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INTRODUCTION

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1 INTRODUCTION

The Wakefield area is located in northeast Raleigh around 12 miles from downtown Raleigh and directly adjacent to the neighboring town of Wake Forest. Raleigh annexed this area in the 1980s. Most of the residential and commercial development in the area was built between 2000 and 2010. This study aims to create guidance as this vibrant neighborhood evolves over the next decade. This plan's recommendations include multimodal transportation, streetscape, addressing issues and taking advantage of opportunities related to the area's growth and development.



FIGURE 1: WAKEFIELD STUDY AREA

The study recommendations highlight opportunities to:

Increase traffic safety.

රිර Improve pedestrian and bicyclist mobility.

Manage stormwater.

* ⊖ Promote open space.

1.1 STUDY AREA DESCRIPTION

The area is bound on the east by the intersection of Falls of Neuse Road and Capital Boulevard and is characterized by standard suburban-style development. This includes various commercial developments, strip malls, and other auto-centric uses. These two roadways serve as major north/south connectors within Raleigh and between Wake Forest and Raleigh. The area includes residential and commercial development along:



Several roadway expansion projects and planned improvements seek to expand capacity to accommodate growing commuting populations. To the west, the area is bound by the Neuse River with Falls Lake to the west of the project area. The lake is located in a state park and serves as a drinking water supply for the region. The Wake County zoning that is applied to the park limits development significantly to protect water quality.

Wakefield is suburban in context with the majority of the zoning in the study area supporting commercial mixed-use (CX-3) with some low density and moderate density (R-6 and R-10) to the west and south. The larger scale development east of Capital Boulevard, and outside the study area in the 5-minute, 10-minute and 20-minute trade areas, provide the best opportunities for future exploration of redevelopment opportunities.

1.2 PLANNING PROCESS

The planning process for this study is broken down in three phases, taking place over seven months. Throughout all these phases, the process focused on:

Analyses of the study area's existing conditions and initial public engagement identified key barriers to mobility, creating a set of planning themes that would form the framework for subsequent design solutions.

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DESIGN

Following investigation, information received was condensed to form preliminary planning and design recommendations. These recommendations were refined through public engagement during the charrette. Some ideas were left behind, while those that received community support were further developed following the charrette to reach a final set of solutions and conceptual designs for the area.

5 ENDORSEMENT

The final phase documented the whole of the planning process. Using plans, materials and designs produced throughout the study, this report was prepared to reflect both the design recommendations, the data and analysis informing the recommendations, and the planning process itself.

In all phases, public involvement was crucial to the process: surveys, interactive mapping, and focus group interviews helped to better identify and understand issues, while public-facing design sessions allowed for real-time feedback on concepts. The results of this involvement are described in the following section.

PUBLIC ENGAGEMENT

2

2 **PUBLIC ENGAGEMENT**

Public engagement plays an integral role in any planning process, as its results will impact the daily lives of community members and local businesses. Planning for a community of any size is not as successful as planning with the community; meaningful engagement means stronger results, tighter community bonds, both of which make plan implementation more likely. Furthermore, engagement provides invaluable feedback to planners, engineers, and designers regarding current conditions and problems that might not be fully understood looking at data alone; the human element and a diversity of perspectives helps to reframe the project team's view of the issues and provide better suggestions for improvement.

The Wakefield Small Area Study conducted public engagement in three phases, concurrent with the planning process described above. Through topical surveys on sense of place, transportation, open space and the environment, focus groups, and public meetings, the collective insights of participants helped to complete the full picture of the study area's strengths, weaknesses, challenges, and opportunities for mobility and community growth. Engagement activities included:

- A series of focus group meetings with stakeholders and members of the public.
- An online survey and online meeting to hear from community members about their experiences and values for the future of the Wakefield area.
- An online project open house to share existing conditions analysis and collect feedback on potential recommendations.
- An online event to present the draft recommendations to the community.
- An online Final Recommendations Survey where community members shared their opinions on the recommendations and prioritized the proposed capital investments.

2.1 KEY FINDINGS

Throughout the process, many participants shared their vision of a plan that celebrated connections to the outdoors and healthy living. Common themes of residents, stakeholders, and other participants included:



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2.1.1 FOCUS GROUP MEETINGS SUMMARY

The City held virtual focus group meeting during the week of April 16, 2021. The intent of the meetings was to assist the design team with initial fact-finding and due diligence. A summary of the information gathered during those two days is found below.

Early in the planning process, the design team met with stakeholder groups to help with fact-finding about the study area. Quantitative data on traffic volume, speeds, and multimodal conditions can only tell us so much about an area; the qualitative insights of residents and stakeholders complement this information and helped the study team prepare the first survey to the Wakefield community.

To capture broad perspectives on the area's needs, challenges, and opportunities for growth, attendees included a broad range of organizations involved in the Wakefield community. Attendees included representatives of homeowner associations, school officials, community and religious organizations, parks and environmental organizations and agencies, developers, and City public safety agencies.



FIGURE 2: WAKEFIELD FOCUS GROUP SUMMARY

Key takeaways from the groups include:

Multimodal Transportation:

Expand multimodal infrastructure in the area (bicycle facilities, sidewalks) for enhanced community safety.

Growth & Development: Foster desirable

development that enhances community character.

Public Safety:

Continue the positive relationship between first responders and the Wakefield community.

Open Space & Environment:

Explore sustainable ways to connect people to nature through expanded trails along stream corridors.

Civic Groups & Schools:

Enhance walkable and bikeable amenities for a population that is highly engaged in local schools and civic organizations.



FIGURE 3: WAKEFIELD FOCUS GROUP MEETING THEMES

2.1.2 KICKOFF ONLINE SURVEY RESULTS

A public survey was open for a response from April 30, 2021, through May 23, 2021. The purpose of this survey was to gather information about Wakefield and how the people who live, work, visit, worship, and play in the area experience the community. In total, over 250 community members took the survey, producing 670 comments.

These large-scale responses complemented the first-hand discussions through the focus groups and public workshops. Major takeaways from the survey are summarized in the following pages. The **full survey responses** are available online.

MAPPING SURVEY ANSWERS

Survey participants were asked to identify places they love (heart icon), traffic safety concerns (intersection icon), and places where they have big ideas or suggestions (light bulb icon). For areas where important pedestrian and bicycle connections need to occur, participants drew the blue lines below.



FIGURE 4. KICKOFF SURVEY MAP RESPONSES

ENVIRONMENT SURVEY ANSWERS

When asked what important information the project team should know about the environmental features of the area, respondents pointed to several key themes, including tree loss and watershed protection.



FIGURE 5. KICKOFF SURVEY ENVIRONMENTAL THEMES

TRANSPORTATION SURVEY ANSWERS

When asked about how they move or would prefer to move around the Wakefield area, survey respondents pointed toward a need for focus on safety.

Please react to the statements below. Also, if there are other specific roadways in the study area you believe have speeding issues, please note those in the comments for this question.

