditional, lower density residential area.

Source: East Clarendon Special Coordinated Mixed Use District Plan (1994)

INNOVATION WITHIN A SHARED VISION

In acquiring the Sear Roebuck site, McCaffery Interests recognized the market support for retail and residential based on the area's demographics, and the advantage that placemaking can bring to retail destinations. A narrow linear park was introduced to provide urban amenities and allow views to penetrate from Clarendon Boulevard. The master plan emphasizes pedestrians' experience with intimate public gathering spaces.

The site's dominant building steps back from the area's main intersection to frame a crescent-shaped plaza with an outdoor restaurant and public art, which is clearly visible from the public streets converging on the site. At the same time, McCaffery worked within the community-driven vision in the 1994 Plan, such as to use low-rise townhomes as a transition between the project's mid-rise core and single-family areas.

PARTICIPATING IN A VISION

Regional transit and the Market Commons project have served as a catalyst for further change within the larger Clarendon Metro Station Area, which covers about 212 acres. In 2006, the City of Arlington Virginia adopted the Clarendon Sector Plan, which extended the “urban village concept” for Market Common throughout the station area. The center of the urban village concept is to promote high-quality public environments with connected spaces and a rich mix of uses and a sense of place. The policies and strategies in the Sector Plan build on concepts presented in previous County plans to concentrate a mix of uses around each Metro station with active ground-floor uses, upper-story uses, and lower heights closer to surrounding residential neighborhoods.

Even when Arlington Virginia was characterized by auto-oriented suburban development, it was an early adopter of transit-oriented principles as Washington Area’s Metro transit system was being planned in the 1970s. Arlington would eventually explore alternatives to create more dynamic Metro station areas by guiding land use and density patterns toward mixed-use development to avoid creating places with solely office uses and little evening and weekend, and take advantage of market demand for high-density residential formats. The first Clarendon Sector Plan was adopted in 1984, which mediated between a desire for higher density near transit and protecting the character of residential neighborhoods and historic resources.

CAMPUS TOD, VIRGINIA COMMONWEALTH UNIVERSITY (VCU) AND MEDICAL CENTER

BRT BOULEVARD AS CAMPUS ADDRESS

VCU and VCU Health System is a public education and research university, and a major health center dedicated to advancing knowledge and partnerships that support the community. VCU has an urban campus that is integrated with central Richmond’s gridiron street network. In the 20th century, the VCU campus grew around the main open space in the area, Monroe Park, and campus growth largely passed over the Broad Street, which experienced disinvestment. As planning of The Pulse BRT occurred, VCU reoriented its campus plan to build sizable institutional and mixed-use buildings along West Broad Street, thereby creating a recognizable walkable transit-oriented urban boulevard from a previously neglected underutilized auto-dominated corridor.

› Sports & Entertainment Node

VCU’s growth along West Broad Street has taken advantage of its visibility and transit access, with uses that serve the community. VCU chose West Broad Street as the location of Siegel Center, an indoor arena with 7,500 seats that hosts VCU sport events, along with concerts and other performances. VCU’s sports medicine clinic is located adjacent to Siegel Center. Across Broad Street from the Siegel Center and adjacent to the VCU BRT station, VCU constructed a mobility hub that includes a visitor center, parking garage, and retail space.

› Infill Housing

VCU has also built several blocks of housing that frames West Broad Street. Most, but not all, VCU development has lined streets with active ground-floor space, including retail shops and building lobbies. Exceptions to more active space include blank walls and ground floor residential units, which are unfortunate interruptions in otherwise continuous pedestrian-oriented routes, and might have been mitigated with landscaped setbacks or architectural solutions.



VCU and surrounding institutions are leveraging the BRT to activate the corridor with mixed-use and institutional developments framing the streets.

Source: <https://ggwash.org/view/69056/xx-photos-of-richmonds-new-brt>

› Creative Arts and Community Focus

VCU is also refocusing its creative arts programs to be part of Richmond's emerging Arts District, east of VCU's historic campus with development of the Institute for Contemporary Arts Center and a planned new Arts and Innovation Building that supports academic programs and community engagement. VCU's master plan proposes continued development of programmatic synergies to connect with The Pulse and serve as a new "front door" to the east edge of its campus.

› Medical Center and Biotechnology

The Pulse plays a vital role in connecting VCU's main campus with its Medical Center campus in downtown Richmond, as well as the Virginia Biotechnology Research Park with which VCU is affiliated. With over a half million outpatient visits each year, VCU Medical Center includes an adult and children's hospital comprised of research, clinical, administrative, and support services. The Virginia Biotechnology Research Park houses nearly 70 public and private life sciences companies, research institutes affiliated with VCU, and prominent medical laboratories.

› Transit Pass Program

In 2019, VCU and GRTC entered into an agreement to provide unlimited transit pass access for VCU students and employees. The transit pass program was first tested as a pilot program, during which it was determined to be highly effective at shifting students and employees out of private vehicles in onto The Pulse and other GRTC service. The program has effectively "closed the distance" between VCU's main campus, its Medical Center, a variety of destinations, and housing options. By shifting demand from private vehicles to transit, the transit pass program has also reduced pressures to build expensive new parking garages.



Developments like The Summit are filling in neighborhoods, bringing housing units and redefining the neighborhood grid.

Source: <https://thesummitrva.com/>

RICHMOND INFILL

› Incremental Infill

Development along The Pulse includes construction on West Broad Street in Richmond's Scott's Addition neighborhood, and adjacent to BRT station. Scott's Addition is among Richmond's fastest growing neighborhoods, with high walk scores and mix of housing, shops, and restaurants. "The Summit at Scott's Addition," a 6-story 166-unit apartment building, includes 8,500 square feet of ground-floor retail with parking behind the retail space and below the project. The developer describes Scott's Addition as ideal given the area's walkability, and opportunities to live, work and play in the area.^{1 2}

¹ <https://richmondbizsense.com/2018/06/07/6-story-mixed-use-building-eyed-scotts-addition/#djPop>

² <https://thesummitrva.com/>

CONCLUSION

As the 20-mile BRT system connects Wake County communities, it is critical for both public and private investments to consider principles outlined in the ETOD Guidebook to promote more sustainable and equitable growth. This TOD Precedent book serves as a companion to the ETOD Guidebook, providing additional context and lessons learned for those interested in pursuing development opportunities along the planned BRT Corridors.

In addition, case studies in this book also help land owners and developers to better understand how TOD can be successfully built by illustrating what types of TOD are appropriate in which contexts, the ways in which the City and interested parties can collaborate, and how to integrate new development into and reflect the needs of the communities near the corridor. As the BRT corridors realize their potential to be conduits of economic and community activity, it is important that public and private parties work together to build successful and equitable TODs that connect communities to economic, social, and recreational opportunities, health services, and to each other.



Raleigh

MEETING SUMMARY

PUBLIC KICK-OFF EVENT: NOVEMBER 12, 2019

**WAKE BUS RAPID TRANSIT (BRT):
WESTERN BOULEVARD CORRIDOR STUDY**



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WAKE BRT: WESTERN BOULEVARD CORRIDOR STUDY

KICK-OFF PUBLIC MEETING SUMMARY



OVERVIEW

The City of Raleigh held a community open house kickoff meeting for the Wake Bus Rapid Transit (BRT) Western Boulevard Corridor Study on Tuesday, November 12, 2019 at the McKimmon Center located at 111 Gorman Street, Raleigh, NC 27606. The meeting was originally scheduled for Thursday, September 5, 2019, but due to inclement weather (Hurricane Dorian), the public meeting was rescheduled.



PURPOSE

The purpose of the meeting was to introduce the project, share information on current conditions, relate potential BRT alignment options, and obtain initial community feedback.

GOALS

The goals of this study are to identify a preferred alternative alignment for BRT, understand the development potential along the Western Boulevard corridor, generate consensus for a conceptual land use strategy for the corridor, identify and address safety concerns, and coordinate with other planned improvements.



MEETING NOTIFICATION

Residents were notified of the November 12, 2019 meeting via postcards, City of Raleigh website, press release, email blasts, social media, CAC meeting updates, and pop-up events.



MEETING SUMMARY

The meeting was held from 4:00 pm to 8:00 pm and featured an open house format with a formal presentation that began at 6:30 pm. The meeting was attended by 157 citizens who were able to provide feedback about the study, ask questions, and comment on the BRT.

INFORMATION PROVIDED

In addition to the project information that was presented, participants had the opportunity to speak with representatives from various departments/organizations and obtain information about the following:

- GoRaleigh
- New Bern BRT Project
- Dorothea Dix Park Project
- CoR Housing
- CoR Economic Development
- Census 2020
- Equitable Development Around Transit Project

OPEN HOUSE

During the open house portion of the meeting, participants visited display board stations staffed by the project team, which detailed project information. The information represented on the boards included:

- Wake Transit Plan
- Wake BRT corridors
- Study area map
- Project overview/history and timeline
- Zoning and land use
- Social-economic trends
- Residential and office trends
- Project coordination
- Comments/feedback
- Existing bicycle/pedestrian facilities

Throughout the meeting, participants had multiple options to provide feedback and comment via the community wall, comment map, voluntary demographic survey, event exit survey, and online survey.



COMMUNITY WALL

Participants were asked to answer the following three (3) questions and place their answers on sticky notes to correspond to the appropriate question on the wall.

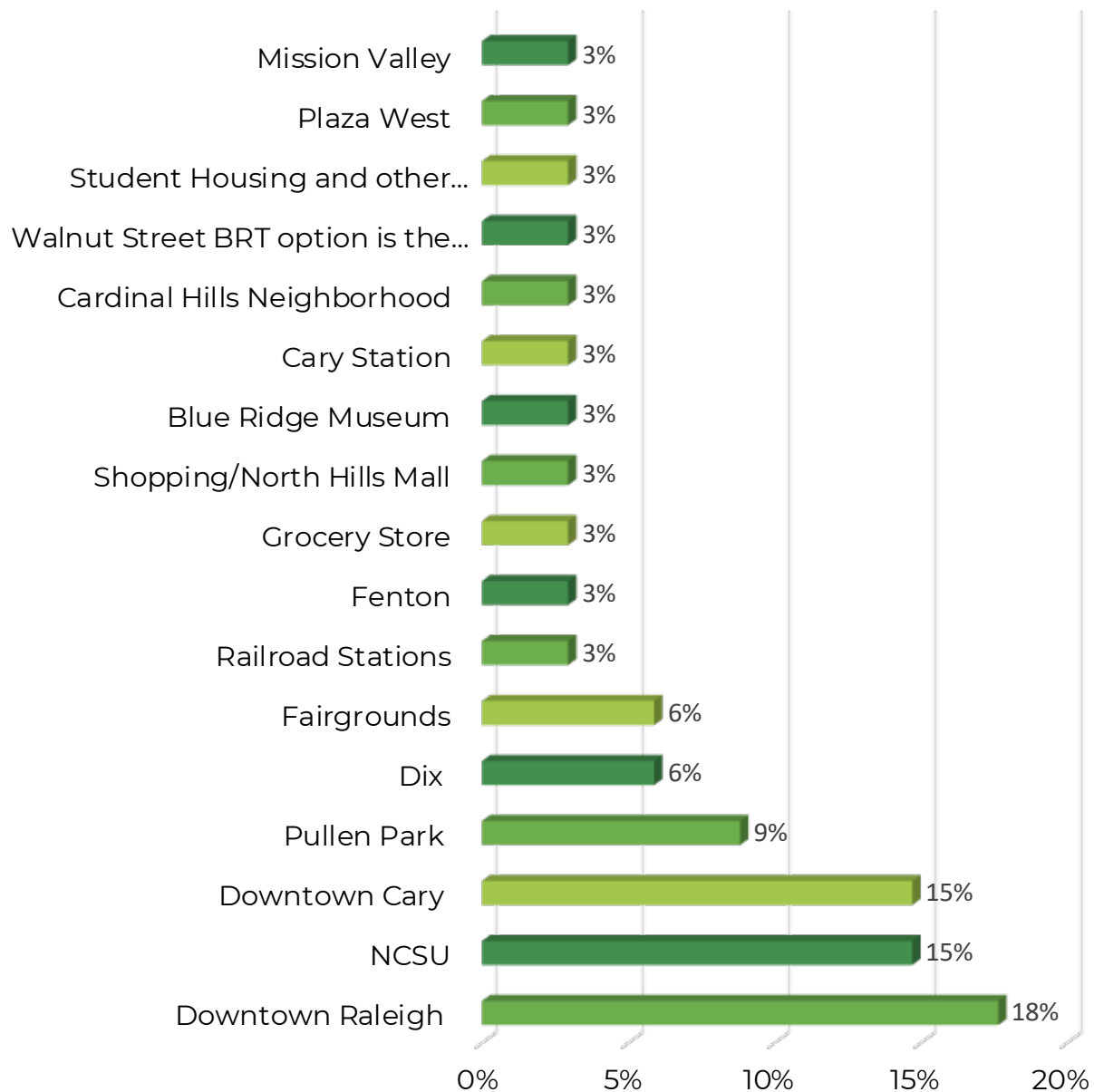
1. What are the important destinations, activities, communities, or landmarks along the Western Boulevard corridor?
2. What excites you about the BRT Study?
3. What questions do you have about Wake BRT: Western Boulevard Corridor Study?

The following pages report the attendees' answers to the three (3) questions above.

COMMUNITY WALL - QUESTION #1

Participants were asked, what are the important destinations, activities, communities, or landmarks along the Western Boulevard corridor? There were a total of 34 responses on nine (9) sticky notes received. Eighteen percent stated Downtown Raleigh, while fifteen percent stated North Carolina State University (NCSU), and fifteen percent stated Downtown Cary (see **chart** below).

Question 1: What are the important destinations, activities, communities, or landmarks along the Western Boulevard corridor?





COMMUNITY WALL - QUESTION #2

Participants were asked, what excites you about the BRT Study? There were a total of 14 responses on 11 sticky notes (see **table** below).

