CITY PLANNING

Walkable Midtown:
The Midtown-St. Albans Area Plan

May 2020

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Raleigh

Walkable Midtown: Contents

Acknowledgements

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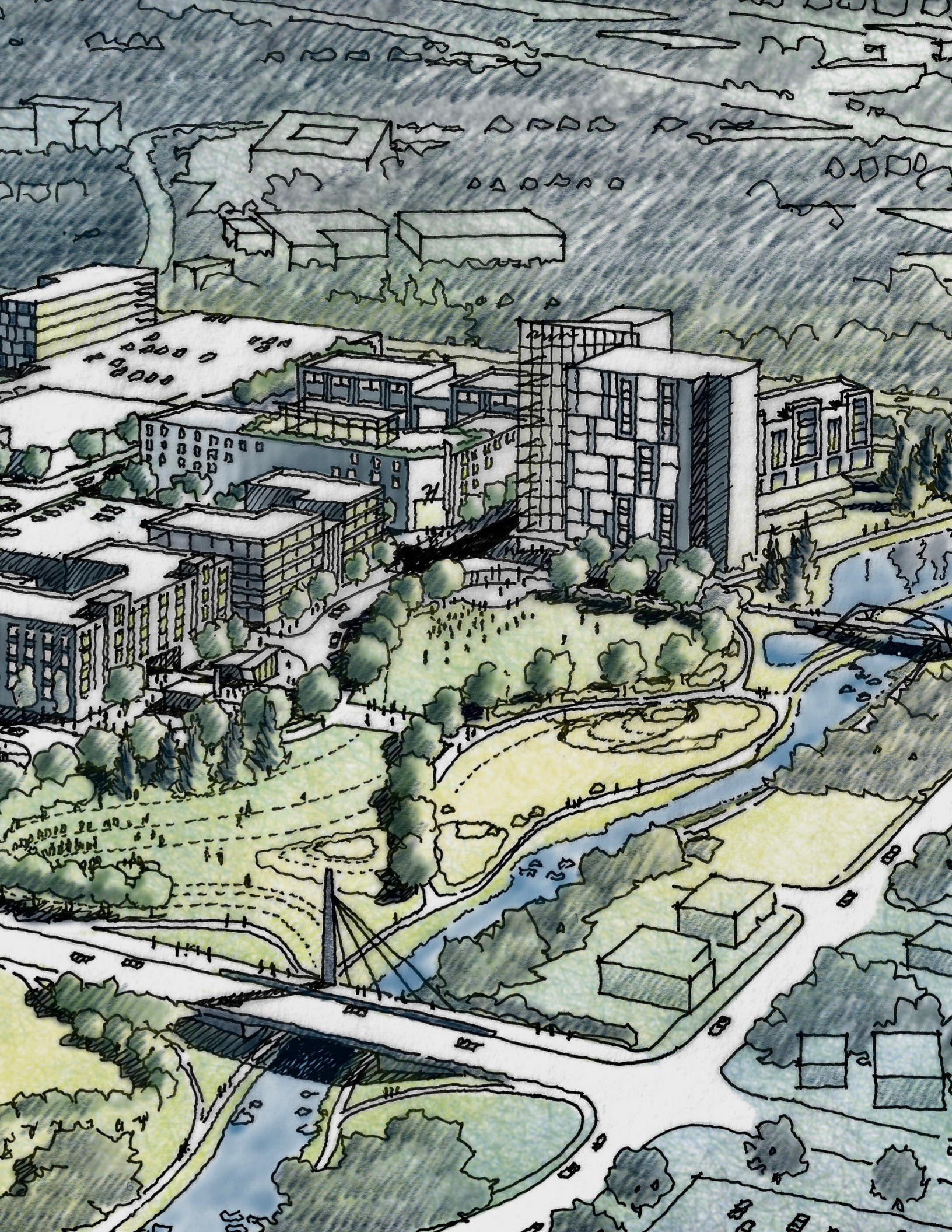


Executive Summary

The Vision

The history of Raleigh's Midtown-St. Albans area is the story of an evolving dream of the future. Born in the auto age of city planning, Midtown's origins reflect a vision of a future where cars frictionlessly zip occupants to their destinations – from carport to parking lot and back again. The new I-440 Beltline facilitated high-speed motion to all corners of the City. Parking lots proliferated to accommodate vehicles at rest. Destinations could be far apart, because the future was an open road, and sidewalks were optional.

Today's Midtown-St. Albans area is at the edge of a different future – one where cars are but one means of transportation and where a clearer understanding of the health and environmental benefits of an active lifestyle make walking as exciting as driving once was.

The Beltline is still a critical piece of infrastructure and an economic engine for the City – but it, and the wide arterial streets that frame Midtown, are also barriers to walkability. A pattern of widely separated homes, jobs, and destinations means few trips can be made by walking.

Walkable Midtown takes the best of the original vision and infuses it with goals that reflect the current needs of the area and overarching considerations such as sustainability, economic vibrancy, and diversified housing options. It creates a future Midtown that:

- Continues to evolve from a place to go through to a destination.

- Creates a blue and green network of natural places and waterways that address stormwater issues, slows traffic in neighborhoods, and provides safe spaces for people to walk or bike.
- Transcends the physical barrier created by the I-440 Beltline.
- Encourages healthy living, reduces carbon emissions, and creates beautiful, green places.
- Provides more reliable travel for people driving while creating more options beyond cars.
- Offers housing choices to residents at all phases of life.
- Begins to accomplish these goals not in a distant future but now.

Process

The Midtown-St. Albans area is a growing, diverse place with a population that swells dramatically during the workday with employees and students while welcoming visitors to shopping and recreational offerings. One significant goal of the planning process was to simply hear from everyone.

Public outreach was guided by a "confirmation group" of residents and other stakeholders, who spoke to the process from the perspective of a participant. They shaped the form and feel of events and helped to create a process that made it easy for participants to take part in and to understand the plan's ideas and recommendations.

Accordingly, this process included:

- **Multiple opportunities to shape the vision and weigh in on the details.** This took place over four meeting phases with a total of 10 in-person events.

- **Alternatives to meetings.** In-person meetings did not work for everyone. Workers with evening shifts, busy parents, people who did not like meetings – the standard weekday evening format could serve as a barrier. Accordingly, each phase included more than one event, with at least one meeting on a weekend. More importantly, each phase included extensive online participation.
- **Proactive outreach.** Instead of requiring people to come to the meeting, this process brought the meeting to people with multiple "pop-up" events at various locations across Midtown.
- **Inclusion.** The process included the City's first-ever planning event conducted entirely in Spanish, and major surveys included both English and Spanish versions. At

In Your Words: Midtown 2040

"Still livable by all income levels. With manageable traffic. And increased walking and biking opportunities."

each key phase, several thousand postcards were mailed to all addresses in the study area. This ensured that not just property owners were included in outreach efforts.

No plan achieves perfect consensus. Stakeholders bring not only diverse ideas but different values to the table. But common ground can be found. *This process uncovered a desire for a human-scaled Midtown-St. Albans area that works for people walking as well as driving, that blends natural systems with public places, and that accommodates job and housing opportunities.* That shared vision created a foundation for specific ideas that received robust testing from the public. No recommendations moved forward without significant support – and some were archived for future consideration.

The final result is a plan for the Midtown-St. Albans area that can enjoy broad support, which is critical to implementing its recommendations.

The Planning Process by the Numbers

More than
600 participants
at the in-person events

More than
1,500 responses
to online surveys

More than
20 Citizens Advisory Council meetings
with updates or in-depth presentations

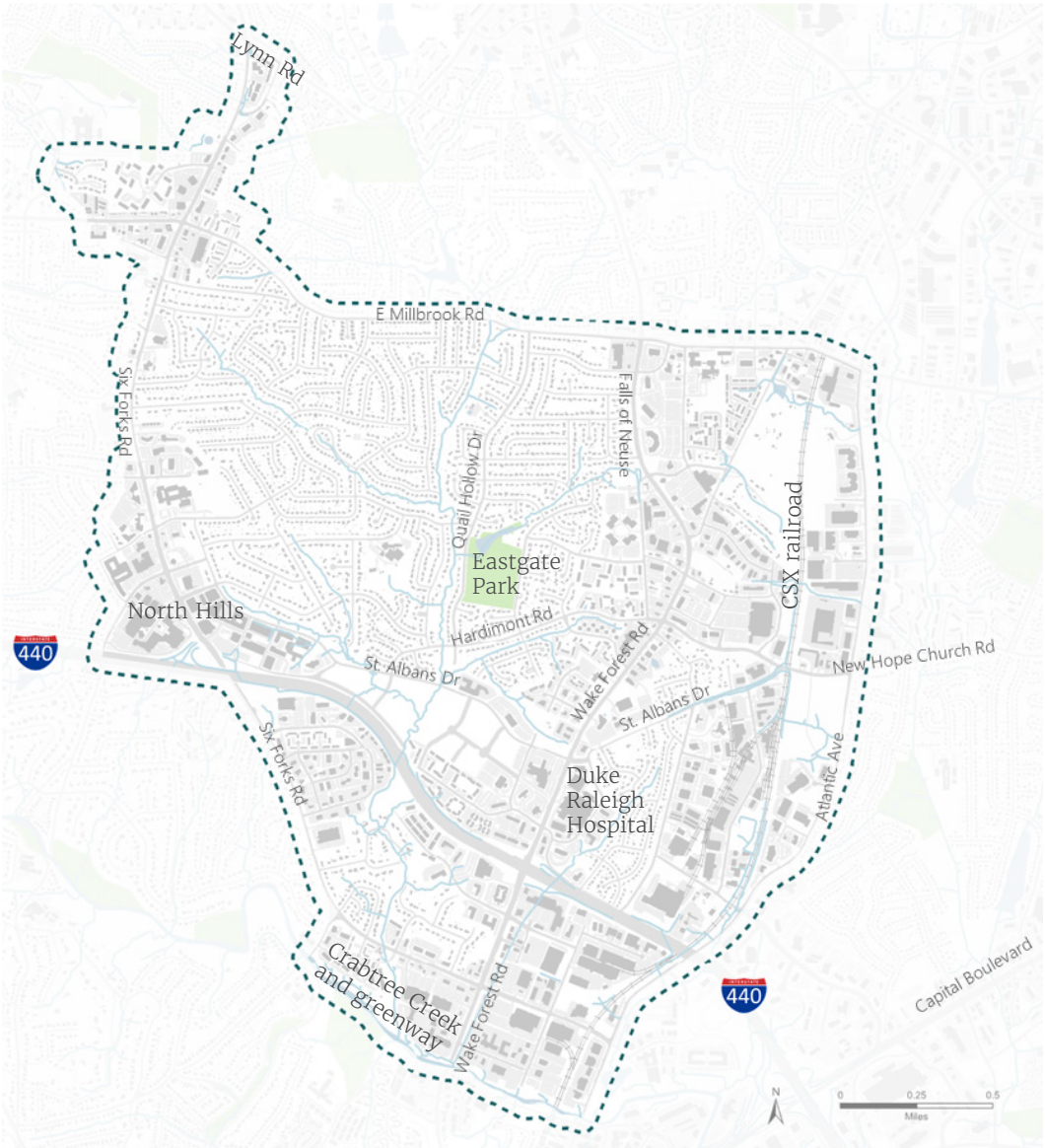
One vision
for the Midtown-St. Albans area

In Your Words: Midtown 2040

"The kind of 'neighborhood' that can have the reputation for both (i) the best restaurants in walking distance, and (ii) the best trick or treating!"

The Study Area

The study area is an approximately five-square-mile area that is bounded by E. Millbrook Road to the north, Atlantic Avenue to the east, and Six Forks Road to the south and west (see map). It features diverse destinations, employers, transportation options, and environmental assets such as North Hills, Duke Raleigh Hospital, I-440 Beltline, railroad, and Crabtree Creek. It is also a rich tapestry of ethnically and culturally diverse restaurants, grocery stores, and other businesses that are unique assets in the City of Raleigh.



Midtown-St. Albans Study Area

Walkable Midtown: Planning Principles

Public input in the process led to the creation of five key principles that acted as a foundation for the identification and development of improvement opportunities. The principles serve as goals for the future of Midtown, and every recommendation in the plan advances one or more of the principles.

Midtown Moves: Healthy, Safe, and Reliable Transportation

- Ensure all Midtown destinations can be reached safely and comfortably by walking.
- Improve travel time reliability for cars and transit vehicles, with a focus on improved technology, demand management, and a better-connected street network.
- Provide more desirable options for travel within the area, including improved transit service and facilities.
- Ensure safe traffic speeds, both on major roads and on neighborhood streets.

Midtown Lives: Residential Neighborhoods and Housing Choices

- Respect the existing scale of housing in established residential neighborhoods.
- Promote a range of housing options for residents at various phases of life and at a range of income levels.

Midtown Green and Blue: Parks, Trees, and Stormwater

- Improve stormwater infrastructure and incorporate it into a connected natural space network, including greenways and parks.

- Explore opportunities to create distinct places focused on water and natural spaces.
- Green: Retain and enhance street trees and functional green spaces to improve the appearance of the area, provide greenway connections, and provide stormwater benefits.

Midtown Works: Innovation and Opportunity

- Support the adaptive reuse or redevelopment of aging/outdated land uses to accommodate new employment and housing opportunities.
- Encourage innovation and entrepreneurship through land use and other policies and programs.

Midtown Beautiful: Aesthetics and Design

- Create attractive streetscapes and ensure the design of new development enhances the feel and appearance of streets and other public spaces.
- Ensure adequate transitions in building heights where a high-density or mixed-use area is adjacent to existing residential neighborhoods.

Walkable Midtown: Seven Big Moves

The recommendations in this plan are organized into seven categories of improvements, known as the "Big Moves," that will support safer streets, economic activity, and transportation and housing options. The Big Moves, outlined in more detail in the Big Picture section of this document, are:

Crossing the Beltline. Two new bridges, one for pedestrians and bicycles only and one for all modes of transportation, to break through the barrier created by the Beltline.

Green Streets. Taming traffic. Catching stormwater. Creating safe spaces for people walking or biking. The plan's Green Streets serve multiple functions, connecting residential areas to Midtown's busy core while ensuring they are not overwhelmed by it.

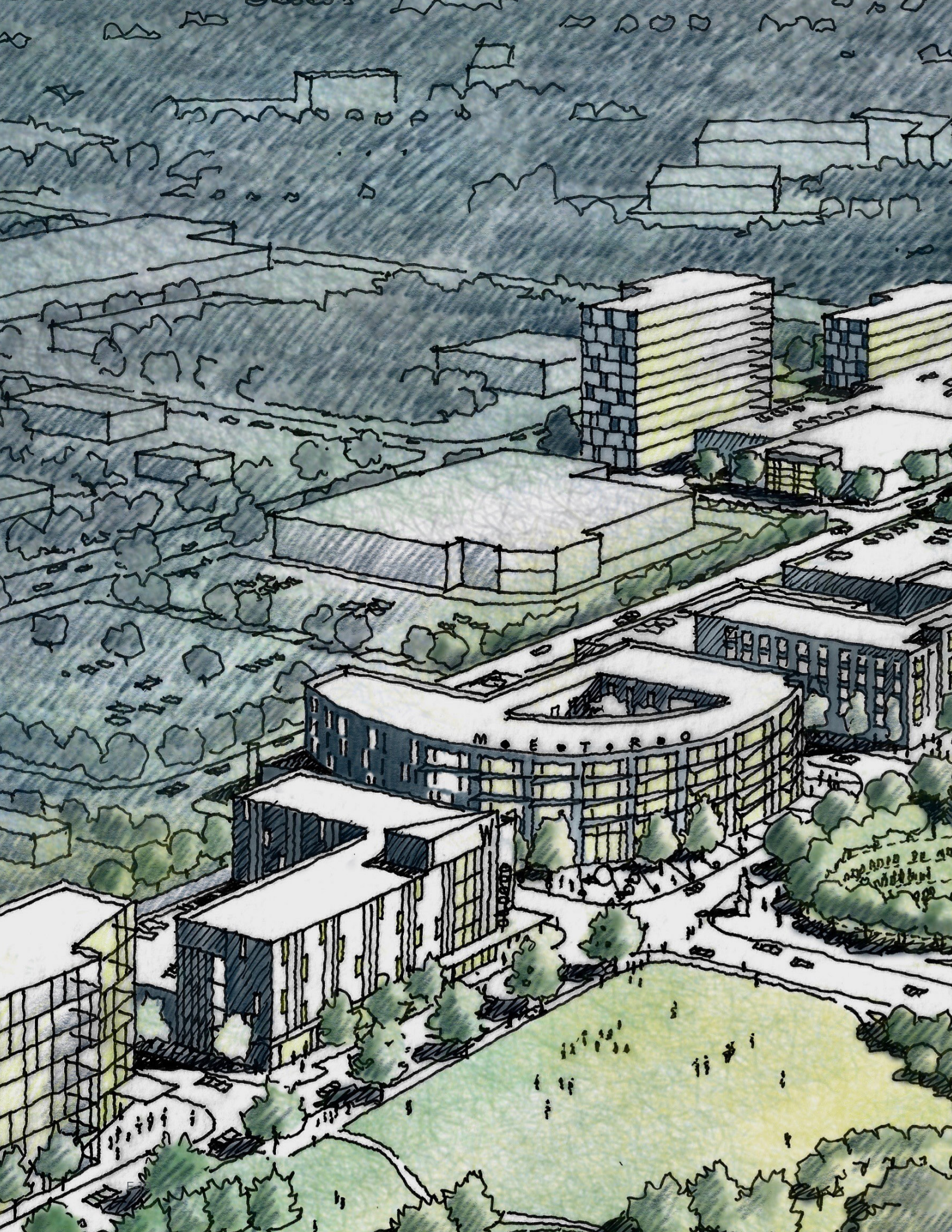
Connected Streets. The driving era's method of handling increased transportation demand was to always widen streets first. Walkable Midtown looks instead to handle more trips by creating a connected grid of pedestrian-friendly streets rather than multilane facilities only for cars.

Serious Transit. For the first time, creating a transit system frequent enough to serve as a real alternative to driving for Midtown residents, workers, and visitors.

The Midtown Ring. A complete network of greenways, on-street protected bike lanes, and bridges that form a safe, comfortable place for people walking and biking. The Ring links neighborhoods with places to work, shop, and recreate and touches all major destinations in the area.

Midtown Living/Midtown Works. Allowing more opportunities for people to live and work in Midtown also serves as a transportation strategy. Transportation isn't just about getting from point A to point B faster in a car; it's about allowing point A to be closer to point B, to allow trips to be made by walking, in transit, or in shorter vehicle trips.

The Midtown Waterfront District. Raleigh's first urban waterfront district takes shape on the edge of the Crabtree. A place where urban life, public park space, and waterside activity all come together.


METRO

Walkable Midtown: The Big Picture

For ease of understanding, this document is divided into two primary sections:

Walkable Midtown: The Big Picture. This section provides a quick, easy-to-read overview of all the key ideas and recommendations of the plan.

Walkable Midtown: Detailed Analysis. This section is intended for those who wish to dive in more deeply into the study analysis and recommendations. It serves as the full plan report and is a standalone document. It contains all the plan's recommendations, along with more detailed technical analysis and description.

The Big Picture: Plan Overview

Walkable Midtown, the final name for the Midtown-St. Albans area plan, was completed in 2020 to create guidance for this dynamic commercial and residential district for the next decade. Recommendations resulting from the plan include multi-modal transportation, streetscape, urban design, and land use guidance. They are aimed at addressing issues and taking advantage of opportunities. related to the area's growth and development. In addition to traffic congestion and safety, the study recommendations highlight opportunities to manage stormwater and flooding issues, promote open space, bolster housing affordability, improve pedestrian and bicyclist mobility, and support expanded transit.

The Big Picture: Seven Big Moves

The previous section described the Planning Principles that guided the identification and revision of numerous potential changes and improvements to how residents, visitors, and employees live, navigate, and experience the Midtown-St. Albans area. This chapter describes the plan recommendations and associated tradeoffs. There were some options considered in the planning process that were ultimately not recommended; they are also described in this section of the report. The recommendations are organized by seven categories of improvements, known as the "Big Moves," that will support safer streets, economic activity, infrastructure development, and transportation and housing options. The Big Moves are:

1. Crossing the Beltline
2. Green Streets
3. Connectivity and Travel Reliability
4. Serious Transit
5. The Midtown Ring
6. Midtown Living/Midtown Works: Land Use Guidance
7. The Midtown Waterfront District and Park

Together, these recommendations work to increase travel options and improve travel reliability for the growing Midtown-St. Albans area compared to a "do nothing" approach. They also address needs for public space, additional infrastructure, and housing and employment opportunities. Each recommendation has an accompanying estimated cost and timeline for implementation that are described in the Detailed Analysis section. Additional details from the transportation analyses are included in the Appendix.

Seven Big Moves

This plan is guided by a vision that is achieved by many supporting projects, all described in detail in this report and appendices. There is a lot to digest and consider. However, if residents and policymakers want the big picture, described clearly and concisely, it is here. Understand the following seven transformative projects, and one understands the plan.

1. Crossing the Beltline

Crossing the Beltline

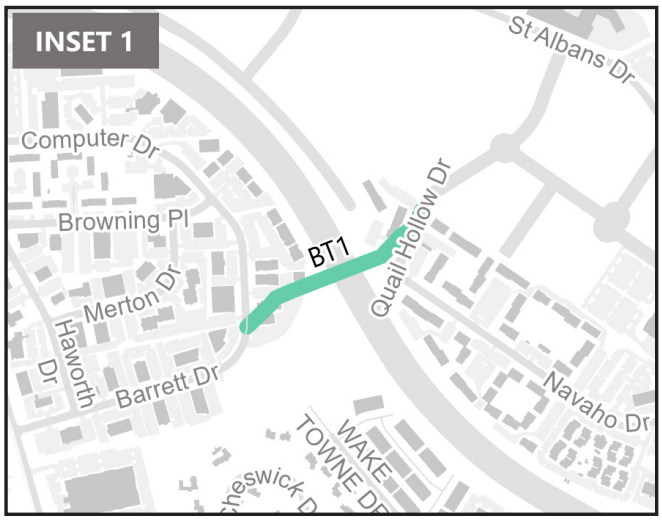
The I-440 Beltline is arguably Raleigh's most impactful single piece of infrastructure, and it helps connect people with opportunity in Midtown and elsewhere across the City. It also funnels trips into a few congested intersections and essentially acts as a moat dividing the Midtown St.-Albans area in half for people walking and biking.

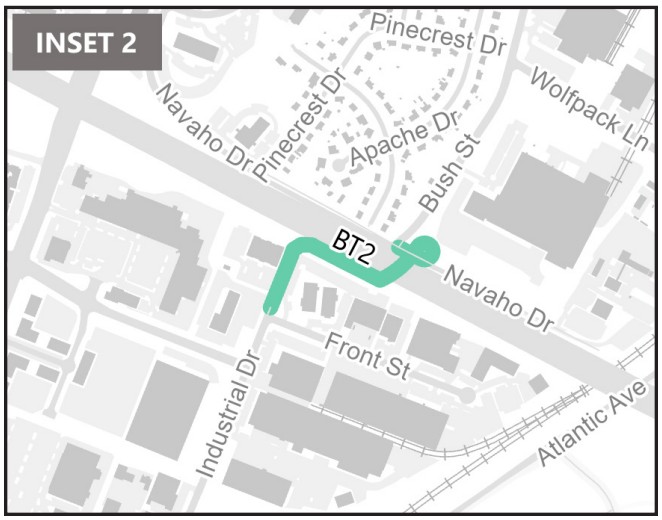
Walkable Midtown envisions overcoming the barrier with two new Beltline crossings: one for cars and pedestrians, and one for people walking and biking only, providing transportation options that currently do not exist.

In Your Words: Midtown 2040

"A place where many people can find housing, groceries, access to transit, and access to jobs without needing a car ."

Figure 3: Bridge Projects

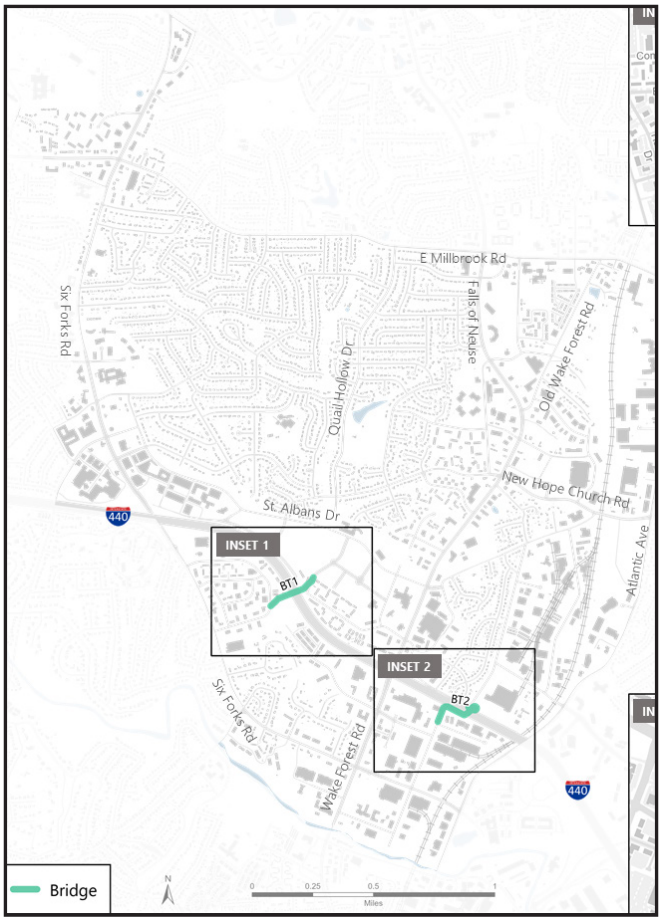




Bridge Project

BT1 - Multimodal bridge connecting Barrett Drive and Navaho Drive

BT2 - Pedestrian bridge connecting Industrial Drive and Bush Street



Bridge Projects

The study recommends two new bridges (**Figure 3**) to cross I-440:

- A Multimodal Bridge (BT1) for walkers, bicyclists, and drivers that connects Navaho Drive and Barrett Drive. This bridge has two lanes for cars, sidewalks, and bicycle lanes.
- A Pedestrian Bridge (BT2) for walkers and bicyclists that connects Bush Street and Industrial Drive. This bridge would be part of the Midtown Ring described in later sections.

A 440 bridge provides the opportunity to create a gateway to Midtown (left); example of a pedestrian-bicycle bridge (below).

2. Green Streets

Midtown Green and Blue: Green Streets/Stormwater Infrastructure

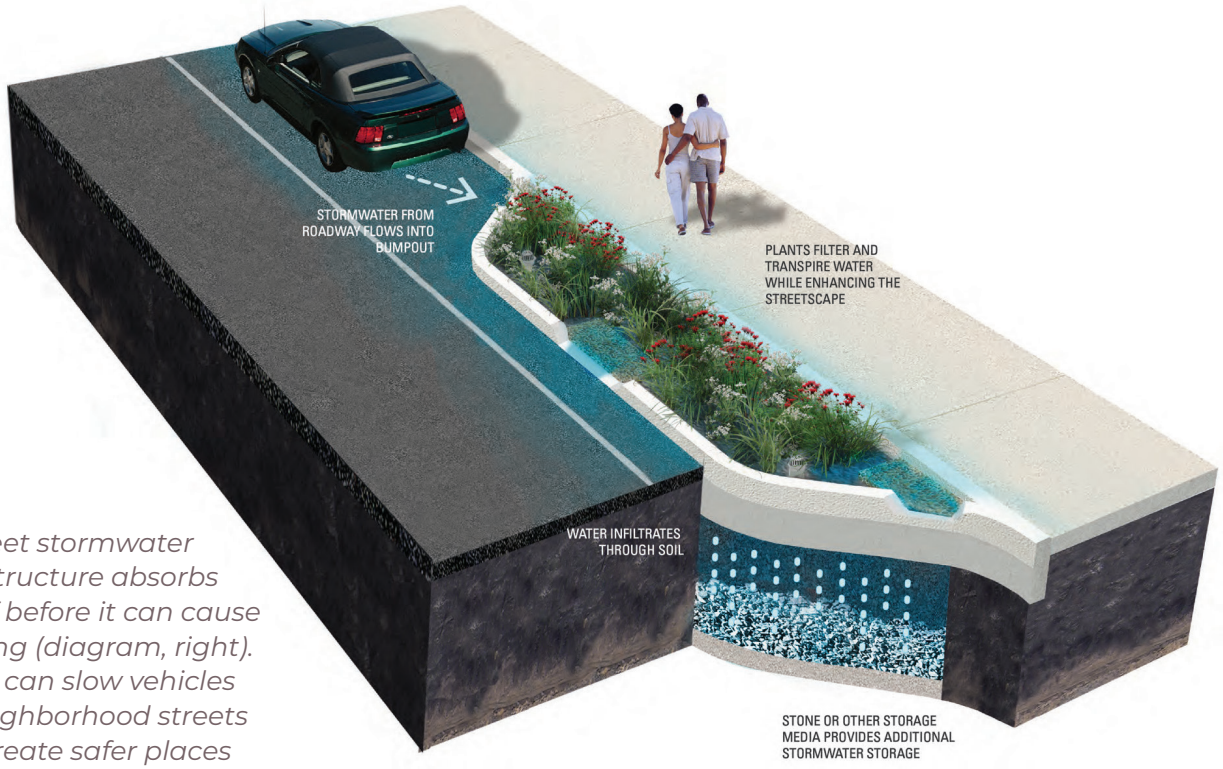
Nature and infrastructure weave together in the plan's vision for a network of "Green Streets." These streets will perform quadruple duty:

- Taming vehicle speeds on wide streets with potentially growing traffic volumes.
- Providing safer, more comfortable places for people to walk or bike.
- Retaining stormwater before it goes places where it can cause flooding.
- Greening and beautifying area streets.

In Your Words: Midtown 2040

"Walkable, inclusive, safe."

Green Streets Benefits: Stormwater, Traffic Calming, Safe Places for Walking and Biking

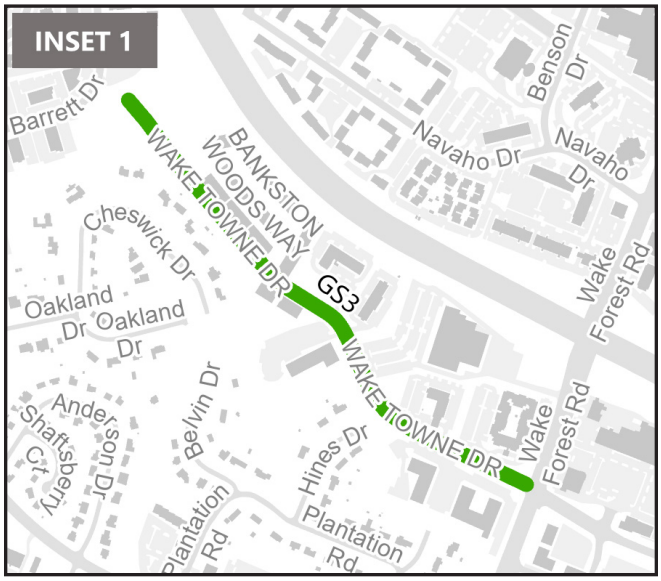


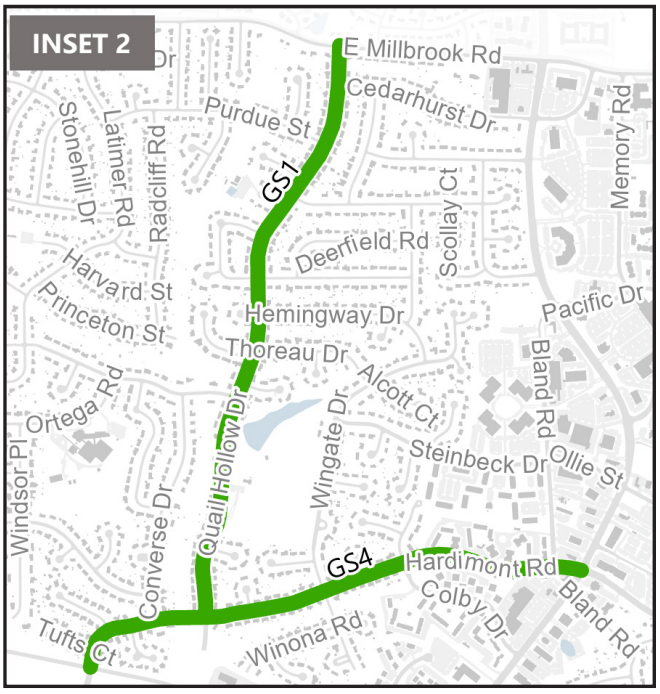
In-street stormwater infrastructure absorbs runoff before it can cause flooding (diagram, right). It also can slow vehicles on neighborhood streets and create safer places for people walking and biking (below)

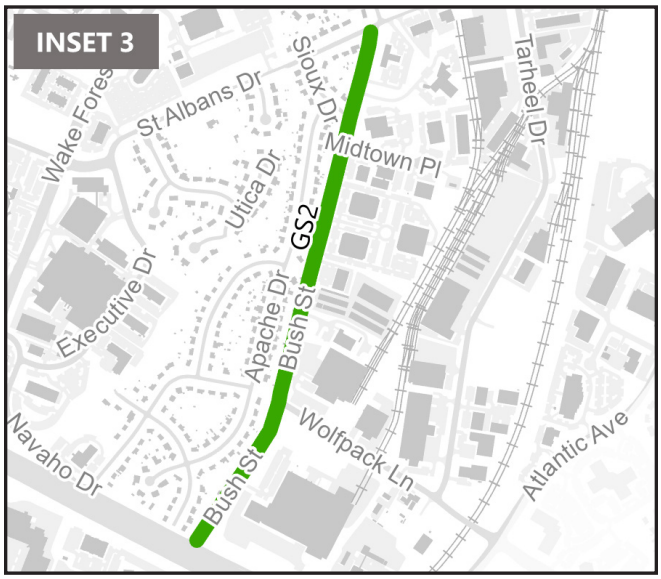
Examples of stormwater infrastructure

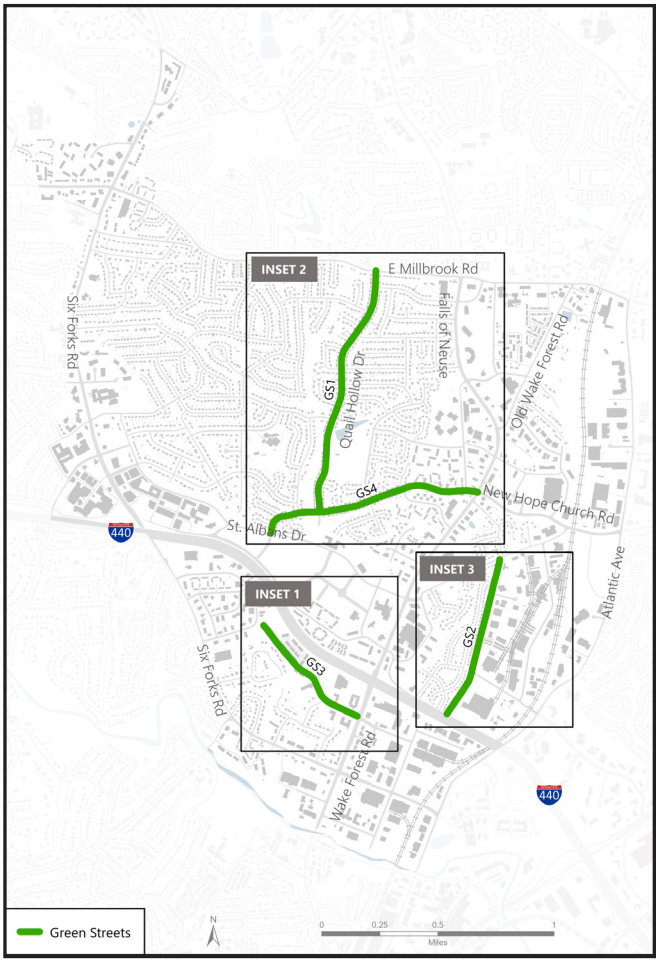
Types of stormwater infrastructure include rain gardens (top right), planters with trees (middle) and, in more urban areas, planters in sidewalks. Permeable paving materials can add to stormwater infiltration capacity.