	Strongly				Strongly
	Agree	Agree	Neutral	Disagree	Disagree
There is a speeding problem on Falls of	44%	24%	19%	12%	1%
Neuse Road.	Strongly	Agree	Neutral	Disagree	Strongly
	Agree				Disagree
Crossing the roadways in Wakefield as a	36%	31%	25%	7%	1%
pedestrian or cyclist is NOT SAFE.	Strongly	Agree	Neutral	Disagree	Strongly
	Agree				Disagree
Traffic backs up on Wakefield Pines Drive	33%	26%	38%	2%	
when school pick-up and drop-off occur.	Strongly	Agree	Neutral	Disagree	Strongly
	Agree				Disagree
	150 responde	nts			

FIGURE 6. KICKOFF SURVEY SPEEDING QUESTION

Congestion is a concern, and school traffic may contribute to this. Fifty-nine percent of respondents noted increased congestion corresponding with school pick-up and drop-off periods. Speeding also contributes to a perception that the area is unsafe for multimodal users, including children and young people traveling to and from school. Aside from Wakefield Pines Drive and Falls of Neuse Road, community members also noted Sycamore Grove Lane, Mabry Mill Road, and Wakefield Plantation Drive as places where speeding is a problem. The survey also asked about what type of facilities community members prefer to use. Greenways and off-road separated cycling facilities were the most popular.

Of those that choose to bike or walk in the area, the majority do so for recreation and exercise. Respondents indicated that biking and walking in the Wakefield area is predominantly for recreation, with nearly 85 percent indicating they bike, walk, and use greenways for that purpose. The survey also found that over 60 percent of respondents would be or may be interested in using transit to travel to or from the Wakefield area.



SENSE OF PLACE SURVEY ANSWERS

The kickoff survey asked participants where they would take a visitor to show them what makes Wakefield special to them. The word cloud graphic shown in Figure 8, illustrates participant responses. The more times the same answer was given, the larger the word appears in the graphic.

The area's natural resources stand out, as well as community amenities connecting residents and visitors to these resources.



Both the Neuse River and Falls Lake (and the Dam) give residents a distinct connection to the area. Among the live, work, and play features, however, "live" amenities are noticeably smaller.

FIGURE 8. KICKOFF SURVEY AREA AMENITIES

Auto-oriented shopping areas focus on visitors arriving by car and providing large parking areas with few considerations for pedestrians. The development typically only includes retail and restaurants. In comparison, walkable mixed use village centers combine retail, restaurants, office, and housing all together. A focus on pedestrian comfort and walkability is also typical of this type of development.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I would love to see an area of Wakefield	54%	24%	6%	9%	7%
redeveloped as a walkable village with a	Strongly	Agree	Neutral	Disagree	Strongly
mix of uses.	Agree				Disagree
I would love for all shopping and dining	12%	13%	24%	31%	19%
experiences in Wakefield to remain auto-	Strongly	Agree	Neutral	Disagree	Strongly
oriented.	Agree				Disagree
	136 responde	nts			

FIGURE 9. KICKOFF SURVEY WALKABLE DEVELOPMENT QUESTION

The survey also asked about future redevelopment of the area and preferences for car-oriented spaces over walkable village. Nearly 80 percent of respondents said a walkable, mixed-use village would be an attractive development alternative, while only one-quarter (25%) favored automobile-oriented development.

In addition, over half of respondents did not feel that the Wakefield area has a sense of arrival or a gateway feature.



Respondents also provided ample comments with their responses. Two examples and key themes are found below.

Finally, the survey asked participants to describe their ideal vision for the future of Wakefield in six words or less. The word cloud graphic shown in Figure 11, illustrates participant responses.



FIGURE 10. KICKOFF SURVEY DEVELOPMENT COMMENTS

The more times the same answer was given, the larger the word appears in the graphic.



FIGURE 11. KICKOFF SURVEY FUTURE OF WAKEFIELD

A few other themes emerged in the survey comments.

These are summarized below.



FIGURE 12. KICKOFF SURVEY COMMENT THEMES

Key Takeaways



Emphasis on multimodal transportation improvements, both to increase safety (improved connections) and convenience (benches, lighting).



Support for streetscaping elements to increase beautification and pedestrian use (trees, sidewalks, plantings, and lighting).



Interest in walkable, mixed-use development in and around Wakefield commercial activity nodes.

2.1.3 ONLINE OPEN HOUSE SURVEY RESULTS

The open house held online offered participants another opportunity to give feedback into the planning process. Survey respondents were presented the summary of the existing conditions analysis and asked their opinions on amenities, investment priorities, streetscaping treatments, and development opportunities.

In contrast to the opening round of engagement, which supplemented data gathering to complete the picture of the area's existing conditions, the open house allowed participants to shape the development of the plan's recommendations. Over 90 community members attended the open house over the two weeks it was open. The full list of responses is **available online**. The open house asked participants to rank possible amenities for greenways in the Wakefield area. Lighting, benches, and trash/recycling receptacles were the most preferred. The open house also asked about preference for accommodating multiple modes in the transportation infrastructure in the area. Over 60 percent of respondents said they supported this, with around 14 percent indicating that it depends on the street.

SURVEY RESULTS

Q: DO YOU BELIEVE IT IS A WORTHWHILE PUBLIC INVESTMENT TO RETROFIT THE MAJOR CORRIDORS IN THE WAKEFIELD SMALL AREA TO BE SAFER FOR PEDESTRIANS, CYCLISTS, AND TRANSIT USERS?

Total respondents: 61



Recurring Comment Themes:

- Investment in transit seen as a positive; more important as mixed use development is being encouraged
- Emphasis on pedestrian and bicycle safety
- · Desire for safe pedestrian/bicycle connections to the greenway

FIGURE 13. OPEN HOUSE RETROFIT MAJOR CORRIDORS

The open house also asked participants to rank potential streetscape elements. Wide sidewalks, high- quality crosswalks, and street trees were the top choices, followed by pedestrianscale lighting and separated cycling facilities. When asked about preferred ways to create a gateway for the area along Falls of Neuse Road, the top choice was enhaced plantings, followed by signage.

In addition, several themes emerged in the comments, including:

- Positive feedback related to mixed-use development and increasing density on previously developed parcels.
- Concern over speeding and traffic issues along Wakefield Pines Drive and Wakefield Plantation Drive.
- Interest in updating the exterior of deteriorating neighborhood homes.
- Emphasis on placing higher priority to local Wakefield area survey respondents.
- Interest in maintenance of local playgrounds and parks (similar to Heritage and Bedford communities).
- Suggested enforcement of commercial parking on local area roads, as residents point out it is used as a storage area during nights/weekends.

2.1.4 DRAFT RECOMMENDATIONS SURVEY

The Draft Recommendations Survey concluded the public engagement, offering participants an opportunity to review proposed transportation investments, vet recommendations, and offer valuable feedback on their effectiveness and priorities in implementation. The survey was open between July 29 and August 16, 2021, and the full results of this survey can be viewed online.

The survey asked if the proposed recommendations would encourage respondents to walk or bike more. Over 50 percent indicated they would walk or bike either "a little more" or a "lot more". In addition, over 40 percent of respondents indicated they would be "highly likely" or "somewhat likely" to walk or bike to a transit station if the recommendations are implemented.

The survey also asked respondents to rank the proposed capital projects in order of priority to them. Improvements to intersections at Falls of Neuse Road and Wakefield Pines Drive ranked the top, followed by pedestrian safety measures along Wakefield Pines Drive and the Richland Creek greenway connector.

Q: RANK THE POTENTIAL STREETSCAPE ELEMENTS BY ORDER OF IMPORTANCE TO YOU

Total respondents: 41



TECHNICAL ANALYSIS

3

3 TECHNICAL ANALYSIS

Recommendations come from a robust understanding of community values, objectives, and insights, but also from an understanding of the current mobility system's problems, opportunities, strengths, and weaknesses.