Question 2: What excites you about the BRT Study?

Fast & reliable service between downtown, NCSU and Western Boulevard neighborhoods

Transit oriented development

Having a Transfer Station at the intersection of Chatham Street, NC-54 and Cary Parkway

Work & residence close together

Better access to the whole City

Not being stuck in Western Boulevard traffic

Multi-modal transit options

Save the trees and median along Western Boulevard

More frequent and convenient service between home and work (downtown)

Better connectivity via transit especially between jurisdictions

Opportunity for mixed income housing

That the study is occurring and seeking input from the citizens

Continuous side path on one side

Getting from downtown, Dix and NCSU taking the bus to Cary. Easier access all over SW Raleigh via transit

COMMUNITY WALL - QUESTION #3

Participants were asked, what questions do you have about Wake BRT: Western Boulevard Corridor Study? There were a total of 32 responses on 18 sticky notes received (see **table** below).

Question 3: What questions do you have about Wake BRT: Western Boulevard Corridor Study?

Will there be rain shelters at bus stops and sidewalks?

How can this BRT be extended into western Wake County and Chapel Hill?

Will you preserve the giant trees in the median?

How can people access the bus stops safely crossing Western Boulevard at Ashe Avenue and Pullen Road?

How will the bus line tie in with the train station downtown?

Will the BRT stop at the intersection of Hillsborough and Bashford Road or the middle of Bashford Road?

What will be done with the I-440/Western Boulevard Exchange? Please make it bike/ped friendly. Will NCDOT's mess get cleaned up?

Will you make sure that any residential construction combines housing for all income levels- 30%, 50%, 80% of AMI and market rate?

Are sidewalks going to be included as part of the project? Raleigh's current residential development is allowing residential buildings to be constructed without sidewalks. How will BRT users get to the bus stops and stations?

At the downtown Raleigh end don't continue the segregation of neighborhoods by ending Western Boulevard at Union Station and New Bern at GoRaleigh Station. Align them.

Chatham Street has too many pedestrians; Walnut Street has too much congestion and too many high school students and shopping traffic

I want BRT to go to Western Boulevard and Chatham Street

Where does Western Boulevard end and South Sanders Street begin?

What is really happening with BRT and stations as they approach downtown from the West and South?

There are major existing gaps in transit walkability, grade separations and roads that BRT station connections could be addressing along Western from Pullen Road to Dawson Street

How will the added lane and cross section for BRT affect the current buffer between Western Boulevard and Dorothea Drive & Boylan Heights?

How can you get more people who ride the GoTriangle 300, 301, 305 routes and GoRaleigh routes to provide input in this process?

Will you be able to keep trees that exist in the median when the BRT is constructed?

Are there plans to connect shopping areas and restaurants?

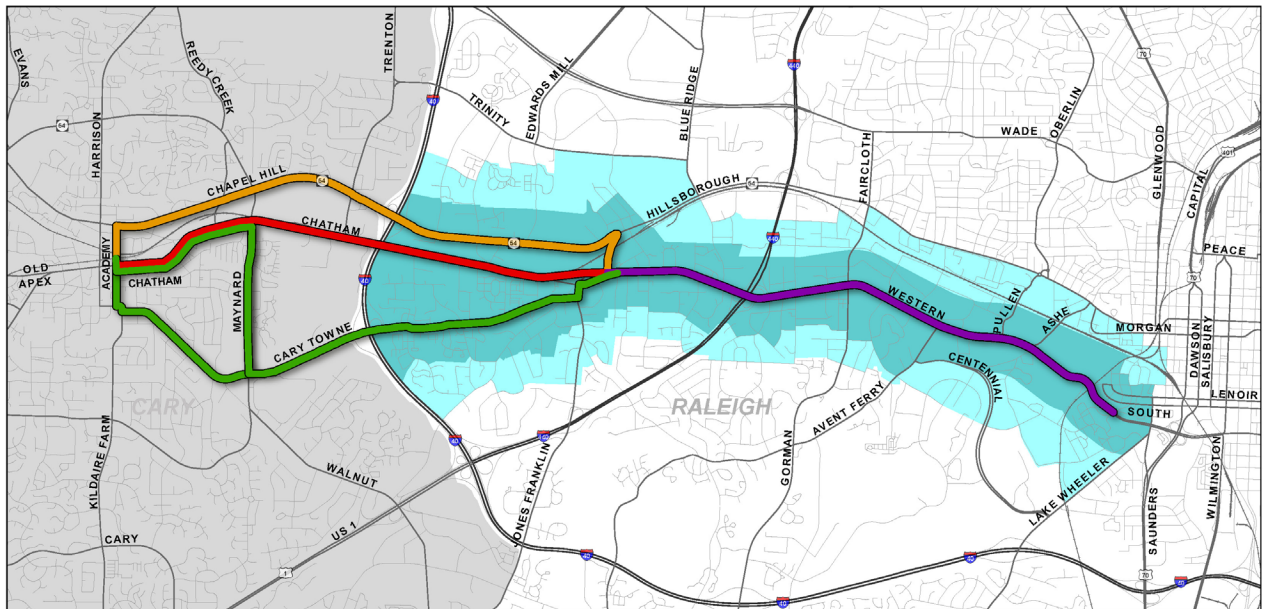
Will the bus stops have beacons for blind travelers to use apps to know where they are or that they are approaching the stop?



COMMENT MAP

An aerial map of the Western Boulevard corridor was displayed to provide attendees the opportunity to provide location-specific comments and concerns. The map showed the corridor/alignments as four color coded alignments. The comments were divided by color segment and a landmark, street, or area was given as a location reference point. A total of 56 sticky notes were received with multiple comments for each segment.

WAKE BRT: WESTERN BOULEVARD CORRIDOR ALIGNMENTS



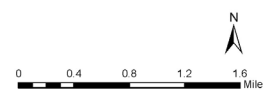
Wake BRT: Western Boulevard Corridor Alignments

- Western Boulevard
- Chapel Hill Road
- Chatham Street / Hillsborough Road
- Western Boulevard Extension / Cary Towne Boulevard

City of Raleigh Study Area

- 1/4 Mile Properties (5-minute walk)
- 1/2 Mile Properties (10-minute walk)

*A land use study for the Cary portion of the BRT Corridor will be completed after selection of a preferred route.



BLUE SEGMENT

Western Boulevard from S. Wilmington Street to Hillsborough Street. A total of 17 sticky notes with 26 responses were received for the blue segment. Multiple responses for the blue segment were connection aesthetics, sidewalks, and pedestrian access.

Location	Response(s)
At Dorothea Drive	Be sensitive to the residents
At Lake Wheeler Road	What will the connection look like
At Dix Park	What will the connection look like
Downtown	Where/how will it connect; join the other three downtowns
Men's Shelter & OCC	Need access to busing, currently Route #21 is one direction
At roundabout at Pullen Road and Hillsborough Street	Need to slow traffic down
Entire corridor	Please incorporate all income levels in new construction
At signalized intersections	Allow median left turns
Rocky Branch Trail	Can't widen Western on the south side of the road due to the existing greenway
At Ashe Avenue	Fewer stops would be needed between Ashe and Downtown if local service is kept
At Medians	Keep the existing trees in the medians (2)
From Pullen Park to Dix Land Bridge	Frequent pedestrian crossing occur
At Pullen Road	Fix the bike signal
Entire project	No need for dedicated busway here (2)
At Morrill Drive	If BRT remains on Western Boulevard than a faster connection to the North Campus is needed instead of Morrill Drive
At Avent Ferry & Morrill Drive	Coordination needed for pedestrian tunnel
Between Gorman Street and Method Drive	Makes this area pedestrian friendly; 10' travel lanes, 35 mph speed, dedicated bus lanes, reduce driveway cuts and add sidewalks
At Kent Street	Create two left turn lanes on Kent Street onto Western Boulevard
Between Gorman Street and Kent Street/Method Road	A lot of infill opportunities exist; I like having both Method Street and Gorman Street stops
West of Kent Road	Add sidewalks on both sides of Western Blvd (2)
West of Kent Road	Add sidewalks to streets leading to Western Blvd (2)
At Blue Ridge Road	Please include dedicated bicycle lanes east of Blue Ridge Road if not the whole corridor

RED SEGMENT

Chatham Street from Western Boulevard to Maynard Road. No sticky note comments were received for the red segment.

GREEN SEGMENT

Western Boulevard Extension from Cary Towne Boulevard to Academy Street. Six (6) sticky note comments with seven (7) responses were provided for the green segment.

Location	Response(s)
At Plaza West Shopping Center	The Plaza West Shopping Center would be a good location for a bus terminal on the western end of the project. (Jones Franklin Road and Western Blvd.
Between Hillsborough Street and Jones Franklin Road	You can't access this portion of the road if you are traveling west since it is currently configured one-way for eastbound traffic
	Green option will be expensive to construct with the cost of acquisitions
Undeveloped land south of the Vie at Raleigh sub-division and the Republic at Raleigh sub-division	Private property acquisition is a concern
At Cary Town Center	I think this is an important stop because of future development of Cary Towne Center and Fenton
Between I-40 and Maynard Road	I like the Green Option, shopping center, high school, downtown, Indian section
SE Corner of Maynard Road and Walnut Street/Cary Towne Boulevard	Teenage drivers, very congested

ORANGE SEGMENT

Chapel Hill Road from Hillsborough Street to Academy Street. There were three (3) sticky notes received with five (5) responses.

Location	Response(s)
The railroad tracks on NE Maynard Road between E Chatham Street and Chapel Hill Road	Please create a grade separation for the crossing
Orange alternative	Probably best for BRT; Chatham is too narrow with ROW issues. Make Chatham a major bikeway.
Chatham Street	High number of pedestrians; these are potential BRT users.

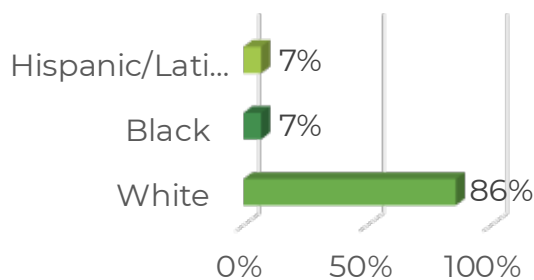
VOLUNTARY DEMOGRAPHICS

The voluntary demographic survey included five (5) demographic questions for participants to complete voluntarily. A total of 15 participants completed the survey during the meeting. Sixty percent of the respondents were male, forty percent were women, forty-six percent were 65 years and older, ninety-three percent spoke English very well, and forty percent of the respondents have household income of \$118,000 or greater (see **demographics** below).

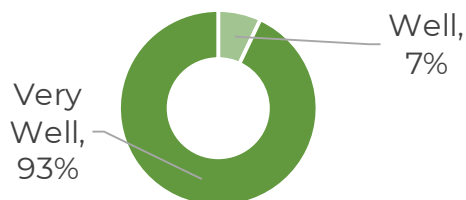
What is your gender identity?



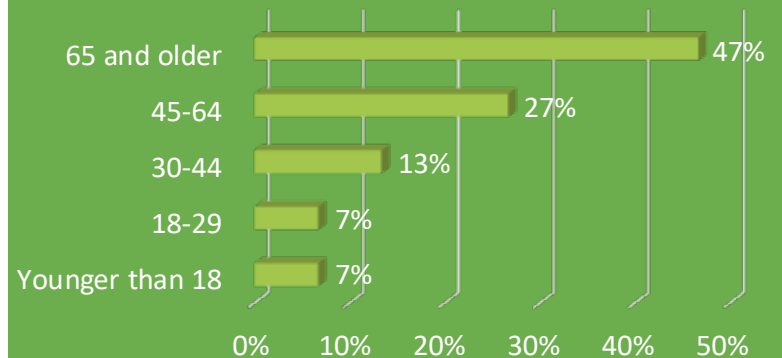
What is your racial identity?



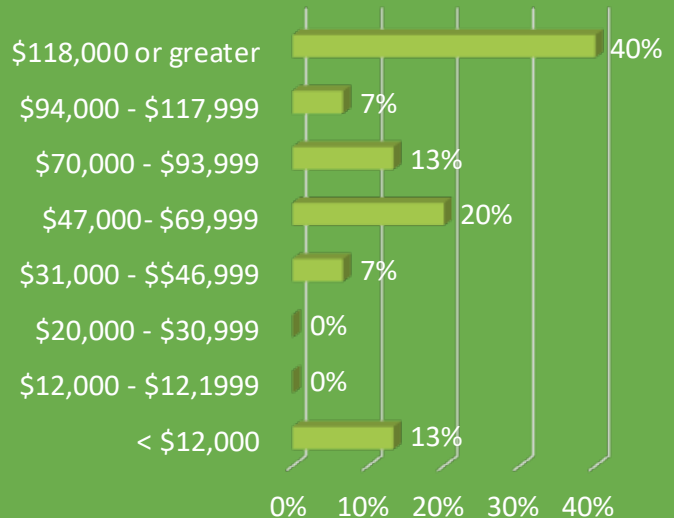
How well do you speak English?



What is your age?



What is your approximate household income?



EVENT EXIT SURVEY

An exit survey was provided to participants to obtain feedback on the meeting format and to allow participants to sign up for project updates via email. A total of 39 participants took the survey. Forty-eight percent of participants strongly agreed that the meeting format was well organized, forty-six percent agreed they received the information they wanted, fifty-three percent strongly agreed that City staff was helpful, fifty-three percent strongly agreed that the location was convenient, forty-three percent agreed that the meeting was a good use of time, and thirty-three percent strongly agreed that the meeting was a good opportunity to be heard.





ONLINE SURVEY

An online survey was conducted between August 6, 2019 to October 6, 2019 to obtain feedback from residents on preferred destinations along Western Boulevard using the proposed BRT service. It was reopened for the November 12th meeting to allow attendees who had not already completed the survey to provide their comments through November 26, 2019. Six (6) participants completed the online survey during the meeting. A total of 429 citizens responded to the online survey. Participants were asked four (4) questions.