Figure 4: Green Streets









Green Streets

GS1 - Quail Hollow Green Street

GS2 - Bush Street Green Street

GS3 - Wake Towne Drive Green Street

GS4 - Hardimont Green Street

Green Streets

Green Streets are roads with specific improvements that reduce stormwater runoff, slow down vehicles, and include a mix of expanded sidewalks, bicycle lanes, and shared-use paths. These streets (**Figure 4**) include:

- Quail Hollow Drive (GS1) from East Millbrook Road to Hardimont Road. Potential redesigns include a shared-use path on the east side (connecting to the Eastgate Park), separated bike lanes on both sides with sidewalks, or another combination that achieves low stress walking and biking.
- Bush Street (GS2) from St. Albans Drive to Navaho Drive. Potential redesigns could include a two-way separated bike lane on the west side with a sidewalk on the east side.
- Wake Towne Drive (GS3) from a new Multimodal Bridge on Barrett Drive to Wake Forest Road. Potential redesigns could include on-road bicycle lanes or separated bicycle lanes, in addition to existing sidewalks.
- Hardimont Road (GS4) from St. Albans Drive to Wake Forest Road. Potential redesigns could include on-road bicycle lanes or separated bicycle lanes, in addition to existing sidewalks.

Together, the four Green Streets expand low-stress biking and walking options across the study area, connect to key destinations and neighborhoods, and complete the Midtown Ring.

Other stormwater improvements would be identified by a Drainage Basin Study (LU3), conducted on the drainage basins in the Midtown-St. Albans study area.

3. Connected Streets

Connected Streets and Travel Reliability

The goal for future Midtown transportation is not speed. It is reliability and safety. Midtown is not a place to pass through as fast as possible – it is a distinct place. Future traffic speeds will be slower than those of the past decades, but the plan's vision is to improve travel time reliability and predictability by providing alternatives to the places where congestion is worst. A key strategy is creating, for the first time, a true street network in Midtown.

Raleigh's older neighborhoods and commercial centers are characterized by a close-knit grid of streets. By contrast, the street network in the heart of Midtown is fragmented and connects only in a few congested and pedestrian-hostile intersections. This plan creates a friendly street grid that provides new options, whether for driving or walking.

In Your Words: Midtown 2040

"Somewhere that my children can safely navigate by bike or foot with public transportation options. urban and green with open space."

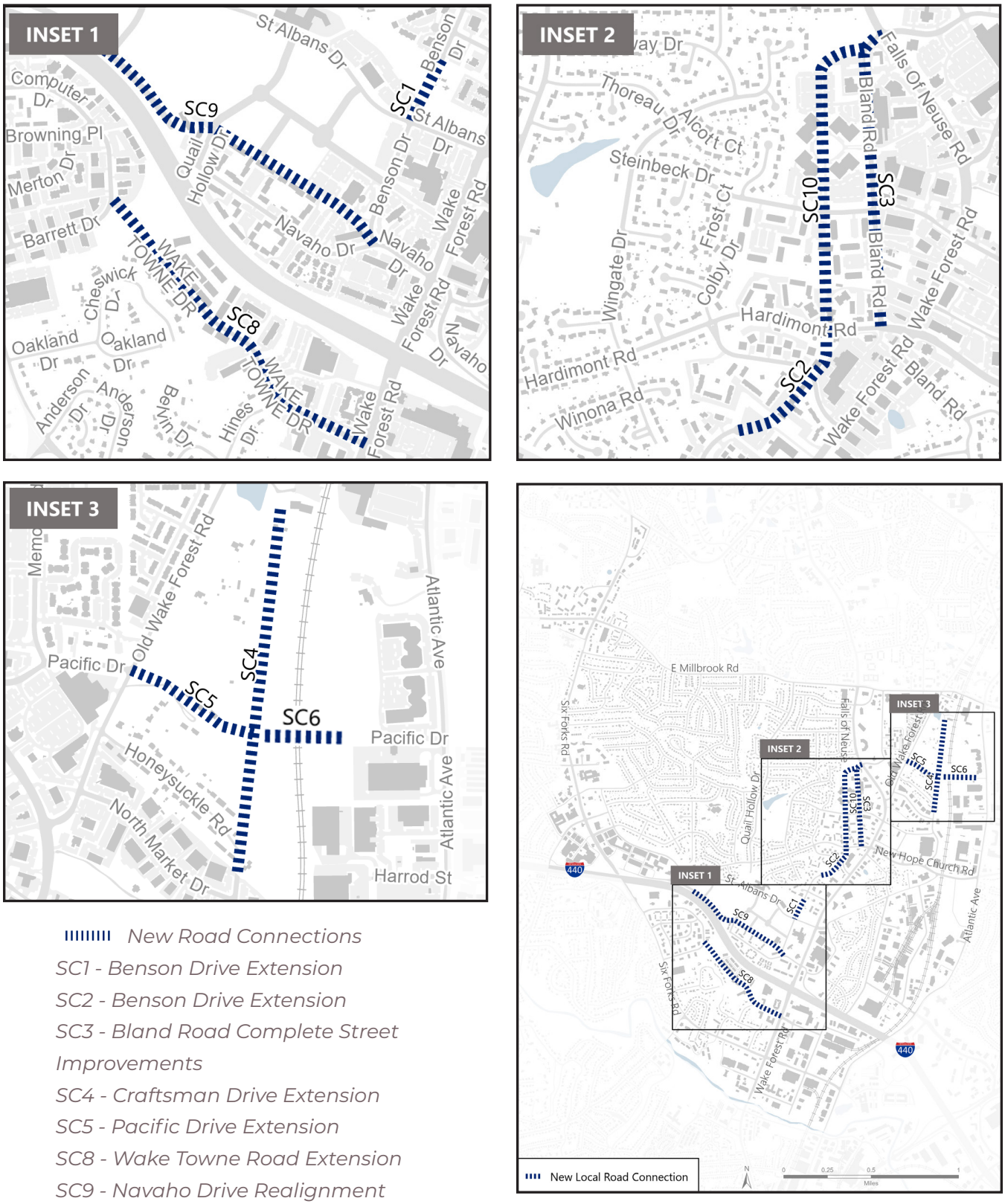
New Local Road Connections

This plan recommends several new local road connections (**Figure 5**). The goal of these new connections is to produce a parallel street network to busy corridors, including Wake Forest Road, the Beltline, and others. These new connections include:

- Benson Drive Extension (SC1) between Dresser Court and St. Albans Drive.
- Benson Drive Extension (SC2) connecting Benson Drive to Hardimont Road.
- Bland Road Complete Street Improvements (SC3), including bicycle lanes and transit amenities between Falls of Neuse Road and Hardimont Road.
- Craftman Drive Extension (SC4) between Sorghum Court and N Market Drive.
- Pacific Drive Extension (SC5) between Old Wake Forest Road to Craftsman Drive Extension.
- Wake Towne Road Extension (SC8) to Barrett Drive.
- Navaho Drive Realignment (SC9) between Quail Hollow Drive and Benson Drive.
- Future Benson Drive Extension (SC10) between Hardimont Road and Bland Road/Pacific Drive.

Midtown's street grid (upper left) currently lacks connectivity compared to those in downtown (upper right) Oberlin Village (lower left), and Five Points (lower right). Compared to a strategy of widening streets, a better-connected grid can improve transportation while not sacrificing walkability.

Figure 5: New Local Road Connections



New Road Connections

SC1 - Benson Drive Extension

SC2 - Benson Drive Extension

SC3 - Bland Road Complete Street Improvements

SC4 - Craftsman Drive Extension

SC5 - Pacific Drive Extension

SC8 - Wake Towne Road Extension

SC9 - Navaho Drive Realignment

SC10 - Benson Drive Extension

Other Roadway Improvements

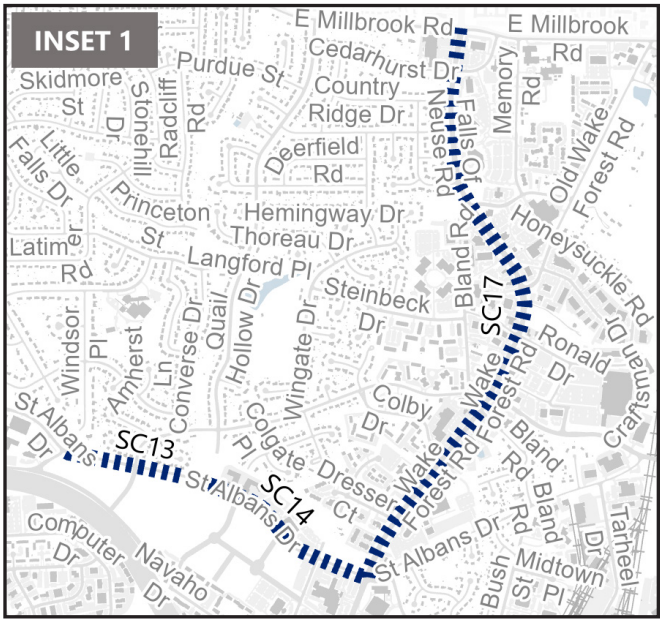
This plan also contains recommendations for changes to St. Albans Drive between North Hills Street and Wake Forest Road (**Figure 6**). These changes will increase safety, comfort, and travel options for non-drivers, as well as support bus service on these streets.

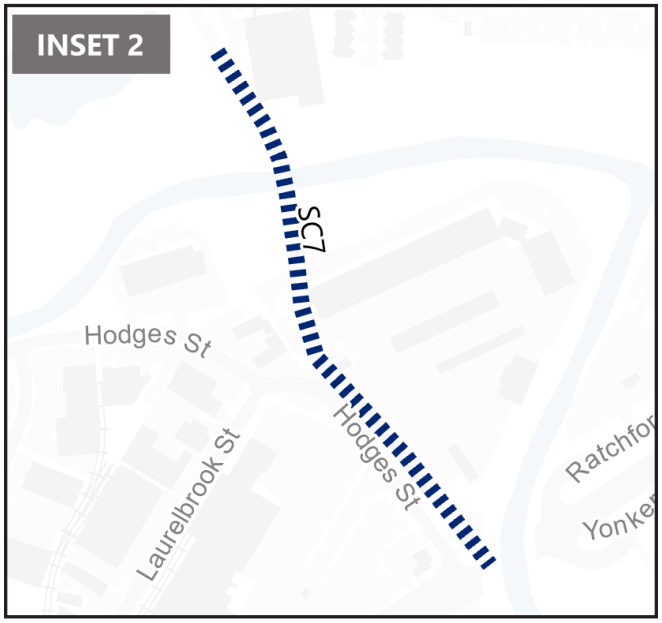
- St. Albans Drive Widening A (SC12) widens St. Albans Drive between Benson Drive and Wake Forest Road to a four-lane divided avenue.
- St. Albans Drive Widening B (SC13) widens St. Albans Drive between Church at North Hills Street and Hardimont Road to a two-lane avenue, divided with a center turn lane.
- St. Albans Drive Widening C (SC14) widens St. Albans Drive between Midtown East Access Road and Benson Drive to a two-lane avenue, divided with a center turn lane.
- St. Albans Drive and Hardimont Road Intersection Improvements will identify interim options to improve existing three-way stop.

This plan recommends a Six Forks Road Extension (SC7) between Atlantic Avenue and Capital Boulevard. The new road would be a four-lane avenue with a median.

This plan also recommends a Wake Forest Road Corridor Reconditioning Study (SC17) to study options for improving this area. In the interim, this plan recommends working with NCDOT to reduce the speed limit to 35 mph.

Figure 6: Other Roadway Improvements





Other Roadway Improvements

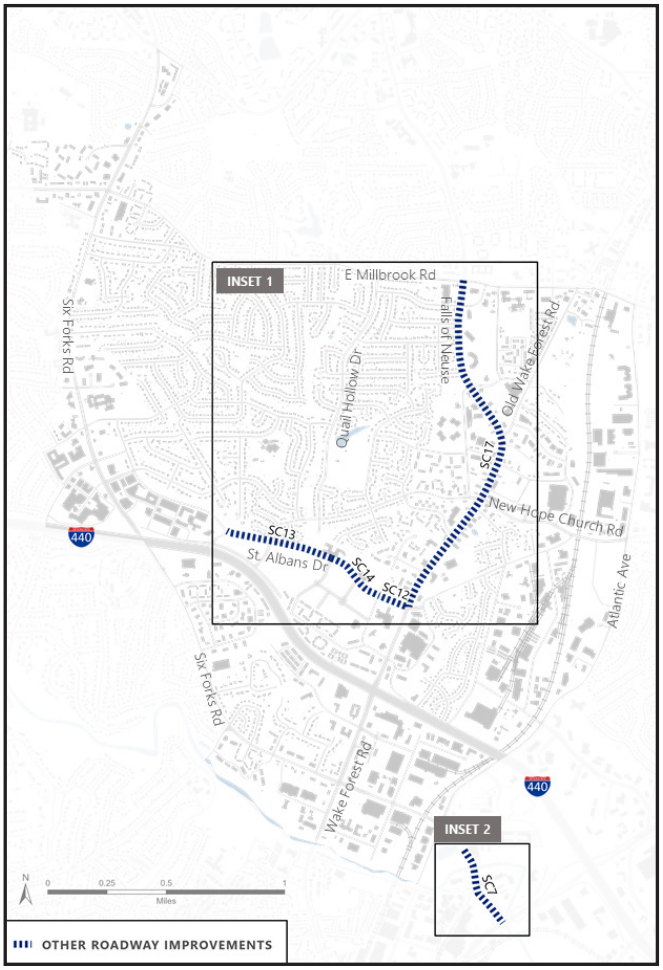
SC7 - Six Forks Road Extension

SC12 - St Albans Drive WIdening A

SC13 - St Albans Drive Widening B

SC14 - St Albans Drive Widening C

SC17 - Wake Forest Road Corridor Reconditioning Study



Roadway Intersection Improvements

This plan recommends intersection improvements (**Figure 8**) to reduce vehicle delays and to increase access to the nearby hospital. These recommendations include improvements at several intersections along Wake Forest Road (I1):

- Wake Forest Road at Navaho Drive, changing the lanes to create a left-only turn lane.
- Wake Forest Road at St. Albans Drive, adding turn lanes. In addition, a signal is recommended to be added to St. Albans Drive at Executive Drive. This signal should be coordinated with the intersection of Wake Forest Road and St. Albans Drive.

The recommendations also include improvements at intersections along Bush Street (I2):

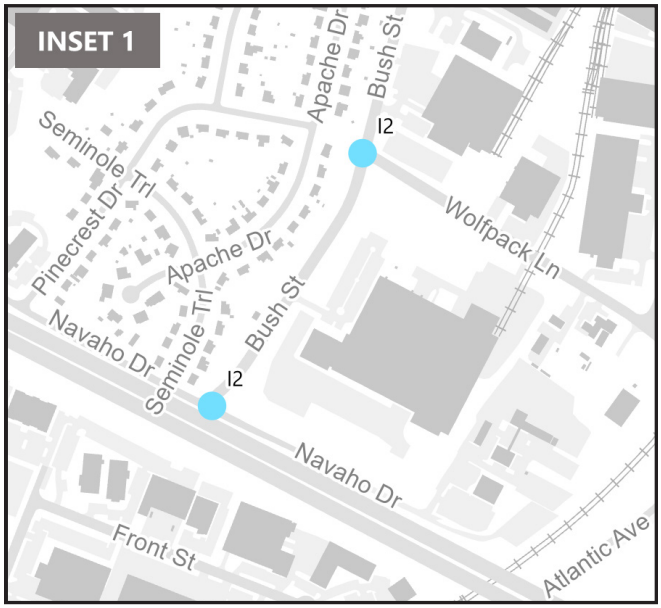
- A pair of roundabouts at the intersection of Bush Street and Navaho Drive and Bush Street and Wolfpack Lane. These are single-lane roundabouts with marked crosswalks.

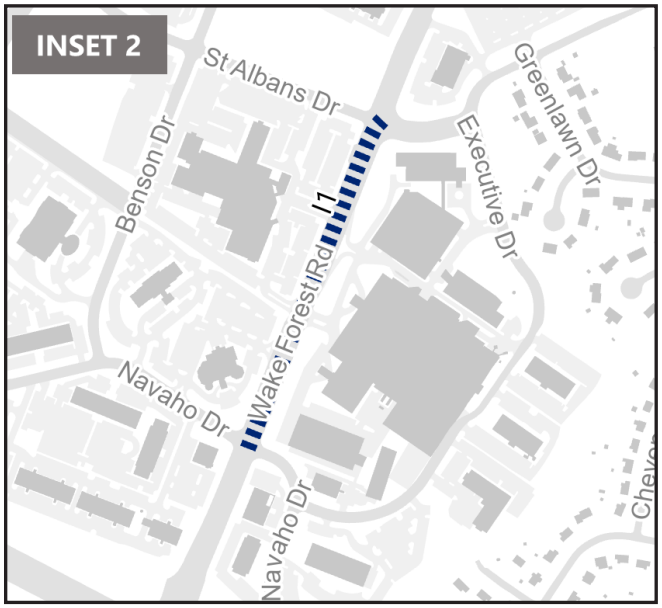
Bicycle and Pedestrian Improvements

The project recommends improvements to bicycle and pedestrian connections in the study area (**Figure 10**). These improvements include some neighborhood bicycle and pedestrian-only connections:

- Cheyenne Road (BP5), connecting Cheyenne Road east to Bush Street.
- Pinecrest Drive (BP6), connecting east to Apache Drive and the improved intersection at Wolfpack Lane.
- Utica Drive (BP7), connecting south to Manovill Place and Cheyenne Road.
- Hines Drive (BP9), connecting north to Wake Towne Drive.

Figure 8: Roadway Intersection Improvements



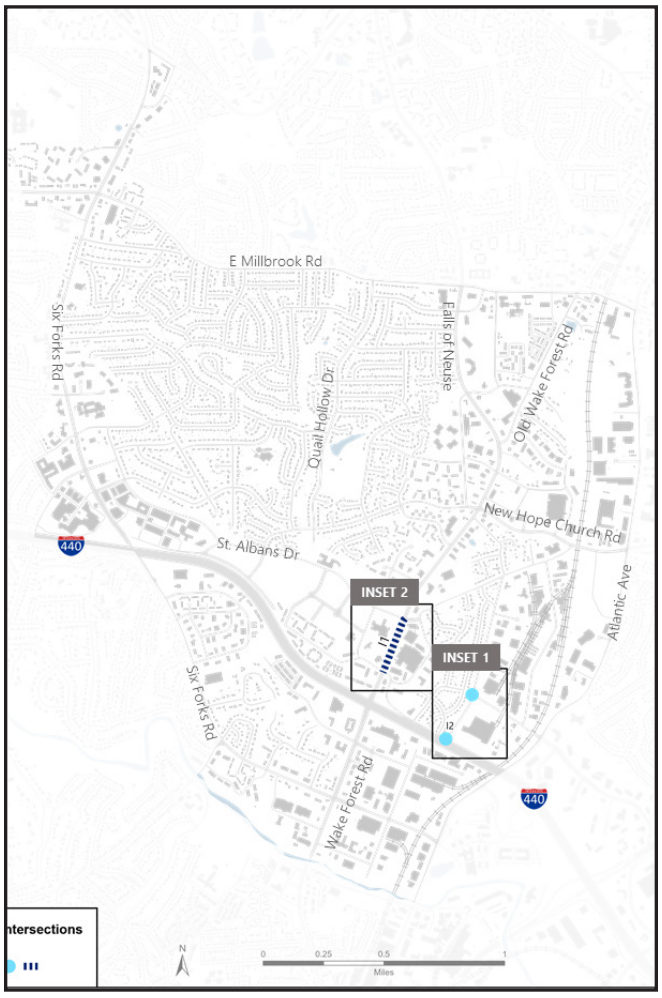


Intersection Improvement

Intersection Improvement

I1 - Wake Forest Road at St Albans and Navaho Drive

I2 - Wolfpack Lane and Navaho Drive connections

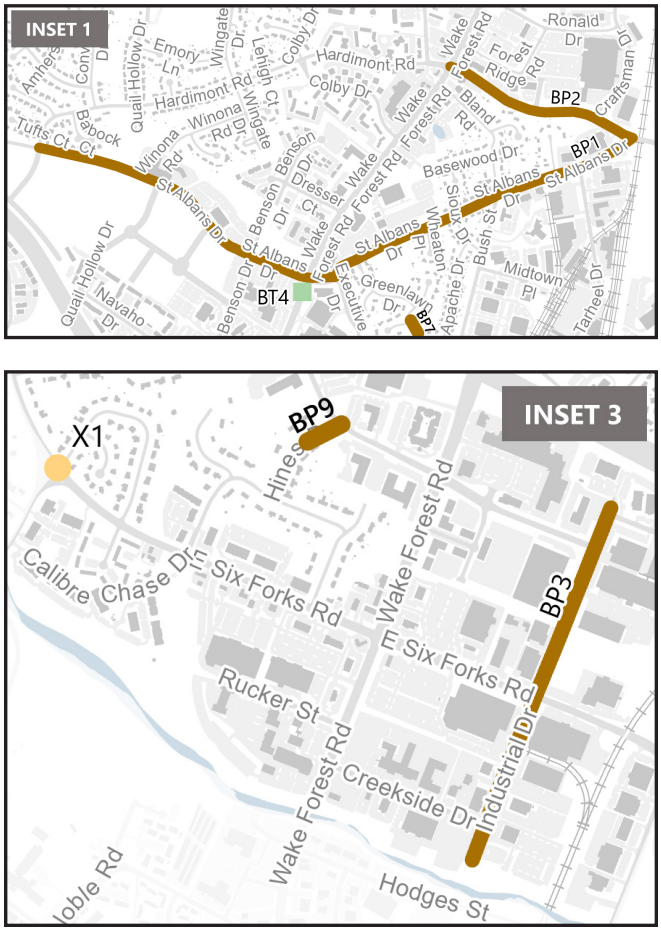


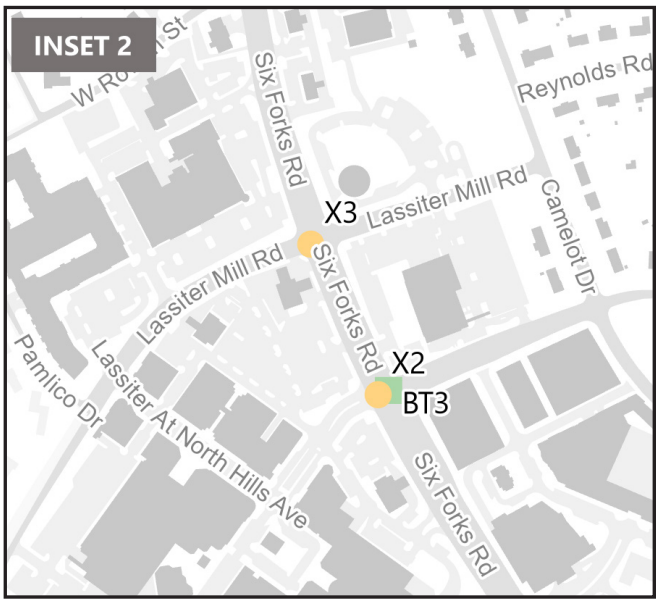
This project also recommends safety improvements for pedestrians crossing existing streets in specific locations. These may include high visibility crosswalks, curb radiuses that discourage fast turns by cars, signage, lighting, pedestrian refuge islands, changes to road markings, bridges (and other grade separations), and other elements. This study does not include detail on the combination of improvements at individual locations; further studies are needed to understand the most appropriate measures given the land use, pedestrian activity, and traffic conditions.

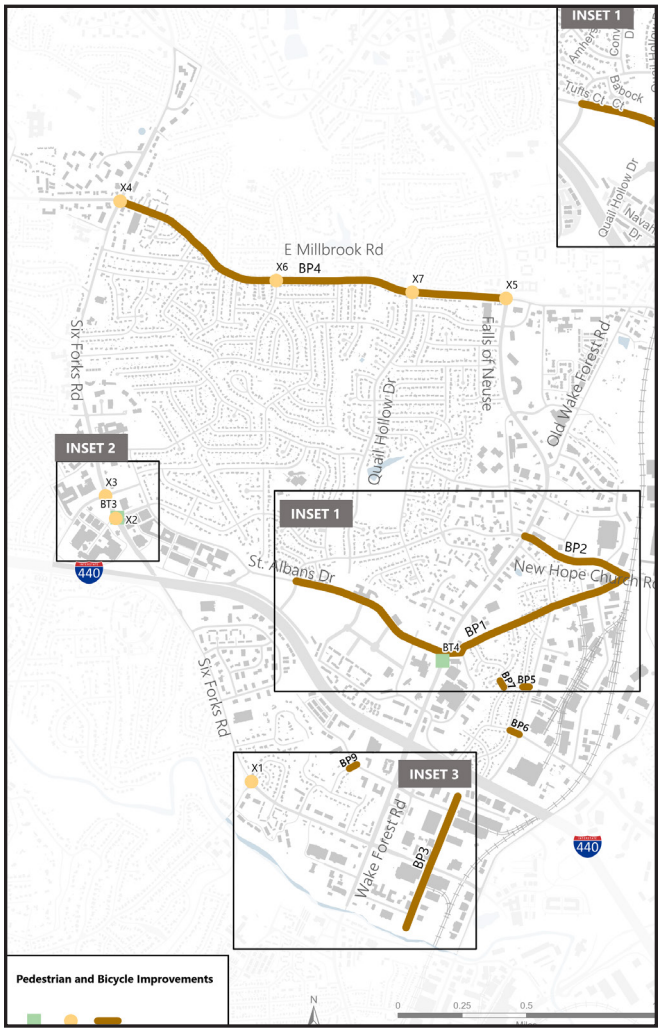
The plan supports bicycle and pedestrian intersection improvements at the following key locations:

- Six Forks Road near Dartmouth Road (BT3), including a new pedestrian bridge across Six Forks Road.
- Wake Forest Road near St. Albans Drive (BT4), including a new pedestrian bridge across Wake Forest Road.
- Six Forks Road at Anderson Drive (X1), adding pedestrian improvements to counter high vehicle speeds and poor visibility.
- Six Forks Road at Dartmouth Road (X2), adding pedestrian improvements such as restricting vehicle turning options, signals that allow pedestrians to begins crossing before cars, a larger pedestrian refuge island, and other elements.
- Six Forks Road at Lassiter Mill Road (X3), adding pedestrian improvements such as restricting vehicle turning options, signals that allow pedestrians to begins crossing before cars, a larger pedestrian refuge island, and other elements.
- East Millbrook Road (X4, X4, X6, X7), adding pedestrian crossing improvements.

Figure 10: Bicycle and Pedestrian Improvements







Intersection Improvement

Connection Improvement

BP1 - St. Albans Drive

BP2 - New Hope Church Road

BP3 - Industrial Drive

BP4 - Millbrook Road

BP5 - Cheyenne Road

BP6 - Pinecrest Drive

BP7 - Utica Drive

BP9 - Hines Drive

BT3 - Six Forks Road

BT4 - Wake Forest Road

X1 - Six Forks Road / Anderson Dirve

X2 - Six Forks Road / Dartmouth Road

X3 - Six Forks Road / Lassiter Mill Road

X4 through X7 - East Millbrook ROad

Other bicycle and pedestrian improvements that improve mobility, increase safety, and provide lower stress biking and walking are recommended along significant roads in the study area:

- St. Albans Drive (BP1), adding on-road bicycle facilities and a continuous sidewalk or a shared-use path along St. Albans Drive between Hardimont Road and New Hope Church Road.
- New Hope Church Road (BP2), improving bicycle facilities on New Hope Church Road between Wake Forest Road and St. Albans Road. A separated facility, either on or above the curb, is recommended.
- Industrial Drive (BP3), adding bicycle and pedestrian facilities and traffic calming measures on Industrial Drive between the I-440 Pedestrian Bridge and the Crabtree Creek Trail. Bicycle facilities could include on-road bicycle lanes, separated two-way bicycle lanes, or a shared-use path. Traffic calming measures could include on-street parking and curb bump-outs.
- Millbrook Road (BP4), adding bicycle facilities along Millbrook Road between Six Forks Road and Falls of Neuse Road. Bicycle facilities could include buffered on-road bicycle lanes or separated bicycle lanes, but will depend on the car lane configuration.
- Other major intersection, such as Wake Forest Road and Six Forks Road, should receive additional pedestrian improvements.

In addition, a Roadway Speed Setting Review is recommended to be conducted. This is a uniform review of posted speed limits in the study area, conducted by the City of Raleigh and NCDOT.

Pedestrian-scaled streets improve safety and comfort for people walking and biking.

In locations where very wide streets exist, pedestrian overpasses can provide a solution.

4. Serious Transit

Serious Transit

A successful transit system works when it is easy and comfortable for the rider, the vehicle arrives on time, travels to the right destinations, and operates on a schedule compatible with its riders. The future of Midtown–St. Albans transit is a network that lets riders throw away the schedule, because the next bus is always coming soon. Connections to Downtown, to N.C. State, and job and shopping centers along the Beltline are frequent and easy. And a future bus rapid transit (BRT) connection between Midtown and Downtown ties together the biggest employment centers in the City with the highest levels of bus service possible.

In Your Words: Midtown 2040

"A well-planned, pedestrian-friendly urban/residential area with great parks and great transportation (light rail, bus, bike lanes)."

Transit Recommendations

Currently, transit services are limited, infrequent, and do not create a desired alternative to driving. This plan recommends major improvements (**Figure 12**) to the study area's transit system, including:

- Multiple-high frequency routes to connect to downtown, N.C. State, and major destinations along the Beltline.
- A future Bus Rapid Transit (BRT) connection between downtown and Midtown.
- Collaboration with privately-operated transit services.

To achieve this, the study recommends route realignments, transit station and stop amenities, and phased expansion of more frequent service with eventual BRT access to the center of the study area.

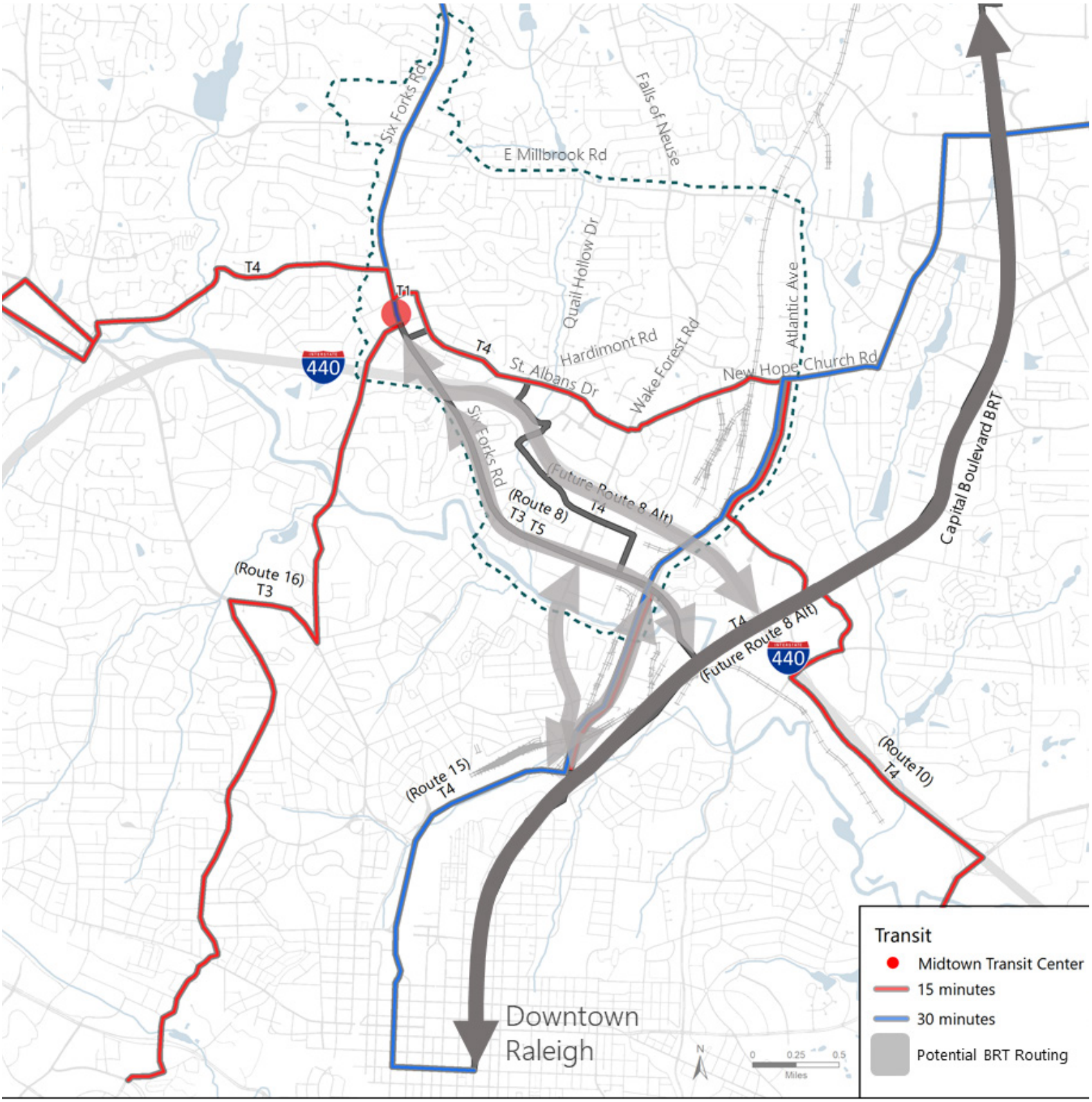
Phase II: High Frequency Transit

Phase I of this recommendation (T3) is to support the expansion of bus service connecting to the Midtown-St. Albans area. By 2024, two routes are proposed to run at 15-minute service, and by 2027 an additional route will run at 15-minute service in the study area. This recommendation will help build transit ridership and allow for potential BRT expansion in Phase II.

Phase II: Midtown BRT

BRT is a form of enhanced transit service and infrastructure that is proposed to run along Capital Boulevard between downtown Raleigh and Crabtree Boulevard. Phase II of this recommendation (T5) is to study the feasibility of an extension of the BRT network to serve Midtown after build out of the high frequency network.

Figure 12: Transit Recommendations, Expanded



T1 - Transit Center

T2 - Bus Stop Improvements

T3 - Expansion of bus service

T4 - Transit Route Realignment

T5 - BRT Extension

Transit Route Realignment

This recommendation (T4) is to study transit route alignment throughout the Midtown-St. Albans study area as other recommendations come to fruition and determine if changes to routes would improve service.

Regional Transit Station Location and Bus Stop Improvements

The Wake Transit Plan proposes a Transit Center to be located near the North Hills Shopping Center and bus stop improvements across the bus system. These improvements could include concrete pads, benches, bicycle racks, access ramps, and sidewalks. This study recommends the Transit Center's general location (T1) and endorses the improvements to bus stops (T2).

The first phase of the plan's approach to transit involves multiple high-frequency routes running through Midtown (GoRaleigh bus shown on facing page).

The second phase calls for study of bus rapid transit, or BRT, to Midtown (example station shown above).

For all forms of transit, enhanced crosswalks and other amenities are critical to provide safe places for riders and other pedestrians (right).

5. The Midtown Ring

The Midtown Ring

Midtown is packed with major job centers, shopping and dining options, educational facilities, and natural places. But for many people who would like to walk or bike, they are out of reach. The Beltline and wide, busy roads such as Wake Forest Road and Six Forks Road divide a large section of the city into small, disconnected islands.

This plan imagines a safe, comfortable facility that guarantees safe passage for people walking or biking. That is the Midtown Ring (**Figure 13**) – a complete loop of greenways, green streets, separated bike lanes and paths that connects every major destination in the area with each other and the residential neighborhoods nearby.