This chapter examines the Wakefield study area holistically, beginning with its demographic and community context, followed by a synthesis of the region's multimodal transportation system, and concluding with analyses of the area's current and future land use, including parks and natural infrastructure.

Through this comprehensive review of area-wide existing conditions and system performance, key insights are laid out to drive this study's recommendations.

In this section:



3.1 OPEN SPACE AND ENVIRONMENT

3.1.1 STORMWATER AND WATER RESOURCES

Richland Creek watershed is considered a water supply watershed and is part of the Urban Watershed Protection Overlay District. The Richland Creek mapped floodway and 100-year floodplain within the study area have been impacted by development. To the north of Falls of Neuse, the topography of sites near Richland

Creek may indicate that above and below ground utilities have led to "fill" within the floodplain. To the south of Falls of Neuse, the Columns of Wakefield apartment complex is located within the mapped 100-year floodplain. The riparian buffer of Richland Creek and most of its tributaries has been protected from development.

Richland Creek flows into the Neuse River south of the study area. A second stream system drains the area around the YMCA and Wakefield Townhouses. The extent of flood-prone soils in the study area generally coincides with the 100-year floodplain. They extend beyond the floodplain near Common Oaks Drive south of Falls of Neuse Road. They are also found on the eastern boundary of the Wakefield school's complex.

Wakefield Study Area Existing Subdivisions Floodprone Soils Floodway 100-Yr Floodplain Stormwater Control Measure HD Streams 0-foot Topographic Contour Falls Richmond Run^C Stratford Hall C Falls Of Neuse Rd qiverside Dr Wakefield Commons Dr Sycam ion Oaks Dr Ponderosa Park D

FIGURE 15. FLOODWAY AND STREAMS

Stormwater control measures (SCMs) that capture stormwater and help decrease impacts to streams and other water resources are located throughout the study area. The majority of the SCMs in the study area are wet and dry detention basins as well as bio retention cells and other measures. Most of the stormwater runoff from impervious surfaces in the study area is routed to the SCMs prior to discharge in wetlands or streams. However, there are

some areas where the stormwater flows directly to streams such as the YMCA and Wakefield Townhouses off Wakefield Drive.

Most of the runoff from streets bypass the SCMs. Some exceptions include most of the surface streets. The Wakefield Hills Condos discharge to wetlands in the Richland Creek floodplain. While not a manmade SCM, it serves to slow stormwater before it enters Richland Creek. The Richland Creek buffer also slows stormwater runoff from Pines and North Pines Elementary Schools.

The area bound by Common Oaks Drive, Popes Creek, and Capital Boulevard is only partially captured by SCMs with the remaining discharging to tributaries of Richland Creek. There have not been many stormwater complaints or flooding issues within the study area. The City has jurisdiction over most of the roads and therefore related stormwater for all of the roads in the study area except for Capital Boulevard which is maintained by NCDOT.



FIGURE 15. FLOODWAY AND STREAMS

3.1.2 LAND COVER ANALYSIS

Most of this area is managed open space consisting of stormwater facilities, maintained lawns, and scattered trees. Land cover data shows a cutover area around Beckstone Way, but that area has since been developed into a multifamily residential area.

The only other open space in the study area is restricted to a narrow buffer along Richland Creek and a small area between Beckstone Way and Richland Creek near Forest Pines and North Forest Pines Elementary Schools.

This open space is classified as floodplain forest, cutover areas and pasture. The cutover areas and pasture are utility line rightsof-way that are infrequently managed. The floodplain forest areas are found within the floodplain and are generally unsuitable for development. All these areas provide habitat for small mammals and birds.



FIGURE 16. LAND COVER



FIGURE 17. PARKS AND GREENWAYS

3.1.3 OPEN SPACE AND GREENWAYS

The open space around the schools contains playgrounds and open fields, however, it is not accessible to the public outside of school hours. The school open space has the potential to serve as public open space pending agreements between the Board of Education and the City. Just beyond the study area boundary to the west is Forest Ridge Park. This park has hiking, biking, a playground, wildlife garden, and fishing areas.

Currently there is no direct access to the park from the study area, however, there is a potential access point located across Old Falls of Neuse Road from Wakefield High School. South of the study area on the southern side of the Neuse River, the Leonard Tract is a large undeveloped parcel owned by the City and identified as a future park. A canoe launch and parking area are located upstream of this area. The study area does not contain any greenways although two existing greenways and two multiuse trails are located just outside the study area. The Neuse River Trail can be accessed via sidewalks on Falls of Neuse Road. The Wakefield Trail can be accessed via sidewalk and is located just north of the study area. A multiuse trail is located on Old Falls of Neuse Road starting at the intersection of Wakefield Pines Drive and continuing north. A second trail along Falls of Neuse Road starts just south of the river and study area.

The proposed Richland Creek greenway was included on the City's Capital Area

Greenway Master Plan published in 1989. According to the City Parks, Recreation, and Cultural Resources (PRCR) staff, this corridor will also be included in the City's updated greenway master plan that is currently in draft format. This proposed greenway would provide a connection to Capital Boulevard to the north and the Neuse River Trail to the south.

The City has acquired an easement along much of the proposed greenway. The trail would need a river crossing to connect to the Neuse River Trail or it could follow the north banks of the Neuse to Falls of Neuse Road where the road could be used to cross the river. It will be important to consider establishing access points from the apartment complexes to the east of the proposed trail, Forest Pines and North Forest Pines Elementary Schools, and the Northeast Regional Library. A wide floodway and 100-year floodplain are located along Richland Creek starting at Falls of Neuse Road that may make trail placement and access points difficult. Relocating the trail to the west of Richland Creek where there is another city-owned linear parcel may be more feasible. Access points will be critical to the success of this trail.



3.2 TRANSPORTATION

3.2.1 WHO MAINTAINS WHAT?

To understand the transportation system in the Wakefield study area, it is helpful to see a map defining City-maintained, Statemaintained, and privately maintained streets. Many of the main corridors in the study area, including most of Falls of Neuse Road, Wakefield Pines Drive, and Forest Pines Drive, are City-maintained.



FIGURE 18. STREET STANDARD OF MAINTENANCE

3.2.2 SPEED & QUEUING OBSERVATIONS



SCHOOL QUEUEING

The project team conducted an onsite observation on May 13, 2021. There were no observed queueing problems

occurring at any of the three public schools (Wakefield High School, Middle School, or Elementary School) during pick-up or drop-off. This may be contributed to COVID-19 and a high percentage of online students.



SPEED OBSERVATIONS

The study team conducted a limited field traffic observation along Old Falls of Neuse Road, Wakefield Pines Drive,

and Falls of Neuse. The field observation was conducted off-peak approximately 10 a.m. and 3 p.m. on Thursday, May 13, 2021. All three roadways have topographical characteristics along each corridor. No significant congestion problems were noted. Vehicular speed was estimated using an initial "floating" car methodology to determine if speeding was an issue. In the floating car method, a test vehicle is driven over a course of travel at approximately the average speed of the stream, thus trying to float with the traffic stream. Several test runs are made along the study stretch and the average speed is noted. There were no significant speeding issues observed along Old Falls of Neuse or Wakefield Pines Drive. However, the team observed speeding issues along Falls of Neuse Road that has a posted speed limit of 45 mph. Additional speed measurements, using a speed gun, were taken along select locations of this roadway to determine if this was a consistent problem. From this data, it is estimated that 20%-25% of the vehicles observed speeds greater than 50 mph. The team also noted several locations of blind spots, notably where there was a curve in the roadway at a residential entrance.