1. If BRT service were provided along Western Boulevard, where would you go using the service?
2. Are there any other locations that you would use BRT to travel to along Western Boulevard between Downtown Raleigh and Hillsborough Street that aren't listed on the map? If so, what are they?
3. If BRT services were provided along Chapel Hill Road, E. Chatham, or Cary Towne Boulevard, where would you go using this service?
4. Are there any other locations along Chapel Hill Road, E. Chatham Street, or Cary Towne Boulevard you would like to go using the BRT service?

The following pages report the answers provided to the three (3) questions above.

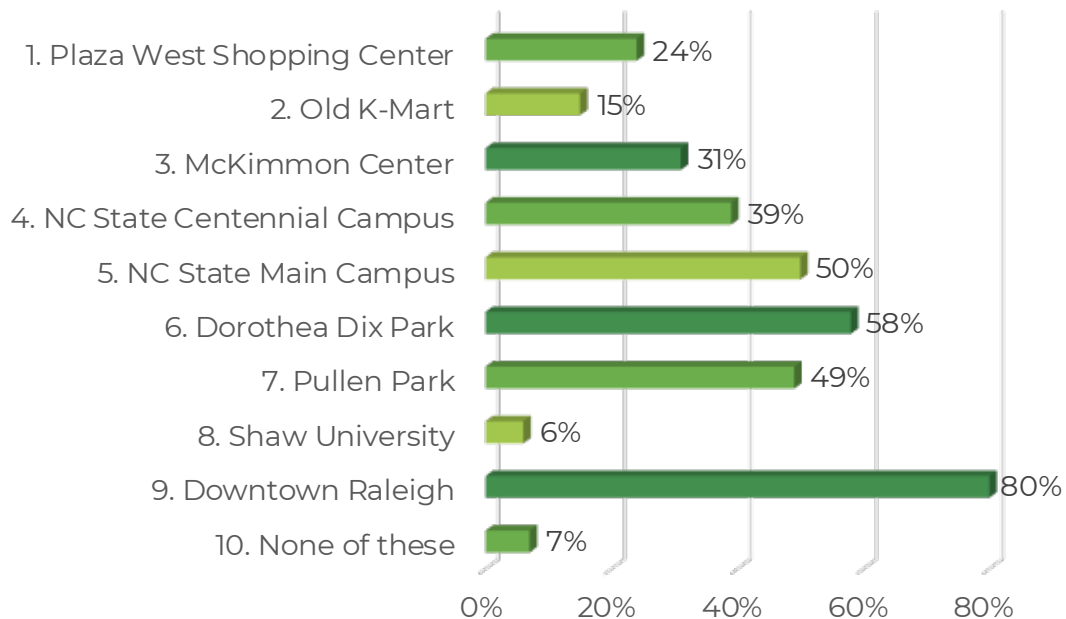


ONLINE SURVEY - QUESTION #1

Participants were asked, if BRT service were provided along Western Boulevard, where would you go using the service?

Eighty percent of participants stated that they would use BRT service along Western Boulevard to go to Downtown Raleigh, while fifty-eight percent would use it to go to Dorothea Dix Park. Other popular destinations include NC State Main and Centennial Campuses, and Pullen Park (see **Destinations** below).

Question 1 Destinations



ONLINE SURVEY - QUESTION #2

Participants were asked, are there any other locations that you would use BRT to travel to along Western Boulevard between Downtown Raleigh and Hillsborough Street that aren't listed on the map? If so, what are they?

A total of 194 responses were given. Seventeen percent of participants stated State Fairground/Flea Market, while eleven percent of participants would use BRT to travel to Mission Valley Shopping Center. Other travel destinations include Downtown Cary, Food Lion and Blue Ridge Road (see **Travel Destinations** below).

Travel Destination(s)

- Mission Valley Shopping Center - 11%
- State Fairground/Flea Market - 9%
- Downtown Cary - 8%
- Food Lion - 6%
- Blue Ridge Road - 6%
- State Farmers Market - 5%
- South side of Western Boulevard between Gorman Street and Method Road - 4%
- NC Museum of Art - 4%
- Boylan - 3%
- Amtrak Station in Cary - 2%
- Cary - 2%
- Old K-Mart - 2%
- Chatham Street/Chatham Square - 2%
- Triangle Family services - 2%
- Cameron Village - 2%
- WakeMed Soccer Park - 2%
- Carter-Finley Stadium - 2%
- PNC Arena - 2%
- JC Raulston Arboretum - 2%
- Intersection of Chatham Street and Academy Street - 1%
- Chavis Park - 1%
- RDU - 1%
- Powell Drive - 1%
- Meredith College - 1%
- Amtrak - 1%
- NCMA - 1%
- Avent Ferry Road - 1%
- Walnut Street - 1%
- Beyond Shaw University - 1%
- Plaza West - 1%
- Cary -Page Walker - 1%
- Cary-Ashworth Drugstore - 1%
- NCSU - 1%
- Cary Bottle Shop - 1%
- Cary Theater - 1%
- Amtrak Station in Raleigh - 1%
- Hillsborough and Chatham Street - 1%
- McKimmon Center - 1%
- Centennial Campus - 1%
- Cary's Main Square - 1%
- Cary Library - 1%
- Downtown Raleigh - 1%
- Martin Luther King Jr. Memorial - 1%
- Performing Arts Center - 1%
- Convention Center - 1%
- Cook Out Restaurant - 1%
- Amedeo's Italian Restaurant - 1%
- Shops on Gorman Street - 1%
- Hunters Creek - 1%
- Cardinal Hills - 1%
- South Hills Mall - 1%
- Buck Jones Road - 1%
- Lake Johnson - 1%
- Western Boulevard and Ashe Street - 1%
- Cathedra - 1%
- Greenways Trailhead - 1%
- Southeast Raleigh - 1%
- Union Station - 1%
- Movie Theater - 1%
- Red Hat Theater - 1%
- NC Courage - 1%
- ESA - 1%
- Edward Mills - 1%
- Prison - 1%

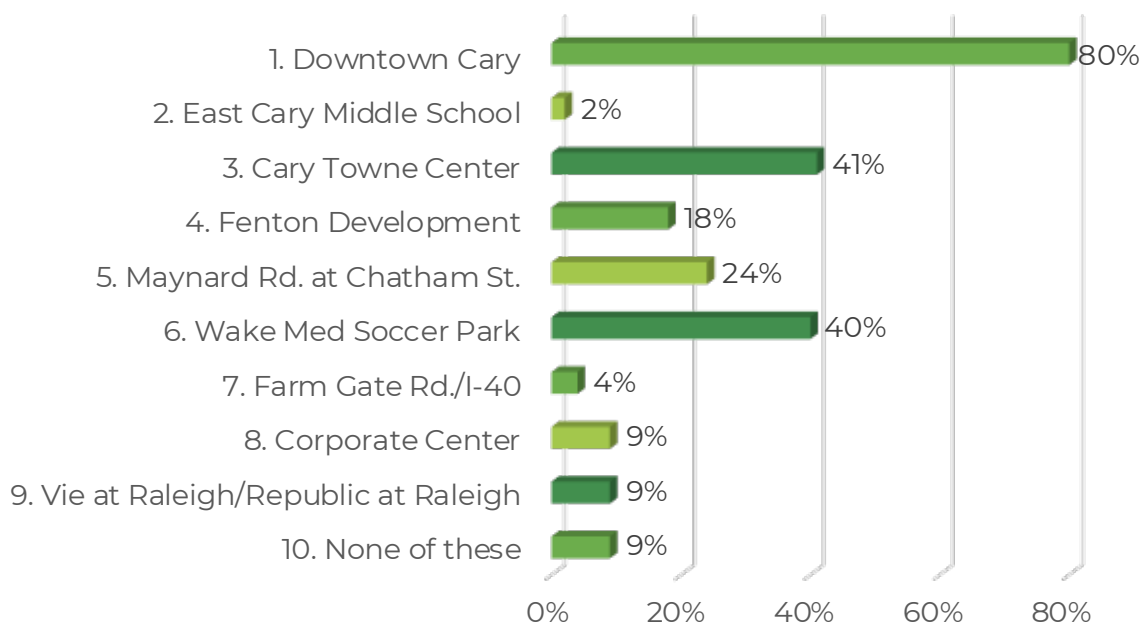


ONLINE SURVEY - QUESTION #3

Participants were asked, if BRT services were provided along Chapel Hill Road, E. Chatham, or Cary Towne Boulevard, where would you go using this service?

A total of 316 responses were given. Eighty percent of participants stated if services were provided, they would go to Downtown Cary, while forty-one percent stated they would go to Cary Towne Center. Other alternative destinations include Wake Med Soccer Park, Maynard Road at Chatham Street, and Fenton Development (see **Alternative Destinations** below).

Question 3 Alternative Destinations



ONLINE SURVEY - QUESTION #4

Participants were asked, are they any other locations along Chapel Hill Road, E. Chatham Street, or Cary Towne Boulevard you would like to go using the BRT service?

A total of 95 responses were provided. Twenty percent of participants stated PNC Area and State Fairgrounds, while eight percent of participants stated they would use the BRT service to go to North Carolina Museum of Art. Other travel destinations include Carter-Finley Stadium, Cary Towne Boulevard, and Cary Towne Center (see **Destinations** below).

Destination	Percentages
PNC Area	20%
State Fairgrounds	20%
North Carolina Museum of Art	8%
Carter-Finley Stadium	4%
Cary Towne Boulevard	3%
Cary Towne Center	3%
Crossroads Shopping Center	2%
South Hills Mall	2%
Cary Library	2%
Blue Ridge Road Corridor	2%
Rex Hospital	2%
Maynard Street	2%
YMCA Association Resource Office	1%

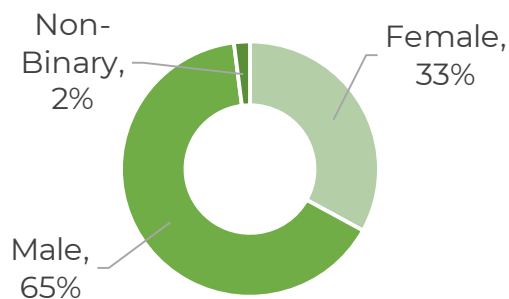
Destination	Percentages
Bond Brothers	1%
Briggs Hardware	1%
Train Depot	1%
Harris Teeter	1%
DMV	1%
Triangle Aquatic Center	1%
The Circle	1%
Maynard and Chapel Hill Road	1%
Cary High School	1%
Ollie's	1%
Swimming Pool	1%
Amtrak Station	1%
Circle of West Chatham	1%
Parks/Greenway Trails	1%
Park & Ride Option	1%
Old K-Mart	1%
Raleigh Sports Arena	1%
Bike Lanes	1%
Cary	1%
RDU	1%
Autism Society of North Carolina	1%
High House Road Bowling Alley	1%
South Hills	1%
Future Commuter Rail Station	1%
Between Downtown Cary and East Cary	1%
Downtown Parks	1%



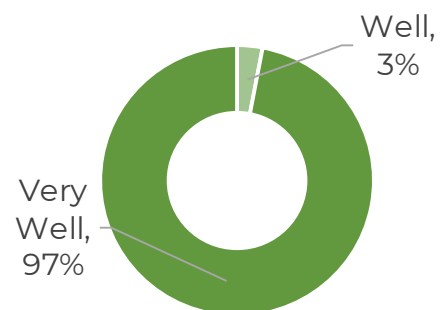
ONLINE DEMOGRAPHIC SURVEY

The online demographic survey contained five (5) demographic questions for participants to complete voluntarily. A total of fifteen (15) participants completed the survey. Sixty-four percent of respondents were male, thirty-eight percent were 30 to 44 years of age, forty-eight percent of respondents have a household income of \$118,000 or greater, ninety-eight percent of participants speak English very well, and thirty-one percent of responses heard about the survey via email (see **Demographics** below).

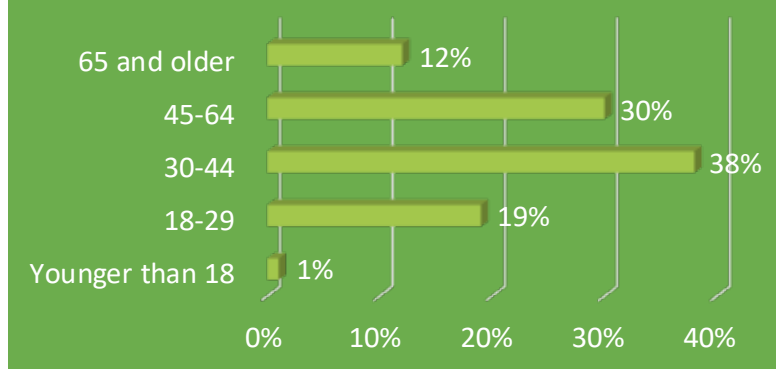
What is your gender identity?