In Your Words: Midtown 2040

"Easy to navigate, on car and on foot. Safe. Full of trees and benches."

The Ring will include both off-street (above) and protected off-street segements (below).

The Little Sugar Creek Greenway in Charlotte

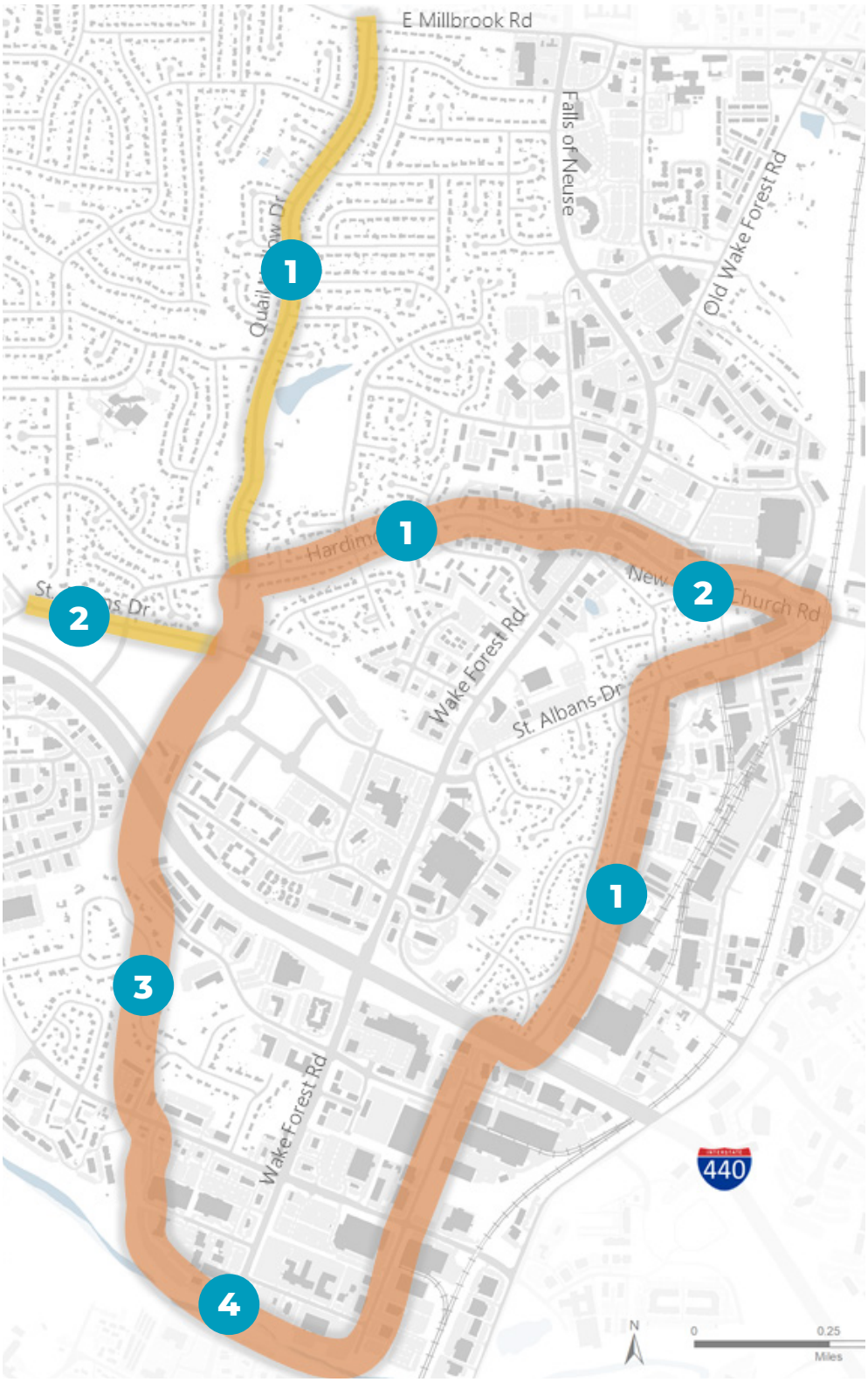
Figure 13: Bicycle and Pedestrian Infrastructure in the Midtown Ring

1 On-street one-way separated bike path and sidewalk

2 On-street two-way separated bike path and sidewalk

3 Off-street multi-use path

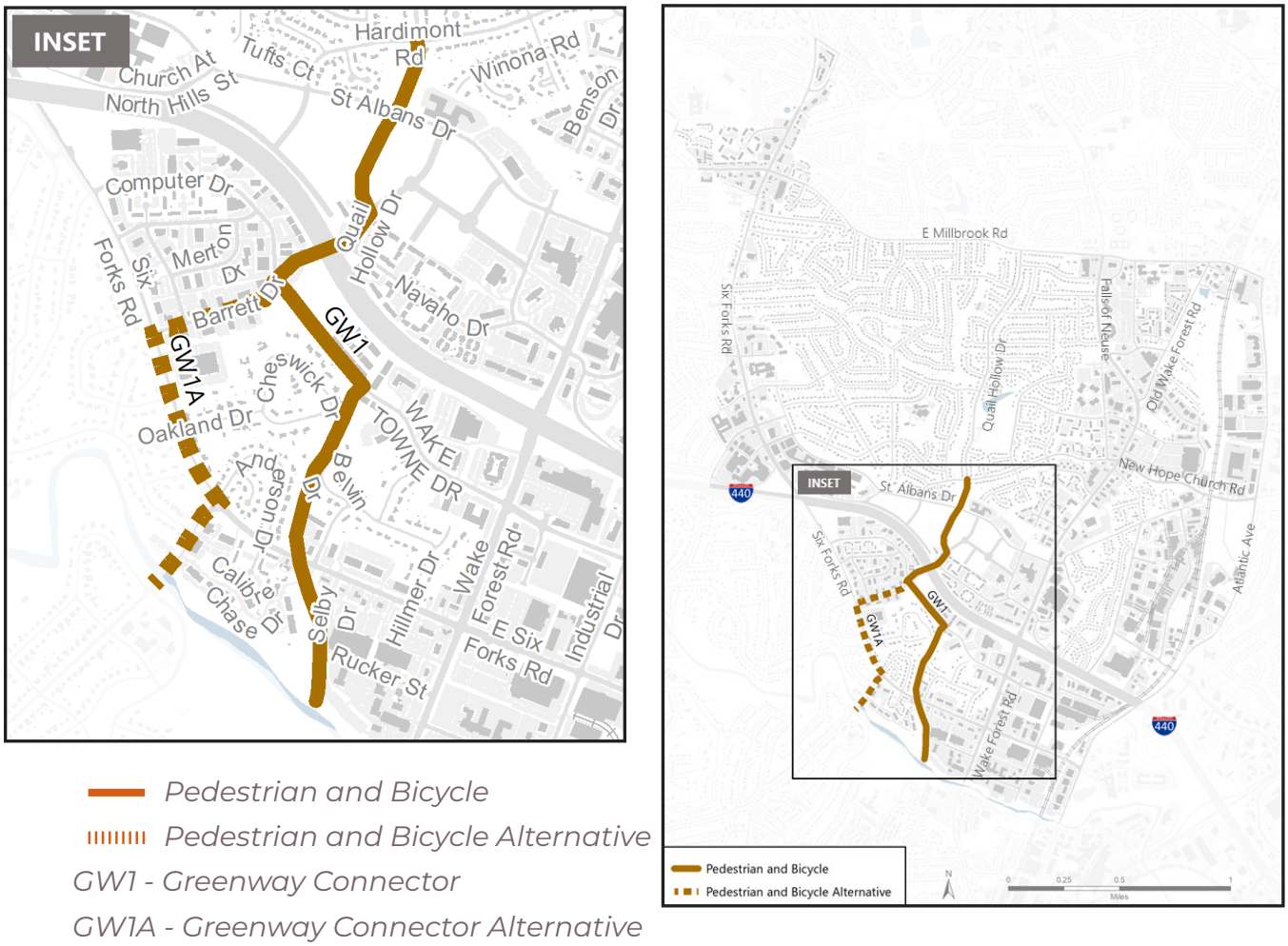
4 Greenway



Crabtree Creek Greenway Connector

This recommendation (GW1) is a new section of greenway from the southern end of Quail Hollow Drive across I-440 to the existing Crabtree Creek Greenway (**Figure 14**). The greenway would align with the City of Raleigh's Capital Area Greenway Planning & Design Guide and is intended for bicyclists and pedestrians. It serves as the western leg of the Midtown Ring.

Figure 14: Crabtree Creek Greenway Connector



Pedestrian and Bicycle

Pedestrian and Bicycle Alternative

GW1 - Greenway Connector

GW1A - Greenway Connector Alternative

6. Midtown Living/ Midtown Works

Midtown Living/Midtown Works

Raleigh continues to be a city of opportunity – a place that provides both existing residents and newcomers the chance to make a living and to live in a welcoming, diverse city. As a growing hub of employment, Midtown has played an important role in providing jobs and housing opportunities. This plan includes attention to ensuring new mixed-use development respects the scale of older residential neighborhoods. But it also finds targeted new locations where additional office and housing space can add opportunity in a location where future transit service, walkability, and other infrastructure means a lower carbon impact than in farther-flung areas of the region.

In Your Words: Midtown 2040

"Somewhere that my children can safely navigate by bike or foot with public transportation options. urban and green with open space."

The need for a wider variety of housing options emerged as a consistent theme throughout the study process. While the City's population continues to grow, average households are substantially smaller than during the post-World War II period. This transition is shifting demand for housing options from larger-lot detached houses to other options. The plan's recommendations include allowing a larger variety of housing types and accommodating more housing near transit and other amenities like parks and bicycle and pedestrian facilities.

Redevelopment Opportunities from Transportation Improvements

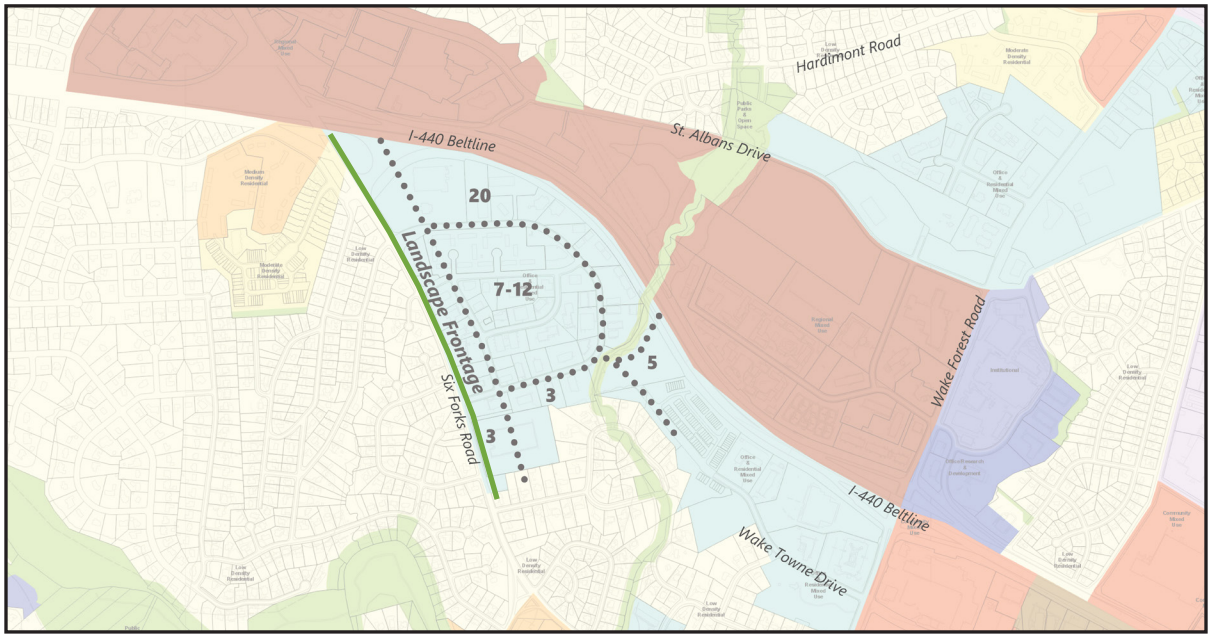
As the area evolves, the plan's recommended transportation improvements are expected to translate into significant changes in land use and urban form. Key areas include:

- I-440 Multimodal Bridge area (**Figure 15**) - Two of the key transportation and transit improvement recommendations would bring new access and mobility and serve as catalysts for redevelopment. The study envisions high densities and building heights (up to 20 stories), office and residential uses immediately adjacent to I-440, along with more moderate height (7-12 stories) and density in the center or interior of the office park. More modest height (3 stories) and density is recommended immediately adjacent to Six Forks Road, including the conservation of the existing tree-lined buffer along much of the road frontage. Additional frontage requirements north of I-440 along Six Forks Road are illustrated in Figure 18.
- Wake Forest Road / Falls of Neuse Road (**Figure 16**) - As this area undergoes increasing growth pressure, it would benefit from zoning and land use guidance that would facilitate moderately higher development intensities with

more mixed land uses. This study recommends greater land use intensities and building heights up to 7 stories with transitions to lower heights and densities immediately adjacent to single-family neighborhoods. Land use recommendations include the conversion from Industrial Mixed Use and Office Mixed Use to Community Mixed Use for selected areas.

- Atlantic Avenue/St. Albans Drive (**Figure 17**) - A market analysis performed as part of this study projected declining demand for industrial uses in the area and increasing demand for housing and office space. This recommendation would allow a transition from industrial space along the railroad to other uses, while including a height transitions to lower-scale residential areas nearby.

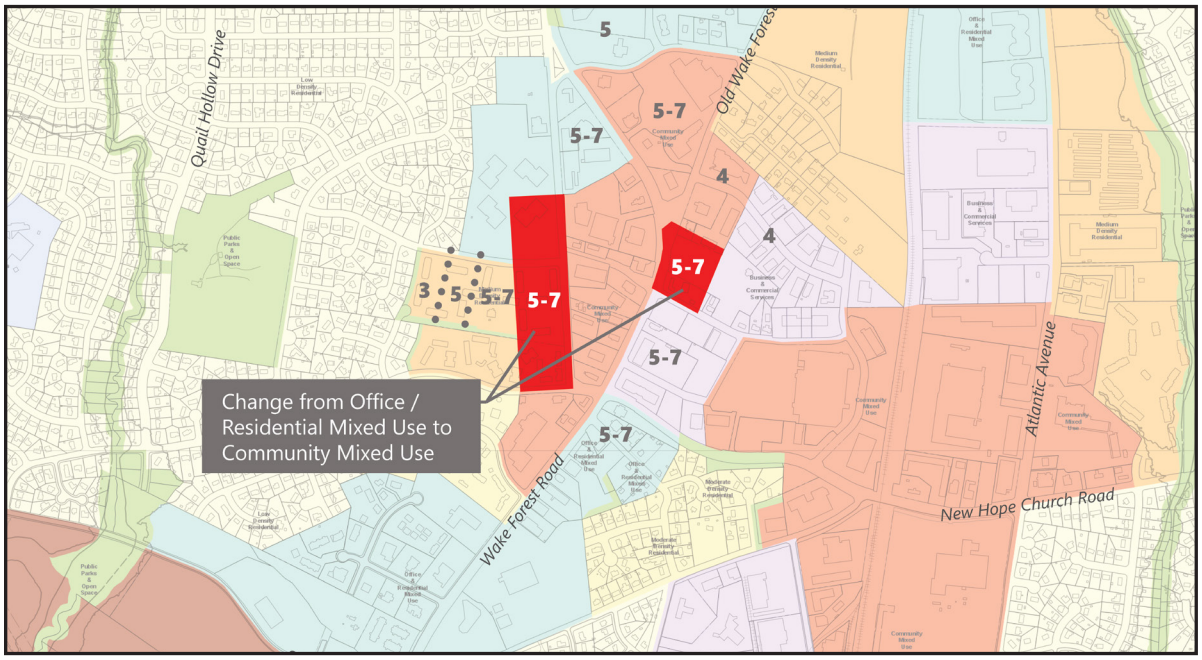
Figure 15: Frontage, Scale, Transitions Near I-440



Green Frontage (GR)

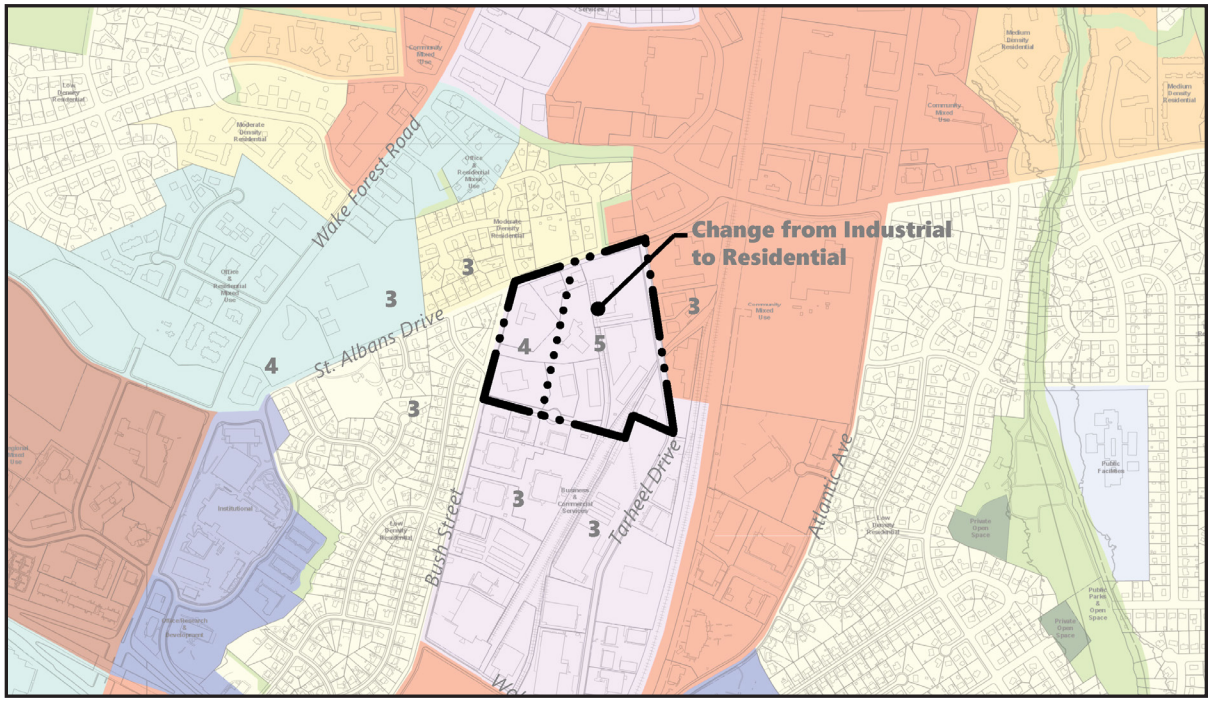
Numbers indicate recommended maximum building height.

Figure 16: Wake Forest Area Land Use Recommendations



Numbers indicate recommended maximum building height.

Figure 17: Atlantic and St Albans Land Use Recommendations

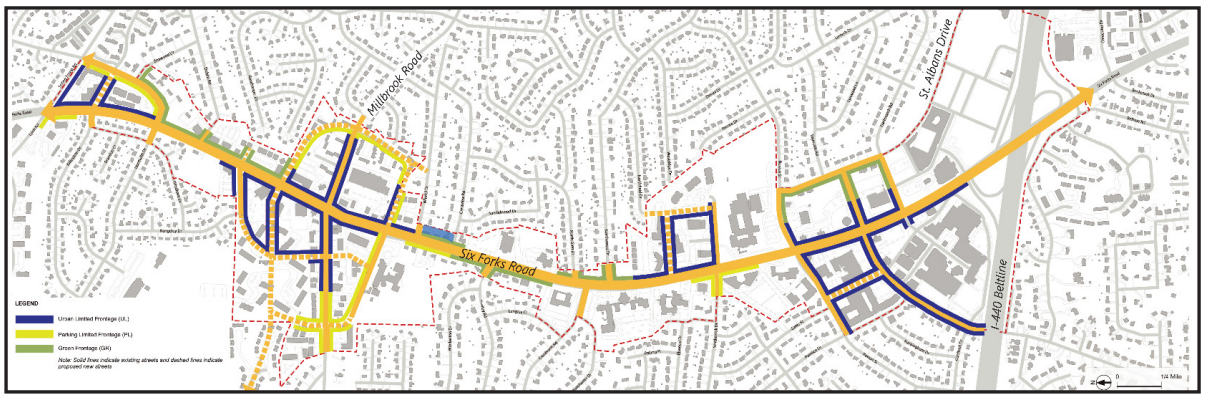


Numbers indicate recommended maximum building height.

Six Forks Road Urban Design

Both the Six Forks Corridor Plan and this study considered the question of "frontage," which is the relationship of buildings to the street (see examples on following pages) In recent years, the City of Raleigh has focused on encouraging walking and creating a sense of place by requiring buildings to be closer to the street in areas that are emerging as new centers. The Six Forks Corridor Plan made frontage recommendations on the portion of Six Forks Road north of I-440 (**Figure 18** and **Figure 20**). This plan reviewed these concepts and also considered Six Forks Road south of I-440 to Oakland Drive (**Figure 15**).

Figure 18: Frontage Recommendations



See Figure 20 for larger image.

Six Forks Road Corridor Study Recommendations Revisited

The Six Forks Road Corridor Study, completed and adopted by the City Council in 2018, provided urban design recommendations for building heights as well as building frontage types. These proposals were reviewed a second time as part of the Midtown-St. Albans Area study. This study recommends that maximum building heights remain as recommended by the Six Forks Corridor study with one exception: the mixed-use retail complex located in the

Urban Design, Frontage, and Walkability

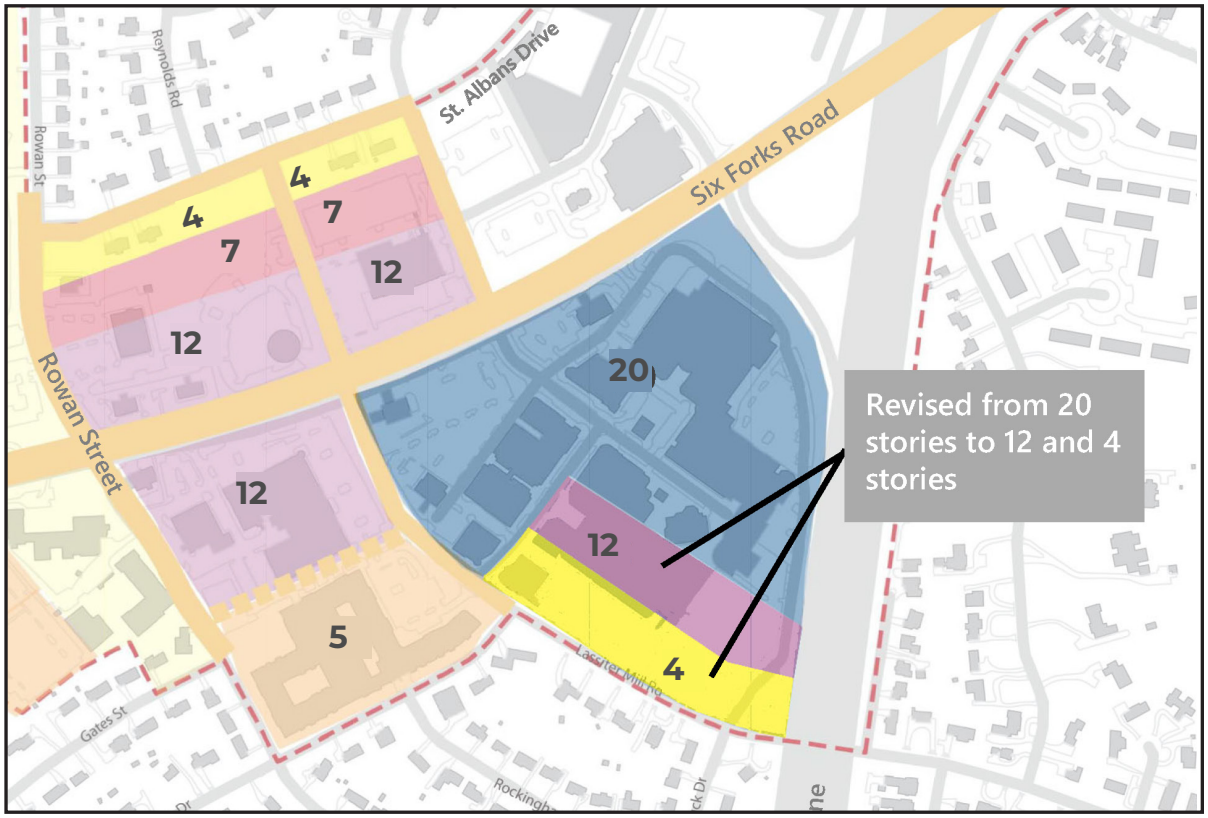
Building frontage defines the relationship of buildings to the street. It significantly determines not just the appearance of an area, but whether it is likely to be used by pedestrians.

Much of the mixed-use and commercial portions of the Midtown area are characterized by buildings set far back from the street, with large parking areas in between the street and sidewalk (opposite page). This tends to create uncomfortable spaces for pedestrians. The Six Forks corridor study recommended a different approach. In larger mixed-use areas, it recommended a more urban approach (see above); in other areas, a more landscaped frontage is recommended (below).

northwest quadrant of the Six Forks Road / I-440 interchange (**Figure 19**). This study recommends a reduction in maximum building height for the area fronting Lassiter Mill Road adjacent to existing single-family residences. Specifically, the recommended building height is a maximum of four stories along Lassiter Mill Road, transitioning to twelve stories in the core of the property.

This study also recommends two changes to the road network improvements in the Six Forks Road Corridor Study (**Figure 20**). The first is the elimination of the proposed extension of Westridge Drive to Six Forks Road. The second is the development of a pedestrian connection, rather than the proposed roadway connection, between the retail center paring north to Rowan Street.

Figure 19: Six Forks Corridor Height Recommendations



Numbers indicate recommended maximum building height.

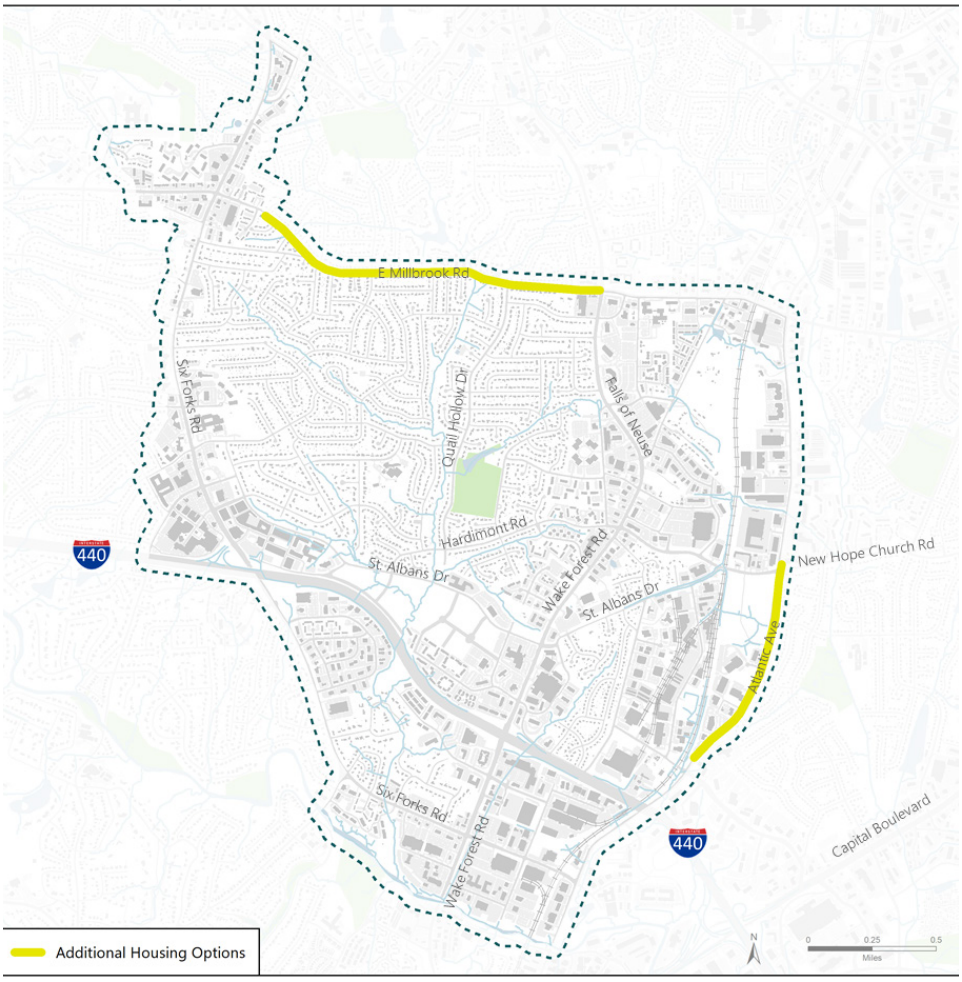
Figure 20: Six Forks Corridor Study Connection and Land Use Modifications

The remaining height and land use recommendations from the Six Forks Corridor Study received relatively little comment during the public engagement process, and the noted feedback was largely positive.

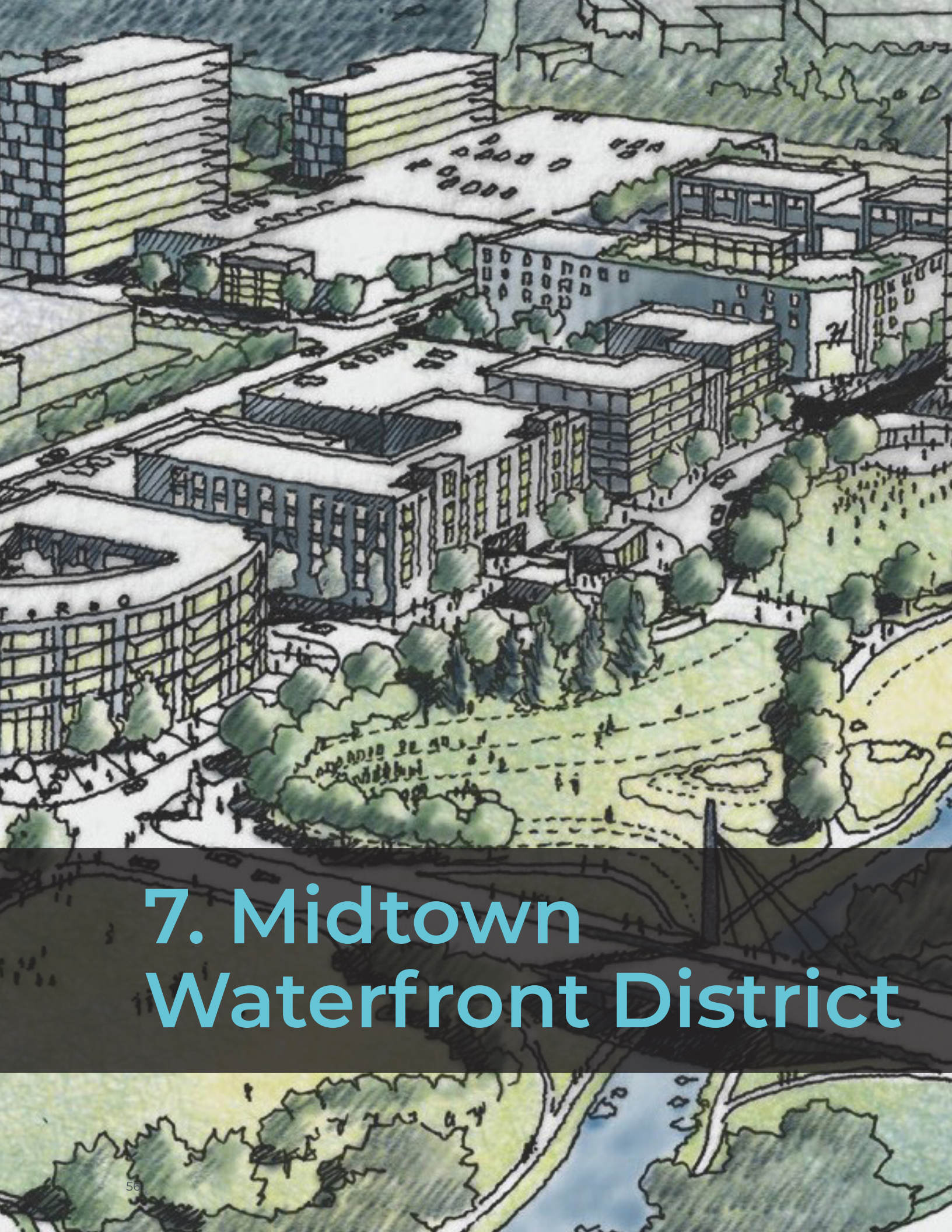
Missing Middle Housing Options

This study recommends facilitating "Missing Middle" housing options, such as duplexes, triplexes, and fourplexes, along the east side of Atlantic Avenue and both sides of Millbrook Road (**Figure 21**). This means a change on the Future Land Use Map to Moderate Density Residential. Future studies may suggest a broader area where these types should be accommodated.

Figure 21: Recommended Areas for "Missing Middle" Housing Options



Examples of "Missing Middle" housing types



7. Midtown Waterfront District

The Midtown Waterfront District

The decision to locate the state's capital on a backwoods farm instead of the bustling Town of Fayetteville means Raleigh has long been a city without a waterfront. However, a perfect opportunity exists along the banks of the Crabtree – a waterway larger than many of the state's rivers – to change that fact.

The Midtown Waterfront District is where urban life and activity occur along the water's edge, a place that serves as a destination for Midtown residents and beyond. New crossings of the Crabtree, a restored and opened-up waterway, and a storm-resistant and runoff-absorbing park combine with housing and retail to make a place unlike any other in the City.

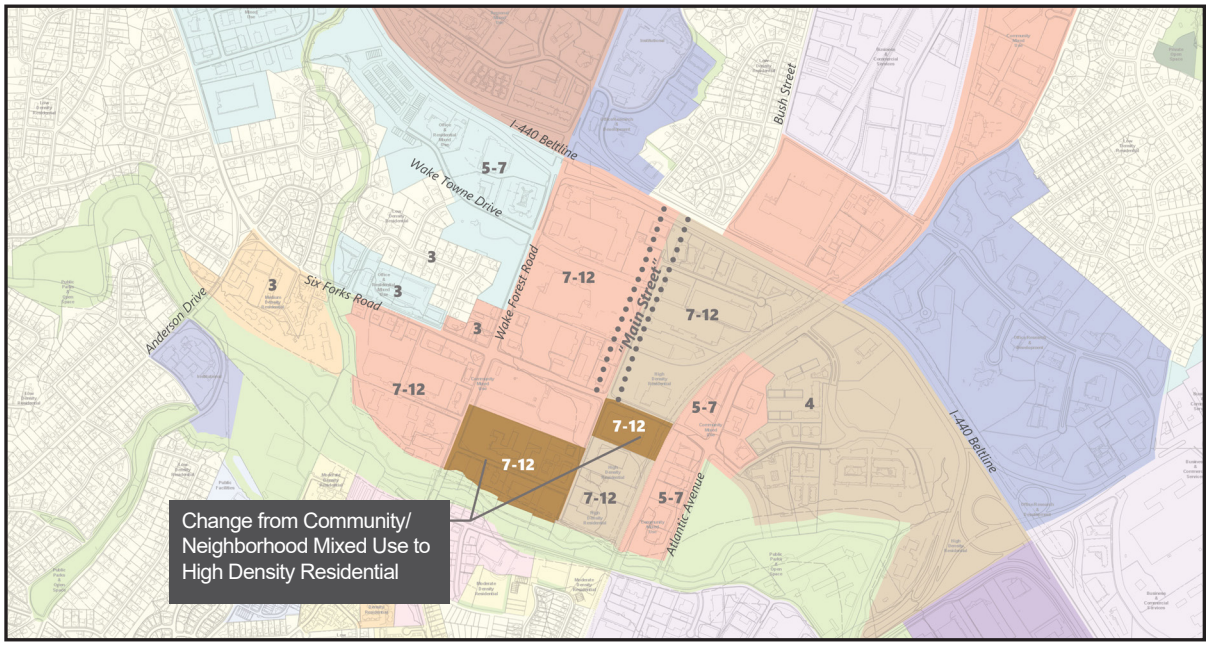
In Your Words: Midtown 2040

"A fun and exciting place to live."