3.2.3 MULTIMODAL LEVEL OF SERVICE ANALYSIS

The consultant team also conducted a Multimodal Level of Service Analysis (MMLOS) for the study area. Multimodal Level of Service subjectively measures and categorizes the level of service for multimodal transportation options into six-letter grades based on the corridor's characteristics.

Taking into consideration traffic speed and volume, signals and phasing, bicycle and pedestrian facility prevalence and type, and transit amenities from both State and local sources, the MMLOS aggregates and synthesizes this data to create hierarchy of the roadway users' perceived satisfaction with the facility.

The resulting letter grades provide a clear and composite image of the areas of concern along the corridor for all users. As a conceptual tool, MMLOS helps the planner and consultant to determine needs and prioritize competing alternatives in planning and decision-making.











VEHICLES

(V/C Ratio = Volume over Capacity; number of cars per day divided by the number of cars that the corridor 'could' move per day)

Motor vehicle users in the Wakefield area find the roadway comfortable and amenable. The key problems are not related to capacity or congestion, but rather, vehicular speeds, sight angles, and high crash rate along Falls of Neuse Road. Volumes are light relative to roadway capacity, although conditions worsen along Falls of Neuse Road and Wakefield Pines Drive the further one travels from Capital Boulevard. Crashes are largely concentrated near intersections, with most occurring at the Capital Boulevard intersection (136). These crashes, however, are noteworthy, as the crash rate for this stretch of Falls of Neuse Road is between 1.4 to 3 times the statewide average for similar roads.



FIGURE 19. EXISTING CONDITIONS VEHICLE MAP

TRANSIT

The Wake Forest Road loop passes through the study area, but there are no transit stops along the main roads where commercial destinations are most concentrated. A total of seven bus stops exist along Forest Pines Drive and in the vicinity, however, most lack features such as lighting, shelters, or trash receptacles and do not have marked crosswalks for safe access.



FIGURE 20. EXISTING CONDITIONS TRANSIT LOS MAP

PEDESTRIANS

Pedestrians face mixed conditions within the Wakefield area. Sidewalks and pedways are well-maintained. Where traffic speed and volumes are lower and sidewalks separated, conditions are fair for much of Falls of Neuse Road. Two high-quality intersections at Common Oaks Drive and Spruce Tree Way make crossing in this section easier and safer. The issue with pedestrian walkability in the study area is related to quality crossings and sight lines. There are very long gaps between adequate crossings along Wakefield Pines Drive and Falls of Neuse Road. Lastly, toward the east/west edges of the study area extents, however, conditions worsen and pedestrian facilities along Forest Pines Drive and Capital Boulevard are lacking.



FIGURE 21. EXISTING CONDITIONS PEDESTRIAN LOS MAP

CYCLING

Bicyclists experience mixed conditions in the Wakefield area. Recreational bicyclists have two greenway options including Neuse River Trail and Richland Creek Greenway, near the study area connecting to greater Raleigh. There are also buffered bike lanes existing along Forest Pines Drive and Common Oaks Drive. With limited or no bike facilities along Wakefield Pines Drive and Falls of Neuse Road, it will continue to be difficult to provide safe and convenient level of service and comfort to beginner and intermediate cyclists. With two of the area's bicycle crashes occurring along Falls of Neuse Road, the lack of facilities here may force bicyclists into unsafe or risky road behavior.



FIGURE 22. EXISTING CONDITIONS BICYCLE LOS MAP

3.3 LAND USE

3.3.1 EXISTING LAND USE

The study area includes the neighborhoods and commercial developments along Falls of Neuse Road between the Neuse River and Capital Boulevard, abutting the boundaries for the Town of Wake Forest. These areas include Wakefield Crossing, Wakefield Commons, and the UNC Rex Healthcare cluster of offices and outpatient facilities. Existing land uses in the plan area include residential, office, commercial, institutional, parks and open space, a grocery store, and an elementary school. The majority of the land area is developed for commercial and includes large surface parking lots, large planted buffers, and street trees. Most



FIGURE 23. EXISTING LAND USE

structures range from one to three stories tall. There are smaller, scattered vacant parcels throughout the study area, although the suitability of development of these parcels is limited due to

existing regulations. Across all uses, structures in the study area were built relatively recently. Many were built between 2000 and 2010, with some development occurring between 2015 and 2020. Because of the relatively recent development, properties in the study area may be less likely to redevelop in the near term.
3.3.2 FUTURE LAND USE

The Future Land Use Map (FLUM) is used to guide land use and zoning designations throughout the city. The Wakefield study area contains several different future land use designations including Community Mixed-Use, Office & Residential Mixed-Use, Public Parks & Open Space, Moderate Density Residential, and others. The recommendation for future proposed land uses correlates with existing land uses; indicating that the nature and character of the development in the area should remain similar in nature to its current condition. As buildings and developments age out or require renovation, new developments are recommended to maintain the current mix of uses.



FIGURE 24. FUTURE LAND USE



3.3.3 URBAN FORM ANALYSIS

The Urban Form Map provides guidance on appropriate frontages to integrate land uses with transportation improvements. Frontage refers to the relationship a commercial, mixed-use, or multi-family development has with the street. The parameters of frontage include the placement of the building on the site, the location of primary entrances, landscaping provided along the front of the property, and the location of parking. Frontage is considered a fundamental urban design attribute, as it governs the relationship between private investment on private land and the public's investment in the public realm.

The Capital Boulevard and Falls of Neuse corridors both indicate a parkway frontage. A parkway frontage is appropriate in a suburban environment where densities are low and multimodal access is not anticipated to be significant within the time horizon of the plan. A parkway front is also appropriate where other frontage approaches are not feasible or practical. Pedestrian access and circulation are still accommodated, however, prescriptive standards for building location are not required and parking between the building and street is an acceptable outcome. The current zoning in the study area is indicative of this type of solution.

3.3.4 CURRENT ZONING MAP

There are a variety of zoning districts within the Wakefield study area. The most prevalent zoning allows more intensive mixed-use development including commercial mixed-use and residential mixed-use, with smaller areas of office mixed-use and neighborhood mixed-use permitted.



FIGURE 25. ZONING

Wake County Zoning District: Highway District (HD)

A small assemblage of parcels along Capital Boulevard are designated HD. The Highway District (HD) is a low-density residential district (maximum density of 1.45 dwelling units per acre) comparable to the R-30 district, but one that allows a wide range of nonresidential uses with a Special Use Permit.

Residential Districts

Within the City of Raleigh, residential districts are designed for neighborhoods with densities of up to 10 dwelling units per acre and building heights no taller than three stories and 40 feet. They allow residential uses as well as civic uses like schools and churches. The areas adjacent to the study area contain numerous examples of R-6 and R-10 zoning. The underlying zoning for the Wakefield schools site is R-6, which is part of annexation processed in 1995. Included in the 1996 annexation is a 28.85acre site zoned R-6 which lies within the study area.