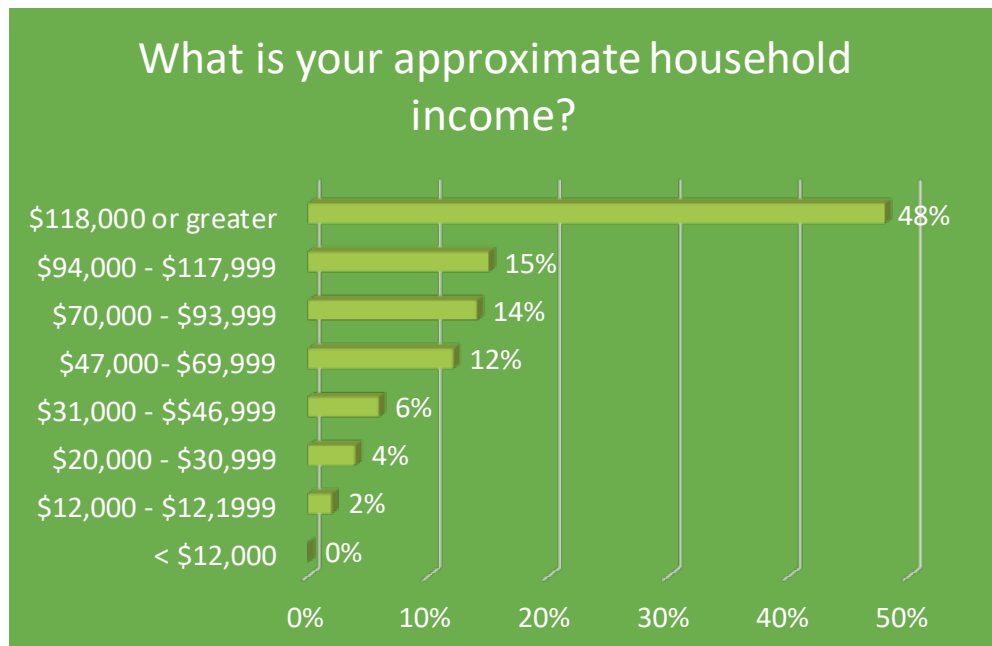
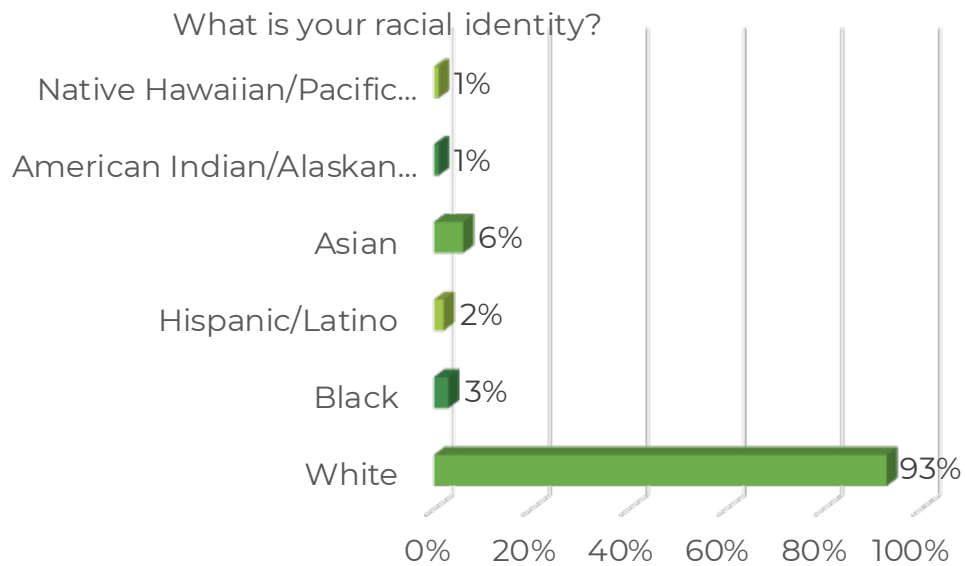
How well do you speak English?



What is your age?



ONLINE DEMOGRAPHIC SURVEY (CONT.)



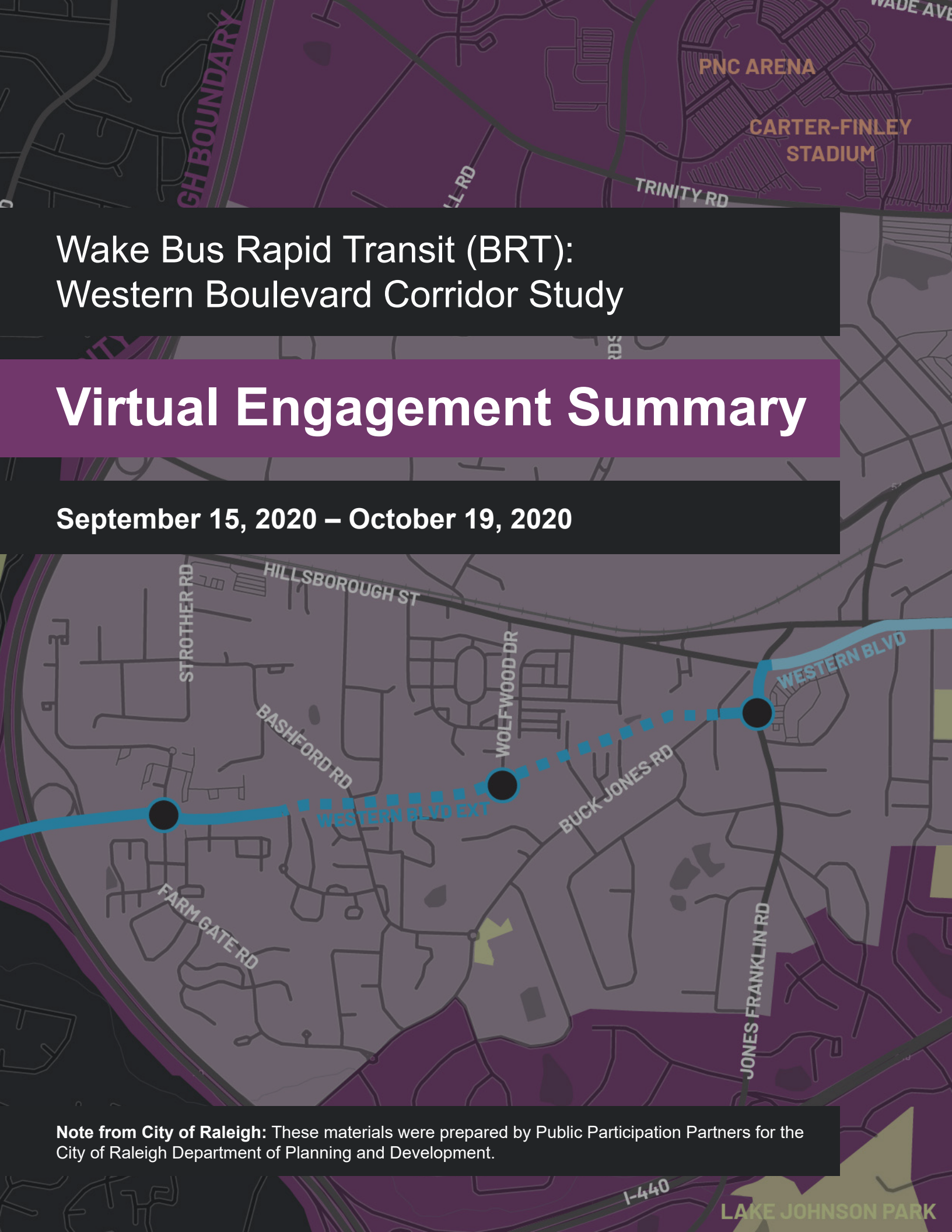
The online survey also asked how participants heard about the online survey. Thirty-one percent of respondents stated that they received a notice via email, twenty-two percent heard about the online survey through social media, seventeen percent learned about the survey on the City of Raleigh's website, nine percent via the meeting invitation postcard mailers, and three percent of participants heard about the online survey at the public meeting.

RECOMMENDATIONS FOR FUTURE OUTREACH

In order to ensure that project outreach efforts are considering the needs of those traditionally underserved by existing transportation systems as defined in Title VI of the Civil Rights Act of 1964 (Title VI), the following measures should be considered:

- **Target outreach toward Black/African American and Hispanic or Latino populations** through methods such as attending pop-up events at local churches, contacting community organizations, and/or distributing a survey to apartment complex renters
- **Outreach to residents with a household income of \$46,999 or lower** to obtain their feedback through methods such as distributing a survey to apartment complex renters, coordinating pop-up events at apartment complexes, and/or posting paid social media ads targeting lower income ranges
- **Reach more individuals with Limited English Proficiency** through methods such as contacting community groups that assist non-English speaking individuals, attending pop-up events at local churches or other religious groups, and/or creating promotional advertisements and videos in Spanish or other widely spoken languages
- **Target outreach to individuals who are between 18-29 years-old** through methods such as video and social media outreach, **and individuals who are 65 and older** through methods such as distributing paper surveys at senior living communities and apartment complexes

Additional outreach to these populations and other traditionally underrepresented populations could include advertising upcoming meetings and input opportunities on the GoRaleigh buses.



Wake Bus Rapid Transit (BRT): Western Boulevard Corridor Study

Virtual Engagement Summary

September 15, 2020 – October 19, 2020

Note from City of Raleigh: These materials were prepared by Public Participation Partners for the City of Raleigh Department of Planning and Development.

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Overview

As a part of Phase 2 of the Western Boulevard Bus Rapid Transit (BRT) project, the City of Raleigh hosted a Virtual Engagement (VE) site. While originally planned to be an in-person public meeting, this phase of engagement was conducted virtually in light of public health concerns due to the COVID-19 pandemic. The VE site included information on the Western Boulevard BRT corridor project and opportunities for public engagement.

The site launched on September 15, 2020 and remained live until October 19, 2020. During this time, the Western BRT City of Raleigh webpage received 2,075 page views, 1,803 of which were unique views.

Purpose

The goal of the Wake BRT: Western Boulevard Corridor project is to create a rapid transit route between Downtown Raleigh and Downtown Cary. The purpose of the VE site was to educate the public on project goals and previous public input received, inform the public about transit-oriented development (TOD), and provide opportunities for feedback on potential TOD opportunities in the corridor.

Format

The VE site was a standalone site that linked to the main project webpage. The VE site featured five different pre-recorded videos explaining project concepts and opportunities, along with a navigable storymap that explored urban design opportunities.

On September 30, the project team also conducted a live question-and-answer session to address public questions and comments regarding the Wake BRT: Western Boulevard Corridor project. This Q&A session was recorded and posted on the VE site for viewers to watch afterwards.

The site also featured an overview of the Catalytic Transit-Oriented Development (TOD) Areas. Participants were invited to share their input and land use visions for the TOD areas via an online survey.

Meeting Notifications

The VE site was advertised through a variety of outreach and communication methods, including:

- Postcards sent to property owners and tenants in the outreach area
- The VE site link and information posted on the City of Raleigh project webpage
- Social media posts shared by the Raleigh Planning and GoRaleigh Facebook, Instagram, and Twitter accounts
- GovDelivery email blasts sent to project subscribers
- HTML email blast sent to apartment complexes, schools, universities, religious institutions, and other businesses and organizations in the study area
- Phone calls and direct emails to businesses in the study area
- Press releases sent to media outlets and partner businesses and organizations

Live Q & A

Overview

On September 30, the project team hosted a virtual live Q&A session. Participants were able to join online or by calling in on their phone. Panelists were present in the meeting to answer questions asked by the public.

Thirty-three (33) people participated in the live Q&A session. Thirty (30) questions and comments were submitted. Five of the 30 were participant responses to previous questions or comments. The project team used the questions from this session to help create a Frequently Asked Question (FAQ) document to post on the project webpage along with the meeting recording. Participants were encouraged to submit additional questions to the project team after the meeting.

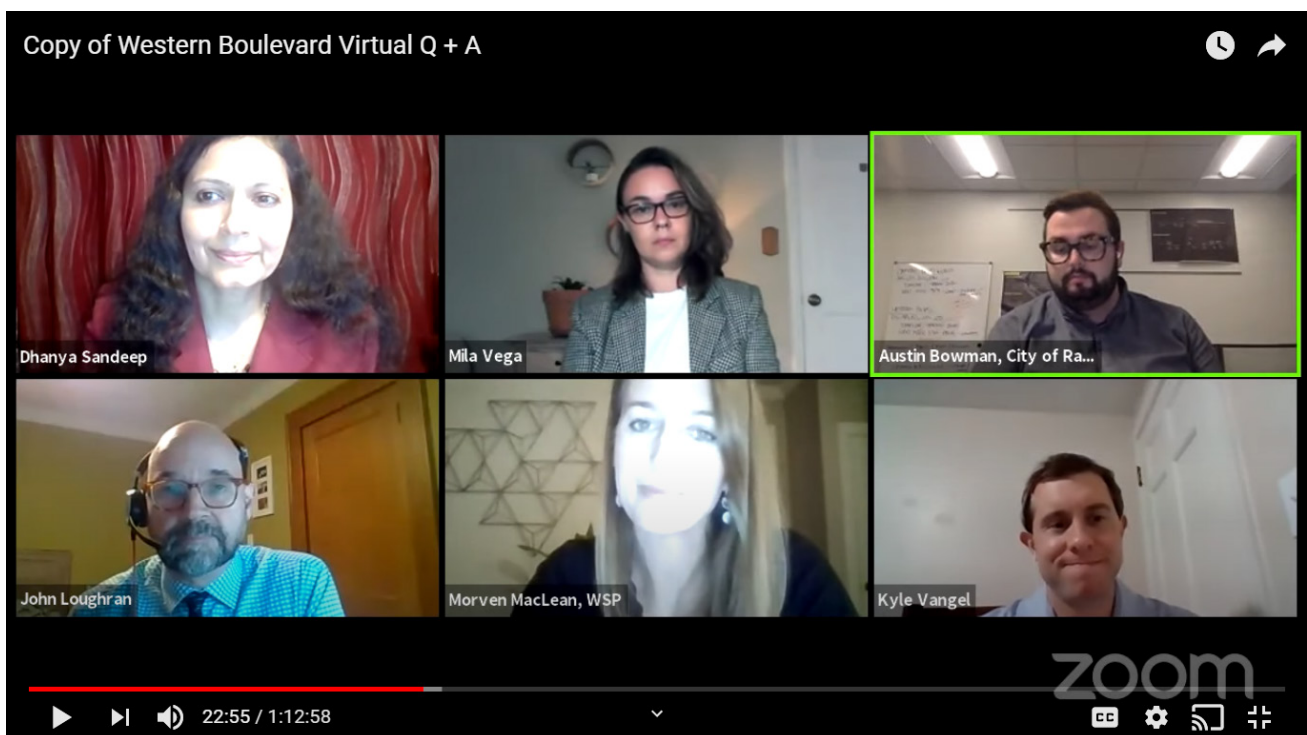
Results

Participants asked a variety of questions about choices and changes that will come with the project. Four (4) participants asked questions regarding the funding of the project and the cost to taxpayers to complete it. Three (3) participants asked about transit-oriented development (TOD) and how it would relate to the BRT project. Some participants asked questions about the project overall, including

- why the Western Boulevard route was chosen
- how the layout of the route was chosen
- what the project timeline is

Other topics asked about were affordable housing, displacement, bike infrastructure, pedestrian connections, and the expected number of people using the BRT service.