The Midtown Waterfront District includes properties directly north of Crabtree Creek on both sides of Wake Forest Road including Creekside Drive, Industrial Drive and Rucker Drive.

The study recommends a stronger emphasis in this area for moderate- to high-density residential as the preferred option to replace land currently utilized by light industrial, specialty retail, and car lot sales. To facilitate this, the study recommends (**Figure 22**) changing much of this area from the current Industrial zoning and Community Mixed Use land use designations to a Residential Mixed Use zoning (RX) classification and to High Density Residential land use. That designation still envisions retail and other commercial uses, but not as the dominant use in the district. Higher density and building heights (7 – 12 stories) are also recommended. These policy changes will help to realize the plan's vision for this area.

Figure 22: Crabtree Creek Land Use Recommendations



Numbers indicate recommended maximum building height.

In addition, three City initiatives are recommended to be explored to facilitate this transition:

- Acquire and construct an urban park along Crabtree Creek on flood-prone property.
- Determine the feasibility of public/private investment strategies to promote the development of mixed income and/or affordable housing units on appropriate properties.
- Establish a new public street grid along Creekside Drive and Industrial Drive to support residential use with service retail development patterns, particularly along the frontage of the proposed park. Industrial Drive becomes the "Main Street" of the district.

View of Waterfront District looking north. Industrial Drive (highlighted in blue) can serve as the new walkable main street of the district, connecting to the Crabtree in the south and across the Beltline to Wake Tech in the north.

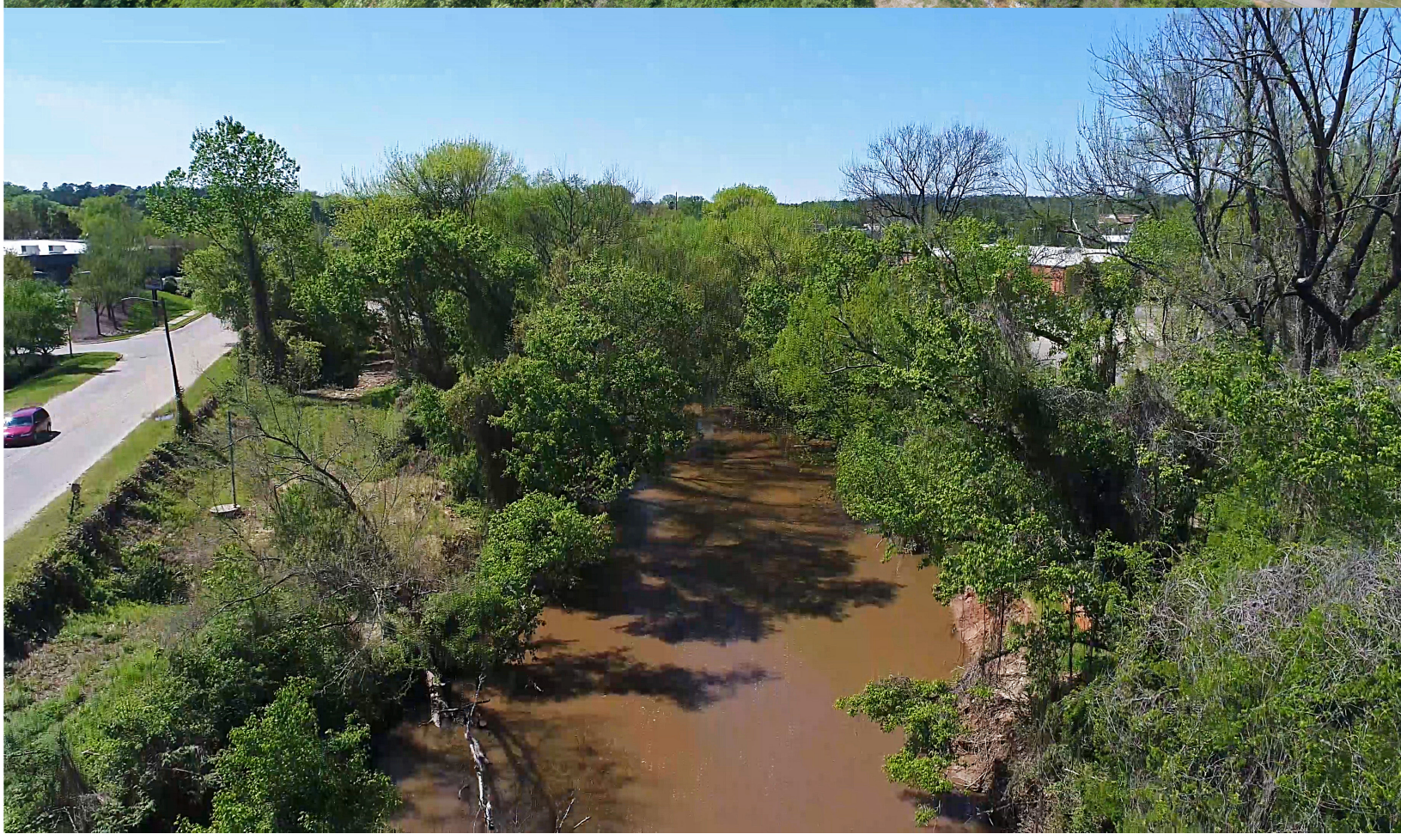
Three views of the Waterfront District

The district is currently characterized by large-format retail uses and warehouses. It turns its back to the Crabtree, which is bordered by vacant lots and overgrown vegetation. This plan recommends reorienting the district to connect with the waterway.

Above: Looking south, the downtown skyline is visible in the backgroud, with the Crabtree defining the southern border of the district.

Facing page, top: Looking northwest, underused properties visible in the foreground, with Duke Raleigh Hospital (upper right) and North Hills (upper left) visible in the background.

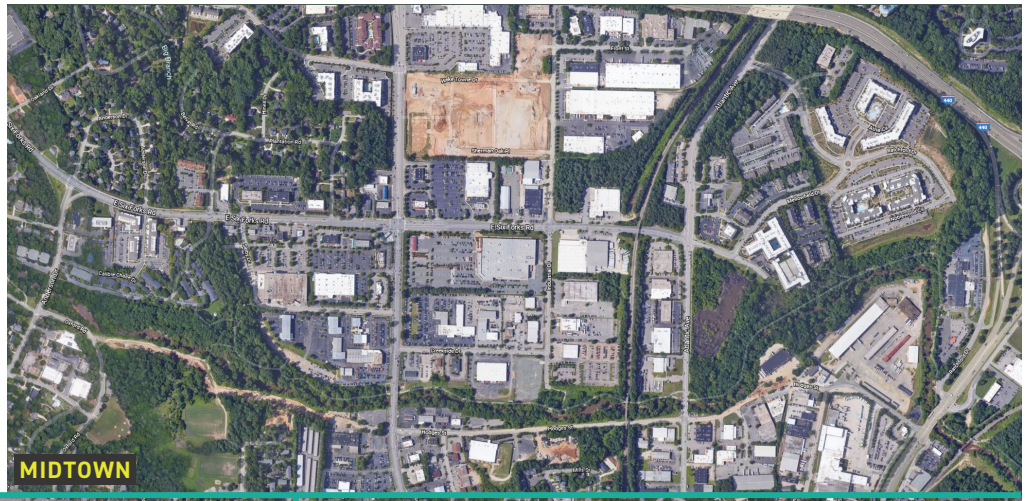
Facing page, bottom: The Crabtree itself is wide and scenic, but in need of a restoration effort.

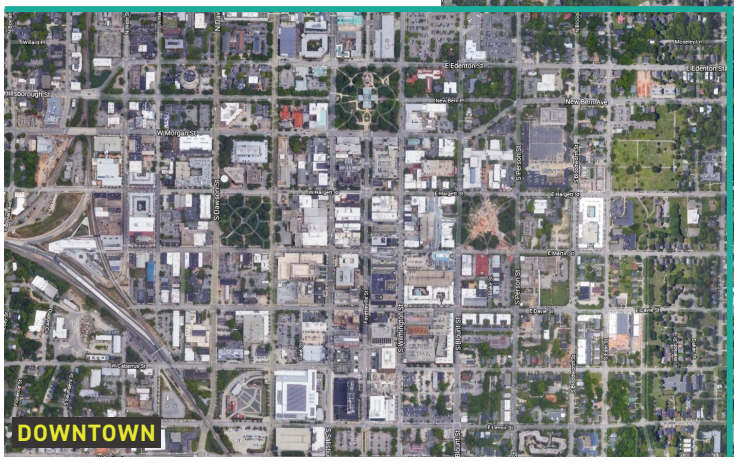


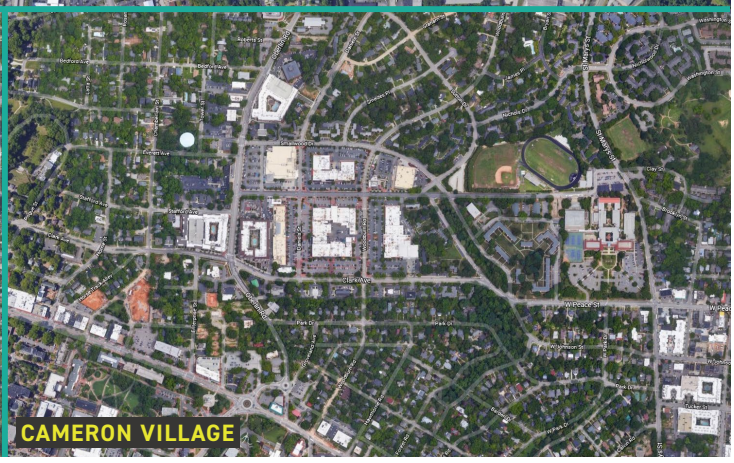
The Midtown Waterfront District: Street Grids and Walkability

Street Grids

The images show the Midtown Waterfront District at the same scale as downtown and Cameron Village. Midtown today has a street network that reflects industrial and large-format retail uses: major streets connect to the highway, with few other streets and little grid. In Downtown and Cameron Village, more urban mixed-use areas of the city, tighter street grids handle transportation demand on smaller blocks with more pedestrian-friendly streets.

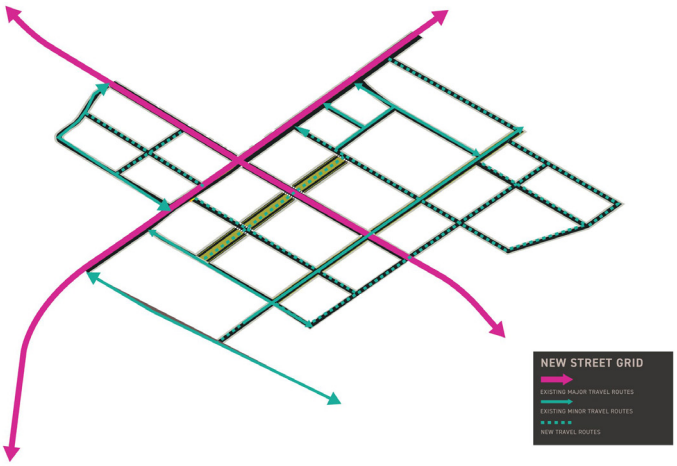






Creating the Grid

The images below show the existing Watefront District grid (below), and a new, connected street grid (right and below right). Industrial Drive becomes the new "Main Street" of the area, similar in function and form to Fayettville Street in downtown Raleigh (above). It connects to the Crabtree Greenway in the south and across 440 in the north via a new pedestrian bridge. Smaller streets begin to break up the large blocks over time.



Re-envisioning the Crabtree Waterfront

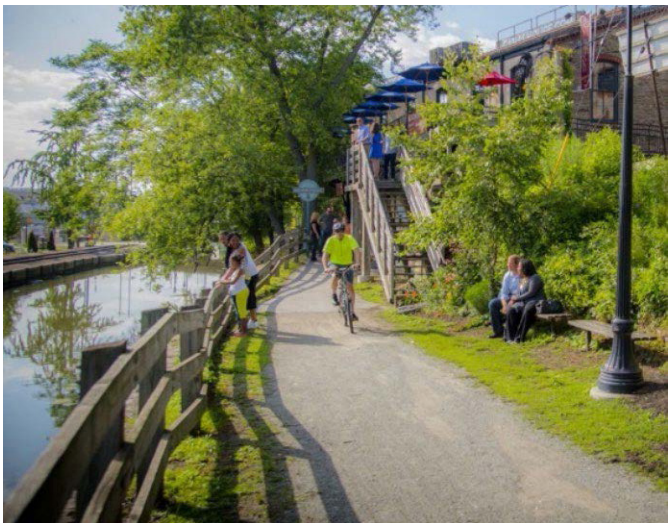
The Crabtree watefront edge currently (above). The current conditions suggests the outlines of a place where water, greenway, and urban space all meet.

Rapids on the Crabtree (right). A waterway restoration project can improve the health and flow of the waterway and can include aesthetic improvements as well.

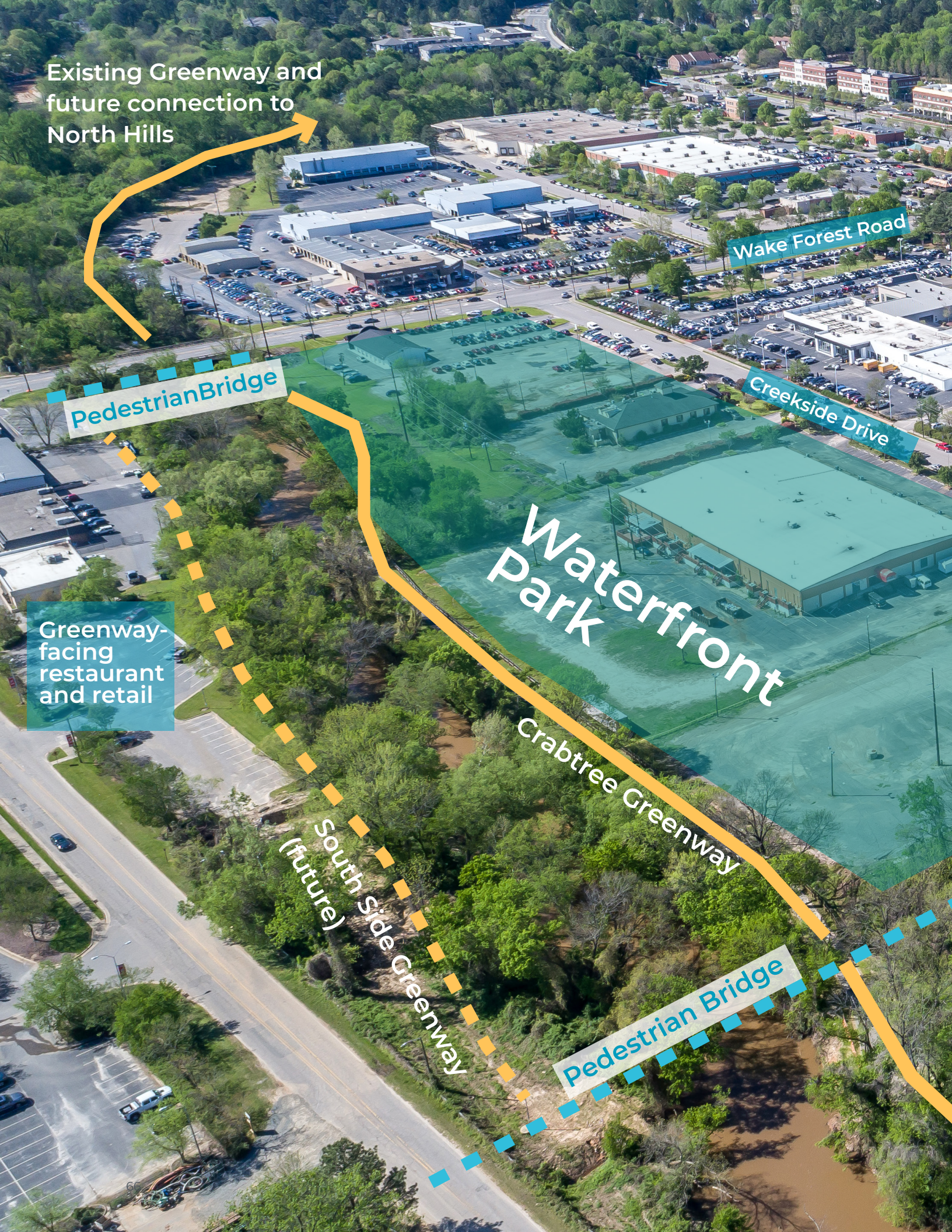
Buffalo Bayou Trail in Houston. The design connects to adjacent amenities, providing areas for observation and interaction with natural resources adjacent to urban places. h-gac.com

Historic Fourth Ward Park in Atlanta, GA. The park's 2-acre lake also acts as a stormwater retention pond. This design feature addressed flooding issues.. beltline.org

Tanner Springs Park in Portland. Active/ passive spaces layered on top of rainwater infiltration and detention wetlands.

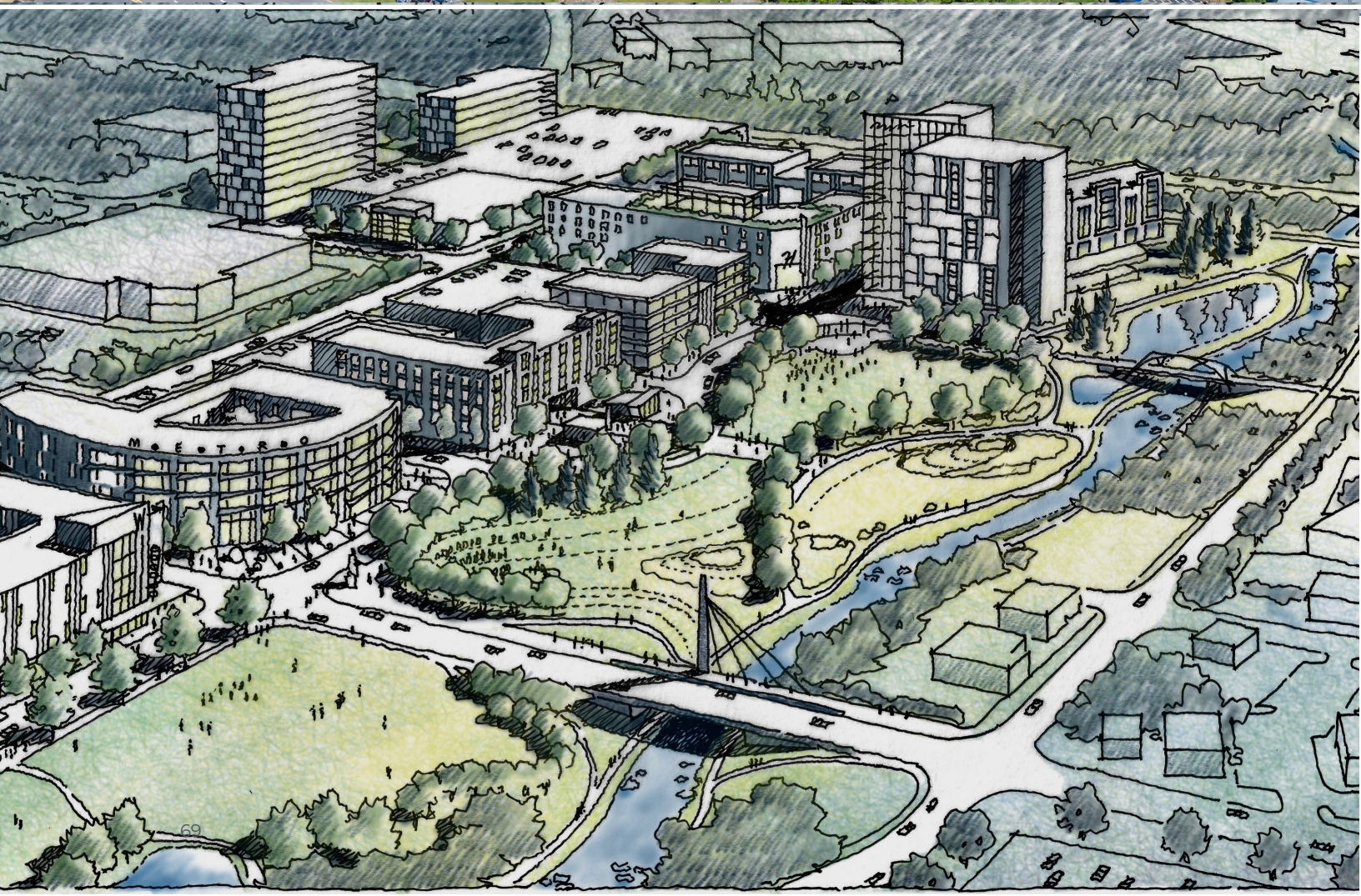


Manayunk Canal Towpath in Philadelphia,. Buildings embrace the greenway and incorporate active and passive spaces.


Existing Greenway and future connection to North Hills
Wake Forest Road
PedestrianBridge
Creekside Drive
Waterfront Park
Greenway-facing restaurant and retail
Crabtree Greenway
South Side Greenway (future)
Pedestrian Bridge

The Midtown Waterfront District

The Midtown Waterfront District: Before and After

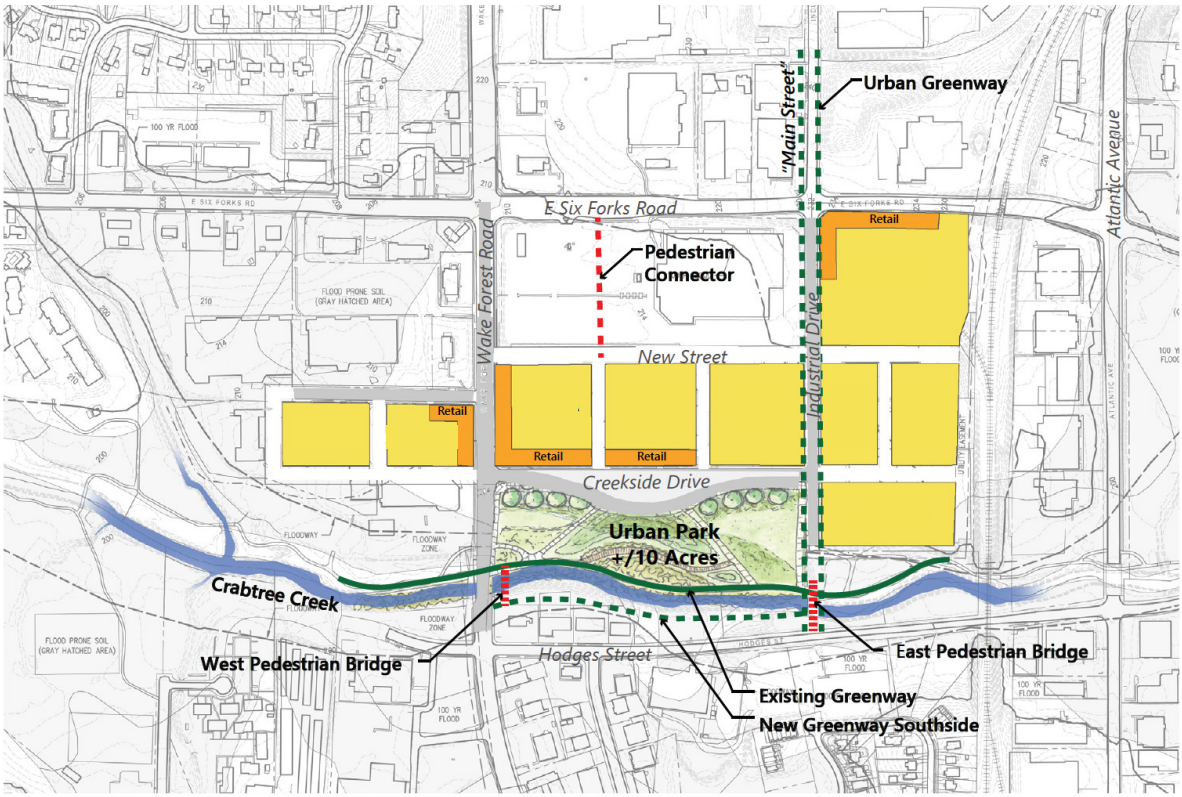


Midtown Waterfront Park

The Midtown Waterfront Park offers the potential to create a signature new public space (**Figures 23 and 24**). The acquisition and conversion of flood-prone parcels along Crabtree Creek create a "storm-resistant park." The Crabtree Creek Greenway would access this neighborhood and the Park with a new pedestrian bridge extending from Industrial Drive and across Crabtree Creek to the south bank. A second pedestrian crossing at Wake Forest Road would allow for a safer, more comfortable experience for pedestrians there as well.

This project creates the possibilty for "greenway-adjacent development" that encourages active uses near the water (see examples to the right) It also involves a waterway restoration effort that improves the appearance and function of the Crabtree.

Figure 23: Midtown Waterfront Park Concept



Potential Layout and Pedestrian Connections for Waterfront Park.

A waterfront park is a place where dense urban life transitions into a beautiful and welcoming public space (example above). The Midtown Waterfront Park will serve as place for active living, contemplation, and connection with water and nature.

A new pedestrian bridge can connect the Watefront District to points south and provide a signature public place along the waterfront (example below from Greenville, South Carolina). The Midtown plan recommends two bridges, one continuing south from Industrial, the second paralleling Wake Forest Road in order to provide a safer crossing ther.e

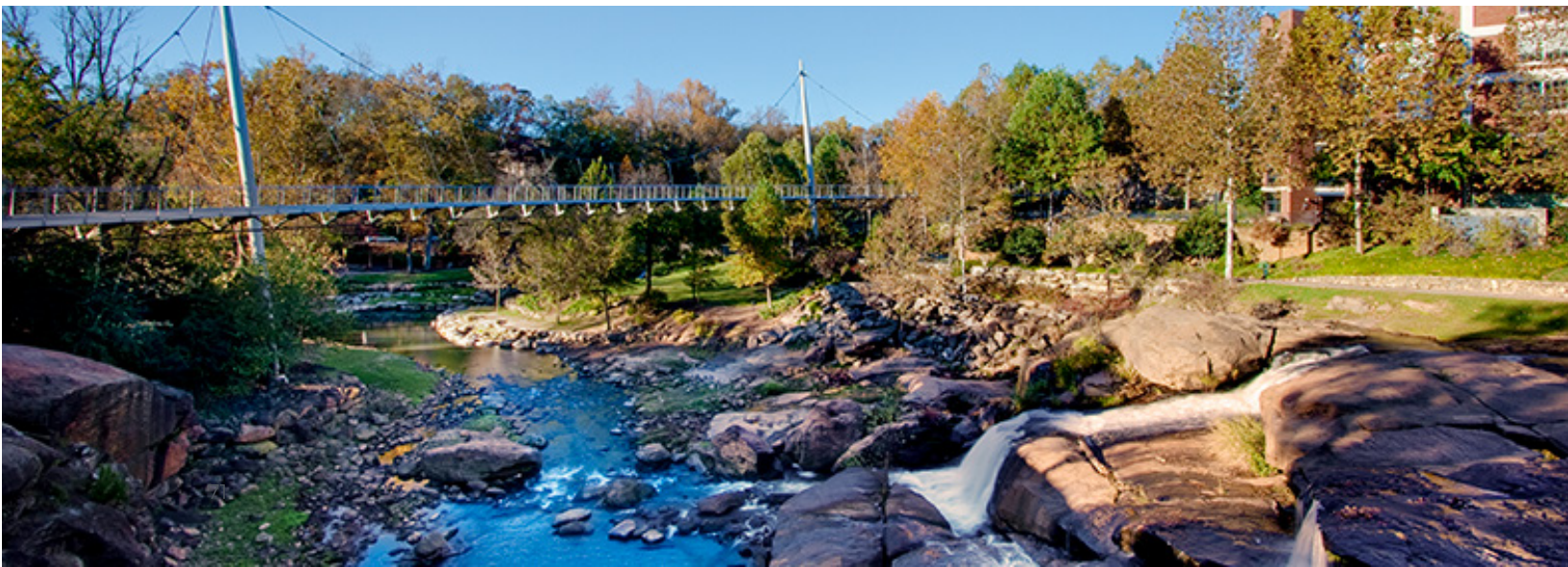


Figure 24: Midtown Waterfront Park Rendering


HOTEL

Walkable Midtown: Implementation

Implementation Priorities and Phasing

Project prioritization is determined (and constrained) by several factors. This process attempts to assess the relative importance of each project, its feasibility, and the ability to fund it. Issues of equity, policy, and interdependencies among projects (such as one project being contingent on another) must also be weighed and balanced.

In terms of implementation schedule, three windows or phases are identified in the matrix on the following pages:

- 0 - 3 years (short-range)
- 3 - 7 years (medium-range)
- 7+ years (long-range)

Being designated a medium- or long-range project does not necessarily indicate less importance than a short-range project; it may be that other projects needed to be completed first; that the later project requires more time to plan, design, and build; or that funding was not available sooner.

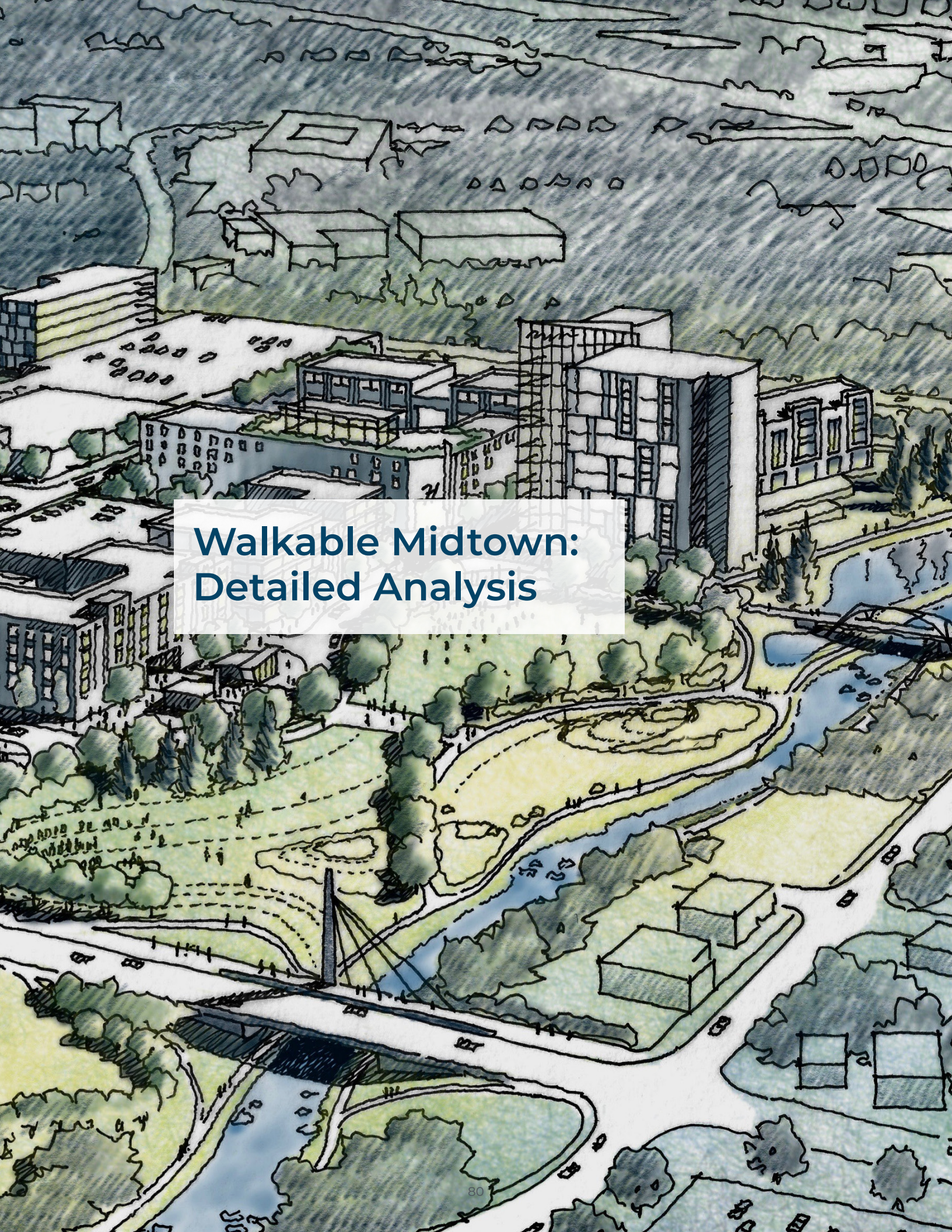
Figure 26: Implementation and Funding Sources

	ID	Project	Description	Status	IMPLEMENTATION PRIORITY			Contingency	Responsibility / Funding Source
					0-3 YRS	3-7 YRS	7+ YRS		
	BT1	**I-440 Multimodal Bridge** *Navaho Dr - Barrett Dr at Big Branch*	2-lane avenue w/ sidewalks and bike lanes, connection with Church at North Hills Drive			HIGH		Realignment of Navaho Dr & Barrett Dr	Raleigh possibly w/ NCDOT
	BT2	**I-440 Pedestrian-Bicycle Bridge** *Navaho Dr - Industrial Dr at Bush St*	Pedestrian-bicycle only bridge			Medium	Medium	Ped/bike improvements on Bush St & Industrial Dr	Raleigh
	BT3	**Six Forks Rd Pedestrian Bridge** *Near Dartmouth Rd*	Pedestrian bridge			HIGH	HIGH	Redevelopment; PPP	Raleigh + Private
	BT4	**Wake Forest Rd Pedestrian Bridge** *South of St Albans Dr*	Pedestrian bridge				low	Redevelopment; PPP	Raleigh + Private
	BT5	**New Hope Church Rd RR Overpass**	Railroad overpass Evaluate realigning St Albans west to Craftsman Dr	STIP (2020-23)	HIGH				NCDOT
	BT6	**Wolfpack Ln RR Overpass**	Railroad overpass	MTP		HIGH			NCDOT
	BT7	**Millbrook Rd RR Overpass**	Railroad overpass	STIP (2021-22)	HIGH				NCDOT
	BT8	**Six Forks Rd RR underpass widening**	Widen railroad bridge for more tracks	MTP			Medium		NCDOT
	GS1	**Quail Hollow Drive** *E Millbrook Rd - Barrett Dr at Big Branch*	Stormwater BMPs, traffic calming measures, and improved bicycle facilities or shared-use path		HIGH	HIGH			Raleigh DOT w/ Stormwater & Parks
	GS2	**Bush St** *St Albans Dr - Navaho Dr*	Stormwater BMPs, traffic calming measures, and improved bicycle facilities		HIGH	HIGH			Raleigh DOT w/ Stormwater & Parks
	GS3	**Wake Towne Drive** *Barret Dr - Wake Forest Rd*	Stormwater BMPs, traffic calming measures, and improved bicycle facilities or shared-use path			Medium		I-440 crossing emphasizes need	Raleigh DOT w/ Stormwater & Parks
	GS4	**Hardimont Rd** *St Albans Dr - Wake Forest Rd*	Stormwater BMPs, traffic calming measures, and improved bicycle facilities			Medium	Medium		Raleigh DOT w/ Stormwater & Parks
	GW1	**Crabtree Greenway Connector** *Quail Hollow Dr - Crabtree Creek Trail*	Extension of bicycle and pedestrian facility to existing greenway			HIGH		I-440 crossing	
	BP1	**St Albans Dr** *Hardimont Rd - New Hope Church Rd*	Improved bicycle facilities and continuous pedestrian facilities or shared use path		HIGH			Coordinate with development	Raleigh & Private
	BP2	**New Hope Church Rd** *Wake Forest Rd - St Albans Dr*	Improved bicycle facilities (separated preferred)			Medium		Coordinate with development	Raleigh DOT
	BP3	**Industrial Dr** *Front St - Crabtree Creek Trail*	Traffic calming measures, bicycle facilities, and pedestrian facilities		HIGH	Medium		Coordinate with development	Raleigh DOT
	BP4	**Millbrook Rd** *Six Forks Rd - Falls of Neuse Rd*	Improved bicycle facilities (separated preferred)		HIGH				Raleigh DOT
	BP5	**Cheyenne Rd Connection** *Apache Dr - Bush St*	Bicycle and pedestrian connection				low		Raleigh DOT