Mixed-Use Districts

Mixed-use districts offer greater flexibility in use and density while still allowing for appropriate transitions between residential, commercial, and industrial areas. Lower-intensity districts like Residential Mixed Use (RX), Office Mixed Use (OX), and Office Park (OP) restrict the amount of retail use in a development and are intended to provide an active but compatible buffer for residential districts. Neighborhood Mixed Use (NX), Commercial Mixed Use (CX), and Industrial Mixed Use (IX) allow a greater range and concentration of uses, making them well suited to commercial centers. and corridors.

Special Districts

In addition to residential and mixed-use districts, Raleigh has a set of special districts for areas and uses that require customized regulation. Special districts can address the unique needs of sensitive environmental areas, agricultural uses, or heavy industry. The only special district located in the study area is Conservation Management (CM), which is intended to preserve the land as permanent open space.

Overlay Districts

The last type of zoning district used by the City of Raleigh is the overlay district. Overlays add an extra set of regulations related to an environmental, cultural, or infrastructure feature that may extend across numerous parcels and various base districts. There is one overlay district that applies to the study area - the Urban Watershed Protection Overlay District. See below for some additional information on this overlay.

3.3.5 URBAN WATERSHED PROTECTION OVERLAY DISTRICT (-UWPOD)

The overwhelming majority of the study area is subject to the Urban Watershed **Protection Overlay District** (-UWPOD). The intent of the -UWPOD is to protect the City of Raleigh's and Town of Wake Forest's drinking water sources. The watershed overlay includes additional impervious surface limitations, watercourse buffers, and stormwater runoff, and water quality standards. Much of the existing development in the area was built before the -UWPOD was established and could not be replicated today without a variance. The overlay provides a high standard for watershed protection and has a limiting effect on major redevelopment.

Timeline of Water Supply Protection Actions

2004

The State of North Carolina Environmental Management Commission (EMC) reclassified the Neuse-Richland Watershed to a Class WS-IV NSW

2008

The State EMC issued a letter establishing a deadline to attain full compliance with the State's Water Supply Watershed Protection Rules

2013 - 2016

Board of Adjustment grants numerous variances for forestation requirements due to hardship

2018 - 2020

Nine (9) development plans received in the study area

Source: City of Raleigh

2005

The Neuse River-Richland Creek Watershed Plan adopted

2009

Urban Water Supply Watershed Protection Area Overlay District adopted

2013

Unified Development Ordinance adopted with Urban Watershed Protection Overlay District

2015 - 2017

Three (3) development plans received in the study area

FIGURE 26. WATERSHED SUPPLY PROTECTION ACTIONS

3.3.5 SOFT SITE ANALYSIS

The map below is often described as a "soft" site analysis and used to identify vacant or unimproved areas. Clearly, only a small amount of property falls into that category within the Wakefield Small Area Study. Between the anticipated NCDOT right-of-way acquisition noted and the forestation requirements of the -UWPOD, the development of those outparcels at Falls of Neuse Road and the future Capital Boulevard interchange are limited. A more likely scenario would be for currently developed parcels to evaluate the transformation of large parking areas as part of a walkable, mixed-use village center. Transformations like this are happening across the country and are often termed "suburban retrofits"; oftentimes, the larger boxes stay in place while incremental, smaller-scale shops fill in over time.



FIGURE 27. SOFT SITE ANALYSIS

WAKEFIELD SMALL AREA MARKET ANALYSIS 3.4

3.4.1 A FEW HIGHLIGHTS INCLUDE:

The Wakefield Small Area Study market area(s) are defined as driving distances from the centroid of the area boundaries (5-minute, 10-minute, and 20-minute drive times). This reflects the current condition of the auto-centric lifestyle and bedroom community environment. Detailed information for the immediate study area boundary of a 1 square mile was also included.



- Development is limited in much of the area due to watershed protection regulations.
- Redevelopment opportunities may exist to the east of the study area. Retail and multifamily housing would be supported in the larger 10-minute and 20-minute trade areas east of Capital
- The area ranks high in quality of life but could provide better and more complete infrastructure to support healthy, active lifestyles and promote outdoor activity opportunities for families

Retail trade and food and drink services anchors employment in the study area and accounts for a large portion of the daytime population.

The study area has a higher population of affluent young families than surrounding areas.

Growth associated with residential areas north and east of Wakefield and population centers south and west of the area has affected local traffic patterns and volumes.

The Esri Community Profile for the study area projects the population will become younger and more diverse overall and will contain more families by 2025. A market analysis shows two consumer groups currently dominate the study area: young, well-educated professionals who are financially secure and accustomed to longer commute times; and younger, more mobile, and ethnically diverse families who prefer to live in newer subdivisions and own the latest tech.

Median household income within the study area is \$105,198.

Most of the current residential population is between the ages of 35 and 44 and predominately white.

RECOMMENDATIONS

4

4 RECOMMENDATIONS

In response to the Wakefield area's needs, concerns, and desires expressed through the engagement process, the study makes a series of recommendations for both new or updated policies and capital project investments. In doing so, the study creates a cohesive framework for a complete, continuous, and connected system of bicycle and pedestrian facilities supportive of present and future land use and development.

As a multimodal plan, the study seeks to address all modes of travel and ways to shape the city's transportation system to be consistent with its desired growth. However, this planning-level guidance requires additional levels of understanding prior to projects being built or actions being taken.

In this section:



Transportation and mobility recommendations



Water resource management options



Land Use and urban design investigations

4.1 TRANSPORTATION & MOBILITY

4.1.1 PREFERRED ACCESS PLAN

The Preferred Access Plan (PAP) forms the conceptual basis for system-level recommendations and conceptual designs. At a high-level, this perspective reflects how all elements work together – connectivity, access management, and key nodal points that increase the distance pedestrians can travel in a short time. The Preferred Access Plan (PAP) transforms key takeaways, guiding principles, and design considerations from corridor analyses into an actionable framework over which potential connections can be made to key locations, and designs can be prepared and tested through review and public engagement.

Closing the gaps between quality crossings in support of creating a more walkable community is a critical goal of the Wakefield Area Preferred Access Plan. For a small area, reduced gaps increase community connections. The plan approaches improved connections by creating 2-2.5-minute walksheds at key locations within the study area; ideally, reducing walksheds to this size (roughly 1,000 feet between crossings) reduces the distance between safe crossings, connecting people with places. The study proposes four crossing improvements along this corridor.



FIGURE 29. PREFERRED ACCESS PLAN

Creating quality, safe, and convenient crossings are critical.

Some current crossings, like this one at the middle and high school, are good examples. Providing a higher level of protection to those that desire to cross a busy street, especially streets that are multilane, high-volume roadways, requires a higher level of design treatments. Some features required under the Raleigh Street Design Manual, such as high visibility crosswalks, pedestrian countdowns, and ramps that meet ADA standards, will be implemented when a street is resurfaced and would provide a baseline of safety features for pedestrians. However, other new treatments like Rectangular Rapid Flashing Beacons (RRFB) or HAWK signals could also be used to enhance visibility and the safety of the crossing.



FIGURE 30. WAKEFIELD PINES DRIVE PEDESTRIAN SIGNAL (HAWK)

4.1.2 **GREENWAY CONNECTIONS**

The proposed network of bicycle and pedestrian facilities was developed with the goal of creating a network of well-connected, lowstress facilities for all. Aligning with the City's vision, these recommendations are intended to supplement previous planning efforts, create and enhance connections to existing bikeways, pedways, and greenways, and improve the safety and convenience of active transportation in the study area.