A full list of questions and comments asked during the session can be found in the Appendix A.



Online Survey

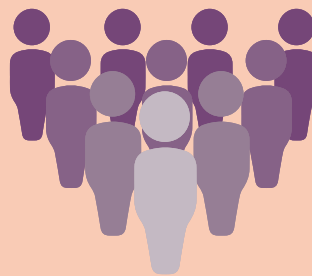
Overview

The VE site also linked to an online survey that gave the public the opportunity to provide feedback on potential TOD opportunities in the study area. This survey was hosted through PublicInput.com and remained open until October 19, 2020. Those that were unable to provide feedback through the online survey were able to send in verbal comments or paper survey responses via postal mail or email. Ninety-six (96) people participated in the survey, leaving 571 responses and 189 comments. Forty-six (46) participants subscribed for project updates.

The survey asked four project-related questions followed by demographic questions to measure participation. The first two questions asked participants to review information on bus routes, land use, and urban design and provide comments on the materials. The third question asked participants to highlight areas of opportunities or challenges in the corridor with an interactive map. The fourth question asked participants to share any further questions they had regarding the project, and the questions submitted before the live Q&A were addressed during the session. Questions submitted after the live Q&A session were addressed in a FAQ document posted on the project website.

Results

The summarized results are below. A full list of comments can be found in Appendix B.



96
survey
participants



571
question
responses



189
survey
comments



46
email
subscriptions

Q1

Participants were asked to review information on bus routes and land use capacity and provide feedback on the materials.



The most common topic brought forth by respondents was connectivity. Many commenters mentioned the need for dedicated bike and greenway infrastructure in the corridor. They also discussed the need for last-mile access between stations for safe access to the bus stops. Respondents noted the need for better pedestrian crossings and infrastructure to create safer transportation for those walking.

Respondents also discussed the need for increased density in the corridor to support Bus Rapid Transit (BRT). Multiple respondents mentioned a desire for fresh, intentional development in the corridor through new, attractive buildings and houses to drive density.

Participants also mentioned concerns with the project in this comment section. Common concerns are listed below:

- loss of affordability and displacement in the corridor due to residents being priced out of their home or displaced by construction
- loss of private property because of construction
- new development taking the place of private property and businesses

Other concerns discussed included:

- traffic congestion, especially near the NC State Main Campus
- loss of trees, especially the Magnolia trees planted along Western Boulevard
- noise pollution

In regard to traffic concerns, respondents noted the need to slow traffic down in the corridor, as well as to improve signal coordination to improve traffic flow.

Some respondents asked questions about the project plan, such as questioning the location of the BRT route as opposed to other streets in the area, and questioning the timeline of the project. Multiple respondents noted a desire to use existing roads for the BRT route instead of constructing new ones. Others noted an appreciation for BRT and several participants expressed excitement about the upcoming project.

Participants were asked to review information on urban design opportunities and provide feedback on the materials.

Q2

When discussing urban design opportunities in the corridor, many respondents mentioned a desire for mixed-use zoning and development. They discussed wanting more businesses such as grocery stores and breweries, as well as office space and residential space. Respondents noted a need for affordable housing and employment opportunities in the corridor to sustain density and growth.

Participants mentioned the K-Mart shopping center as an area that should be redeveloped. Multiple respondents expressed that they did not want more construction of parking decks or “mall” businesses within the corridor, as they were concerned about higher urban development density.

Participants noted concerns over safety and connectivity in the corridor, especially for bicyclists and pedestrians. Some noted the need for bicycle and greenway infrastructure improvements. Multiple respondents discussed pedestrian safety in the corridor, noting a need for improved pedestrian facilities, such as sidewalks, especially on side streets. Other commenters mentioned general safety concerns of traffic in the area, noting a need for traffic calming elements to reduce speeding of vehicles.

Participants discussed connections to parks in the area. One (1) participant noted the need for more parks to accommodate growth from increased residents and commuters in the corridor. Another participant mentioned a need for a connection to Pullen Park along Ashe Avenue.

Respondents mentioned concerns of displacement and affordability within the corridor. One (1) participant also expressed the need to consider needs of current residents and commuters over future residents and commuters that will come with development.

Participants again took this opportunity to ask questions or express concerns about the general project proposal. Respondents asked about the location on Western Boulevard as opposed to Hillsborough Street.



Q3

Participants were asked to share specific locations they feel are opportunities or challenges within the corridor.

Participants were asked to place a marker on a map to show specific areas for opportunity or areas of challenges in the corridor. Those that wanted to provide more input or information were able to leave comments under the interactive map. The markers placed on the map are shown below.

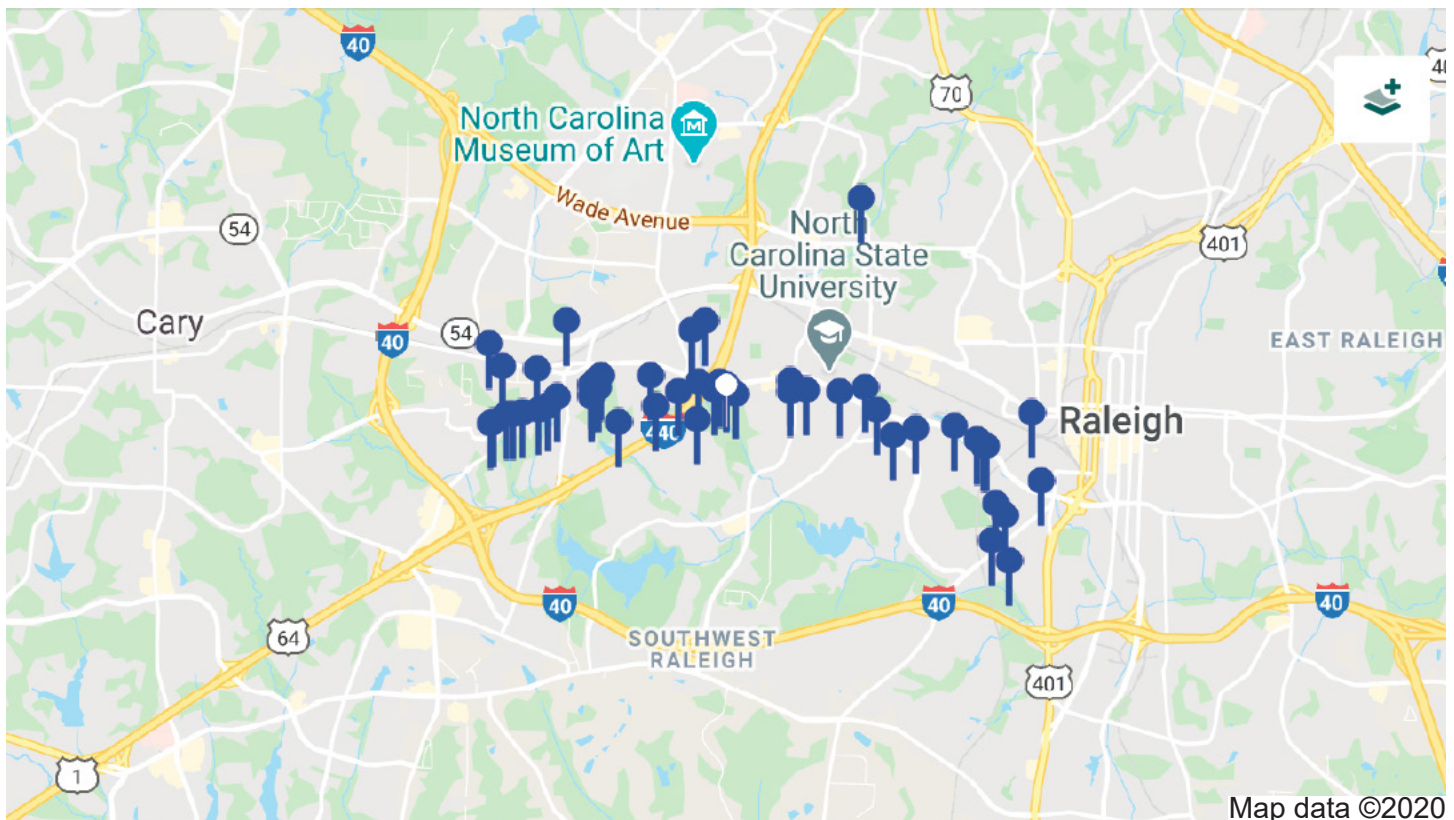
Areas of opportunities and challenges were highlighted along the Western Boulevard corridor. One participant also marked North Carolina State University as an area of opportunity or challenge as well.

In the open comments, respondents commonly discussed the need for pedestrian connection improvements in the corridor. Participants noted the need for improved sidewalk connections and pedestrian crossings, specifically along Western Boulevard, Pullen Road, Maywood Avenue, Bashford Road, the Farmer's Market, and the intersection of Hillsborough Street and Chapel Hill Road.

Two (2) areas specifically mentioned for sidewalk improvements were Hillsborough Street west of Faircloth/Gorman, and E Chatham Street in Cary.

Participants also mentioned the need for bike lanes and greenway connections in the study area. Two (2) areas mentioned for greenway connections were Hillsborough Street and Simmons Branch Trail from Western Boulevard. In terms of general connections of the corridor, one participant mentioned the need for improved connections for surrounding neighborhoods to Western Boulevard.

Multiple respondents mentioned desires for changes in zoning in the corridor, with some expressing the need for mixed-use zoning or higher density zoning. Participants also mentioned the need for new grocery stores in the area and another participant mentioned the need for an elementary and middle school in the area.



Q3 (Cont.)

Participants were asked to share specific locations they feel are opportunities or challenges within the corridor.

Some participants mentioned specific areas of opportunity within the corridor. One (1) respondent discussed Ashe Avenue as an area for opportunity as it would create an entrance to Pullen Park, a link to Hillsborough Street, and access to the Dix Park and Centennial Campus development. Another participant mentioned Nazareth Street as an area of opportunity for a BRT station as it would provide a connection to Centennial Campus and the Mission Valley Shopping Center. Another participant discussed the old K-Mart shopping center as an opportunity zone as well. One (1) participant discussed an opportunity to connect the Edwards Mill Extension to this corridor and connect GoRaleigh Route 26.

Participants discussed concerns within the study area, including the loss of affordability, loss of private

property, and environmental impacts, including the loss of wildlife habitats. Respondents also discussed traffic concerns, specifically congestion at intersections of Avent Ferry Road, Buck Jones Road, Western Boulevard, and Hillsborough Street, as well as concerns of speeding in the corridor.

Some participants were excited to see the area as a TOD hub. Other participants discussed ideas for the project, such as promotion to NC State students or promotion through the Dix Park as an opportunity for leisure after work. Two (2) respondents discussed infill, one proposed it as an idea to help pay for rehabilitation of the area, while the other expressed concerns of increasing infill in the area.

Participants were asked to share any questions they would like addressed in the Live Q&A session to be held on September 30.

Q4

Participants were able to share questions to be answered in the Live Q&A session in this comment section. Participants asked questions regarding the choice for Western Boulevard as the location for BRT, the priority of the corridor, the frequency of bus service, locations of cross sections, and last-mile transportation options/multi-use paths. Two (2) participants asked questions about potential changes to the project; one asked if the project could be stopped and another asked if the location of the Bashford Road and Buck Jones Road connection

could be changed, as they said the green area is worth preserving.

One (1) participant asked about the inclusion of park space, and discussed areas that need to be addressed including: stormwater, pedestrian activity, density, trees, parks, bike lanes, benches, lighting, and bus stops with protection from the elements. Another participant asked about future plans for the K-Mart property in the corridor.

Demographics

Following the project questions, participants were asked voluntary demographic questions. These questions help the project team conduct analyses of who is participating and who is underreached in the study area. These demographics are used to guide future engagement activities to gather more representative data.

Gender Identity

A total of 224 respondents answered this question. Fifty-five percent (55%) of respondents identify as a man and 44% of respondents identify as a woman, with 1% of respondents identifying as non-binary.

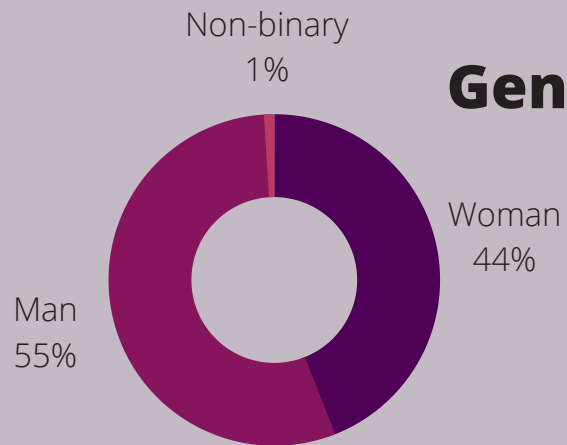
Age

A total of 226 respondents answered this question. No respondents were under age 18, 16% of respondents were between 18 and 29 years old, 43% of respondents were between ages 30 and 44, 30% of respondents were between 45 and 64 years old, and 10% of respondents were over 65 years old.