	ID	Project	Description	Status	IMPLEMENTATION PRIORITY			Contingency	Responsibility / Funding Source
					0-3 YRS	3-7 YRS	7+ YRS		
	BP6	**Pinecrest Dr Connection** *Apache Dr - Bush St*	Bicycle and pedestrian connection				low		Raleigh DOT
	BP7	**Utica Dr Connection** *Manovil Pl - Cheyenne Dr*	Bicycle and pedestrian connection				low		Raleigh DOT
	BP9	**Hines Dr Connection** *North to Wake Towne Dr*	Bicycle and pedestrian connection			low			Raleigh DOT
	X1	**Six Forks Rd & Anderson Dr Crossing**	Improved pedestrian crossing		**HIGH**				Raleigh DOT
	X2	**Six Forks Rd & Dartmouth Rd Crossing**	Improved pedestrian crossing	Included in Six Forks Corridor Study	**HIGH**			Six Forks Widening	Raleigh DOT
	X3	**Six Forks Rd & Lassiter Mill Rd Crossing**	Improved pedestrian crossing	Included in Six Forks Corridor Study	**HIGH**			Six Forks Widening	Raleigh DOT
	X4	**Six Forks Rd & Millbrook Rd Crossing**	Improved pedestrian crossing	Included in Six Forks Corridor Study	**HIGH**			Millbrook ped/bike improvements (BP4)	Raleigh DOT
	X5	**Falls of Neuse Rd & Millbrook Rd Crossing**	Improved pedestrian crossing			Medium		Millbrook ped/bike improvements (BP4)	Raleigh DOT
	X6	**Sweetbriar Dr @ Millbrook Rd Crossing**	Improved pedestrian crossing			Medium		Millbrook ped/bike improvements (BP4)	Raleigh DOT
	X7	**Quail Hollow Dr @ Millbrook Rd Crossing**	Improved pedestrian crossing			Medium		Millbrook ped/bike improvements (BP4)	Raleigh DOT
	--	**Wake Forest Rd** *I-440 to St Albans*	Improved bicycle and pedestrian facility (shared use path)		**HIGH**			Diverging diamond; Navaho & St Albans intersection improvements (I1)	NCDOT
	--	**Other crossing improvements**	Suite of pedestrian visibility enhancements for intersections with noted safety concerns. Inclusive of high visibility crosswalk markings, inroad signage, advance warning signage, curb bump outs, lighting, and other elements.		**HIGH**	Medium	low		Raleigh possibly w/ NCDOT
	--	**Six Forks Rd Corridor Study Recommendations**	Separated bike lanes along both sides of Six Forks Road from Lynn Rd to Dartmouth Rd. Pedestrian refuge islands at North Clift, Loft, Millbrook, Windel, Shelley, Northbrook, Lassiter Mill, Dartmouth, and Front at N Hill St.	Phase I Planning & Design 2019	**HIGH**			Six Forks Widening	Raleigh DOT
	T1	**Midtown Transit Center**	The Transit Center, planned to be located near the North Hills Shopping Center and Six Forks Road, will accommodate multiple routes with enhanced amenities	Planning & Design FY 2020 Construction FY 2021	**HIGH**				GoRaleigh
	T2	**Bus Stop Improvements**	Bus stop improvements could include concrete pads, benches, bike racks, access ramps, and sidewalks.	Ongoing	**HIGH**	Medium	low		GoRaleigh
	T3	**Wake County Transit Plan - Bus Service Improvements**	Route 8 (Six Forks Midtown) - 15 min. headways Route 8L (Six Forks North) - 30 min. headways Route 16 (Centennial-Midtown) - 15 min.	FY 2024 FY 2024 FY 2024		Medium	low		GoRaleigh

	ID	Project	Description	Status	IMPLEMENTATION PRIORITY			Contingency	Responsibility / Funding Source
					0-3 YRS	3-7 YRS	7+ YRS		
	T4	**Midtown High Frequency Bus Service** *Study future Route 8 Alternatives or additions*	St Albans/I-440 Crossing/Wake Towne/Industrial/Six Forks Ext			Medium	Medium	Implementation of frequent routes; adequate ridership	GoRaleigh
	T5a	**Future Midtown Rapid Transit** *BRT extension from Capital Blvd*	Study feasibility, routing options, and related considerations.			Medium			GoRaleigh
	T5b	**Future Midtown Rapid Transit** *BRT extension from Capital Blvd*	Some combination of Six Forks, Wake Forest, Atlantic, and I-440 corridor options				low	Six Forks Rd Extension (SC7)	GoRaleigh
	SC1	**Benson Dr Extension** *Dresser Ct - St Albans Dr*	Avenue 2-Lane Undivided		Medium			Development assisted	Raleigh & Private
	SC2	**Benson Dr Extension** *North to Hardimont Rd*	Avenue 2-Lane Undivided			Medium	Medium	Development assisted	Raleigh & Private
	SC3	**Bland Rd Complete Street Improvements** *Falls of Neuse Rd - Hardimont Rd*	Road diet			**HIGH**			Raleigh
	SC4	**Craftsman Dr Extension** *Sorghum Ct - N Market Dr*	Avenue 2-Lane Undivided	Raleigh St Plan		Medium	Medium	Development assisted	Raleigh & Private
	SC5	**Pacific Dr Extension** *Old Wake Forest Rd - Craftsman Dr Ext*	Avenue 2-Lane Undivided	Raleigh St Plan		Medium	Medium	Depends on Craftsman Rd ext (SC4) Development assisted	Raleigh & Private
	SC6	**Pacific Dr Extension** *Craftsman Dr Ext - Atlantic Ave*	Includes RR overpass	Raleigh St Plan			low	Depends on Pacific & Craftsman Rd exts (SC5, SC6). Development assisted	Raleigh & Private
	SC7	**Six Forks Rd Extension to Capital Blvd**	Avenue 4-Lane, Divided	Raleigh St Plan		**HIGH**			Raleigh possibly w/ NCDOT
	SC8	**Wake Towne Rd Extension** *West to Barrett Dr*	Avenue 2-Lane Undivided	Raleigh St Plan		**HIGH**		I-440 crossing adds importance	Raleigh
	SC9	**Navaho Dr Realignment** *Quail Hollow Dr - Benson Dr*	TBD (develoment-dependent)			**HIGH**		Development driven I-440 crossing adds importance	Private
	SC10	**Future Benson Dr Extension** *Hardimont Rd - Bland Rd/Pacific Dr*	Avenue 2-Lane Undivided				low	Development-driven	Raleigh & Private
	SC12	**St Albans Dr Widening A** *Benson Dr - Wake Forest Rd*	Avenue 4-Lane, Divided			**HIGH**		Development-driven	Raleigh & Private
	SC13	**St Albans Dr Widening B** *Church at N Hills St - Hardimont Rd*	Avenue 2-Lane, Divided/Turn lanes	Raleigh St Plan		low		Development-driven	Raleigh & Private
	SC14	**St Albans Dr Widening C** *Midtown East Access Rd - Benson Dr*	Avenue 2-Lane, Divided/Turn lanes	Raleigh St Plan		low		Development-driven	Raleigh & Private
	SC15	**Millbrook Road Diet Study**	Possible 2-laning depending on anticipated traffic demands		low	Medium			Raleigh
	SC16	**Six Forks School & Connectivity Study** *North of Rowan St*	Detailed study of school and connectivity issues		**HIGH**				Raleigh

	ID	Project	Description	Status	IMPLEMENTATION PRIORITY			Contingency	Responsibility / Funding Source
					0-3 YRS	3-7 YRS	7+ YRS		
	SC17	**Wake Forest Rd Corridor Study** *St. Albans to E Millbrook*	Complete Streets upgrade: access management; lane-width increase; streetscape; bike-ped & transit accomodation			Medium	Medium		Raleigh
	I1	**Wake Forest Rd & Executive Dr Intersection Improvements at St Albans Dr & Navaho Dr**	Signal and lane configuration changes; pedestian accomodations; internal cirulation changes		**HIGH**	Medium		Wake Forest Rd Diverging Diamond	Raleigh
	I2	**Bush St Roundabouts** *Wolfpack Ln & Navaho Dr*	Single-lane roundabouts with bike-ped accommodations			low	Medium	Bush St ped-bike improvements (GS2)	Raleigh
	LU1	**Midtown Waterfront Park Acquisition**	Acquisition of parcels adjacent to Crabtree Creek for new public park space		**HIGH**				Raleigh
	LU2	**Midtown Waterfront Park Study**	Formal study of the park space, uses, necessary improvements, and coordinated development		**HIGH**			Park acquisition (LU1)	Raleigh
	LU3	**Stormwater Drainage Basin Study**	Updated review of the stormwater drainage basins in the Midtown-St. Albans study area and implications for existing and planned stormwater infrastructure		Medium				Raleigh
	LU4	**Comprehensive Plan Amendments**	Adopt Future Land Use Map, Urban Form Map, and other area-specific guidance		**HIGH**				Raleigh



Walkable Midtown: Detailed Analysis

Walkable Midtown: Detailed Analysis

Purpose and Scope

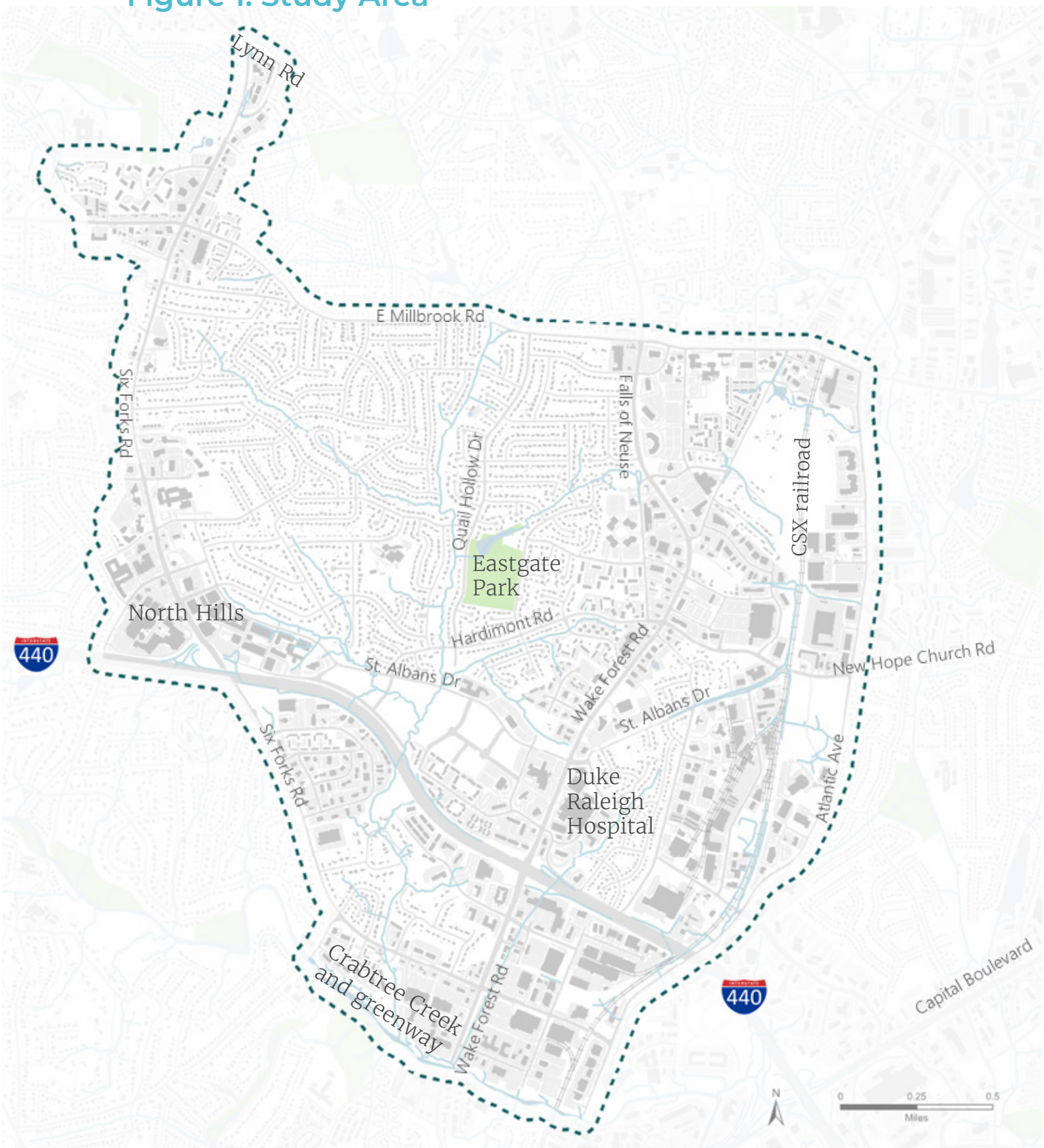
The *Walkable Midtown* area plan – the final name for the Midtown-St. Albans area study – was completed in 2020 to create guidance for this dynamic commercial and residential district for the next decade. Recommendations resulting from the plan include multi-modal transportation, streetscape, urban design, and land use guidance. They are aimed at addressing issues and taking advantage of opportunities. related to the area's growth and development. In addition to traffic congestion and safety, the study recommendations highlight opportunities to manage stormwater and flooding issues, promote open space, bolster housing affordability, improve pedestrian and bicyclist mobility, and support expanded transit.

> *A primary objective of the study recommendations is to address the transportation impacts of recent land use and zoning changes on existing and proposed transportation infrastructure in this district.*

Overview of Study Area

The Midtown-St. Albans study area is an approximately five-square-mile area that is bounded by E. Millbrook Road to the north, Atlantic Avenue to the east, and Six Forks Road to the south and west **(Figure 1)**. It features diverse destinations, employers, transportation options, and environmental assets such as North Hills, Duke Raleigh Hospital, I-440 Beltline, railroad, and Crabtree Creek. It is also a rich tapestry of

Figure 1: Study Area



ethnically and culturally diverse restaurants, grocery stores, and other businesses that are unique assets in the City of Raleigh.

The area is also a blend of commercial and residential land uses, with coexisting old, new, and transitioning development. Roughly 13,000 residents call the study area home, while the daytime population surges to 43,000 due to the area's more than 2,000 employers. Two Citizens Advisory Councils (CACs), Midtown and Atlantic, cover the study area and serve as the connection points between the City and residents that allow for sharing of information and feedback.

The story of the *Walkable Midtown* plan begins in 2003 with the redevelopment of an aging enclosed mall and strip center called North Hills. That area, still known as North Hills, transformed into a nationally recognized mixed-use development featuring retail, office, hotel, and residential spaces. A 50-acre master plan approved in 2009 expanded the mixed-use transformation east across Six Forks Road.

Several years later in 2012, the City began the Six Forks Corridor Study. That plan sought to create *"a unique sense of place with enhanced fluidity of movement, environmental sensitivity, and connectivity for residents, workers, students, and visitors using transportation modes of all types."* After the conclusion of the Six Forks Corridor Study public outreach, but before the plan's adoption, a second master plan for an additional 34 acres was approved for North Hills east of Six Forks. At the time of the rezoning approval, City Council requested additional area planning in the vicinity; this action initiated the Midtown-St. Albans area study. Primary goals included ensuring adequate

infrastructure to serve current and future residents, workers, and visitors, and continuing to add to the sense of Midtown as a distinctive place in its own right.

The Six Forks Corridor Study plan was adopted in 2018. The approval included the plan's recommendation for widening Six Forks to six lanes and including improved pedestrian and bicycle facilities. However, City Council requested that land use recommendations from the city be included in the Midtown-St. Albans study area for additional stakeholder input and education.

Public Engagement Summary

The area plan study included a robust public engagement program of in-person workshops, pop-ups, and online surveys to explain the study's progress and seek feedback and guidance at four distinct stages. These stages included Visioning, Understanding the Area, Choosing a Path, and From Ideas to Action. The City of Raleigh targeted its promotion of the engagement events to ensure that renters, non-English speaking residents, and those with different work schedules were included. Results from each of the four stages informed the following stage, which at times generated new concepts and removed some concepts from consideration.

Examples of the many outreach events hosted by the Project Team

The plan process also benefited from the role of a "Confirmation Group." Council appointed this group of area residents and stakeholders to ensure that the process was thorough and transparent and – critically – to confirm that plan recommendations reflect public input as well as technical analysis. The group, which met seven times during the study, generally confirmed the outline of the recommendations in October 2019. A final "confirmation" was completed in early 2020.

In general, the process focused on:

- **Understanding key issues to address.** This generated core goals for the project – encouraging walkability and pedestrian safety, taming traffic on neighborhood streets, ensuring transportation infrastructure is adequate, addressing stormwater and housing affordability, respecting the scale of residential neighborhoods, and more.
- **Creating solutions for those issues.** This phase involved exploring, analyzing, and fine-tuning ideas to address the goal goals outlined above.
- **Testing those solutions.** Recommendations should be both technically sound and well-supported by the public. Some ideas were left on the cutting-room floor after they failed one or both tests. Others, though, gathered supermajority support and made it into the final phase.
- **Prioritizing actions.** Once solutions were generally agreed upon, the process aimed to determine what should come first. An interactive process allowed stakeholders to vote with hypothetical "Midtown Bucks."

Visioning Event, June 2018

Visioning

The process included multiple events in late spring 2018. *More than 100 people took part in person, and hundreds more participated online.* This phase aimed to identify the core issues that the plan should address. This key phase developed the framework for the remainder of the plan, and introduced the clear direction that walkability and pedestrian safety and comfort are the top priorities, a finding repeated in later phases. Other topics, as mentioned above, included building height transition between commercial and residential areas, housing, transit, stormwater, parks and public space, and more.

Understanding the Area (Discovery Phase)

The process, also called the "Discovery" phase, included three public workshops and a public survey from December 2018 to January 2019 to gather input on the study's five interest areas: Natural Systems,Transportation (Car and Non-Car), Land Use, and Visioning. *The workshops attracted 105 attendees, while the survey gathered 615 responses.* Both the workshops and survey confirmed issues with the transportation network,

natural systems, preservation of neighborhood character, and a sensitivity for building transitions. The Issues & Opportunities Report in the Appendix details those combined results.

Major findings included from the Discovery phase included:

- Identification of perceived unsafe travel locations (for all modes) and areas with congestion.
- Preference for a balanced combination of options to address safety and congestion.
- Support for new parks and park improvements in the study area even if supported by higher taxes.
- Confirmation that current approaches to building transitions are working reasonably well. A majority of responses (72 percent) in the survey identified the ideal maximum height next to lower-scale residential areas as between three to five stories.
- Acceptance of larger structures, and also a desire to maintain existing character.
- Preference for allowing backyard cottages, single family homes, and townhomes to accommodate new residential growth.

The results from the workshops and surveys helped identify problems (i.e. issues) and led the study team to begin conceptualizing opportunities to address them. These opportunities helped shape the Planning Principles, or guiding themes, noted later in this report.

Choosing a Path (Testing Concepts and Options Phase)

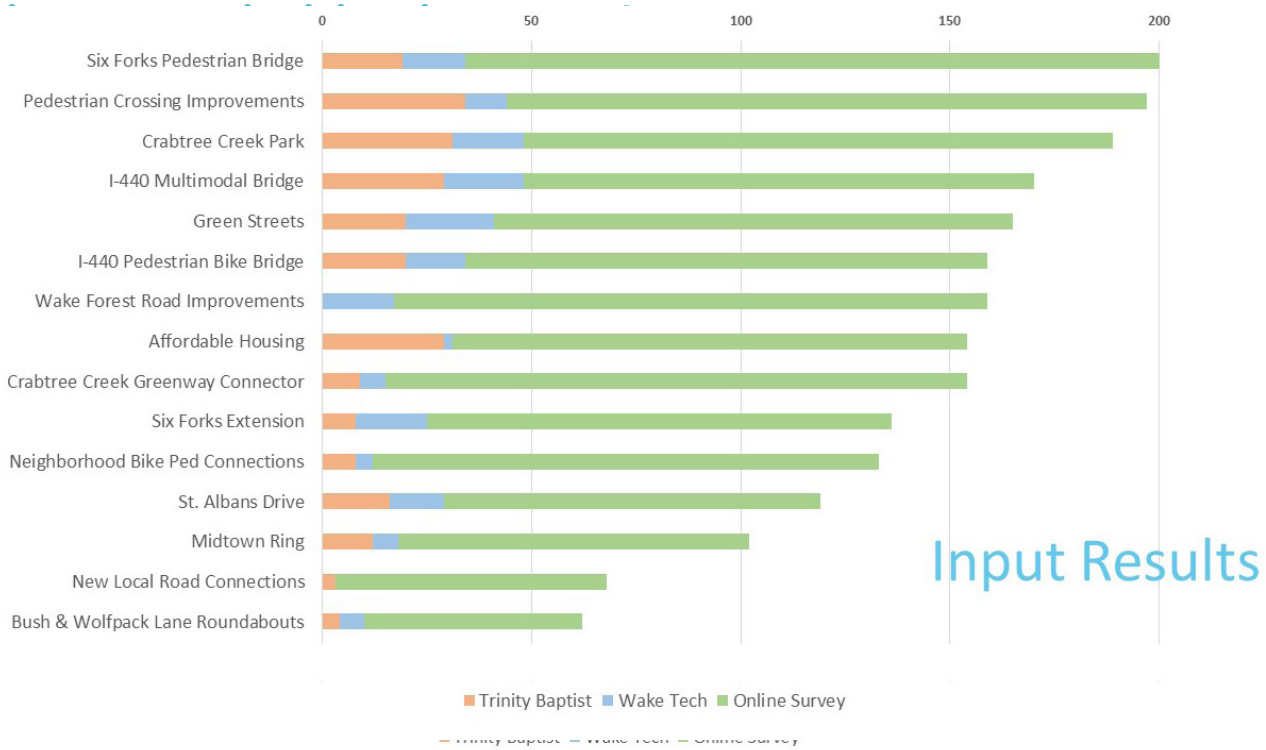
The second engagement phase included workshops and surveys in May 2019 through June 2019 to explain and seek feedback on conceptual improvement options. Two large meetings were complemented with six smaller pop-up events and an online survey, which yielded 300 attendees and 400 survey responses, respectively. During both the in-person events and online survey, participants were first briefed on the proposed improvements, benefits, and trade-offs, and were then asked to indicate how much they liked the concept. A detailed analysis of this phase's findings are included in the Appendix.

The conceptual improvements received the following feedback:

- **Green Streets** – Support from both in-person events and survey.
- **Bridges and Tunnels** - Support from both in-person events and survey.
- **Midtown Ring** - Support from both in-person events and survey, although there were comments regarding the route alignment between I-440 south to Six Forks Road.
- **Pedestrian Improvements** - Support from both in-person events and survey, though negative feedback focused on greenway maintenance.
- **Connectivity and Access Management** – Varied input on the concepts in both the workshops and survey; general support for new road connections, but preference for roundabouts on Bush St and Wolfpack Ln and neutral preference for a lane reconfiguration on Wake Forest/Falls of Neuse and Bland Rd.
- **Transit** – Support from both the in-person events and survey. Transit improvements such as bus rapid transit

(BRT), higher-frequency routes, and commuter rail all were favored by participants. The online survey asked participants how likely they believe they were to use BRT on a scale from not likely to very likely. A majority of participants indicated they were likely to use the service, and overall support for transit improvements is presumably even higher, as people driving can benefit from transit provision as well.

- **Land Use** – The survey and in-person events explored changes to land use near Crabtree Creek, the St. Albans-Atlantic area, housing, and the Wake Forest/Bland Rd area.
  - Increasing housing and employment opportunities south of I-440 at Six Forks Rd and implementing height guidance of 20 stories immediately next to 440 to three stories along Six Forks Road was received favorably.
  - Shifting future land uses along St. Albans Drive between Bush and Atlantic from industrial to housing, with a height of five stories, dropping to four stories next to existing residential areas was received favorably.
  - Promotion of "Missing Middle Housing" (e.g. duplexes, triplexes, fourplexes, and townhouses) along the Millbrook Rd and Atlantic Ave corridors received favorable responses.
  - The vision for a more walkable, mixed-use Wake Forest/Bland Rd are with a step down from seven to three stories received favorable feedback.
- **Six Forks Corridor Study Revisited** - The 20-story recommendation without a transition received highly negative feedback. Allowing detached houses to evolve into three-story office and residential uses did receive support, as did the Millbrook height recommendation. The Northbrook area street connections received highly negative feedback, while the Pamlico connection was more mixed.



The results from the Testing Concepts and Options phase guided the study team in refining project recommendations. This included, for example, the addition of alternative routes, new locations to apply crossing improvements, and areas for future or continued study.

> *Both project recommendations and concepts that were dropped from consideration are described in the Seven Big Moves for the Midtown-St. Albans Area Plan.*

From Ideas to Action (Prioritization Phase)

The final public engagement phase in September and October of 2019 focused on the prioritization of a core group of the study's preliminary recommendations. Across three workshops and an online survey, participants were asked to prioritize 16 projects within a limited budget. The goal was to simulate real-world limits that exist when prioritizing project

funding. Participants were given project worksheets that detailed the respective project's relative costs (in "Midtown Bucks"), dependence on other projects, benefits and tradeoffs, location, and a project description with illustrations. While the workshops utilized a group-based discussion and prioritization format, the survey was limited to individuals. Approximately 60 people participated in the in-person workshops, and 225 people participated through the survey. Together, the results informed the study's efforts to prioritize projects through the community's expressed preferences.

Public prioritization revealed support for several large projects and a lack of comparative enthusiasm for roadway building overall. Connectivity improvements such as the I-440 crossings and public space projects like Midtown Waterfront Park were highly ranked while new local road connections and corridor operational improvements consistently ranked low.

A composite view of all responses, weighted for group size (from the in-person events), revealed the popularity of the bridges, crossing improvements, park space, affordable housing, Green Streets, bicycle and pedestrian-focused improvements **(Figure 2)**. These priority selections overlapped with those projects most dependent on City leadership to implement. Those that were less popular—such as the new local roadway connections—are anticipated to occur with private development.

Finally, the survey requested feedback on the height and other recommendations originally made during the Six Forks Road Corridor Study. Approximately two-thirds of survey participants indicated support for both the removal of a Westridge/Northfield/Six Forks roadway connection that

would only take place through private development and a building height transition along Six Forks Road and Lassiter Mill Road. Participants also generally supported approaches to frontage guidance along Six Forks Road. These specific survey responses informed revisions to the study's reconsideration of elements from the Six Forks Corridor Study and are reflected in the recommendations.

Planning Principles

The Visioning, Discovery, and preliminary technical analysis culminated in the development of five Planning Principles. The Planning Principles acted as a foundation for the identification and development of improvement opportunities; they included conceptual infrastructure improvements and potential policy revisions. These five principles are identified below:

Midtown Moves: Healthy, Safe, and Reliable Transportation

- Ensure all Midtown destinations can be reached safely and comfortably by walking.
- Improve travel time reliability for cars and transit vehicles, with a focus on improved technology, demand management, and a better-connected street network.
- Provide more desirable options for travel within the area, including improved transit service and facilities.
- Ensure safe traffic speeds, both on major roads and on neighborhood streets.

Midtown Lives: Residential Neighborhoods and Housing Choices

- Respect the existing scale of housing in established residential neighborhoods.

- Promote a range of housing options for residents at various phases of life and at a range of income levels.

Midtown Green and Blue: Parks, Trees, and Stormwater

- Improve stormwater infrastructure and incorporate it into a connected natural space network, including greenways and parks.
- Explore opportunities to create distinct places focused on water and natural spaces.
- Green: Retain and enhance street trees and functional green spaces to improve the appearance of the area, provide greenway connections, and provide stormwater benefits.

Midtown Works: Innovation and Opportunity

- Support the adaptive reuse or redevelopment of aging/ outdated uses to accommodate new employment and housing opportunities.
- Encourage innovation and entrepreneurship through land use and other policies and programs.

Midtown Beautiful: Aesthetics and Design

- Create attractive streetscapes and ensure the design of new development enhances the feel and appearance of streets and other public spaces.
- Ensure adequate transitions in building heights where a high-density or mixed-use area is adjacent to existing residential neighborhoods.

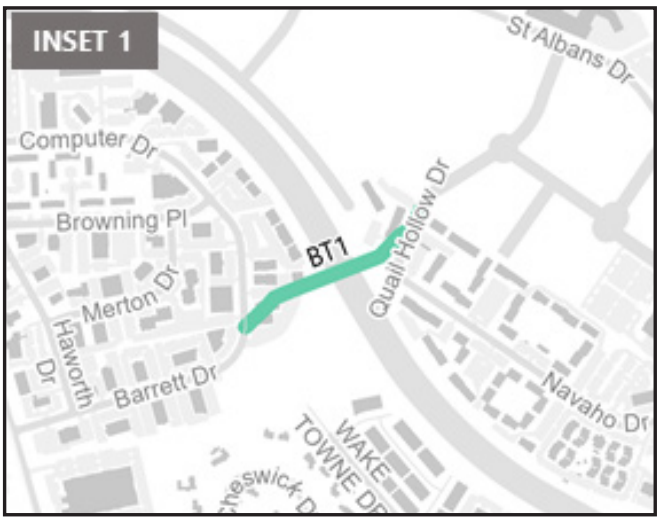
Taken together, the planning principles address key issues facing Midtown and the city as a whole, including reducing carbon emissions and other air pollutants, addressing housing affordability, improving walkability and the ability of residents to lead healthy lifestyles, encouraging job creation and innovation, and creating a Raleigh that helps everyone thrive.

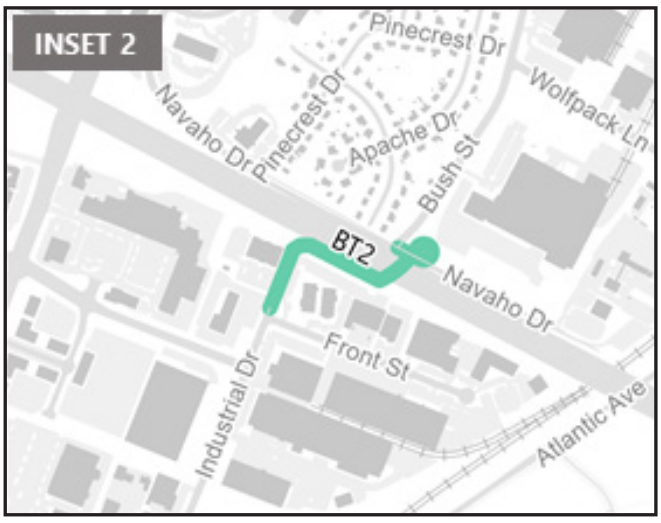
Seven Big Moves for the Midtown-St. Albans Area Plan

The previous section described the Planning Principles that guided the identification and revision of numerous potential changes and improvements to how residents, visitors, and employees live, navigate, and experience the Midtown–St. Albans area. This chapter describes the plan recommendations and associated tradeoffs. There were some options considered in the planning process that were ultimately not recommended; they are also described in this section of the report. The recommendations are organized by seven categories of improvements, known as the "Big Moves," that will support safer streets, economic activity, and transportation and housing options. The Big Moves are:

1. **Crossing the Beltline**
2. **Green Streets**
3. **Connectivity and Travel Reliability**
4. **Serious Transit**
5. **The Midtown Ring**
6. **Midtown Living/Midtown Works: Land Use Guidance**
7. **The Midtown Waterfront District and Park**

Figure 3: Bridge Projects

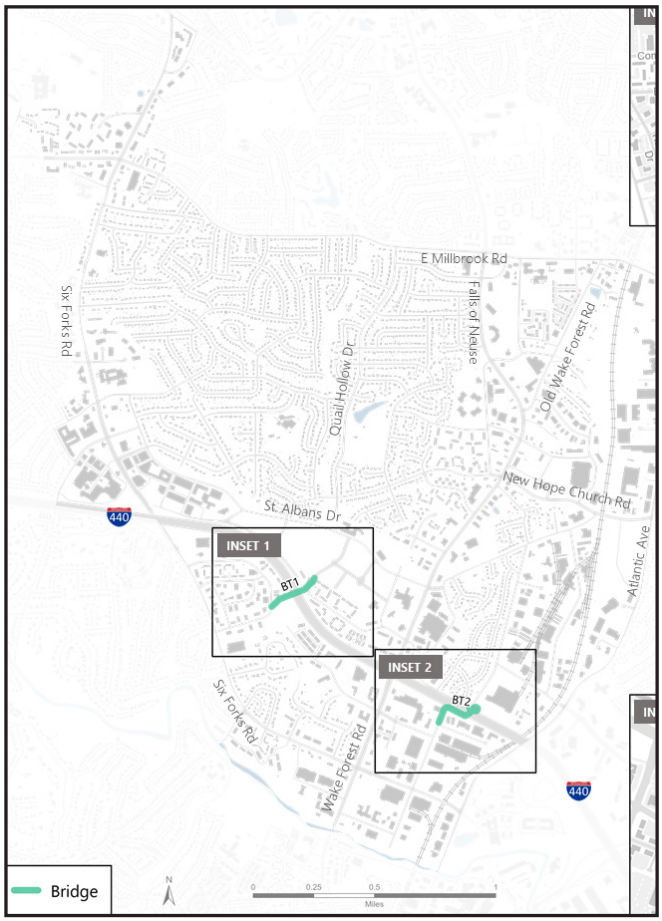




Bridge Project

BT1 - Multimodal bridge connecting Barrett Drive and Navaho Drive

BT2 - Pedestrian bridge connecting Industrial Drive and Bush Street



Together, these recommendations work to increase travel options and improve travel reliability for the growing Midtown-St. Albans area compared to a "do nothing" approach. Each recommendation has an accompanying estimated cost and timeline for implementation that are described in the Implementation section. Additional details from the transportation analyses are included in the Appendix.

Crossing the Beltline

While the I-440 Beltline provides access and mobility for thousands of daily commuters, visitors, and residents, it is also a barrier to those who wish to cross north or south to reach parks, neighbors, and stores, particularly as pedestrians. The study area's two interchanges, Wake Forest Road and Six Forks Road, allow travel across the I-440, but study participants reported feeling unsafe crossing at those locations and wanted other options for walking, biking, and driving across the interstate. In response, this study recommends two new bridges to cross I-440: one is a Multimodal Bridge for pedestrians, bicyclists, and vehicles, and the second is a pedestrian and bicycle only bridge **(Figure 3)**.

Multimodal Bridge

This project (BT1) is a new bridge over I-440 that connects Navaho Drive and Barrett Drive. This bridge has two vehicle lanes, sidewalks, and bike lanes, is intended for vehicles, transit, pedestrians, and bicyclists. The bridge provides another option for residents and visitors to cross I-440 without using the interchanges at Wake Forest Road or Six Forks Road, and it reduces traffic at critical interchanges and intersections.

The bridge supports the study's goals of improved travel reliability and expanding multimodal options. It improves travel reliability by reducing vehicle trips on congested roadways, intersections, and interchanges along Six Forks, Hardimont, and Wake Forest, and diverting vehicle trips across the new bridge and the realigned and connected roads of Wake Towne, Barrett, and Navaho. The bridge also supports more direct transit routing, path for the Crabtree Creek Greenway Connector, and a crucial connection for the Midtown Ring (all discussed later on).