Closing the gap between existing greenways, sidepaths and multiuse trails is a key recommendation of this study. Some of the existing trail connections include the Old Falls of Neuse sidepath, Wakefield Trail, and the upper Neuse Greenway. These recommendations include utilizing on- and off-road 10' to 12' trail connections to cross physical roadway and bridge barriers. In addition, there are several opportunities that exist to explore greenway connections to Wake Forest (along Richland Creek or Forest Pines Drive) and to the Wakefield Elementary School campus with a future study. Bicycle and greenway connections with Wake Forest is the topic of a "hot spot" study conducted by Capital Area Metropolitan Planning Organization (CAMPO) starting in 2022.



FIGURE 31. GREENWAY CONNECTIONS

Barriers like the Richland Creek bridge create limitations to well-connected trail systems.

However, by grading out a 10' pathway or trail underneath the dual bridges, this trail/greenway connection avoids having to cross multiple lanes of traffic along Falls of Neuse Road. Adding pedestrian-scale lighting and protective railing enhances the safety and use of this facility. In the case that a future study finds that a grade-separated crossing isn't feasible, an atgrade crossing of Falls of Neuse with pedestrian signage is recommended.





That means that a pedestrian would have to walk an additional 6 to 7 minutes out of their way just to cross the road, and then 6 to 7 minutes back to the same spot.

Currently, there is no pedestrian crossing along Falls of Neuse Road between the Neuse River bridge and the signal at Spruce Tree Way, a total distance of 3200 feet. Similarly, no pedestrian crossing exists on Falls of Neuse between the Wakefield Pines Drive intersection and Common Oaks Drive intersection, approximately 3,400 feet away. That means that a pedestrian would have to walk an additional 6 to 7 minutes out of their way just to cross the road, and then 6 to 7 minutes back to the same spot. Sight line issues and elevated speeding along Falls of Neuse east of the Neuse River bridge were also noted during investigation. To address the speeding and sight line issues, it is recommended that a traffic signal and high-quality pedestrian crossing be installed at the Village Pines Lane intersection and at the Dunard Street intersection.



FIGURE 33. FALLS OF NEUSE MID-BLOCK CROSSING



FIGURE 33. FALLS OF NEUSE MID-BLOCK CROSSING

To augment safe crossing of Falls of Neuse Road and enhance bicycle and pedestrian connectivity, it is recommended that a high-quality pedestrian crossing be placed midway between Village Pines Lane and Spruce Tree Way. This treatment would include a HAWK signal, pedestrian-level lighting, high-visibility crosswalk and enhanced signage. This proposed crossing would also provide a vital link between the Sycamore Grove Lane greenway connection and the Richland Creek Trail extension.

4.1.3 BIKEWAY CONNECTIONS

The proposed bikeway facilities provide on- and off-road bike treatments to accommodate all levels of cycling abilities. Some streets, like Narrowood Street, Sycamore Grove Lane, Dunard Street, Stratford Hall Drive and London Bell Drive, are narrow, low traffic volume and slow speed facilities. These neighborhood bikeways simply require enhanced signage and wayfinding to bring more awareness to drivers of potential cyclists. See the 2016 BikeRaleigh Plan for more information on neighborhood bikeways. Other streets, like Kelway Drive, Spruce Tree Way, Wakefield Crossing Drive, Common Oaks Drive and Wakefield Commons Drive, are wide enough to accommodate separated bike lanes for added protection from vehicles. These separated bike lanes would include 5-foot painted bike lanes with bollards and/or armadillo bumpers and enhanced signage.



FIGURE 34. PROPOSED BIKEWAY CONNECTIONS

Some streets like Wakefield Plantation Drive, Forest Pines Drive, and sections of Common Oaks Drive already have buffered bike lanes. In addition, there are limited curb cuts along these streets. It is recommended that vertical separation including bollards and/ or armadillo bumpers be implemented requiring no modifications to the curb and gutter. In the longer term, concrete separation could be installed, like that on the Gorman Street connector in western Raleigh.





FIGURE 35. COMMON OAKS DRIVE SEPARATED BIKE LANE



*Delineated bike lanes currently exist on a portion of Common Oaks Drive. This section shows a portion that does not have bike lanes.

FIGURE 36. COMMON OAKS DRIVE SECTION

PROPOSED

The proposed cross section would repurpose the wide pavement that exists today and introduce a vertical separation element. Lane width would be reduced to a comfortable 11-foot width.



This perspective shows a gateway treatment and enhanced pedway experience for bicyclists and pedestrians traveling northbound. The gateway treatment is proposed to bring more awareness to drivers that they are entering an area where more bicyclists and pedestrians are expected. Expanded sidewalks with separated buffers will allow users of all levels safe and convenient passage, as well as access to the Neuse River Trail.





FIGURE 38. FALLS OF NEUSE ROAD SECTION

One possible treatment along this portion of Falls of Neuse Road is to utilize the wide median to implement a 12' meandering multiuse path. This would provide a protected multimodal facility from the proposed greenway crossing near Spruce Shadows Lane to the Dunard Street proposed sidepath extension. Additional detailed work would be required to ensure that potential designs include intuitive crossings at intersections and left turn lanes and that future planned growth of the Falls of Neuse corridor is accounted for.

FALLS OF NEUSE & WAKEFIELD PINES INTERSECTION

Several intersections, as seen on the proposed Preferred Access Plan (PAP), call for high-quality intersection treatments. One such intersection is Falls of Neuse and Wakefield Pines. This intersection is the busiest intersection in the study area and calls for a higher level of safety and connectivity for bicyclists and pedestrians. It is recommended that high-visibility crosswalks be installed on all approaches, extend medians to accommodate pedestrian refuges, and install pedestrian level lighting.



FIGURE 39. INTERSECTION SAFETY

4.1.4 MULTIMODAL SYSTEM LEVEL CONNECTIONS

The proposed network of bicycle and pedestrian facilities was developed with the goal of creating a network of wellconnected, low-stress facilities for the broadest array of people. Aligning with the City's vision, these recommendations are intended to supplement previous planning efforts, create, and enhance connections to existing bikeways, pedways, and greenways, and improve the safety and convenience of active transportation in the study area.

The following map is a compilation of all proposed system-level bike and pedestrian recommendations.

> FIGURE 40. GREENWAY AND BIKEWAY CONNECTIONS



4.2 WATER RESOURCE MANAGEMENT

During the study's initial fact-finding activities, community members expressed interest in the protection of the Neuse River, Richland Creek, and other streams in the Wakefield area, including from stormwater runoff. Fortunately, the study area has a wellfunctioning stormwater system and Raleigh Stormwater data shows relatively few complaints compared with elsewhere in the city. This section presents ideas on how the City and private development can support the continued management of the area's water resources.

4.2.1 STREAM PRESERVATION AND RESTORATION

City-owned land and easements found along Richland Creek and other streams within the study area present an opportunity to preserve streams and stream buffers. When the City only owns one side of a stream, preservation is more practical. If a greenway



is not proposed along a stream, preservation is less expensive than restoration and protects trees in the stream buffer.