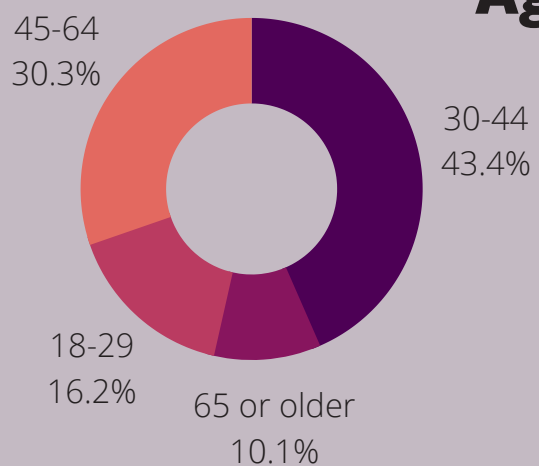
Annual Household Income

A total of 211 respondents answered this question. The majority of participants (44%) have an annual household income of \$118,000 or more. Fourteen percent (14%) of respondents have an annual household income of \$94,000 - \$117,000. Fifteen percent (15%) of respondents have an annual household income between \$70,000 - \$93,999. Fifteen percent (15%) of respondents have an annual household income of \$47,000 - \$69,999. Six percent (6%) of respondents have an annual household income of \$31,000 - \$46,999. Five percent (5%) of respondents have an annual household income between \$20,000 - \$30,999. One percent (1%) of respondents have an annual household income of less than \$20,000.

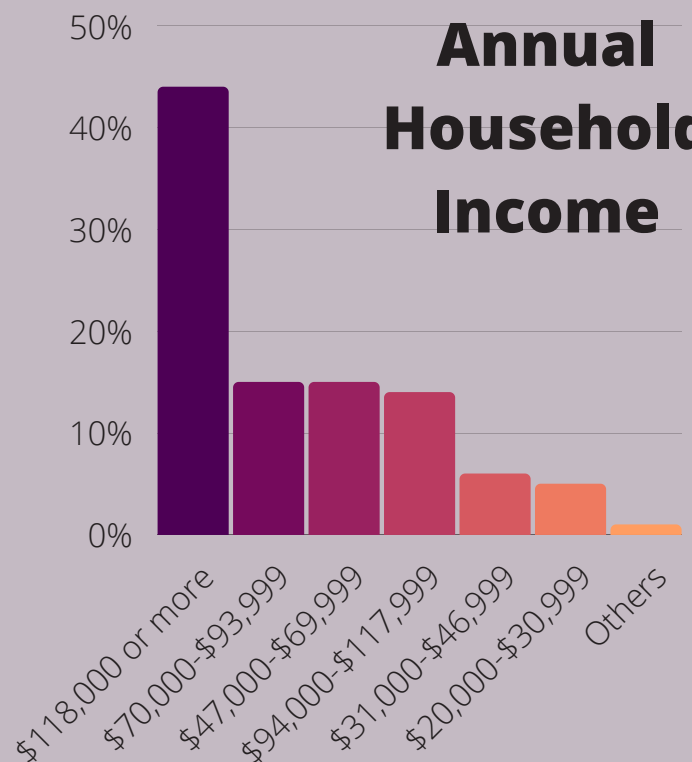
Gender



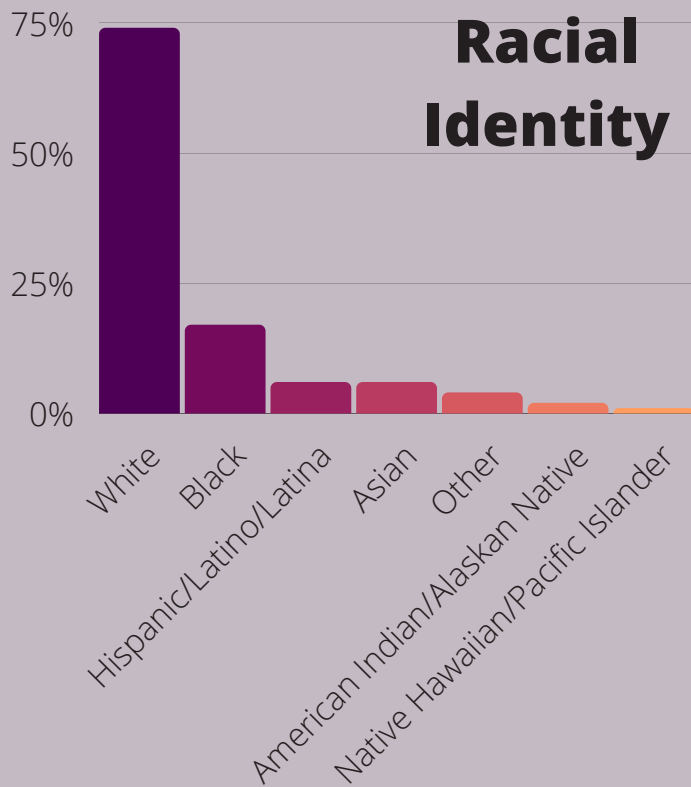
Age



Annual Household Income



Demographics



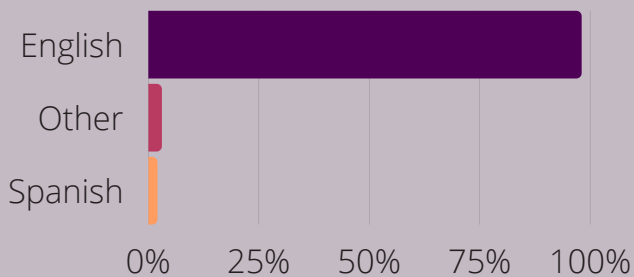
Racial Identity

A total of 187 respondents answered this question. Seventy-four percent (74%) of respondents are White, 17% are Black/African American, 6% are Hispanic/Latino/Latina, 6% are Asian, 2% are American Indian/Alaskan Native, and 1% are Native Hawaiian/Pacific Islander. Four (4%) of respondents answered “Other.”

Primary Spoken Language

A total of 190 respondents answered this question. The majority of participants (98%) speak English as their primary language. Two percent (2%) of respondents speak Spanish as their primary language. Three percent (3%) of respondents chose “Other.”

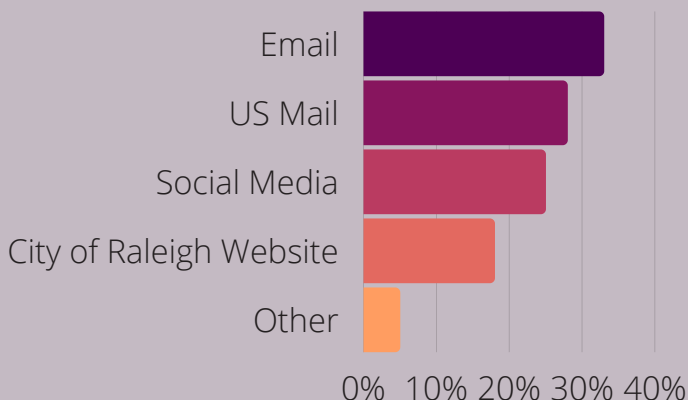
Primary Language



Meeting Notifications

Participants were asked how they heard about the meeting, and 40 respondents answered. A third (33%) of respondents heard about the meeting through email, 28% heard about the meeting through postal mail, 25% heard about the meeting through social media, 18% heard about the meeting through the City of Raleigh website, and 5% of respondents chose “Other.” The response of “Other” included by word of mouth.

Meeting Notifications



Demographics

Agree/Disagree with Meeting Effectiveness

Participants were given multiple statements regarding the effectiveness of the meeting and were asked to rank how much they agreed or disagreed with the statements. Forty (40) respondents answered these questions. Seventy-five percent (75%) of respondents thought the engagement website was easy to use. Seventy-five percent (75%) of respondents thought the provided information was easy to understand. Sixty-eight percent (68%) of respondents said they received the information they wanted. Fifty-one percent (51%) of respondents thought the virtual meeting time was convenient. Sixty-three percent (63%) of respondents thought this was a good opportunity for their perspective to be heard.

Participants were also able to leave comments under this question in response to the effectiveness, convenience, and ease of use of the VE website. Some commenters discussed the survey itself, but others took the opportunity to discuss further concerns of displacement and gentrification as a result of the project. A full list of comments can be found in the Appendix.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
The engagement website was easy to use	8%	3%	15%	44%	31%
The information provided was easy to understand	5%	2%	18%	57%	18%
I received the information I wanted	5%	3%	24%	49%	19%
The virtual meeting time was convenient	12%	-	36%	30%	21%
This was a good opportunity for my perspective to be heard	8%	11%	18%	47%	16%

Recommendations

Recommendations for Future Engagement

While the project website received a lot of page views and the survey had almost 100 participants, it is recommended to increase engagement efforts in future phases to encourage higher numbers of participation. Specifically, efforts should be made to engage a more diverse and representative population through targeted outreach to youth, lower-income, Spanish-speaking, and racially diverse populations in the study area.

As the demographic data from the survey shows, a majority of participants were White, have a relatively high annual household income, and speak English as their primary language. In the following phases of the Western BRT study, the project team should focus engagement efforts to engage a more representative sample of the population.

Youth and adolescents in the study area can be reached through outreach to schools and teen clubs in and surrounding the study area. Efforts can also be made to encourage parents to invite their children to participate.

Lower-income populations can be reached through targeted outreach to specific neighborhoods and groups in the community.

Spanish-speaking populations in the community can be reached through translated materials and outreach to Spanish-speaking organizations in the community. Similarly, racially diverse populations can be reached through outreach to minority religious institutions and other organizations in the community.

It is recommended to modify the existing outreach approach to gather more representative data in future project phases.

Appendix A

Live Q&A Questions and Comments

- Thanks for this event. It was very helpful.
- thank you for this Q&A session!
- Great question! And a great presentation. Thank you for this opportunity and discussion.
- Without the federal funding, would this project continue?
- Will this presentation be posted online after the meeting?
 - Yes it will be posted in the coming week
- With all of the BRT projects, will construction take place at the same time?
- Are there any plans for general, blanket upzoning within 1/4 or 1/2 mile of the corridor?
 - WakeUP & CAFT will be discussing TOD on Oct 9th<https://wakeupwakecounty.networkforgood.com/events/23752-transit-oriented-development-tod-what-is-it-how-does-it-work>
 - There is a “Transit Oriented Development” planning that is also going on that talks about this
- How and when will TOD planning be tied in with these BRT corridors
- Why not use a railroad btw? It’s going from Raleigh Downtown through Cary Downtown. This railroad is not heavily used and you can run several small electric trains or trams
- Have you considered being open about the taxpayer cost per route? Existing infrastructure exists in other routes, but will be inevitably more expensive with the one you are planning on implementing.
- Do the statistics you presented regarding low income housing and needed access take into account the homes you would be depleting with this route?
-
- How is Raleigh & NCDOT tackling the I440 DDI?
 - Diverging diamond interchange<https://www.ncdot.gov/initiatives-policies/Transportation/safety-mobility/diverging-diamond-interchanges/Pages/default.aspx>
 - What is DDI?
- Please consider a BRT only western extension!
- When speaking about TOD development, doesn’t it just need to be connected for walkers, people on bikes, and public transit? I don’t think it needs to be connected for cars, but I never see that distinction
- What is your plan for fairly paying residents who you are evicting from their homes?
- also all buses i see here around Buck Jones rd are always empty (rarely with one or two people inside).How many people are planned to use BRT on the daily basis?
- My concern is that dashed line on the map with two bus stops. This ruins our forest here and the road is going right through our backyards. Could BRT reuse Hillsborough Rd instead ?
- Any update on the NCSU Western Tunnel?
- What are the plans for bicycle infrastructure along the corridor?
- What is the planned layout of the new Western Connector?
- Explain how you will insure affordable housing along the line. Specifically 0%-50% of AMI
- Who was surveyed to choose this route from the 4 or 5 originally presented? What was the response rate?
- Is there an estimate for each route on what the taxpayer cost will be?
- What is the funding source? City, County, State, or Federal?
- What percent of confidence is this happening?

Appendix B

Survey Comments

Q1 Comments: Now that you've reviewed the information on the selected bus route and land use capacity please provide us with any comments you have on the material.

- I would love to see a dedicated cycle route from downtown Cary to downtown Raleigh. I
- A dedicated cycle/greenway route parallel to the corridor will be an essential connectivity key for development along the corridor (similar to the blue line path/greenway in CLT). Would specifically allow for last mile access between stations (increasing convenience safety of bike/ped access between origin/destination pairs and stations) - presents unique opportunity to improve bike/ped access across I-440 parallel to BRT line.
- It is really important to have a mixed use path / greenway along the entire route to allow for easy / safe 1st mile / last mile connections for riders and community members
- Density is key. Bring some fresh development patterns to this under-utilized corridor
- It goes through too many current residential houses / developments. Needs to make more use of already existing roads and improve those roads instead of cutting through people's property. Not sure how many people are going to want to sell their homes for this. I certainly wouldn't.
- My only thoughts are that a lot of the plans include areas that are private property, or University property that you have no control over. How will this plan be implemented when there will be many land owners who will not want to give up their property for this.
- I think you should consider instead having this corridor at least partially down Hillsborough street. There is already dense development there unlike western Blvd. Everyone will have to walk to get to the western corridor.
- I'm not sure how private property is going to be given up for this to come to fruition. I think it would be better suited using existing roads than going through so many residential areas. I don't want to see a stream of public transit buses going through my quiet neighborhood everyday.
- As someone who lives along western Blvd, noise is a major issue. Please consider electric buses that are quiet. Also consider means to slow other traffic down because people speed and it makes western unsafe. Also consider that we need more ways to get pedestrians across the road. There are few safe pedestrian crossings and the existing ones take forever for the lights to change. Overall if you're going to encourage denser development along western, it needs to be slower, safer, and quieter.
- Planning this rapid transit route on roads that are not yet built delays implementing this rapid transit route for an unacceptable period of time. Using existing roads that already directly connect downtown Cary to Downtown Raleigh are the better and more expedient option.
 - It uses Western Boulevard. I drove on that yesterday. It's already built.
- I want to echo what other people mentioned in the a bike and pedestrian/greenway is vital in addition to the proposed bus rapid system. The link between Cary Towne Blvd and Jones Franklin/Western Blvd. hasn't been built.
- This is wonderful. Love the designation of the bus stop locations with different characteristics and the designations you picked were spot on. Also I agree with the need for TOD and esp the density it calls for at the Blue Ridge intersection at the old Kmart site.