The anticipated cost of bridge construction includes the costs of realigning Barrett Drive, Wake Towne, and Navaho, as well as private project acquisition for the necessary right of way.

The recommended bridge location avoids higher costs, potential construction impacts on I-440 travel, property impacts, and grade/floodway issues associated with tunneling under I-440. The study included analysis of a tunnel option as

Conceptual illustration of the Multimodal Bridge crossing the I-440 Beltline

well. However, the only viable location for a tunnel is several hundred feet west of Big Branch, and extensive earthwork and retaining walls are needed to achieve adequate depth of cover under I-440 while providing suitable road grades and avoiding flooding. The result would be highly disruptive to development, especially on the north side of I-440.

Some variation in the proposed bridge location and orientation is possible–and even likely–as design details are investigated. The challenge will be to provide reasonable road connections while preserving developable land and not placing buildings in the floodways.

Upon completion, this bridge connection provides a range of travel and land use benefits:

- Enables all modes to more safely and conveniently cross I-440 while avoiding traffic on Six Forks or Wake Forest Roads, especially congested interchanges.
- Reduces traffic conflicts at critical intersections and interchanges along southern segments of Six Forks and Wake Forest Roads, reducing congestion and delay.
- Should reduce local vehicle-miles of travel and vehicle-hours of delay, resulting in lower emissions and fuel consumption.
- Could provide more efficient, direct, and reliable bus routing options.
- Improves road network resilience and reliability by increasing connectivity and creating a network of roads that provide more options for getting around.
- Enhances greenway connectivity to Crabtree Creek and the proposed park.
- Increases the accessibility—and value—of properties in the vicinity of the bridge connection.

Pedestrian Bridge

This project (BT2) is a new bridge over I-440 from Bush Street to Industrial Drive. However, unlike the Multimodal Bridge, this bridge is only for pedestrians and bicyclists. The new pedestrian bridge connects the proposed Green Streets of Industrial Drive and Bush Street, and it is a critical link for the Midtown Ring, the network of pedestrian-bicycle facilities connecting residential neighborhoods and all major destinations in the area.

The pedestrian bridge supports the study's goals of expanding multimodal options and increasing connectivity. Currently, there are few direct opportunities to cross I-440 outside of the high vehicle volume interchanges of Six Forks and Wake Forest. The bridge's location enables north-south pedestrian travel

Conceptual illustration of the Pedestrian Bridge across the I-440 Beltline

between existing neighborhoods like Pinecrest, Greenwood Farms, and Forest Ridge to grocery stores, shopping, and employment opportunities south of I-440. Additionally, the pedestrian bridge is a link in connecting the series of Green Streets (Bush Street) to roadways with wide sidewalks and bicycle facilities along Industrial Drive.

A tradeoff for the pedestrian bridge is the acquisition of private of property. Due to the Beltline's width and the bridge's ADA requirements, right-of-way is required on both sides of I-440 to allow a gradual, non-steep approach to the bridge. On the north side of I-440, this could take the form of the approach curling around back to Bush Street, while on the south side the approach would descend parallel to the interstate before connecting to Industrial Drive.

Green Streets

Green Streets are roadways with specific improvements that reduce stormwater runoff, decrease vehicle speeds, and include a mix of expanded sidewalks, shared-use paths, and

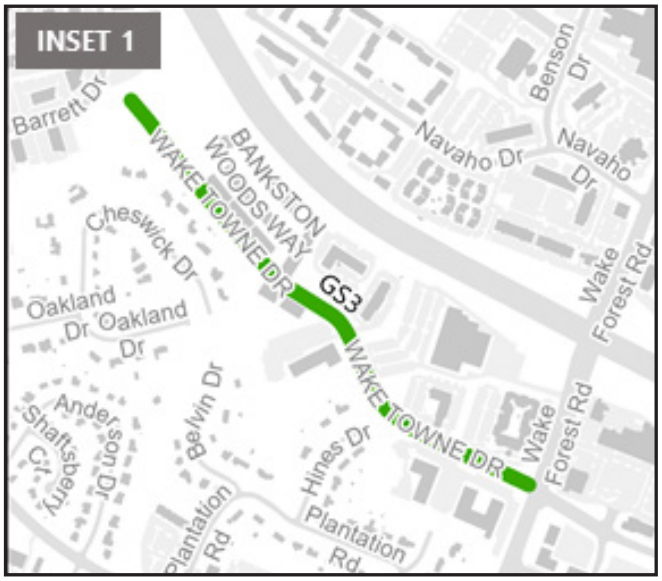
Example of a stormwater bump-out that could be included in a Green Street.

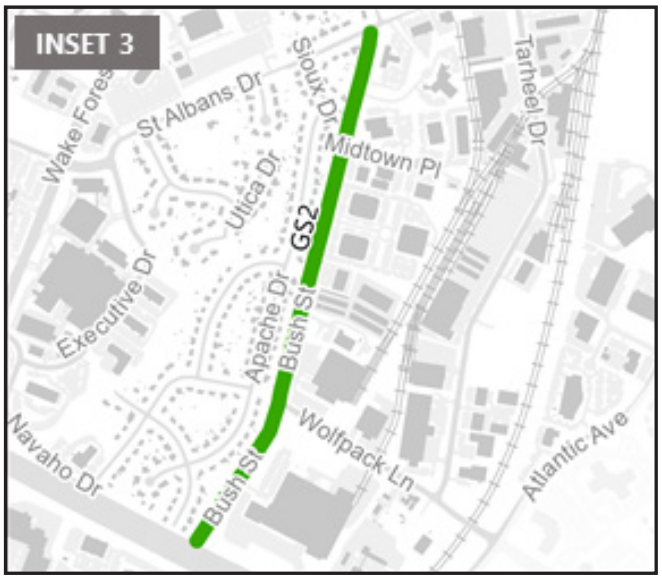
bicycle lanes. During the study's public engagement events and surveys, there was a clear preference for reducing speeds on certain streets, expanding comfortable walking and biking options, and addressing flooding. These streets include Quail Hollow Drive, Bush Street, Wake Towne Drive, and Hardimont Road
(Figure 4).

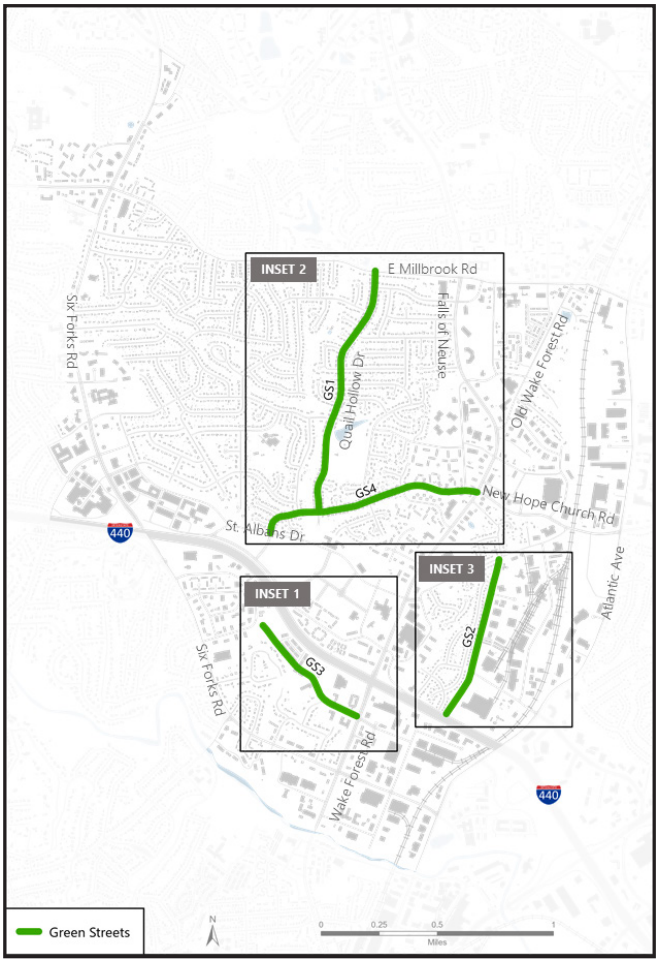
The configuration of each Green Street is dependent on the street's respective width, topography, adjacent land use, role in the transportation network, and the City of Raleigh's decision on stormwater features. For example, a shared-use path above the curb may be more suitable along roads with high levels of people walking and biking and a connection(s) to parks and greenways. Stormwater and traffic calming features such as bump-outs (i.e. a curb extension partly into the street) would also be designed to accommodate roadway users; for roads with on-street bicycle lanes, the bump-out would allow the lane to continue behind the bump-out. Together, the four Green Streets expand low stress biking and walking options across the study area, connect to key destinations and neighborhoods, and complete the Midtown Ring.

Tradeoffs for Green Streets include the reduction of pavement for vehicles, like the narrowing of travel lanes and reduction of some on-street parking. Green Street benefits come from the repurposing of pavement to stormwater features like bump-outs, and transportation improvements like separated bike lanes and shared use paths. Further study is needed to determine the specific reconfiguration of parking and travel lanes to achieve reduced vehicle speeds and improved places to walk and bike.

Figure 4: Green Streets







Green Streets

GS1 - Quail Hollow Green Street

GS2 - Bush Street Green Street

GS3 - Wake Towne Drive Green Street

GS4 - Hardimont Green Street

Quail Hollow Drive

This Green Street (GS1) follows Quail Hollow Drive from East Millbrook Road to Hardimont Road. The existing road is two lanes but is wide enough for four travel lanes, encouraging speeding. Potential redesigns include a shared-use path on east side (connecting to the Eastgate Park), separated bike lanes on both sides with sidewalks, or another combination that achieves low stress walking and biking. The southern segment of Quail Hollow, which does not connect to this Green Street, should be renamed.

Bush Street

This Green Street (GS2) follows Bush Street from St. Albans Drive to Navaho Drive. The existing road is two lanes, but it is over 40' wide – wide enough for four lanes, which again encourages high travel speeds. A recommended redesign due to the lack of driveways on the west side is a two-way separated bike lane with sidewalk on the east side. The Bush Street Green Street would connect to the pedestrian bridge over I-440.

Wake Towne Drive

This Green Street (GS3) follows Wake Towne Drive from the new connection with the Multimodal Bridge and Barrett Drive to Wake Forest. The existing road is two lanes, but it is also over 40' wide. Potential redesigns could include on-road bicycle lanes or separated bicycle lanes; sidewalks are already present along most of Wake Towne Drive. The Wake Towne Green Street would connect to the I-440 Multimodal Bridge and serve as a link for Crabtree the Creek Greenway Connector.

Hardimont Road

This Green Street (GS4) follows Hardimont Road from St. Albans Drive to Wake Forest Road. The existing road is two lanes with sections of on-street parking between Lehigh Court and St. Albans

Drive. Potential redesigns could include on-road bicycle lanes or separated bicycle lanes; sidewalks are already present along most of the street. The Hardimont Green Street would connect to the Quail Hollow Drive Green Street and serves as the primary east-west link on the north side of the Midtown Ring.

Either as part of or before a Green Street project on Hardimont, the existing four-way stop at Quail Hollow Road should be evaluated for means to better alert drivers to the stop. These can include textured pavement, signage, or other similar measures.

Midtown-Wide Safety

Beyond the streets specifically mentioned in this section, this plan broadly supports lower speed limits and traffic calming throughout Midtown. This includes both supporting efforts for lower speeds on individual streets and a broader, even citywide, approach to transportation safety, such as a Vision Zero plan.

Other Stormwater Improvements 

The Green Street projects are examples of the significant role that stormwater infrastructure is included in this plan and its recommendations. Throughout the public engagement phases, community feedback indicated flooding concerns tied to new development and inadequate stormwater infrastructure (overall and in combination with new development). This plan incorporates green stormwater infrastructure (GSI), natural and constructed features that captures, absorb, and store rainwater, into numerous projects such as the Midtown Waterfront Park, new local road connections, and a study to update the area's drainage basin data. While the new park and road connections are described in later sections, the study is described below.

- **Drainage Basin Study (LU3) –** Conduct a study on the drainage basins in the Midtown-St. Albans study area, including the Big Branch, Crabtree, and Marsh basins. Findings may indicate additional specific stormwater projects.

Connectivity and Travel Reliability

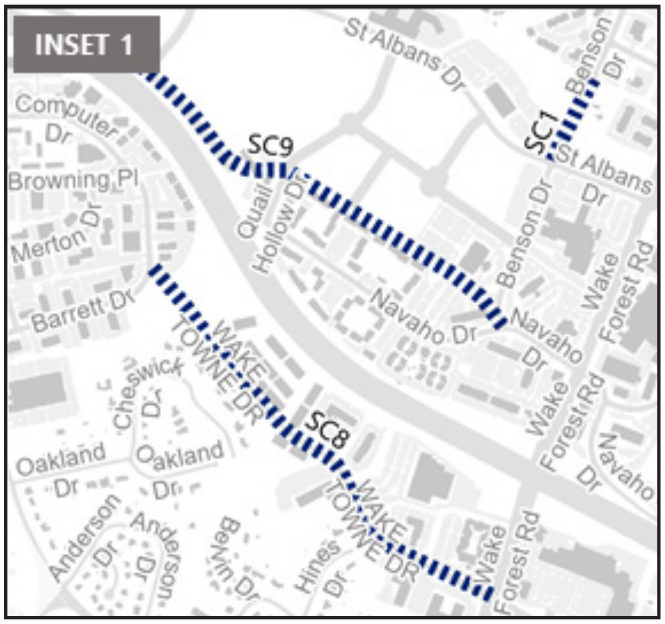
The Midtown-St. Albans roadway and pedestrian networks do not provide the level of desired connectivity and travel time reliability to match its growth of residents, visitors, and employees. Throughout the public engagement process, members of the community expressed support for balancing travel improvements for vehicles with pedestrians and bicyclists alike, with a focus on safety and transportation options. *Participants favored creating a more complete network rather than continuing to widen existing streets.* The following project recommendations for roadways, intersections, and non-vehicle connections are intended to improve traffic flow during periods of peak congestion, increase safety for all road users, provide more transportation options, and establish shorter, more direct connections through a more formal street grid.

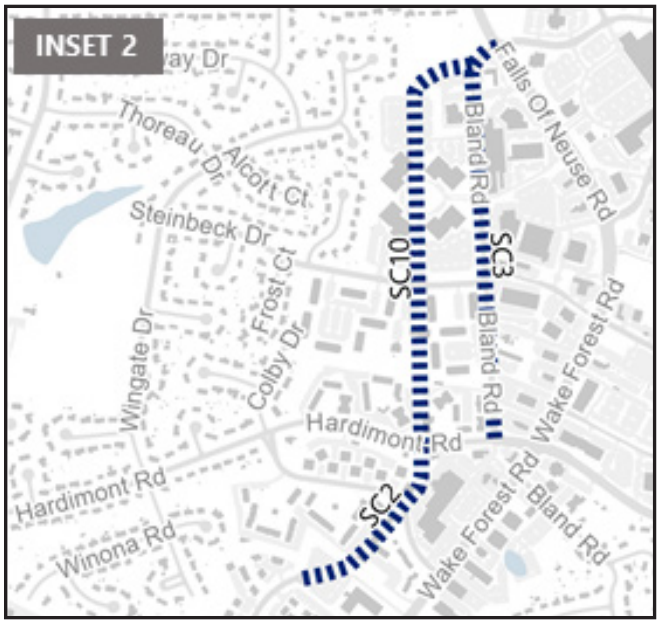
New Local Road Connections

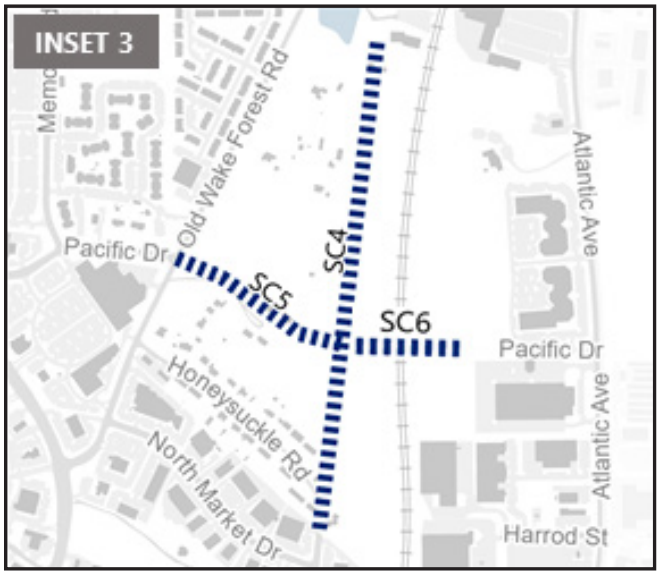
This involves the creation of a true street grid in the heart of Midtown. Currently, the presence of the Beltline and the lack of parallel streets to the Beltline and Wake Forest Road mean virtually all trips are funneled into the Wake Forest-440 interchange. In addition to extending streets to create a grid, projects include "Complete Street" improvements – the addition of improved facilities for people walking, riding a bicycle, or using transit, so that a street serves all users safely and comfortably. These new improvements should also include green stormwater infrastructure (GSI).

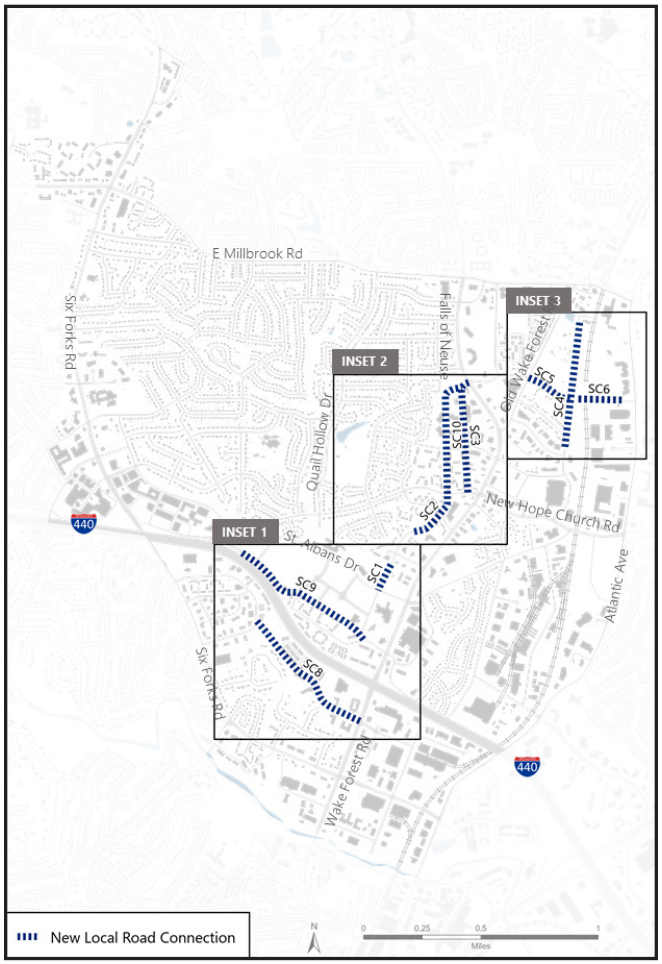
Specific recommendations (**Figure 5**) include:

Figure 5: New Local Road Connections









New Road Connections

SC1 - Benson Drive Extension

SC2 - Benson Drive Extension

SC3 - Bland Road Complete Street Improvements

SC4 - Craftsman Drive Extension

SC5 - Pacific Drive Extension

SC8 - Wake Towne Road Extension

SC9 - Navaho Drive Realignment

SC10 - Benson Drive Extension

Wake Forest Parallel Street Network

- Connecting the separate portions of Benson Drive to create a continuous new street running parallel to Wake Forest Road from Navaho Drive to Falls of Neuse Road. Portions of this street likely would require a city project; others would depend on future redevelopment.
- Redesigning Bland Road as a "Complete Street." Currently, this street has two very wide travel lanes. The addition of improved bicycle facilities and traffic calming measures will make an a more desirable alternative for people walking or biking. They also will position Bland Road as a future "Main Street," with the potential for wider sidewalks and a more extensive redesign as the area continues to evolve.

Beltline Parallel Street Network

- Connecting Navaho Drive to Church at North Hills Drive. This 440 parallel means that St. Albans Drive would not be the only non-Beltline east-west option in the area.
- Connecting Wake Towne Road to Barrett Drive. This performs the same function south of 440 that the Navaho connection does north of 440.

Other Network Connections

- Pacific Drive connection from Old Wake Forest to Atlantic.
- Other connections as larger commercial blocks are redeveloped.

The new roads provide walking, biking, and vehicular connections between neighborhoods, and the Complete Streets improvements on Bland Road expand the road's modes to include bicycle, pedestrian, and transit (seen in **Figure 5**). New roads serve the purpose of creating shorter, more direct routes between destinations that distribute traffic more efficiently and allow for route options. These new road connections also

support redevelopment for housing and commercial spaces by providing smaller blocks that can allow more buildings to fit on them. Furthermore, the addition of sidewalks and bike lanes to the new roads and Complete Streets elements create safer, more comfortable travel options.

The new local road connections are not without tradeoffs. For those locations not owned by the City of Raleigh, acquiring private property will be necessary. Also, building some of these new connections is dependent on new development—either from private developers, the public, or a partnership between them.

The recommended new road connections are below:

- Benson Drive Extension (SC1) - This is a two-lane undivided avenue from Dresser Court to St Albans Drive.
- Benson Drive Extension (SC2) – This is a new two-lane undivided avenue to Hardimont Road.
- Bland Road Complete Street Improvements (SC3) – This is the modification of the existing wide two-lane roadway to include bicycle facilities and transit amenities from Falls of Neuse Road to Hardimont Road. Including Complete Streets elements would calm traffic speeds, position Bland Street as a "Main Street," and allow for a later extensive redesign.
- Craftsman Drive Extension (SC4) – This is a new two-lane undivided avenue from Sorghum Court to N Market Drive.
- Pacific Drive Extension (SC5) – This is a new two-lane undivided avenue from Old Wake Forest Road to Craftsman Drive Extension.
- Wake Towne Road Extension (SC8) – This is a new two-lane undivided avenue to Barrett Drive; it allows for travel parallel to I-440.

How does Private Property Acquisition work?

One of the powers of local government is the ability to purchase private property for public infrastructure projects such as road widenings, sewer line construction, new bridges and other projects that would provide a benefit to the greater area. The ***Walkable Midtown*** plan may require the acquisition of some private property in order to build a new bridge that will cross over I-440 or to create a waterfront district.

The process for acquiring private property in Raleigh starts with the Real Estate Division. Real Estate staff reach out to affected property owners to make them aware of the project and begin a conversation about purchasing their land (or permission to use a portion of it, referred to as an easement, depending on the project).

Once the property owner has been notified, their land is appraised to help determine the fair market value. If the owner disagrees with the offer, they can make a counteroffer using backup information that City Staff will consider during the valuation process. Once an agreement is reached with the owner of an occupied property, the City may, as the project schedule allows, work with the owner to stay in the home for up to 90 days rent free after closing to ease the transition.

If the property owner and the City are unable to reach an agreement, the City has the power of Eminent Domain, which is the power of the government to take private property for the benefit of the public. This process requires Real Estate Staff to seek authorization for condemnation from City Council prior to the lawsuit being filed. This process requires that the property owner be paid just compensation for their land and improvements. Condemnation is always a last resort for the City to use in order to keep projects moving forward.

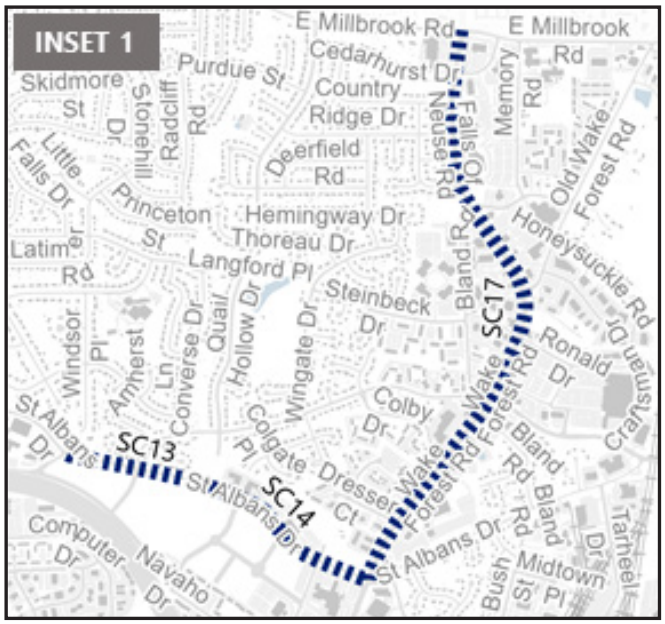
- Navaho Drive Realignment (SC9) – This is a realignment of Navaho Drive from Quail Hollow Drive to Benson Drive to support a connection to the I-440 Multimodal Bridge; it allows for travel parallel to I-440.
- Future Benson Drive Extension (SC10) – This is a new two-lane undivided avenue from Hardimont Road to Bland Road/Pacific Drive.

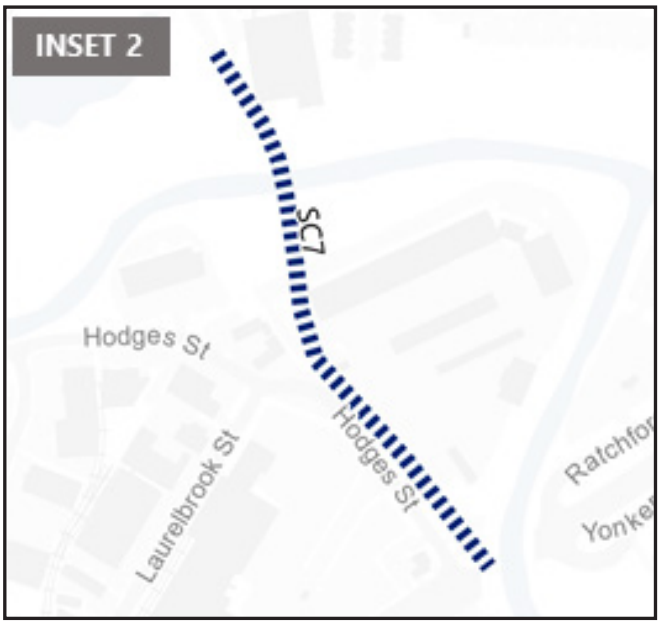
St. Albans Drive

This project recommendation contains several changes to St. Albans Drive from North Hills Street to Wake Forest Road (seen in **Figure 6**). These changes include the addition of turn lanes, a median, partial widening, and a shared-use path along St. Albans Drive. Each of the specific recommendations are noted below. These improvements will increase safety, comfort, and travel options for non-motorist, support more efficient bus routes, and increase vehicle safety and traffic movements. However, the changes to St. Albans Drive will necessitate private property acquisition for expanded right-of-way and will likely reduce driveway access.

- St. Albans Drive Widening A (SC12) – Widening to a four-lane divided avenue from Benson Drive to Wake Forest Road. At a minimum, a shared-use path is recommended along the south side of St. Albans Drive to maximize connections to destinations, but strategies that include separated facilities for people walking and biking on both sides should be explored. Access management strategies should be integrated to reduce new driveway conflicts as properties develop.
- St. Albans Drive Widening B (SC13) – Modification of roadway to two-lane avenue, divided with center turns lanes, from Church at North Hills Street to Hardimont Road. A shared-use path is recommended along the south side of

Figure 6: Other Roadway Improvements





Other Roadway Improvements

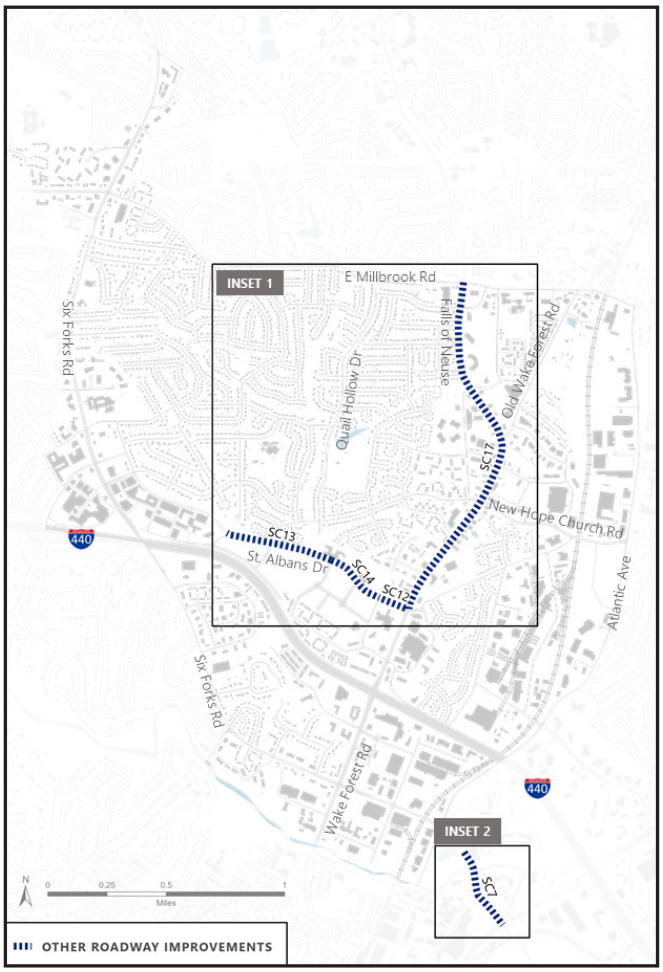
SC7 - Six Forks Road Extension

SC12 - St Albans Drive WIdening A

SC13 - St Albans Drive Widening B

SC14 - St Albans Drive Widening C

SC17 - Wake Forest Road Corridor Reconditioning Study



St. Albans Drive to maximize connections to destinations, however access management strategies should be integrated to reduce new driveway conflicts as parcels develop.

- St. Albans Drive Widening C (SC14) – Modification of roadway to two-lane avenue divided with center turn lanes, from Midtown East Access Road to Benson Drive. A shared-use path is recommended along the south side of St. Albans Drive to maximize connections to destinations, however access management strategies should be integrated to reduce new driveway conflicts as parcels develop.
- St. Albans Drive and Hardimont Road Intersection Improvements - This intersection, currently a three-way stop, was the subject of comments during the public input phase that motorists were not observing the traffic control device. While future traffic volumes may necessitate a traffic signal, interim treatments to improve stopping rates are recommended.

Six Forks Extension (SC7)

This project recommendation is a 2,000' extension of Six Forks Road from just east of Atlantic Avenue to Capital Boulevard. The new road extension cross section is 4-lanes with a median, and it is intended for vehicles and transit.

The benefits of the extension include those for transit, vehicular traffic, and land use improvements. First, the new connection allows for more efficient transit routes to key population and employment areas and supports future Bus Rapid Transit connections. Second, the extension creates shorter connections for motorists who wish to reach Capital Boulevard without navigating local streets. Finally, the extension and resulting

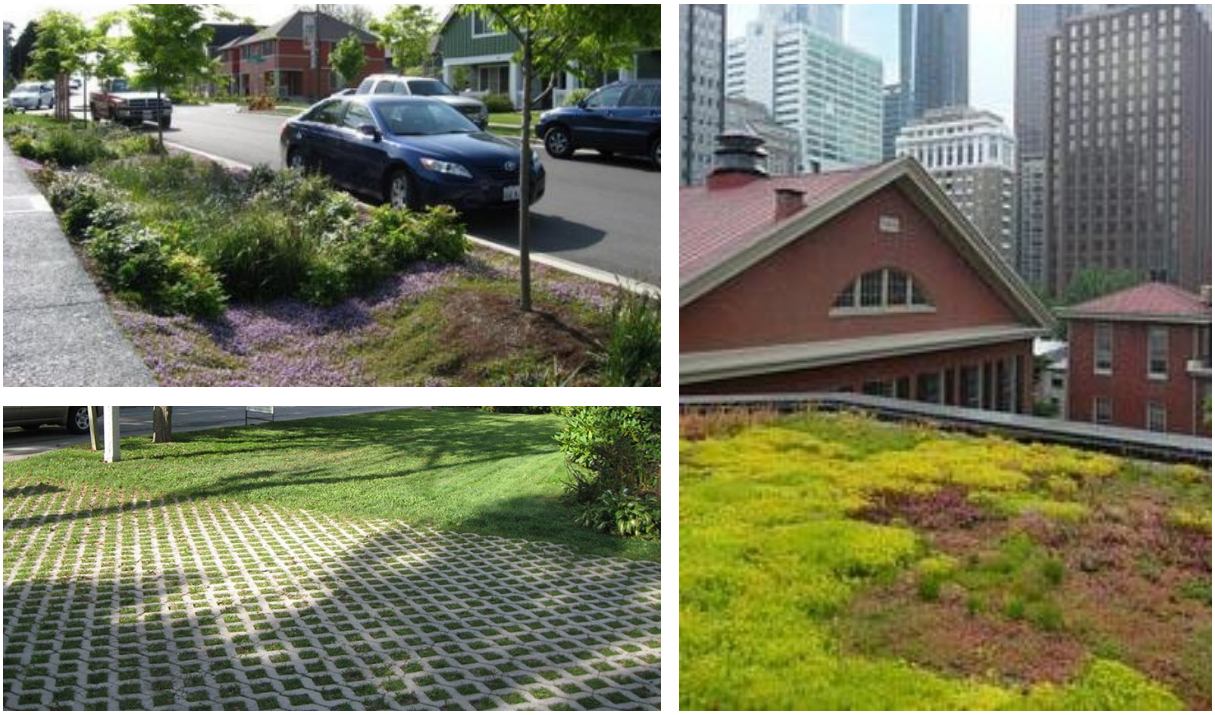
access supports redevelopment of buildings and industrial uses near the end of life cycles to higher density residential and mixed land uses.

Wake Forest Road Corridor Reconditioning Study (SC17)

Poor driving conditions on Wake Forest Road, specifically from Hardimont Road/New Hope Church Road south to the I-440 interchange, were shared frequently during the public engagement phases. In response to concerns over congestion, narrow driving lanes, and lack of sidewalks and bicycle lanes, the study looked at several options to improve conditions. One option involved reducing Wake Forest Road to four lanes, converting three of the lanes to northbound lanes (the remaining lane would be southbound) and widening the parallel street of Bland Road from two lanes to three lanes southbound and one lane northbound. However, community feedback and further analysis revealed this as an expensive option with little community support and a negligible benefit to the transportation network.

Instead, this study recommends a focused transportation study of the Wake Forest Road corridor to be built for multiple modes, including potential Bus Rapid Transit, safety, access management, parcel acquisition, likely costs, and both development opportunities and impacts. As an additional interm step, this plan recommends working with NCDOT to reduce the speed limit to 35 mph, reflecting both speeds in typical traffic conditions and the conditions of the existing lanes.