Stream assessments can be conducted on all streams where greenways are to be installed or have already been constructed as well as streams that lack woody vegetation. Assessments will help identify opportunities for stream plantings, bank stabilization and/ or stream restoration. These practices can help improve water quality in the watershed as well as overall ecological health of the stream corridor. Due to the extent of overhead and underground utilities in the area, these practices may be limited in scope.

FIGURE 41. STREAM RESTORATION

4.2.2 **STORMWATER**

Development within the past 20-30 years has included the installation of stormwater control measures such as wet and dry ponds; the opportunity exists to improve water quality by utilizing stormwater best practices. Examples for consideration include:





FIGURE 42. STORMWATER CONTROL MEASURES

- Retrofitting existing facilities as constructed wetlands.
- Reducing impervious cover with reduction of parking spaces and/or replacing them with permeable pavement.
- Supplementing existing stormwater treatment with underground vaults with sand filters where space is limited.
- Utilizing green stormwater infrastructure such as bioretention and suspended pavement systems to improve water quality, and including trees in these devices where possible to enhance tree canopy.
- Installing bioswales and vegetated filter strips to encourage infiltration.
- Consider downstream restoration in conjunction with site-level green stormwater infrastructure controls where possible to mitigate water quality and quantity impacts from development.

4.3 LAND USE & URBAN DESIGN

As part of the planning process and in response to survey respondents indicating interest in creating a walkable, mixed-use development, the design team explored the potential for redevelopment in the area and potential land use and urban design recommendations. Examining different scenarios, the project team found that redevelopment in the Wakefield area will require greater study, examination of policies, and stakeholder engagement to develop a cohesive vision for land use and development in that is both implementable and consistent with community desires. Additionally, the recent provenance of most development in Wakefield suggests that large scale redevelopment is many years off. This study therefore makes no recommendation for changes to the land use or urban design guidance for the area. Development is an ongoing process, and the City will continue to engage with residents and stakeholders in future studies.

4.3.1 **REDEVELOPMENT SCENARIOS**

Over 80 percent of initial survey respondents wanted the design team to investigate the potential to create a walkable village center in the Wakefield community. Through public input, including survey responses and the open house, the Wakefield Commons shopping center was identified as a site for conceptual redevelopment. The project team investigated a potential evolution of the Wakefield Commons shopping center. Suburban retrofits typically include the transformation of auto-centric centers into walkable villages. Design features often include a pedestrian-scale block structure, gathering places for people, and a mixture of uses to encourage vibrancy.



FIGURE 43. REDEVELOPMENT SCENARIO

The conceptual design portrayed here reflects two methods of potential redevelopment to create the desired walkable village center. One that maintains the existing density but adds a few buildings over existing parking to create a community space, and another that increases density and a new walkable block network. The more intense intervention still encourages public space creation along with mixed- use buildings that provide housing.

A transformation of this nature, particularly on a recently developed site, is challenging to achieve based on current site requirements. Additional conversations would be needed to find an approach that balances the urban tree canopy with the transformation of autocentric areas into walkable village centers.

IMPLEMENTATION

5

5 IMPLEMENTATION

The Wakefield Small Area Study is intended to provide detailed information to guide the physical and regulatory characteristics for this part of the city.

Generally, after consultation with citizens, an area plan provides recommendations for public improvements or amenities, and rules for private development or reinvestment. The area-specific guidance and rules are adopted into the City's Comprehensive Plan and become the basis for inclusion into the Capital Improvement Plan and departmental work plans.

Area-specific guidance generally includes recommendations for:

- Land use amendments.
- Zoning amendments.
- Updates to transportation maps.
- Updates to parks, recreation, and open space maps.
- Future capital projects.
- Urban design guidelines to shape new development or redevelopment.

The Wakefield area-specific guidance identifies potential street and greenway capital projects that focus on adding connections for people walking and biking and increasing safety in the area. It is important to note that the ability to implement capital projects depends on adequate staffing, capital funding, and consultant assistance. A new program or complex project is unlikely to be implemented without investing in staff resources as well. While the projects below do not come with specific staffing recommendations, all should be understood, as with other area planning projects, as requiring additional staff for successful implementation.

5.1 **GOALS**

This study's recommendations reflect community values and goals, which have guided the planning process. Developed through technical analyses, refined by members of the public through public engagement, these goals provide the framework by which improvements are prioritized and decisions made.

All recommendations for physical improvements, potential regulatory changes, programming, and private property investments are tied back to these goals.

Based on community feedback and technical analysis, the Wakefield Area Plan focuses on improvements to:



 Support Healthy Living through a series of recommended capital projects to allow for improved and additional bicycle and pedestrian facilities along existing roadways and newly proposed greenway connections.



 Increase Safety through a series of recommended capital projects to increase safety at intersections and crossings for all users.



 Ensure Long-term Economic Viability by providing information for private business owners interested in investing in smaller scale commercial and retail properties.

5.2 **IMPLEMENTATION STRATEGY**

Implementation strategies focus on:

- Amendments to policy documents, such as the Comprehensive Plan, BikeRaleigh Plan, and Capital Area Greenway Master Plan.
- Identification of likely funding sources for capital projects. Identification and promotion of public and non-profit supported grants available for business improvements, art, and community programming.

During the final round of public engagement, the community indicated a strong consensus for implementing intersection improvements at Falls of Neuse and Wakefield Pines Drive and enhancing safety with a HAWK signal project at Wakefield Pines Drive. As preferred choices of the community, these projects should be prioritized when pursuing funding opportunities through both traditional municipal, state, and federal multimodal and safety programs. Other non-capital projects, such as programs to encourage the long-term economic vitality of smaller businesses, will require the identification of a local champion or organization to realize.

5.2.1 URBAN DESIGN GUIDELINES AND FURTHER STUDY

No change to urban design guidelines is recommended at this time. Should community sentiment change in the future, specific guidelines would be needed to create an appropriate suburban retrofit.

5.2.2 LAND USE AND ZONING AMENDMENTS

No change to land use guidance is recommended at this time. Significant redevelopment is not anticipated or and may be challenging in the Wakefield area due to existing regulations and newness of development.

5.2.3 PARKS, RECREATION, AND OPEN SPACE PLAN UPDATES

Inclusion of recommended greenway facilities in Greenway Master Plan. Amendments to the Capital Area Parks and Greenway System Map.

5.2.4 TRANSPORTATION PLAN UPDATES

Inclusion of recommended bike routes and pedestrian improvements in the BikeRaleigh Plan and the Pedestrian Plan.Amendments to Planned Bicycle Facilities.

5.2.5 FUTURE CAPITAL PROJECTS

A series of bicycle and pedestrian improvements along existing and proposed facilities are imagined.

The table below identifies recommendations that should be considered for implementation within the study area, according to community goals. A list of high-level cost estimates and funding sources is provided as an appendix as a resource as projects move from planning to design.