- I stringently oppose any changes to Western Blvd if it will mean that the gorgeous magnolias on the NC State side of Western Blvd have to be destroyed. These trees have been there for dozens of years. They are core to the NC State campus and the look of Western Blvd so that it is not just a sterile building lined street. DO NOT KILL THESE TREES!!! Additionally, Western Blvd is one of two main ways to reach main campus. It is already an extremely busy corridor -- we need to keep these lanes clear for the campus traffic. I understand that the railroad lines pose a problem on Hillsborough going out to Cary -- yet this is the best direct route to downtown. I am worried that by widening these roads, increasing the traffic flow will have a negative impact upon the residence who are economically impoverished. Taking away homes, etc. is only hurting this group. Raleigh is already doing an abysmal job in taking care of the poor and special needs populations. This BRT will NOT help them. I would rather this money invested in housing. Additionally, these CAT buses and connector buses are not safe for the special needs. The passengers are not monitored and leaves that popular vulnerable. The talk about cycle docks and cycling will only benefit those with the money to do so.
- Safe dedicated cycle and pedestrian paths and crossings are crucial. Can we encourage growth without encouraging characterless, rubber stamp development like we've seen along parts of Hillsborough St? Inward-facing development patterns typify Cary and are more present than ever in Raleigh. Can we encourage intentional development moves that dial-down the scale and speed of the Western Blvd Corridor without creating a traffic nightmare? Can we improve signal coordination: (e.g. right now signals like Dan Allen are on a timer and will stop traffic even if there are no queued cars or pedestrians)?
- Outstanding work. Be sure that the amenities added to neighborhoods along the way do not end up pricing out people who live there. Western is surrounded by students and working class neighborhoods. Make sure they can still live there when the route is complete. The connectivity planning here is impressive. Integrating bike/ped access with BRT makes non-car travel possible and helps open more space to residential and community resource uses where it is currently parking lots or unused space. Well done.
- It would be great to mix in some attractive businesses/housing along the part of western that is all fast food places and not appealing aesthetically. More trees and green landscaping I hope is being planned with the affordable housing.
- Who was surveyed to do this? Clearly the residents of these areas were not part of this survey. This is another example of the wealthy making decisions for those without a voice. Are people aware that this plan is uprooting families and decimating neighborhoods? Did you take into consideration that yes, while this route is CURRENTLY in the route of families in poverty, this route takes out the majority of the low-income, affordable housing on this route? PLEASE reconsider this.
- Needs more aggressive upzoning/mixed-use rezoning of surrounding residential areas within a 20 minute walk or 15 minute bike ride of Western Blvd, and even more street/ped connectivity improvements in the same area.
 - Amanda. I don't agree with Daniel that surrounding residential neighborhoods need to be upzoned. I believe the thrust of designated high-density areas act as a counter/alternative option to the lower-density surrounding areas. A city needs both densities in order to appeal to all its residents. This proposed TOD provides adequate areas of both high and low density residential development.
- Dedicated bicycle infrastructure along the corridor is key. Both to allow for people to quickly get to the bus stations, but also to provide a solid backbone to Raleigh's bike network.

- Please add Citrix Cycle docks along the route and more in a half-mile radius of each station to provide additional last-mile options.
- I agree with the alignment option I think it serves existing and future development well. The higher the density the better, not just at the sites called out but in residential areas. The forthcoming TOD-R is perfect for areas of this corridor. If BRT is going to be successful and if the city wants to evolve into a more sustainable, equitable, and accessible city out neighborhoods need to evolve as well.
- This study fails to note that Cary's gateway plan will wipe out all of the ethnic businesses at Maynard and Chatham, and relocate all residents of the two mobile home parks, which likely violates Civil Rights laws. The Maynard route passes through two school zones, with East Cary Middle's involving both cars queued up blocking a lane and many children walking across Maynard. Will this Cary part really be Bus Rapid Transit? Or just more frequent service while buses remain stuck in regular traffic, school zones and signals?
- There must be a quick route from Downtown Cary to Downtown Raleigh which will dramatically decrease the traffic on I-40,
- For the Cary Towne Blvd. - Western Blvd. link, the plan should use existing roads. No need to build a new road through quiet neighborhoods. Would also help reduce the cost of the overall plan.
- Looks like a complete waste of time and money. Will this really help Raleigh? Bus ridership has remained low and this wasted money will not help.
- I am excited to see this plan. I only wish it could be implemented before 2028, but I understand that this is big project. It's nice to see that some improved form of mass transit is funded and in the works. The Triangle area sorely needs some new options.
- I would like to see a mix of development, greenway and biking options and a density that supports our growth needs.
- dedicated safe pedestrian and bike paths. and safe car share drop and pick up points at bus terminals
- Will there be a cycle route from Downtown Cary to Downtown Raleigh?
- 1. Putting the route through existing property is just evil, 2. Unless you have connecting transportation to outlying areas off the BRT what's the point, 3. Whats on Western BLVD that anyone actually wants or needs increased accessibility to?, 4. If there is increased development and redevelopment the Kane Realty and other companies need to be banned from that development because of their relationships with city council members.
- Unless you can get NCSU to give up land it doesn't need anyhow, which it won't being the greedy university it is, this plan is misguided from the start. Do I really want to walk 20 minutes to get to some stop on Western Blvd. so I can ride into downtown Cary? Why is Raleigh's transportation planning paying for Cary's needs?
- bring a good frequency of buses
- Please add Citrix Cycle docks along the route and more in a half-mile radius of each station to provide additional last-mile options. Also, I'm concerned about the DDI interchange at I-440. Will the bus still get a dedicated lane through this section?
 - Correction: I think you mean last half-mile options, not last mile options. Unless you can be in two places at once.
- Western is a good corridor because it goes *near* a lot of destinations, but it does not quite go *right in front of* many destinations. I appreciate the focus on street connectivity, but it seems like it will take a long time to make Looking forward to the Western-Cary Towne connector (the last big chunk of land to be acquired appears to be listed for sale now).
- The route at the Western/Hillsborough/Jones Franklin intersection has 3 traffic lights within about ¼ mile. This mess of roads was modified only a few years back. You will be adding another intersection at Buck Jones and Zebec when the Western Blvd extension goes through. At rush hour (pre-COVID-19) this area would become severely backed-up on many days. Better traffic management will be a must.

- Excited for the bus route to happen. Thank you for considering the development along this corridor which parts are cited as Opportunity Zones and could add tremendous value to this area of Raleigh. There is much to be desired with great access to the I-440, downtown, and NC State. Curb Appeal along this area looks abandoned and needs updating (ie medians, trees, plantings, etc.) Please also consider pedestrian access to Western Boulevard. I currently leave near Schaub Dr. across from K-Mart and access to the bus stop and intersection is not safe for pedestrians, especially those with children. There is no sidewalk. A stroller has to be lifted over a curb into the grass. Cars enter at high speeds there and it's just before an on-ramp. Lastly, I also piggyback off of dedicated cycling and greenway access that is safe and efficient along the corridor.
- I am surprised that this plan bypasses all the student-focused apartments that line Hillsborough Street and the Wake Med Soccer park. While I understand the problem posed by the railroad track, I'd think the high density apartment clusters would help improve ridership, especially since there's no Wolfline connection there to get students to campus. The path chosen does include future development plans (Fenton, Cary Town Center) that will include *expensive* retail and residential opportunities. Once again, poorer neighborhoods are being overlooked for future, fancy development.
- TOD is a must for Raleigh going forward. For our health as individuals, for the health of the community, and for the health of the environment, we must vigorously move away from automobile dependency. TOD is the only sustainable way forward. I support previous commenters who expressed desire for a dedicated cycle/greenway route parallel to the corridor to promote connectivity and to travel the last mile of our journeys. Density and walkability are imperative factors to ensure the transit corridor will be used and make commuters feel safe.
- So-called "affordable housing" is great ... but there needs to be housing near transit routes that people who work for minimum wage can afford.
- NA
- I have to admit that after reviewing all of the materials in-depth I am much more excited about all of the planned improvements to pedestrian movement along western blvd, bike lanes, intersection improvements, and added greenways than the BRT implementation. These things in and of themselves are worthy of such a project even without the Bus Rapid Transit which this whole project hinges around. The BRT will be nice but the much bigger quality of life improvements are all the pedestrian and bike improvement.
- It looks good. I'm hoping the new portion will not displace any residences.
- Waste of public money-nobody rides the bus
- looking forward to it. Curious how long this will take though. To see Fenton develop but nothing promising yet on the western corridor makes me worry it will be a painful wait. I want to ensure that safe access, parks & beautification reaches into the adjacent neighborhoods so that there's not an abrupt transition from old/sketchy to the new/gentrified.
- Would love to see a bus station on western blvd
- No
- I love BRT.
- The route sounds great! Hopefully there is a mixed use trail and it is accessible and close to people in affordable housing.
- No thank you.
- I agree with the proposed route from downtown Cary to Raleigh.
- I like the route that transit service will follow along Western Blvd, connecting Western Blvd. to Cary Town Blvd. and then to downtown Cary. This can open transit services to both Cary and Raleigh residents. However, affordable housing patterns adjacent to this route will certainly influence ridership and exposure of residents to the benefits of working and living in west Raleigh and Cary. Parts of west Raleigh are an eyesore and i would hope urban planners are looking at the possibility of improving this area along with parts of Southeast Raleigh.

- Increase pedestrian access, add bike docking stations at each bus stop, also plan for the electric scooters. They're here to stay even if we don't like them. Plan to increase density along the corridor so that there are more people taking the bus. It's great to see Raleigh finally 'growing up'.
- I think the route chosen was the best of the bunch.
- Super excited and will give quick access to Cary and Raleigh.
- Dedicated and protected bike lanes are a must.
- I agree with the choice of route and appreciate the dedication to public input and systematic decision process.
- I think the bus drivers are very rude the city of Raleigh is not a good place to live if you have no car or a license that's what the bus is for right? You don't have to be rude or disrespectful I'd know you and you don't know me I'm just trying to get where I need to go thanks.
- I would think the route should go from Western Blvd connecting to Cary Towne Center. This would serve a lot of transportation needs.
- I support the selected bus route.

Q2 Comments: Now that you've reviewed the information on urban design opportunities along the corridor, please provide us with any comments you have on the material.

- If it isn't done correctly - if too much free parking is provided, or if "mall" businesses go in rather than neighborhood - then TODs are mostly an excuse for higher urban development density while still generating suburban levels of car traffic.
- I support the Western Extension option. It seems to connect the best destinations throughout the corridor. I hope further land-use is dense along this stretch to allow for as many households as possible to get to key locations in the region without use of a car.
- Make Western pedestrian safe. Take away car primacy.
 - They did that to Hillsborough Street and now it can't even be used for BRT, which is where it should be focused -- not on Western Blvd.
- Need sidewalks into all neighborhoods off of Western to provide access. For sure Grove Ave. and Powell Drive (north side of Western).
- Higher retail, commercial, and housing density along a transit corridor is the way to go for smart growth in our area.
- This plan has already caused the destruction of neighborhoods and affordable housing. Developers have built expensive homes along the route for people that will not be interested in taking a bus anywhere.
- You are only going to ruin the streets. This will not improve the situation, only make things worse. Please don't waste our money on this useless but feel good project.
- I would like to see some improvements to bring a potential for grocery stores/breweries along the parks, and campus sections.
- Again, developing the area with affordable housing, employment opportunities (office space) is important to sustaining ridership. It is important to balance housing with office space and not create massive standalone parking decks.
- I appreciate the focus on the Avent Ferry Rd/Western Blvd intersection. This intersection is highly traveled by students and this part of Western Blvd could be made more pedestrian and bike friendly! I just don't want this urbanization to push out the local businesses in Mission Valley in favor of fancier stores.
- Please do as much as possible to make this a comfortable and safe corridor for people to be on. Slow down / discourage cars.
- Rezone the ugly strip malls along the drive-thru fast food section to make way for some mixed-use high density development. Access to 440 and direct transit link to downtown can make this area very desirable for upmarket apartments.
- What about Hillsborough Street? There is so much housing going up along there compared to Western.