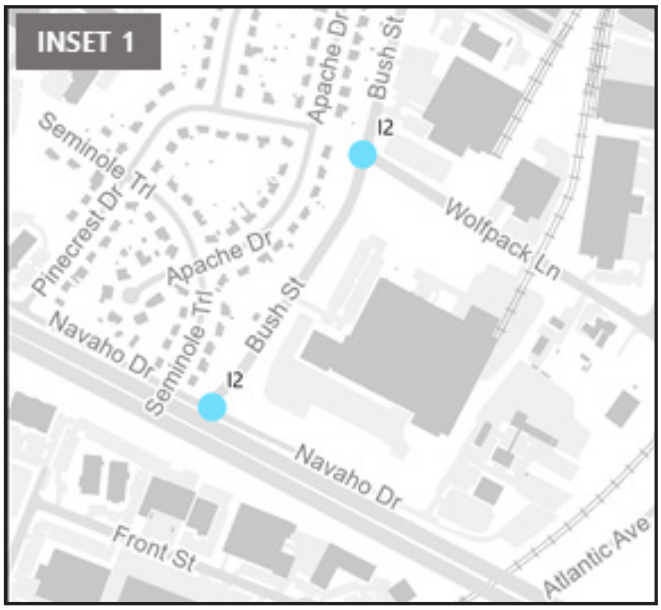
Figure 7: Examples of Green Stormwater Infrastructure

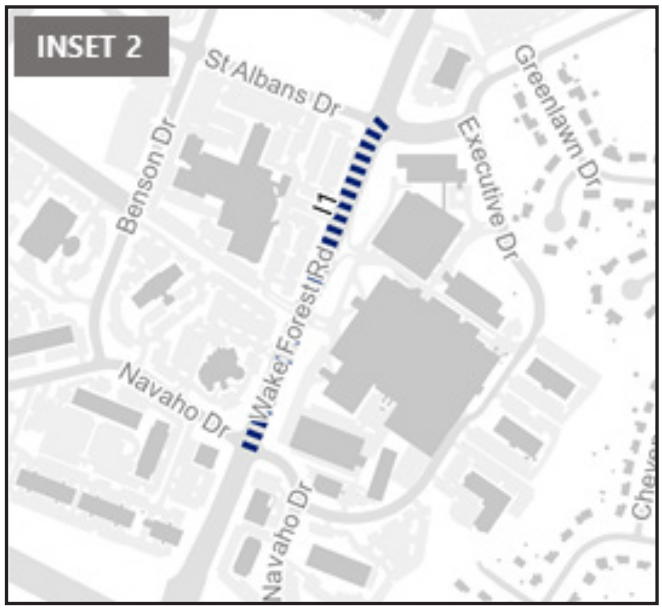


Role of Green Stormwater Infastructure (GSI) in New Road Connections

These recommended new local road connections and roadway improvements should also include GSI in their respective designs. What separates roads with GSI elements from conventional roads is that GSIs are natural and are constructed with features that capture, absorb, and store rainwater (**Figure 7**). Public respondents expressed preferences for increasing travel time reliability, decreasing flooding, and limiting new roadway construction. The inclusion of GSI into new local road connections would balance those preferences.

Figure 8: Roadway Intersection Improvements

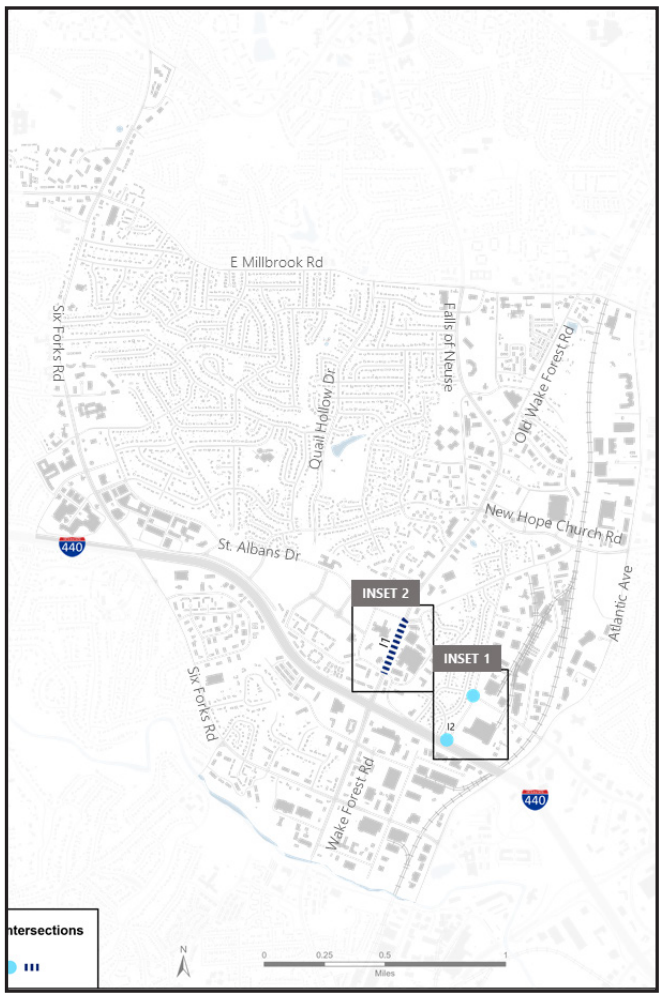




- *Intersection Improvement*
- *Intersection Improvement*

I1 - Wake Forest Road at St Albans and Navaho Drive

I2 - Wolfpack Lane and Navaho Drive connections



Intersections

Wake Forest Road Improvements

This project recommendation (I1) is the improvement of Wake Forest Road at St. Albans Drive and Navaho Drive intersections **(Figure 8)**. This includes the following improvements to reduce vehicle delays and increase access to the nearby hospital.

- Wake Forest Road at Navaho Drive
  - Change lane configuration from left/through and right-only, to left-only and through/right on the westbound Navaho Drive approach or widen the westbound approach to have exclusive left, through and right-turn lanes.
  - Restripe the southern end of Executive Drive to two westbound lanes at Navaho Drive, which would reduce queue lengths and help separate conflicts.
- Wake Forest Road at St Albans Drive
  - The recommended widening of the western leg of St. Albans Drive (SC12) is crucial to the recommended lane configuration. An eastbound approach with dual left-turns (northbound onto Wake Forest Road), and separate right-turn and through lanes is recommended, although other intermediate configurations are possible.
  - Longer-term, a second through-lane to the westbound St Albans Drive approach is recommended. Although this lacks significant initial benefit, development and eventual railroad grade-separation are anticipated to increase traffic volumes.
  - Add a signal on St. Albans Drive at Executive Drive that is coordinated with Wake Forest Road at St. Albans Drive. An emphasis should be placed on accommodating pedestrians at this intersection. The existing stop-controlled

intersection—while it includes a marked crosswalk—has several turning lanes and a wide crossing distance that can present challenges to pedestrians.

Wolfpack-Navaho Connections

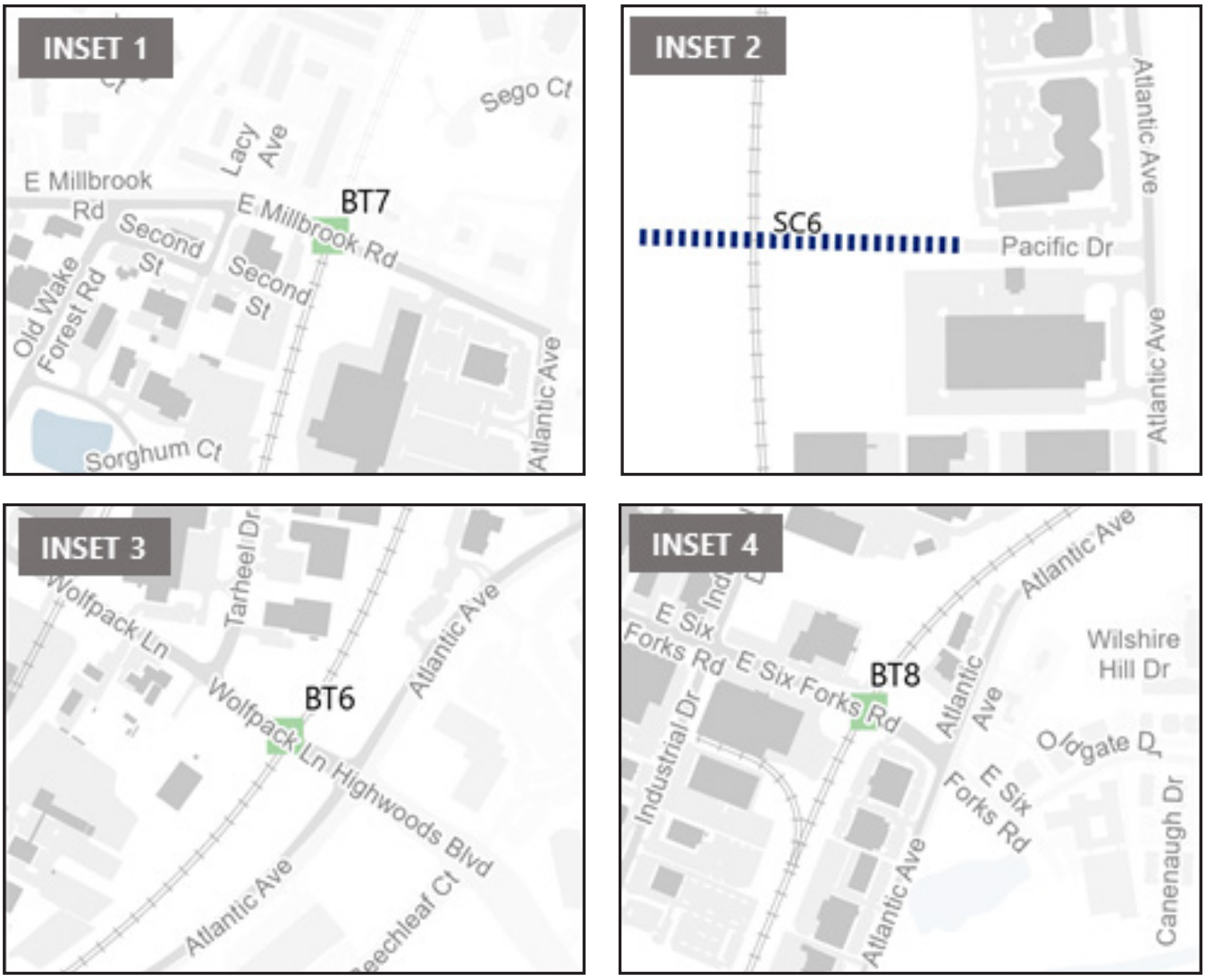
This project recommendation (I2) is a pair of roundabouts at the intersections of Bush Street at Navaho Drive and Bush Street at Wolfpack Lane (**Figure 8**). These are single-lane roundabouts that include marked crosswalks for pedestrians and bicyclists. The roundabouts improve vehicle movements through the intersections and moderate roadway speeds. While the roundabouts do result in expanding the footprint of the intersections, those effects are significantly less than the alternative explored below.

An alternative to roundabouts was also explored during the concept development phase and later dropped from consideration. This alternative included a new two-lane roadway from Wake Forest Road eastward that bisected the Pinecrest neighborhood and connected to Wolfpack Lane at Bush Street. While this option reduced travel time to access the hospital, it would have required acquiring residential property and did not perform well with respect to cost-benefit analysis given the limited time travel benefits. Also, when members of the public were surveyed on the roundabouts and Pinecrest Drive connection, the roundabouts were selected by a 2:1 margin.

Six Forks School & Connectivity Study

This recommendation (SC16) is for a detailed transportation study of the area north of Rowan Street on Six Forks Road. During the public engagement phases, survey and meeting participants identified parking, congestion, pedestrian safety, and vehicle conflicts associated with school operations that spilled over

Figure 9: Railway Grade Separations



At-grade crossing

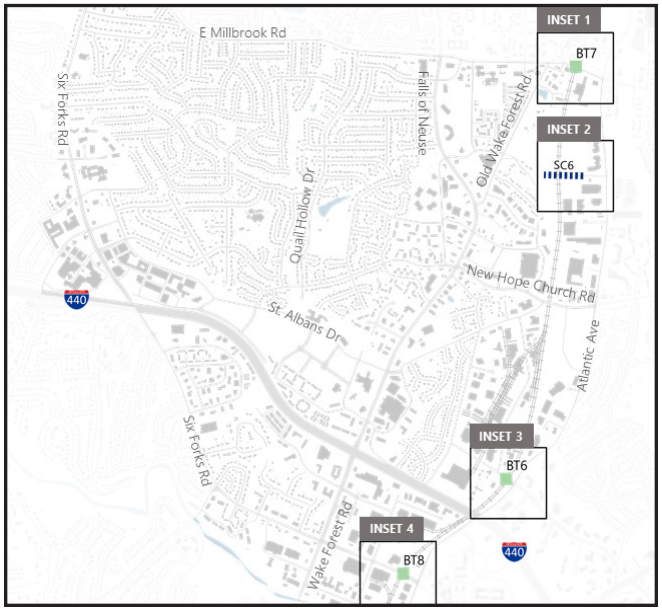
Railway Grade Separation

BT6 - Wolfpack Lane

BT7 - East Millbrook Road

BT8 - Six Forks Road

SC6 - Pacific Drive Extension



onto side streets. The recommended study would review school bus and pick up and drop off operations, signal timing, parking policy, roadway and internal lot connectivity, and more to reduce near-term congestion and improve safety for all users. It would also consider connectivity to Six Forks between Northbrook Drive and Northwood Drive.

Railroad Grade Separations

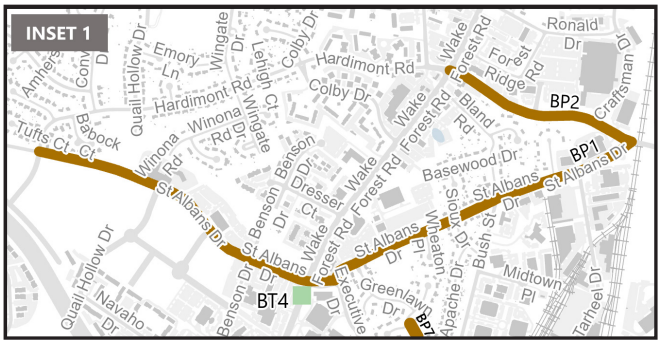
Railroad crossings on the same level as roadways (known as at-grade crossings) present significant safety and delay issues for motorists, pedestrians, railroad operators, and transit users. There are several opportunities to create grade-separated crossings – where the street crosses over or under the railroad - in the Midtown-St. Albans area **(Figure 9)**. Grade separation of railroad crossings increase safety and comfort for all users, allows for new bicycle and pedestrian connections (where new road connections are created), and can support redevelopment. However, grade separation often requires acquiring more land (potentially private property) to reach sufficient height to span railroad tracks. This study recommends railroad crossing grade separations at the following locations: Pacific Drive Extension (SC6), Six Forks Road (BT8), Wolfpack Lane (BT6), New Hope Church (BT5), and East Millbrook Road (BT7).

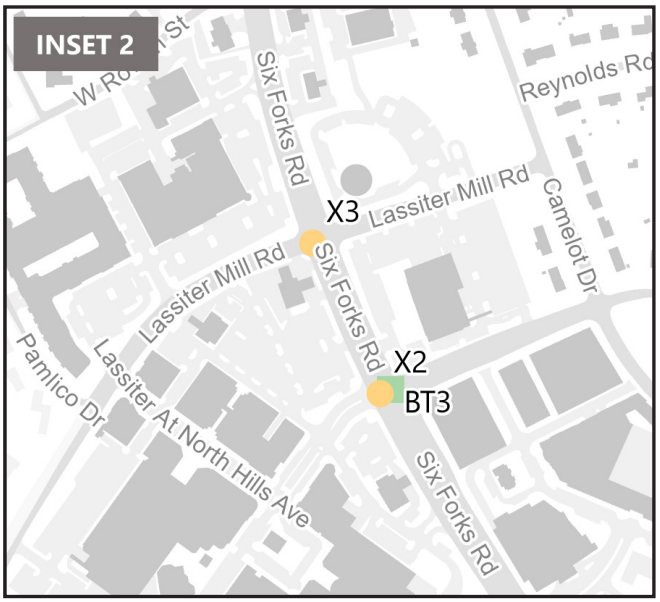
Bicycle and Pedestrian

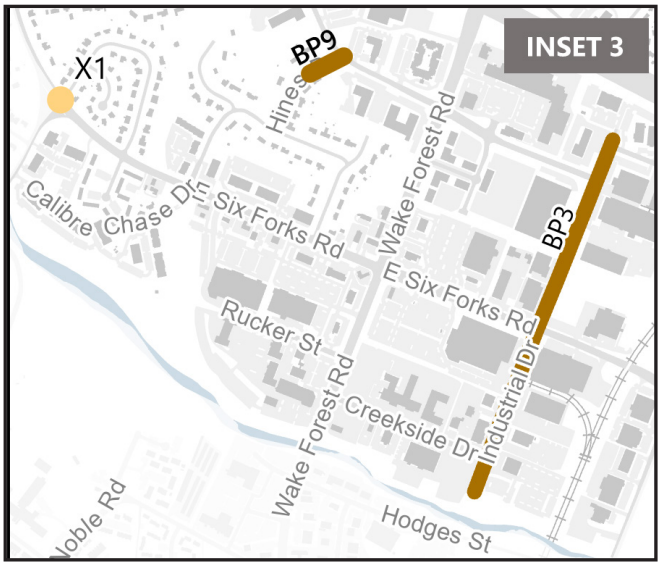
Neighborhood Bicycle and Pedestrian Connections

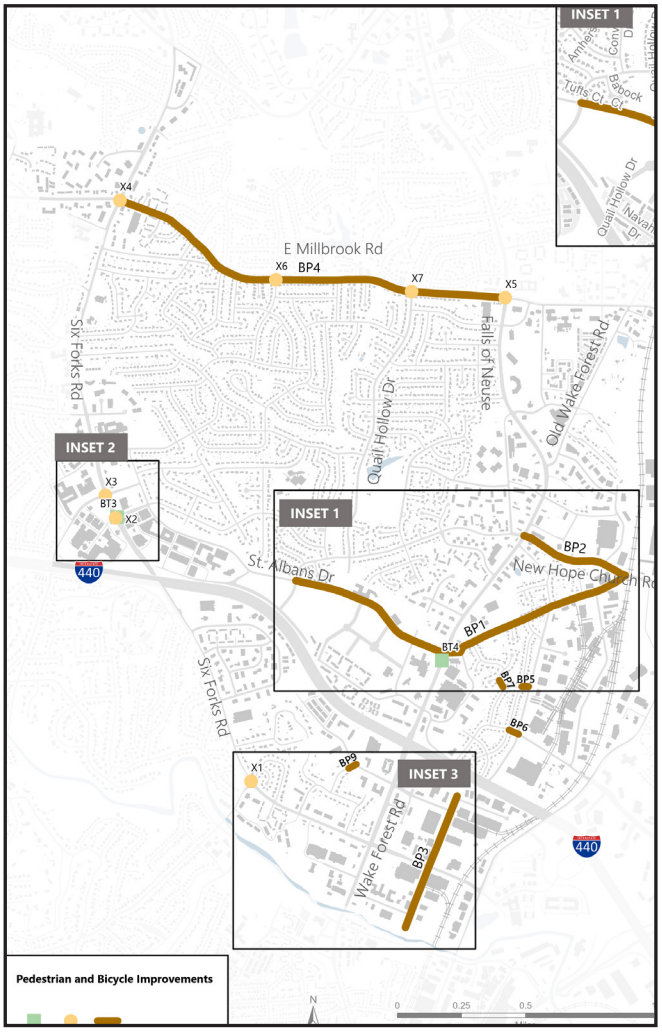
This recommendation is a group of new bicycle and pedestrian connections between existing roads **(Figure 10)**. The existing layout of the Midtown-St. Albans street network is representative of 1960's suburban development with looping roads and cul-de-sacs that present barriers to walking and biking. These new connections would provide more direct access for residents

Figure 10: Bicycle and Pedestrian Improvements









- *Intersection Improvement*
- *Connection Improvement*

BP1 - St. Albans Drive
BP2 - New Hope Church Road
BP3 - Industrial Drive
BP4 - Millbrook Road
BP5 - Cheyenne Road
BP6 - Pinecrest Drive
BP7 - Utica Drive
BP9 - Hines Drive
BT3 - Six Forks Road
BT4 - Wake Forest Road
X1 - Six Forks Road / Anderson Dirve
X2 - Six Forks Road / Dartmouth Road
X3 - Six Forks Road / Lassiter Mill Road
X4 through X7 - East Millbrook ROad

to their neighbors, Green Streets, the Midtown Ring, and employment and shopping destinations. Since the city owns the right-of-way, property acquisition is not anticipated.

The following are recommended neighborhood bicycle and pedestrian-only connections.

- Cheyenne Road (BP5) – This connection from the north end of Cheyenne Road eastward to Bush Street. This provides access to the Bush Green Street and I-440 Pedestrian Bridge.
- Pinecrest Drive (BP6) – The connection is from the east end of Pinecrest Drive at Apache Drive eastward to the improved intersection of Wolfpack Lane at Bush Street. This provides access to the Bush Green Street and I-440 Pedestrian Bridge.
- Utica Drive (BP7) – This connection is from the south end of Utica Drive at Manovill Place southward to Cheyenne Road.
- Hines Drive (BP9) – The connection is from the north end of Hines Drive to Wake Towne Drive. This provides access to the Wake Towne Green Street, the I-440 Multimodal Bridge, and the Crabtree Creek Connector.

Pedestrian Crossing Improvements

This recommendation includes safety improvements for pedestrians crossing the streets at specific locations. During the public engagement phases, participants expressed safety

Example of a pedestrian crossing at-grade across Six Forks Road at Dartmouth Road

concerns for crossing small and large roads throughout the Midtown-St. Albans area. These improvements include measures that are proven to reduce the likelihood of pedestrian crashes and improve comfort, such as high visibility crosswalks, curb radiuses that discourage fast turns by cars, signage, lighting, pedestrian refuge island, changes to road markings, bridges and tunnels, and other elements. This study does not include detail on the combinations of improvements at individual locations; further studies are needed to ascertain the most appropriate measures given land use, pedestrian activity, and traffic conditions. Tradeoffs for pedestrian crossing improvements may include reduced on-street parking (to increase pedestrian visibility). The plan supports intersection improvements generally; key improvement locations are identified below and show in **Figure 10**:

- Pedestrian bridge over Six Forks Road near Dartmouth Road (BT3) – This recommendation is a new pedestrian bridge above and across Six Forks Road near Dartmouth Road. Cooperation and coordination between the City of Raleigh and developers in the North Hills commercial area are essential for implementation. The location and timeline of the bridge may be dependent on construction or retrofitting of compatible buildings on both sides of Six Forks Road. Although the lower surface elevation east of Six Forks Road between the two office towers suggest a pedestrian tunnel at this location could be more feasible, there are a number of problems with this option. More analysis is provided in the Appendix.
- Pedestrian Bridge over Wake Forest Road near St. Albans Drive (BT4) – This recommendation is a new pedestrian bridge above and across Wake Forest Road south of St. Albans Drive. Cooperation and coordination between the City of Raleigh and developers in the Wake Forest Road/St. Albans Drive

commercial area are essential for building and construction. The location and timeline of the bridge is dependent on construction of compatible buildings on both sides of Wake Forest Road.

- Pedestrian improvements on Six Forks Road and Anderson Drive (X1) – This recommendation is additional pedestrian improvements. Residents and study participants reported feeling unsafe crossing at this location due to high vehicle speeds and poor intersection visibility.
- Pedestrian improvements on Six Forks Road and Dartmouth Road (X2) - This recommendation is for additional at-grade pedestrian improvements. Improvements may include turning vehicle restrictions, Leading Pedestrian Intervals (LPI) – signals that allow pedestrians to begin crossing before cars enter the intersection, reducing conflicts with turning vehicles–, a larger pedestrian refuge island, and other elements. Based on anticipated development timelines, this improvement should be implemented prior to the proposed Pedestrian Bridge at Six Forks Road and Dartmouth Road (BT3).
- Pedestrian improvements at Six Forks Road and Lassiter Mill Road (X3) - This recommendation is for additional pedestrian improvements. Improvements may include turning vehicle restrictions, LPI, a larger pedestrian refuge island, and other elements.
- Pedestrian improvements along East Millbrook Road (X4, X5, X6, X7) – There are four locations along East Millbrook Road that are included for pedestrian crossing improvements. East Millbrook Road acts as a barrier to north-south pedestrian travel to reach neighborhoods, parks, and amenities such as Green Streets. These intersections include: Six Forks Road, Sweetbriar Drive, Quail Hollow Drive, and Falls of Neuse Road.

Other Bicycle and Pedestrian Improvements

This recommendation includes new bicycle and pedestrian facilities along significant corridors that improve mobility, increase safety, and provide for lower stress biking and walking (**Figure 10**, above). These improvement locations were identified during the study's engagement phases and address the repeated preference for dedicated facilities such as shared-use paths, bicycle lanes, and other measures that reduce vehicle speeds. Additionally, these recommended facilities support larger networks for walking and biking, such the Midtown Ring, and access to businesses and recreation. Reduced on-street parking and driveway access are potential tradeoffs from the implementation of these projects.

- St. Albans Drive (BP1) – This recommendation includes a combination of on-road bicycle facilities and a continuous sidewalk or a shared-use path along St. Albans Drive from Hardimont Road to New Hope Church Road. The type of facility, whether a bike lane or separated facility, is dependent on right-of-way.
- New Hope Church Road (BP2) – This recommendation is for improved bicycle facilities on New Hope Church Road from Wake Forest Road to St. Albans Road. A separated facility, either on or above the curb, is recommended. To support network bicycle connectivity, this project should be considered in conjunction with the Capital Boulevard North Study.
- Industrial Drive (BP3) – This includes bicycle and pedestrian facilities and traffic calming measures along Industrial Drive from the I-440 Pedestrian Bridge to the Crabtree Creek Trail. Potential bicycle improvements include two-way separated bike lanes, on-road lanes, and a shared-use path with pedestrians (a sidewalk may also be paired with the non-SUP facilities). Traffic calming measures such as on-street parking

and bulb-outs will enhance this project's role as a low-stress connection from the Midtown Ring to the greenway system.

- Millbrook Road (BP4) – This recommendation is bicycle facilities along Millbrook Road from Six Forks Road to Falls of Neuse Road. Potential facility types depend on the lane configuration and design profile and could include buffered bike lanes and separated bike lanes. With bicycle facilities, Millbrook Road serves as an East-West connection between neighborhoods, recreation facilities, and dedicated places for walking and biking such as the proposed Quail Hollow Green Street. Additionally, as traffic volumes on Millbrook are relatively low for a four-lane street, a broader study (SC15) can consider if a more thorough redesign is warranted.
- Roadway Speed Setting Review – This recommendation is for NCDOT and the City of Raleigh to initiate a uniform review of posted speed limits in the study area. Given the study area's changing land use and traffic patterns since speeds were set, the study's recommendations for traffic calming measures such as Green Streets, and updated speed setting guidance from national organizations, a review of posted speed limits would align intended operations and safety goals. This could be part of a broader "Vision Zero"-style rethinking of speeds across the city, as issues exist in many locations in Raleigh.
- Other major intersections – Additional key intersections, such as Wake Forest and Six Forks, should receive additional at-grade pedestrian improvements. Improvements may include turning vehicle restrictions, Leading Pedestrian Intervals, larger refuge islands, and other elements."

To make the Midtown area a truly walkable place, pedestrian and bicycle amenities will need to go beyond the ADA minimum standards and create a safe, functional, and low-stress pedestrian and bicycle network.

Serious Transit

The study area's future as a growing employment and residential center indicates that transit will play a larger role in the transportation system. Currently, transit services are limited, infrequent, and do not create a desirable alternative to driving. This plan recommends major improvements to the study area's transit system, including:

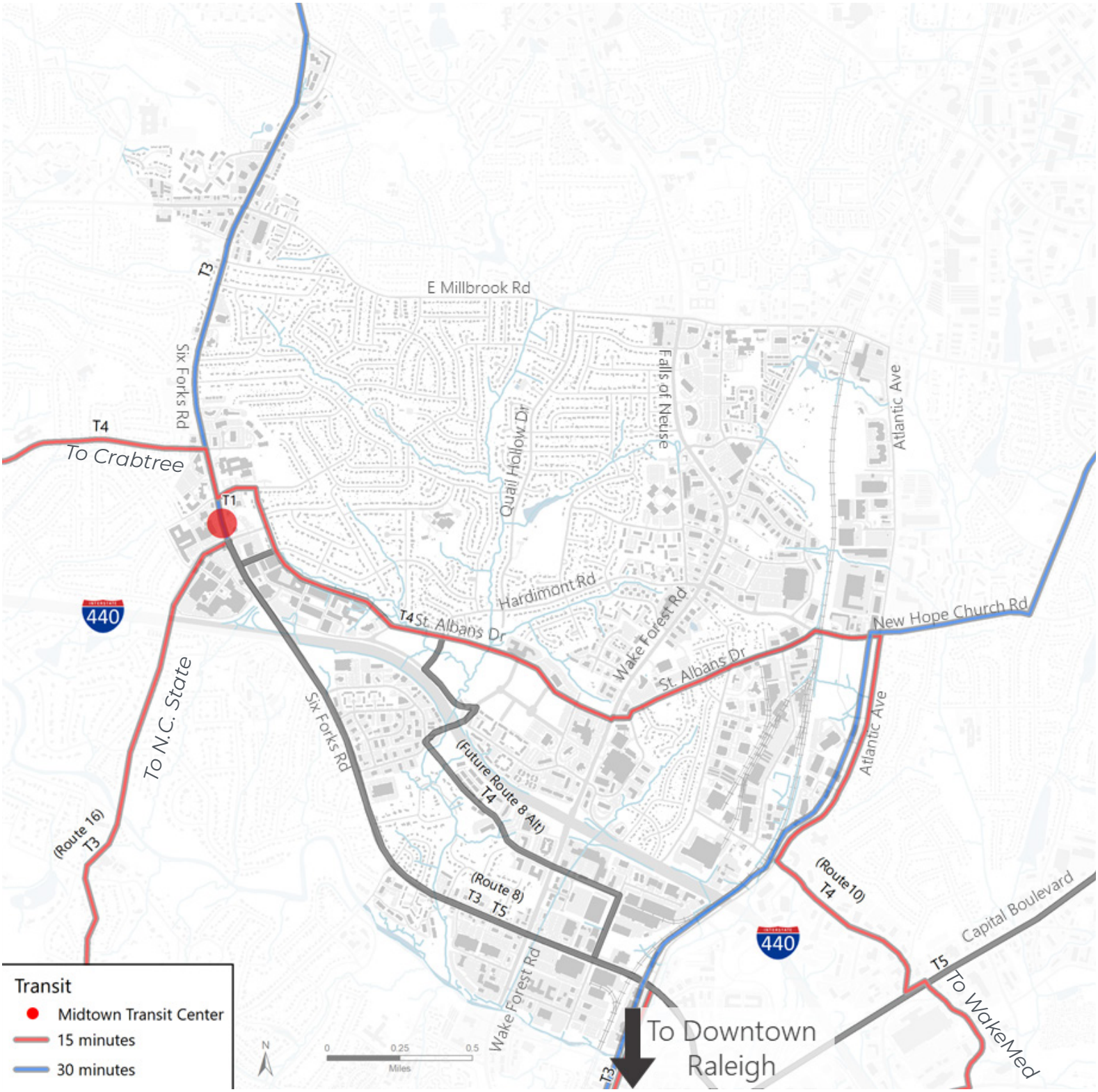
- Multiple high-frequency bus routes to connect to downtown, N.C. State, and major destinations along the Beltline.
- A future BRT connection between Downtown and Midtown.
- Collaboration with privately-operated transit services.

The following transit recommendations are intended to increase ridership overall, the share of people who use transit, and improve the delivery of transit. To achieve this, the study recommends route realignments, transit station and stop amenities, and the phased expansion of more frequent service with eventual Bus Rapid Transit access to the center of the study area **(Figure 11** and **Figure 12)**. Many of these recommendations are dependent upon other projects within this plan, such as new locations to cross I-440, transit-supportive land use, expansion of sidewalk and bicycle facilities, and increased housing options.

Phase I: High Frequency Transit & Phase II BRT Connections

Phase I of this recommendation (T3) is to support the expansion of bus service connecting to the Midtown-St. Albans area. One of the main drivers of transit ridership is bus frequency, also known as "headway." By 2024, 2 routes (8-Six Forks Midtown and 16-Centennial Midtown) are proposed to run at 15-minute headways. By 2027, an additional route (24) will run at 15-minute headways which will connect Crabtree

Figure 11: Transit Recommendations



T1 - Transit Center

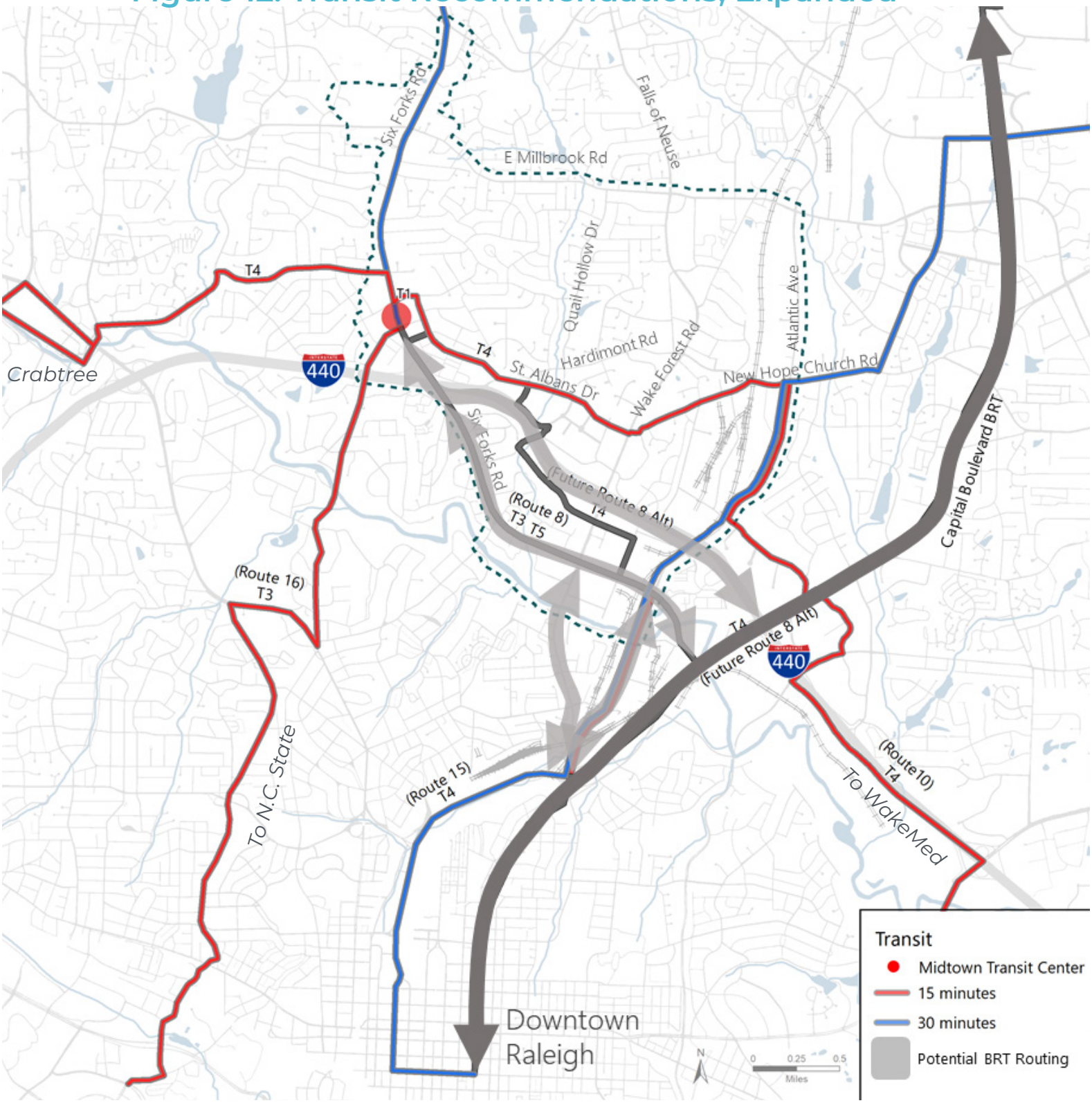
T2 - Bus Stop Improvements

T3 - Expansion of bus service

T4 - Transit Route Realignment

T5 - BRT Extension

Figure 12: Transit Recommendations, Expanded



T1 - Transit Center

T2 - Bus Stop Improvements

T3 - Expansion of bus service

T4 - Transit Route Realignment

T5 - BRT Extension

Valley Mall Transit Center, Midtown Transit Center, and the East Raleigh Transit Center. This recommendation will help build transit ridership and allow for potential BRT expansion in Phase II.