		Healthy Living	Safety	Economic Vitality
FALLS OF NEUSE GREENWAY CONNECTION	Proposed additional greenway segments to provide alternate connections throughout the area. These connections may potentially include two new grade separated facilities. Any proposed greenway capital projects would have to be run through a system-wide prioritization matrix.	x	X	X
	North Forest Pines Elementary to Falls of Neuse Road			
	Falls of Neuse Road to Falls of Neuse Road (half loop)			
	Falls of Neuse Road to Sycamore Grove Lane			
	Spruce Tree Way to Neuse River Trail			
	Pedestrian bridge over Richland Creek on Falls of Neuse			
	Pedestrian underpass at Falls of Neuse along Richland Creek			
WAKEFIELD PINES DRIVE PEDESTRIAN SAFETY	Roadway and intersection improvements along Wakefield Pines adjacent to existing Wake County Public Schools. These improvements take a "complete streets" approach to create active and safe routes to the local schools.	x	x	

		Healthy Living	Safety	Economic Vitality
FALLS OF NEUSE MULTIUSE PATH AND SIDEPATH	A series of improvements to allow safe bicycle and pedestrian connections along Falls of Neuse Road for recreational, access to transit, and placemaking purposes. Improvements allow safe connections to future bus locations and existing recreational opportunities and provide opportunities to identify and celebrate the community through art and placemaking elements.	X	X	X
	Neuse River to Spruce Shadows Lane sidepath			
	sidepath			
	Spruce Shadows Lane to Richland Creek multiuse path			
COMMON OAKS DRIVE BIKE IMPROVEMENTS	A series of low-cost improvements within the existing curb lines to improve bicycle connectivity and safety along Common Oaks Drive, to include separated bike facilities using paint (restriping), signage, and bollards, and safety devices such as armadillos.	x	x	x
REGIONAL BIKEWAY IMPROVEMENTS	A series of area improvements proposed within existing curb lines to create protected bikeways using paint (restriping), signage, and bollards.	x	x	x
	Mabry Mill Street to Kelway Drive Bikeway			
	Stratford Hall Drive to Dunard Street Bikeway			
	Sargas Street to Dunard Street Bikeway			
	Townfield Drive and Sycamore Grove Lane Bikeway			
	Springfield Park Drive Bikeway			
	Kelway Drive Bike Lane			
	Spruce Tree Way Bike Lane			
	Wakefield Crossing Drive Bike Lane			
	Waketield Commons Drive to Common Oaks Drive Bike Lane			

		Healthy Living	Safety	Economic Vitality
HIGH-QUALITY INTERSECTIONS SAFETY & HAZARD	A coordinated set of area improvements to provide enhanced intersections with safe crossing features for all users.	x	x	X
ELIMINATION PROJECT	Wakefield Pines and Old Falls of Neuse			
	Wakefield Pines and Wakefield Elementary (south access)			
	Wakefield Pines and Kelway Drive			
	Wakefield Pines and Spruce Tree Way			
	Falls of Neuse and Village Pines Lane			
	Falls of Neuse and Wakefield Pines			
	Falls of Neuse and Dunard Street			
	Falls of Neuse and Forest Pines Drive			
	Falls of Neuse and Capital Boulevard			
MIDBLOCK CROSSINGS	Adding safe crossings where long distances exist between signalized crossings.	x	x	x
	Falls of Neuse at Spruce Shadows Lane			
	Falls of Neuse at Richland Creek			
BUSINESS VIABILITY AND RETENTION	Private commercial owners and operators will be made aware of existing grants available to support a culture of small, independently- owned businesses. Eligible expenses span a range from exterior and interior physical improvements to community events and beautification projects.			x
6 APPENDIX

6 Appendix

The below table summarizes high-level cost estimates for the projects identified in this study. These estimates are for capital costs, and escalation of construction costs is not included. Potential greenway projects would be run through a system-wide project prioritization matrix.

		Estimated Construction Costs*	Notes
FALLS OF NEUSE GREENWAY CONNECTION	Proposed additional greenway segments to provide alternate connections throughout the area. These connections may potentially include two new grade separated facilities.		
	North Forest Pines Elementary to Falls of Neuse Road	\$350,000	
	Falls of Neuse Road to Falls of Neuse Road (half loop)	\$1,550,000	
	Falls of Neuse Road to Sycamore Grove Lane	\$375,000	
	Spruce Tree Way to Neuse River Trail	\$400,000	
	Pedestrian bridge over Richland Creek on Falls of Neuse	\$900,000	
	Pedestrian underpass at Falls of Neuse along Richland Creek	\$450,000	\$200,000 for at grade option

WAKEFIELD PINES DRIVE PEDESTRIAN SAFETY	Roadway and intersection improvements along Wakefield Pines adjacent to existing Wake County Public Schools. These improvements take a "complete streets" approach to create active and safe routes to the local schools.	1,000,000	Cost estimate includes potential for multiple intersection or pedestrian signals.
FALLS OF NEUSE MULTIUSE PATH AND SIDEPATH	A series of improvements to allow safe bicycle and pedestrian connections along Falls of Neuse Road for recreational, access to transit, and placemaking purposes. Improvements allow safe connections to future bus locations and existing recreational opportunities and provide opportunities to identify and celebrate the community through art and placemaking elements.		
	Neuse River to Spruce Shadows Lane sidepath	\$600,000	Remove existing sidewalk and replace with multi-use path
	Richland Creek to Common Oaks Drive sidepath	\$250,000	Remove existing sidewalk and replace with multi-use path
	Spruce Shadows Lane to Richland Creek multiuse path	\$1,500,000	Multi-use path in median
COMMON OAKS DRIVE BIKE IMPROVEMENTS	A series of low-cost improvements within the existing curb lines to improve bicycle connectivity and safety along Common Oaks Drive, to include separated bike facilities using paint (restriping), signage, and bollards, and safety devices such as armadillos.	\$300,000	

REGIONAL BIKEWAY IMPROVEMENTS	A series of area improvements proposed within existing curb lines to create protected bikeways using paint (restriping), signage, and bollards.		
	Mabry Mill Street to Kelway Drive Bikeway	\$10,000	Neighborhood Bikeway Implementation
	Stratford Hall Drive to Dunard Street Bikeway	\$25,000	Neighborhood Bikeway Implementation
	Sargas Street to Dunard Street Bikeway	\$15,000	Neighborhood Bikeway Implementation
	Townfield Drive and Sycamore Grove Lane Bikeway	\$20,000	Neighborhood Bikeway Implementation
	Springfield Park Drive Bikeway	\$10,000	Neighborhood Bikeway Implementation
	Kelway Drive Bike Lane	\$40,000	Bicycle Lane Striping
	Spruce Tree Way Bike Lane	\$60,000	Bicycle Lane Striping
	Wakefield Crossing Drive Bike Lane	\$50,000	Bicycle Lane Striping

HIGH-QUALITY INTERSECTIONS SAFETY & HAZARD ELIMINATION PROJECT	A coordinated set of area improvements to provide enhanced intersections with safe crossing features for all users.		
	Wakefield Pines and Old Falls of Neuse	\$100,000	
	Wakefield Pines and Wakefield Elementary (south access)	\$100,000	
	Wakefield Pines and Kelway Drive	\$100,000	
	Wakefield Pines and Spruce Tree Way	\$300,000	
	Falls of Neuse and Village Pines Lane	\$300,000	
	Falls of Neuse and Wakefield Pines	\$100,000	
	Falls of Neuse and Dunard Street	\$300,000	
	Falls of Neuse and Forest Pines Drive	\$100,000	
	Falls of Neuse and Capital Boulevard	\$300,000	
MIDBLOCK CROSSINGS	Adding safe crossings where long distances exist between signalized crossings.		
	Falls of Neuse at Spruce Shadows Lane	\$250,000	

*Cost reflects current costs (no escalation).