- If you want to link Pullen Park, there needs to be a stop at Ashe--that's where the entrance is. Ashe will also be closer to the "land bridge" to Dix. Finally, although you are framing the Pullen/Dix area as a "park zone," there is in fact significant development near Centennial Campus and along Hillsborough that will be better served by a stop on Ashe than on Pullen or Hunt. Hunt?!
- If you want to link Pullen Park, there needs to be a stop at Ashe--that's where the entrance is. Ashe will also be closer to the "land bridge" to Dix. Finally, although you are framing the Pullen/Dix area as a "park zone," there is in fact significant development near Centennial Campus and along Hillsborough that will be better served by a stop on Ashe than on Pullen or Hunt. Hunt?!
- I think this content is great and something all city planning projects should get. We need the city to spend more time looking into these detail-oriented suggestions rather than broad changes in land use and zoning. Those broad things definitely have significant impact on the corridor, but the extent and quality of that impact is determined by these more focused studies. I agree with the comment about parking. As further study is done on these TOD sites I would love to see less building devoted to parking decks. The whole point of TOD, particularly opening a business or living in one is to ditch cars. Let's see what that might look like! I would also like to see more work done on sustainability. What would these areas look like if we made meaningful investments into making development and infrastructure truly sustainable?
- Great design potential along this corridor, especially the K-Mart lot. That space is underutilized. Not opposed to Affordable Housing, but also think there is ample space for it to be mixed-use (grocery, retail, restaurants, green space). Also, thank you for updating medians, landscaping, curb appeal to this high traffic area. Much needed! Lastly, much attention needs to be around access to bus routes from side streets like Schaub Dr which is near the blue ridge/Western intersection. No sidewalk and very unsafe for families, cyclists, and all pedestrians.
- Overall I think the designated areas are will be key to the construction of the BRT. The two concerns I have include designed TOD areas that are currently occupied by grocery stores (Food Lion & Harris Teeter). Both of these locations serve areas that would otherwise be in food deserts if not for the stores. I hope that any changes to those sites would continue to include grocery opportunities.
- Increase density and walkability. If vehicular traffic will continue on the corridor, reduce speeds and implement traffic calming measures. If prospective transit riders do not feel safe crossing traffic to access rapid-transit stops or walking alongside the corridor, they will not use the BRT. Develop the area with mid-rise buildings (shops at groundlevel to draw the eye, office space, and residential). Include developer mandates for affordable housing. Do not waste anymore of Raleigh's real estate on massive standalone parking decks. If decks are needed, go underground.
- The Kmart site can't be redeveloped fast enough! It is and should be a gateway to the heart of west Raleigh - fairgrounds, NCMA, Rex Hospital and related uses and the new NCDA complex and facilities on Reedy Creek Road. Expedite please!
- would be nice to see if/where the other funded projects are in relation. I thought there were some RR crossings that could have been addressed.
- I agree with the design concept of the TOD-R which provides for designated areas of high density residential or mixed use development while leaving existing neighborhoods more than 1/4 of a mile from the designated stops at their current low/lower density zoning. A vibrant city needs both high and low(er) density residential options. Both designations feed riders to the rapid transit bus. And both will benefit from the greenway/bike paths associated with this TOD-R plan. I'm curious to see where the City plans to add parks along/near this development corridor to support the influx of residents and business users.
- Implementing BRT for the current commuters is vital, not development opportunities that will delay BRT implementation for current commuters and favor future residents who live/work in future developments that don't yet exist.

- I definitely support the Western Extension route which gives more equitable opportunities for the public.
- Needs more aggressive upzoning/mixed-use rezoning of surrounding residential areas within a 20 minute walk or 15 minute bike ride of Western Blvd, and even more street/ped connectivity improvements in the same area.
 - Seriously? A 15-minute bike ride? What does that translate to? A three-mile ride? Why not just pedal your way downtown rather than mess with a bus which won't be there when you want it (unless another 15 minutes sitting there waiting for the bus is OK when instead you could be riding your bike (now a 30-minute bike ride).
- I think you are dead on. Job well done.
 - LOL

Q3 Comments: Using the map below let us know areas you feel are opportunities or challenges along the corridor.

- Must walk before we run! The fundamental mode of transit is the human foot. No sidewalks on E Chatham St in Cary. No sidewalks on Hillsborough west of Faircloth/Gorman except where the Hillsborough/Western/Jones Franklin intersection was rebuilt.
- Western Boulevard should add density and get away from growth patterns that are very car oriented. Right now, many of these roads are dangerous to cross, which will deter individuals from wanting to use the transit system.
- A dedicated cycle route beside train track
- It would be nice to have more ways to walk, bike or get around campus in a safer way than crossing Western Boulevard
- Great bones for TOD, but needs a spark
- Really excited for this as a TOD hub!!
- This direct route between Cary and Downton Raleigh already exists.
- Please keep in mind pedestrian / bike traffic over Western for students, and work to make this a more comfortable option than it currently is
- The intersections for Jones Ferry, Buck Jones, Western, and Hillsborough can already get congested at times. I'm worried it will get even worse -and more confusing to drive through- when BRT comes. Managing traffic, stoplights, and road lanes can be nice. But if these are real problems, shouldn't the roads here be reorganized from scratch? Also, the Area Plan here was made back when we thought light rail would happen. It would be nice if developments around here were more organized and more walkable.
- Need a sidewalk/greenway connector going up pullen road. It's a real pain and dangerous to push a stroller through here.
- Doing this knocks out a lot of the affordable housing in this area. Please reconsider
- This road already exists and has a lesser environmental and residential impact. Use this.
- Ashe avenue--entrance to Pullen Park; link to Hillsborough Street; accessible to the development going on between Dix and Centennial Campus.
- there are a lot of private homes along this route, particularly from Bashford to Western. Not many people are going to want to sell.
- I'd love to see the Edwards Mill Extension be packaged into this and to have GoRaleigh Route 26 extended to connect to the Western BRT route.
- Great idea for a hub
- I'm sorry for leaving a second comment her. But I just wanted to beg you to not make a transit between Bashford rd and Buck Jones rd. This is a beautiful small green isle, home for squirrels, bunnies, foxes and raccoons, also for birds from humming birds to eagles and owls. Making a road here would ruin this ecologically fragile area, "road-killing" animals nobody cares to remove for days like on Hillsborough Rd :(Make greenways, not highways ! The surrounding neighborhoods could be connected with Hillsborough street via Greenways suitable for both pedestrians and cyclists. Hillsborough rd is good for BRT. These two BRT stops you plan to make on that green territory rather could find more use on Hillsborough Rd. Thank you
- The sidewalks around the 440 crossing need to be complete, wider, and more visible.

- I would like to see the work here produce some real ideas about how we can create strong connections from these surrounding neighborhoods to Western Blvd. All of the commercial development here almost creates a barrier between the neighborhoods and the corridor.
- This is a very environmentally sensitive area. I'd be interested to see what the staff thinks it could do to innovate here and reduce our impact as we extend Western Blvd.
 - We bought our townhouse here in nice park area. Now we're talking about highway going right under our windows ?
- This property should be rezoned for at least 12 floors if not more, should be mixed use and should not be able to be garden style or big box style development.
- This entire corner and shopping area needs significant upgrade and redevelopment.
- BRT station near Nazareth St would be a good connection southward to Centennial Campus, and still proximate to Mission Valley without contributing to its safety challenges
 - This is a good idea. Move the Pullen stop to Nazareth, and the Hunt stop to Ashe.
- Seems fairly low/wet through this area. The environmental impact, and cost to bridge, will be high.
- Re-alignment of Western Blvd will be helpful. Could we also connect these north-south stub out streets to create a grid?
- Bashford will need a lot of improvements to be transit friendly. The population and dense housing is there, but Bashford looks like it's been left out over the years. I hope with the BRT tie in it will finally get the attention it deserves.
- The route at the Western/Hillsborough/Jones Franklin intersection has 3 traffic lights within about ¼ mile. This mess of roads was modified only a few years back. You will be adding another intersection at Buck Jones and Zebec when the Western Blvd extension goes through.
- Poor access to transit. No sidewalk access. Dangerous for pedestrians and cyclists.
- Great opportunity in the old K-Mart location. Mixed used space (commercial, retail, housing). Great highway and road visibility.
- I would hope the property at this point isn't developed. It currently serves as a nice pocket park that breaks up all the other density that is occurring in the same neighborhood area.
- I would like to see the grocery store stay here as part of the plan.
- The opportunity for ridership among NC State students is massive. Potential partnership with State for discounted BRT passes to students? The BRT will grow student access to internships and jobs further afield, without the need for a personal vehicle.
- Dix Park should be a major draw for transit ridership. The BRT should be promoted, not only as a service for quick commuting, but as one's gateway to leisure following the workday as well!
- A stop south of the Boylan Heights neighborhood, one of Raleigh's first streetcar suburbs, may encourage residents of this area to ride transit again.
- Add a pedestrian entrance to the farmers market
- Need a sidewalk here and easy crossing to maywood.
- Need a trail or sidewalk here.
- Move the central prison somewhere else. Out of the middle of the city. Away from these nice parks.
- Mission valley needs a grocery store
- Crossing Western here is incredibly dangerous. Please provide a safe crossing. Also- would like to see the Gas Station gone and incorporating this into parks in some way would be great. Maybe a stopoff with some water and a bike repair station.
- This property would be perfect for an updated Harris Teeter (grocery store) or Target ("better" department store) and this area needs it. 12-year resident.
- This bus stop is so dangerous. Last year a man was killed here as he crossed the street from the stop. sight lines are short for cars heading into the City and this stop is at the peak acceleration for cars. I'm glad Bilyeu is no longer connected.

- can we make sure there's good/safe pedestrian connections along the BRT? Bashford is a DANGEROUS place to walk with no sidewalks and it's be an absolutely shame for a great corridor to be inaccessible shy of risking your life. Also, would love to ensure there are still affordable housing options worked into the TOD. Generally excited #RIPKMART
- As current plans show, part of the Western Extension could tentatively overlap parts of Jones Franklin and Buck Jones Roads, which could lead to driver confusion. Please consider revising these plans.
- Please make the extension max 2 car lanes, this should encourage less driving not more
- This point is the center of a lot of student and low income housing on the south side of western. This point on Gorman street would provide access to the route for many students and families.
- The creation of a new street as part of the western blvd extension provides substantial opportunities for dense, walkable, mixed-use development along the new street.
- This area along western west of 440 will need more commercial/retail/office uses to complement the overwhelmingly residential character, as well as greater density
- This entire area north of Hillsborough/Chapel Hill and west of Gary st has huge open spaces that can be broken up with a fine grid or network of streets or pedestrian corridors and developed in a dense, walkable, urban, mixed-use fashion.
- Reduce driving speeds to about 35 mph. Widen sidewalks and plant trees. Rezone the fast-food segment to allow higher density development.
- Concerned about congestion on Western Blvd with bus stops. They still block a lane of traffic and western is always backed up as it is. There is enough neighborhood invading between 440 construction & developers putting 10 houses where 2 used to stand that it's concerning all of the residential/private property that needs to be taken in order for this to happen
- Potential greenway connection (combination of on-street, sidepath, and trail) along Simmons Branch from Western Blvd down to Lake Johnson, via Athens Drive bridge over Beltline
- Although these properties are condos, that doesn't mean they're immune to redevelopment pressures. Infill could help pay for rehabilitation.
- May want to consider long-term future of this industrial area. Could remain as equipment storage – or extend Blue Ridge office corridor, or lab/bio space related to NCSU CVM.
- Lots of low-density snout-house infill happening around here. Need to determine ASAP whether this is the right path, or whether to allow more transit-supportive patterns -- with the street connectivity to match.
- Even after the old US-1 flyover was removed (though its embankment remains), the one-way forking roads here are geared towards high-speed through traffic. Would this make more sense as multiple roundabouts, like Pullen Drive? Could even swap some land in places, if some structures are in the way.
- I don't like the idea of having highway right in our backyard :(
- Area needs an Elementary School and Middle School.
- Between Gorman and Blue Ridge should be allowed to have significantly more density, 12 floors or more around Blue Ridge. This area is perfect for TOD.
- Please make a safe connection for the #27 bus.
- This one-way pair operation is somewhat confusing to drive thru, and must be a challenge to navigate on foot. Are we fitting BRT to the existing street, ore redesigning the entire corridor to better perform as BRT?

Q4 Comments: The project team is planning on hosting a virtual Q+A session on September 30 for this project, are there any questions you would like answered during this session?

- If they plan to include a mixed-use path with the BRT alignment to create robust 1st mile / last mile transportation options for riders
- How can we stop this from happening? This is an incredibly selfish plan that does not consider the residential impacts. Why not use existing infrastructure instead of wasting taxpayer money to kill the environment and remove people from their homes.
 - read the report.
- Why not use Hillsborough Street instead of Western Blvd.? Because there is more ROW on Western and space for lanes.
- What will be the likely cross section of the new Western Blvd Extension?
- Since it is now October 16th this Q+A session is useless. Typical.
- Can plans on building a road between Bashford Rd and Buck Jones Rd be changed ? This is a very nice green area very much worth preserving.
- Exactly what are the plans for the K-Mart property?
- Is additional park space being designated to accommodate the needs of the increased number of residents? I hope design plans will address on-site water retention, permeable paving, on-site rainwater conservation, waterwise plantings, integrated pedestrian accessibility, traffic slowing through high-density residential designated areas, people-scaled building facades with overhangs for protection from the elements, street trees, benches, bus stops with protection from the elements, dark-sky lighting, dog parks, skate park, and bike lanes
- Which transit service will provide service along Western Blvd? What is the frequency of bus service along the route?
 - Bus Rapid Transit, plus traditional bus routes will use the corridor.
- How to provide enough density in surrounding low-density residential areas to properly make use of and support the new transit investment?
- Among the four (4) potential BRT corridors in Raleigh, what is the priority of this corridor?

Comments from Survey Satisfaction Questions

- The questions were so open ended that it was hard to formulate a response. A little more direction would have been helpful.
- If this is truly an ETAD project than you should share the existing demographics of the area and compare them to the demographics of survey takers. Otherwise, it's just more gentrification and displace of black people.
- Not very happy with the communication level. Very difficult to find information. Had to really search.
- This is a gentrified plan that will displace people PLEASE STOP THIS PROJECT.
- Odd - I cannot get off this page. I do not see away to submit my replies above and leave. So I am leaving this oddball comment
- Based on the information this is about creating a better busing system not displacing people. Can you please provide information on how this is gentrification and displacing black people?
- If valid, please let your voice be heard on how this can be improved.
- Have you worked with ONE Wake or other groups that are focused on what is good for low-income people, especially low-income people of color? If not this whole thing risks further disenfranchising low-income people. Please have focus groups that involve low-income stakeholders and leaders within those communities.
- Thanks.
- lets do it like this from now on! thanks for the mailer & for the helpful website.
- Greenway-like space for safe pedestrian and cycling along the route will be most appreciated.
- This is a long survey and I doubt you will get the feedback you want.
- Thanks!

PLANNING AND DEVELOPMENT



City of Raleigh
Planning and Development Department
1 Exchange Plaza, Suite 300
919-996-2682

raleighnc.gov