Phase 2: Midtown BRT

BRT is a form of enhanced transit service and infrastructure that is proposed to run along Capital Boulevard between downtown Raleigh and Crabtree Boulevard as part of the Wake Transit Plan. *Over time, increasing density, diversifying land uses, and pressures on roadway capacity will make transit relatively more attractive compared to driving.* But this will only be the case if convenient, reliable, and affordable transit is available. BRT appears to be the most viable and sustainable option for providing this type of service without excessively disrupting adjacent development in both the study area and City-wide. Phase II of this recommendation (T5, highlighted in grey) is to study the feasibility of an extension of the BRT network to serve Midtown after the build out of the high frequency network. Potential BRT routes to the Midtown-St. Albans area could include Atlantic Avenue, Six Forks Road Extension, I-440, and more. The study should include an analysis of demand for the service, infrastructure (such as where to add dedicated bus lanes, intersection improvements including traffic signal priority, and potential station locations), and cost.

Creative Collaboration for Expanding Transit Services

The introduction of the North Hills Shuttle in Fall 2019 allows for internal circulation of residents, customers, and visitors of the North Hills shopping area. The free shuttle connects the Main, Park, and Lassiter districts of North Hills, operating seven days a week from 10 a.m. to 8 p.m. at 15-minute headways. The shuttle's route could grow coinciding with

the growth of North Hills and Midtown. The shuttle is an example of creative public-private collaboration to serve a local destination with high demand for internal circulation between districts. The study recommends continued coordination between public and private transit operators and to reassess transit routes as North Hills expands.

Transit Route Realignment

With the addition of new roadway connections and changes to land use and density within the Midtown-St. Albans study area, there will be opportunities to adjust routes to best serve riders. This recommendation (T4) is to study transit route alignments through the Midtown-St. Albans study area as other recommendations from this plan come to fruition. These related recommendations—that may improve transit routing—include the I-440 Multimodal Bridge, St. Albans Drive improvements, Six Forks Road Extension, general connectivity improvements, railroad grade separations, and intersection improvements. Overall intersection improvements and traffic shifts are anticipated to increase schedule reliability by reducing severe congestion.

Regional Transit Station Location and Bus Stop Improvements

The Wake Transit Plan proposed a Transit Center to be located in the general vicinity of the North Hills Shopping Center and Six Forks Road, which will accommodate multiple high frequency routes and will provide enhanced amenities. In addition to the Transit Center, the plan proposes bus stop improvements across the bus system which can include concrete pads, benches, bike racks, access ramps, and sidewalks. This study recommends the Transit Center's general location (T1) from the Wake Transit Plan and endorses the

improvements to transit stops (T2). These measures will increase the comfort and safety of transit users and expand transportation choices for residents, employees, and visitors of the Midtown–St. Albans area.

Potential Future Commuter Rail

Several studies have explored the possibility of commuter rail service between Raleigh and Wake Forest. That service would take place within the current CSX rail corridor, which runs parallel to Atlantic Avenue at the eastern edge of the study area. The 2017 Wake Forest to Raleigh Commuter Rail Conceptual Infrastructure Report identified the intersection of Atlantic Avenue and Six Forks Road as a potential station location. Due to the high level of uncertainty regarding the project and its timeline, this study did not consider commuter rail. However, the study's recommendations for increased housing options and improved transit in the southeast of the study area would complement future rail service.

The Midtown Ring

The Midtown Ring is a composite of greenway, Green Street, and improved bicycle and pedestrian facilities that creates a 5+ mile network for low stress walking and bicycling (**Figure 13, in orange**). The ring connects greenways, parks, commercial areas, and community resources north and south of I-440. The Midtown Ring's benefits and tradeoffs are the same as the bicycle and pedestrian facilities that form the route; improved walking and biking comfort, additional travel options, improved safety, and reduced flooding contrasted with a greenway susceptible of flooding and potential acquisition of private property. The Midtown Ring's route elements are shown in the graphic to the right.

Crabtree Creek Greenway Connector

This recommendation (GW1) is a new section of greenway from the southern end of Quail Hollow Drive across I-440 to the existing Crabtree Creek Greenway **(Figure 14)**. The greenway would align with the City of Raleigh's Capital Area Greenway Planning & Design Guide (e.g. minimum 10' wide and paved) and is intended for bicyclists and pedestrians. The greenway connector increases bicycling and walking comfort and safety, expands non-driving options, and extends the greenway network to the Midtown-St. Albans area. It also serves as the western leg of the Midtown Ring.

The review of the Crabtree Creek Greenway Connector in the study's concept development phase identified several challenges. Navigating Big Branch Creek's topography, with its steep grade on either side of the creek, increases project cost estimates due to boardwalk and path construction. Second, the greenway is dependent on the construction of the I-440 Multimodal Bridge over the interstate; however, if the greenway

Figure 13: Bicycle and Pedestrian Infrastructure in the Midtown Ring

1 On-street one-way separated bike path and sidewalk

2 On-street two-way separated bike path and sidewalk

3 Off-street multi-use path

4 Greenway

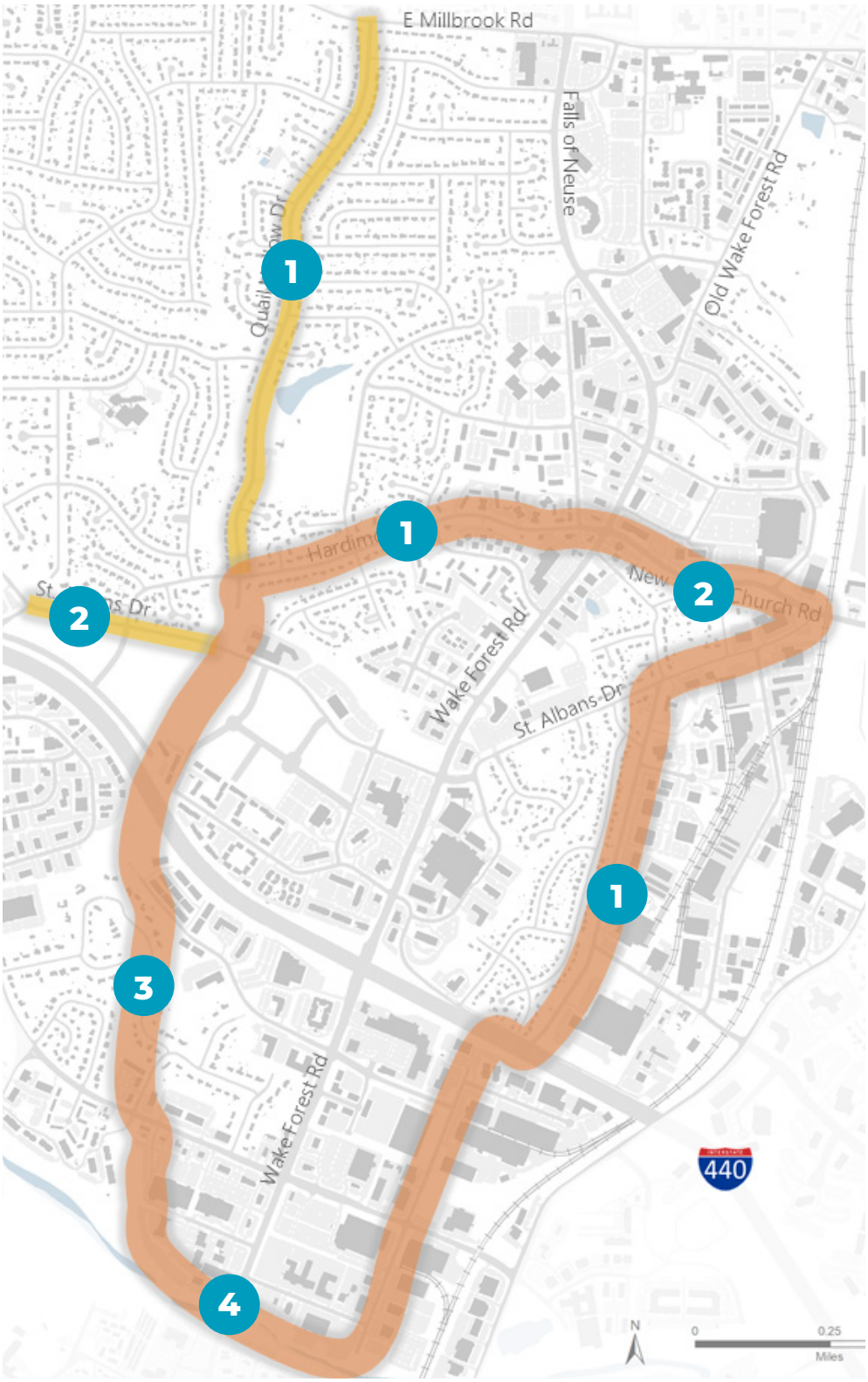
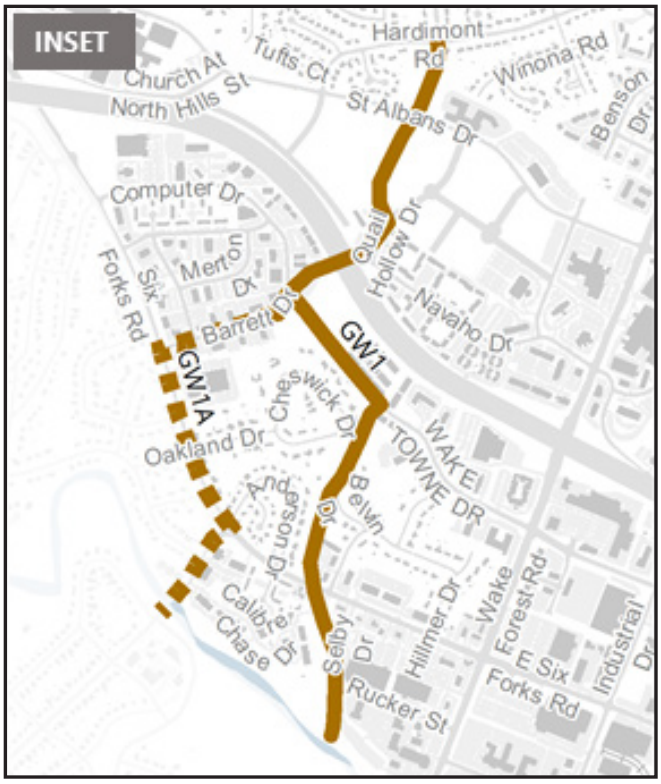
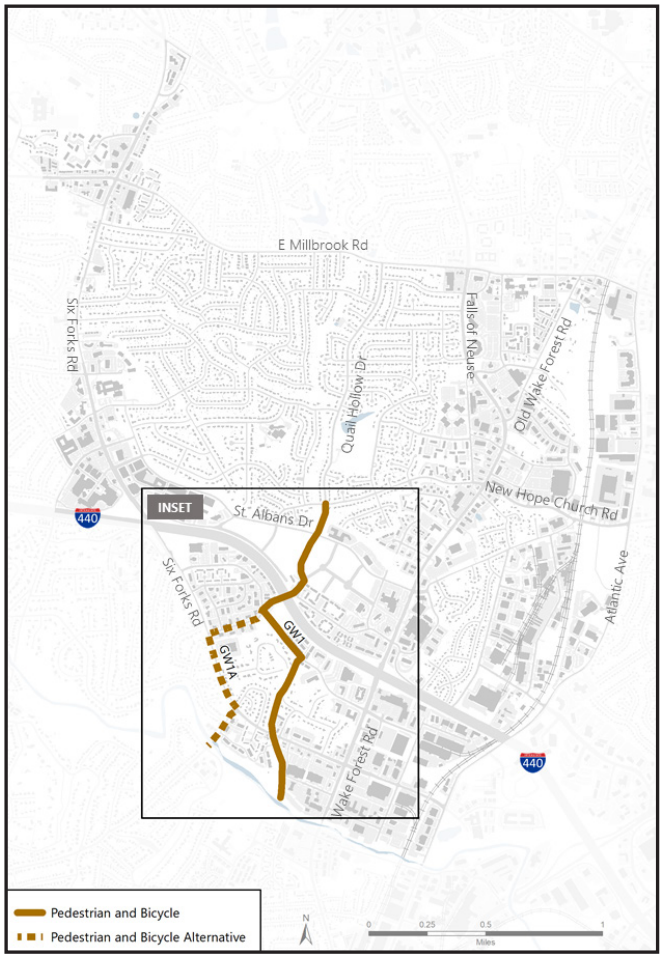


Figure 14: Crabtree Creek Greenway Connector





Pedestrian and Bicycle

Pedestrian and Bicycle Alternative

GW1 - Greenway Connector

GW1A - Greenway Connector Alternative

Example of the Crabtree Creek Greenway Connector.

were built independent of the bridge, culverts under I-440 could provide an interim crossing solution. Finally, concerns from residents on the routing along Big Branch Creek, its proximity to neighborhoods, and the potential acquisition of private property supported further routing review.

During public outreach phases, some participants recorded opposition to initial conceptual routing of the greenway along Big Branch Creek near Anderson Drive. This study identifies two greenway route options as part of the overall connector recommendation to accommodate those concerns. The first route (GW1) is a traditional greenway that largely follows Big Branch Creek south of Hardimont Road, travels over the I-440 Multimodal Bridge, and then utilizes the Wake Towne Green Street to travel southeast to again follow Big Branch Creek southward to the Crabtree Creek Greenway. The second route (GW1A) is an overland option that differs from the first traditional option south of the I-440 Multimodal Bridge. The route uses existing sidewalks and on-road bicycle lanes (if applicable) on Barrett Drive, Six Forks Road, and Anderson Drive to connect to the Crabtree Creek Greenway at Oxford Road and Anderson Drive. Further study is recommended to determine the preferred routing alignment.

Midtown Living and Midtown Works: Land Use Guidance

The need for a wider variety of housing options emerged as a consistent theme throughout the study process. While the City's population continues to grow, average households are substantially smaller than during the post-World War II period. This transition is shifting demand for housing options from larger-lot detached houses to other options. The plan's recommendations include allowing a larger variety of housing

types and accommodating more housing near transit and other amenities like parks and bicycle and pedestrian facilities. Similarly, the Midtown-St. Albans area is an emerging employment center, and planned public amenities and infrastructure are likely to support further job creation.

The Midtown-St. Albans study area includes distinct city-wide urban focus areas which are increasingly attractive for redevelopment. Two key focus areas, the Six Forks Road corridor at the I-440 interchange, and the Wake Forest Road corridor at the I-440 interchange, are designated as Urban Focus Areas. These focus areas continue to shift from a distinctly suburban character to a more dense and diverse urban character with greater land use intensities. The City should encourage a strategic mix of supportive land use policies and key infrastructure investments to facilitate and shape this expected land use transition. The study recommends that the City support further development of a strategic mix of land uses encouraging office, housing, and retail associated with green space, improved walkability, and convenient access to employment opportunities and transit.

As the area evolves, the plan envisions allowing additional housing and employment opportunities in key areas. However, it also recognizes the affordability challenges that can come as older, more affordable structures are replaced by newer buildings. As such, the plan envisions that new projects would include some means of addressing those issues.

Rezoning proposals that request seven or more stories of height and include a residential component should include affordable units. A reasonable expectation is that 10 percent of new units should be affordable at 80 percent of area median income. If a

site includes existing units that are affordable to residents at 60 percent of the area median income, then a higher level of affordability should be included in rezoning proposals.

Similarly, the plan envisions that redevelopment will take place in areas near Crabtree Creek east of Wake Forest Road and south of Six Forks Road. The plan envisions creating a storm-resistant park in the areas at highest risk of flooding. However, in areas that are less likely to flood, possibilities exist to allow more housing and other uses in a way that not only does not worsen flooding, but can improve it. Rezoning proposals within a floodplain should include stormwater management measures and green space allocations that go beyond code requirements and ideally contribute to a connected public space along the Crabtree.

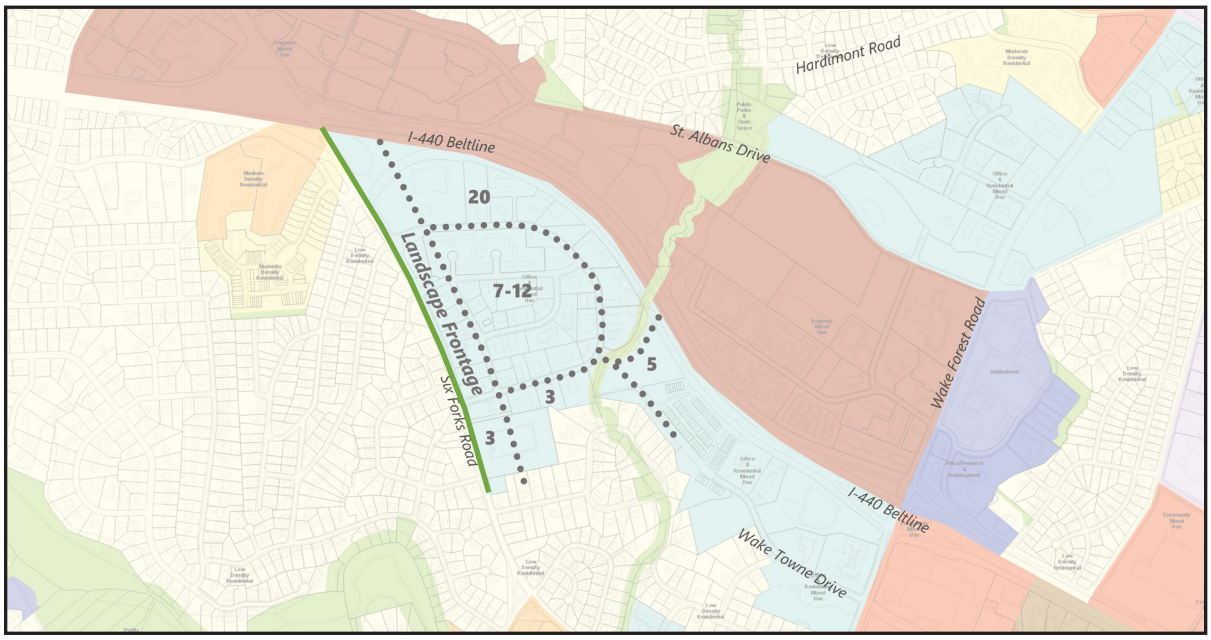
Redevelopment Opportunities from Transportation Improvements

The study's recommended transportation improvements are expected to translate into significant changes in land use and urban form for the southern portion of the Midtown-St. Albans District. As new and improved roads and transit options offer enhanced access and mobility, older commercial properties will become increasingly attractive for redevelopment with new land use patterns. New private redevelopment projects will likely bring higher land use intensities along with a greater mix of land uses which will both benefit from and sustain transportation and transit services.

I-440 Multimodal Bridge Area

Two of the key transportation and transit improvements recommendations would serve as catalysts for redevelopment. For instance, the proposed Multimodal Bridge over I-440

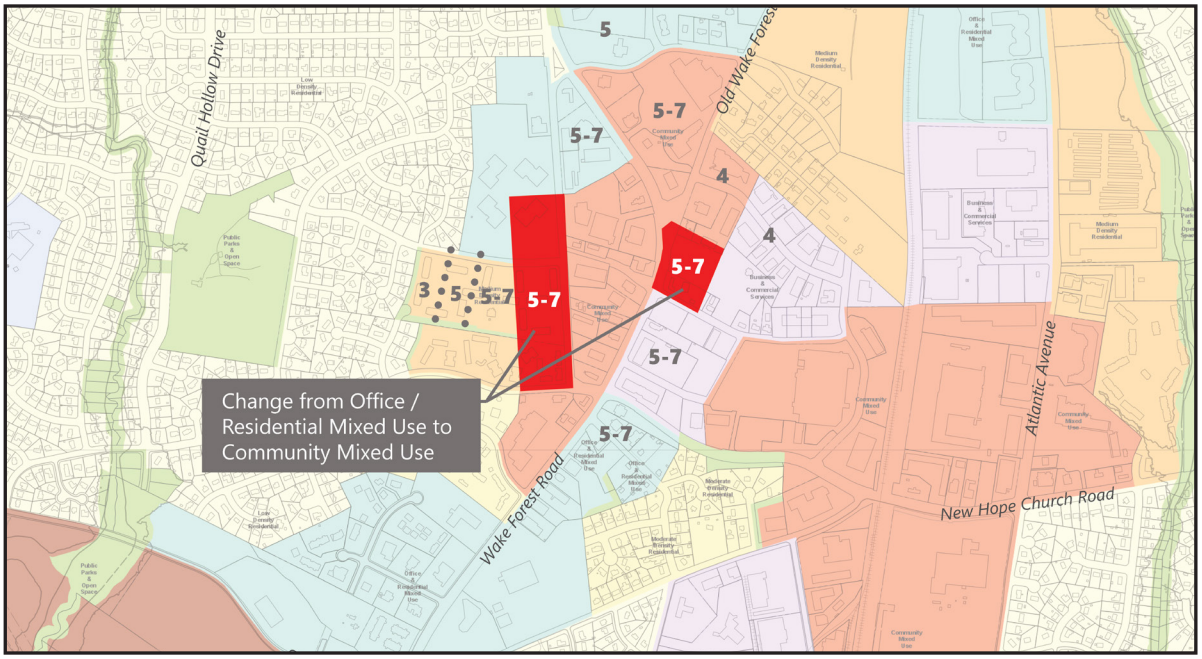
Figure 15: Frontage, Scale, Transitions Near I-440



Green Frontage (GR)

Numbers indicate recommended maximum building height.

Figure 16: Wake Forest Area Land Use Recommendations



Numbers indicate recommended maximum building height.

connecting Six Forks Road and St. Albans Drive will bring new access and mobility, particularly to the properties at both ends of the bridge. It would be expected that the suburban office complex along I-440 served by Computer Drive and Barrett Drive would be an attractive redevelopment site with the advent of the bridge.

As these properties are reassembled for redevelopment, the study envisions high densities and building heights (up to 20 stories), office and residential uses immediately adjacent to I-440, along with more moderate height (7 – 12 stories) and density in the center or interior of the office park **(Figure 15)**. More modest height (3 stories) and density is recommended immediately adjacent to Six Forks Road including the conservation of the existing tree lined buffer along much of the road frontage (described at Landscape Frontage in Figure 15). This will result in an appropriate land use transition for the single family residential on the west side of Six Forks Road and maintain the long-standing natural roadway edge character of this section of Six Forks Road. Additional frontage recommendations north of I-440 along Six Forks Road are illustrated in **Figure 18**.

On the north side of I-440, the new Multimodal Bridge will significantly change the development potential of the land along Navaho Drive east of the bridge. Regardless of the actual timing of the bridge project, there is a strong likelihood that the naturally occurring affordable housing within the existing garden apartment community will be redeveloped. In addition, the currently approved master plan for the St. Albans Drive mixed-use development may well change to respond with different land uses and urban form where the new multimodal roadway meets the property.

Wake Forest Road / Falls of Neuse District

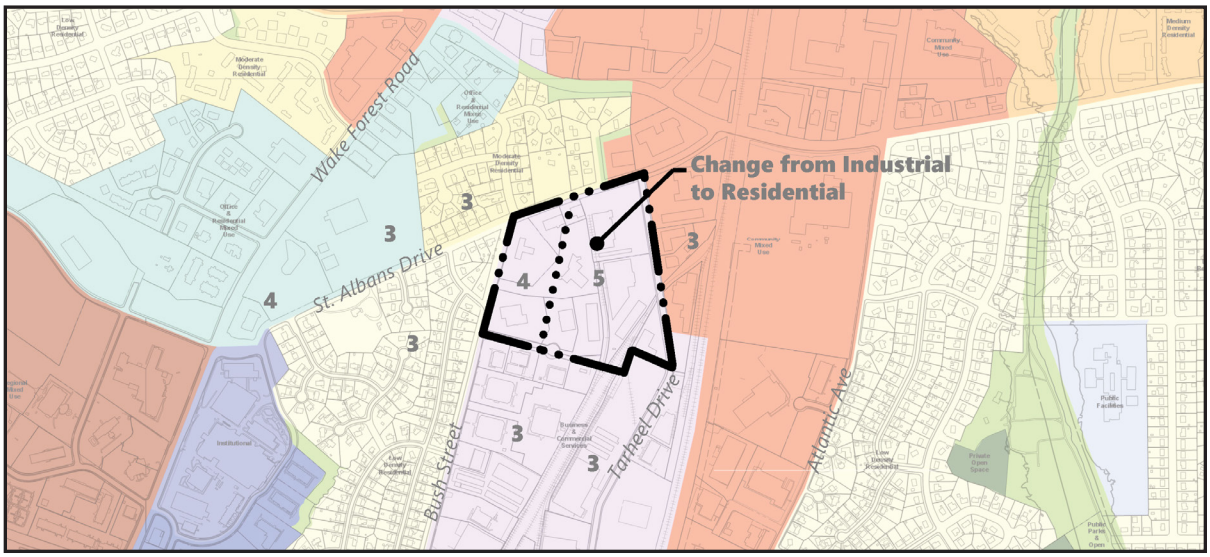
This focus area has a wide variety of land uses. As this area undergoes increasing growth pressure, it would benefit from zoning and land use guidance that would facilitate moderately higher development intensities with more mixed land uses **(Figure 16)**. Although traffic congestion is a significant hindrance, the area could intensify with new forms of diverse residential developments along with vertical mixed uses supporting transit and walkability to become a more vibrant, less chaotic and more attractive local destination. Current commercial uses are tightly packed along the frontages of Wake Forest Road and Falls of Neuse Road closely bordered by single family neighborhoods.

This study recommends greater land use intensities and moderate building heights (up to 7 stories) be encouraged for selected areas along the corridor roadway edges while the transitioning to lower heights and densities be targeted for properties immediately adjacent to the single-family neighborhoods. Land use recommendations include the conversion from Industrial Mixed Use and Office Mixed Use to Community Mixed Use (CX) for selected areas.

Atlantic Avenue / St. Albans Drive

A market analysis performed as part of this study projected declining demand for industrial uses in the area. At the same time, demand for housing and office space is increasing. Accordingly, this recommendation is to begin allowing a transition from industrial spaces along the railroad to other uses, while including a height transition to lower-scale residential areas nearby. The recommendation is shown in

Figure 17: Atlantic and St Albans Land Use Recommendations



Numbers indicate recommended maximum building height.

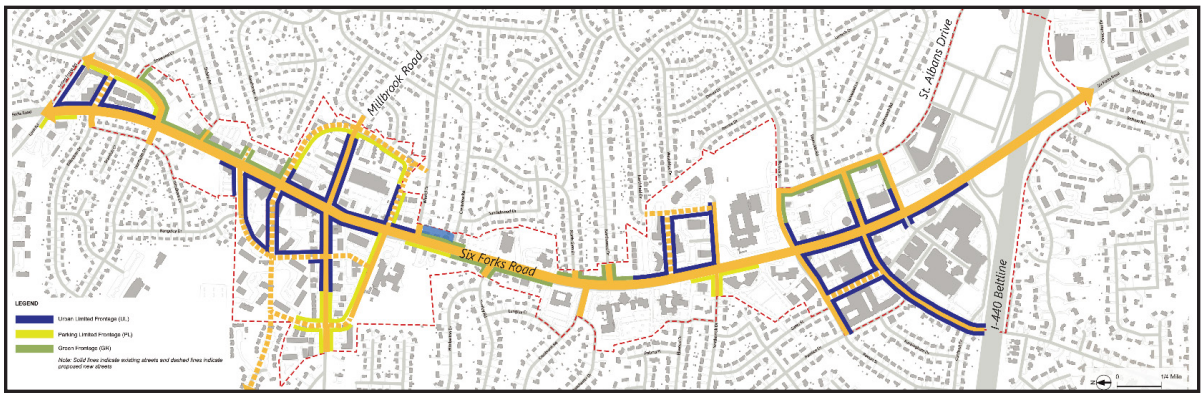
Six Forks Road Urban Design

Both the Six Forks Corridor Plan and this study considered the question of "frontage," which is the relationship of buildings to the street. Frontage can determine the look and feel of a place – and the walkability of a street – as much as the use or height of the buildings. During the peak of the post-World War II boom, buildings often were set back far from the street, with large parking lots between the street and the building entrance. Traditional city design involves buildings that are closer to the streets and fronted by wider sidewalks, as is the case in Downtown Raleigh, along Hillsborough Street, and other older centers. Frontage helps differentiate areas where people pass through from destinations.

In recent years, the City of Raleigh has focused on encouraging walking and creating a sense of place by requiring buildings to be closer to the street in areas that are emerging as new centers. Accordingly, the Six Forks Corridor Study made frontage

recommendations along the portion of the street north of I-440. These were among the recommendations that received additional review during this plan. Additionally, the planning process considered frontage on Six Forks south of the Beltline to Oakland Drive. The engagement phases supported both recommendations.

Figure 18: Frontage Recommendations



See Figure 20 for larger image.

The frontage recommendations recognize the differences in context along Six Forks Road.

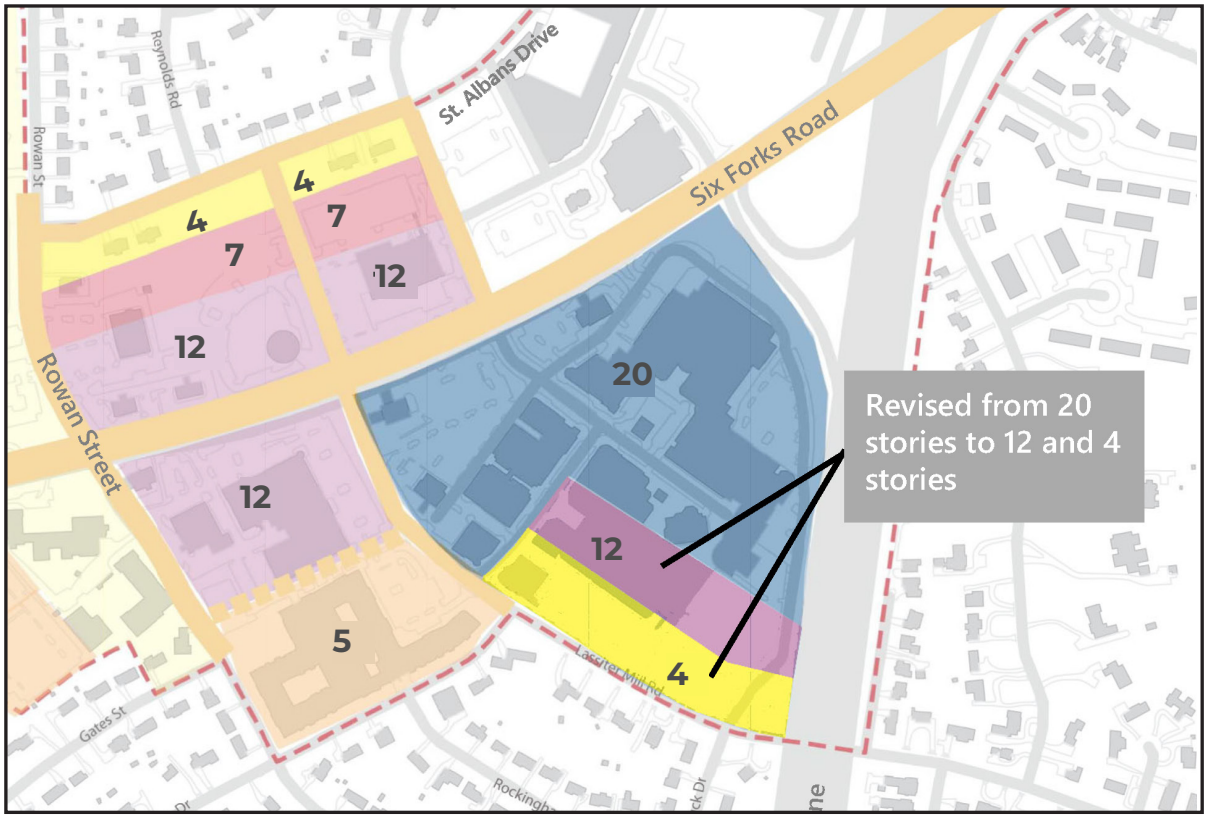
- Urban sections (navy blue). This is where buildings are closer to the street, and where an "Urban Frontage" should be included in any rezoning requests.
- Hybrid sections (yellow). These are locations where a limited amount of parking is reasonable between the building and the street. Either an urban frontage or a "Parking Limited" frontage is appropriate here.
- Green sections (green). These are locations where a specific type of urban frontage with a moderate setback and additional landscaping are recommended. This is also referred to Landscaped Frontage.

Figures 18 and 20 illustrate the frontage recommendations north of I-440, while **Figure 15** displays the green landscaped frontage recommendations south of I-440 in combination with land use changes as part of the Multimodal Bridge.

Six Forks Corridor Study Recommendations Revisited

The Six Forks Corridor Study, completed and adopted by the City Council in 2018, provided urban design recommendations for building heights as well as building frontage types – how a building relates to the street, particularly in terms of how close or far away buildings are from the sidewalk. While that process reached consensus on the future of the Six Forks roadway, some participants felt more input was needed about proposed

Figure 19: Six Forks Corridor Height Recommendations



Numbers indicate recommended maximum building height.

Figure 20: Six Forks Corridor Study Connection and Land Use Modifications

street connections, heights, and frontage recommendations. As a result, these proposals were reviewed a second time as part of the Midtown-St. Albans Area Study.

The 2018 building height recommendations along the Six Forks corridor were largely found in keeping with the favored transition approach of lower building heights directly adjacent to single family residences. The Six Forks Corridor Study recommended three to four stories of building height in most corridor locations adjacent to single family residences and neighborhoods.

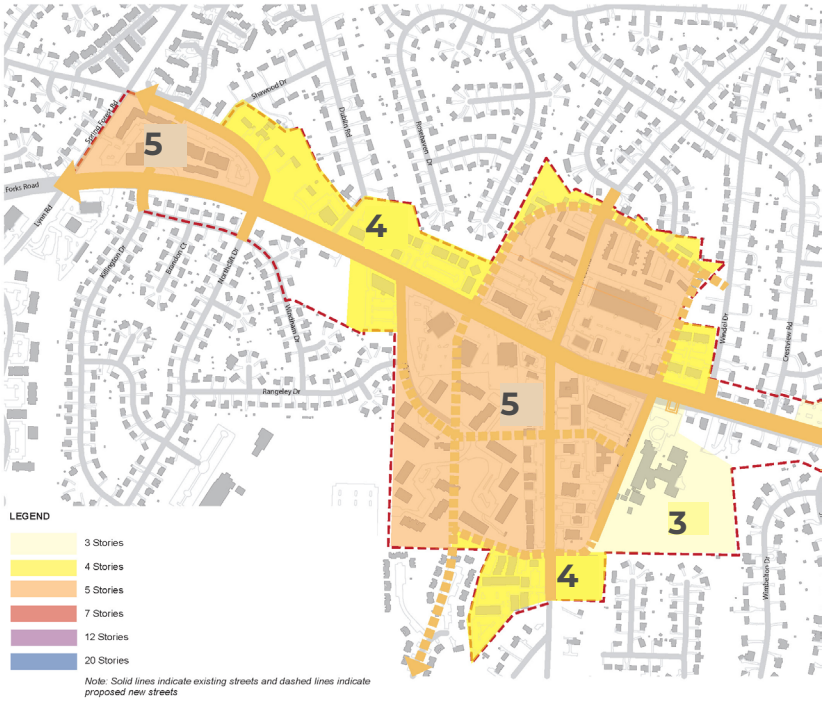
The Midtown-St. Albans study recommends that maximum building heights remain as shown in the Six Forks Corridor Study with one exception: the mixed-use retail complex located in the northwest quadrant of the Six Forks Road / I-440 interchange (**Figure 19**). More specifically, the study recommends a reduction in maximum building height for the area fronting Lassiter Mill Road adjacent to existing single-family residences. The recommended building height is a maximum of four stories along Lassiter Mill Road transitioning to twelve stories with increasing distance from Lassiter Mill Road before rising to twenty stories in the core of the property. This modification was endorsed during the Fall 2019 public survey.

This study also recommends two changes to the roadway network improvements in the Six Forks Corridor Study (**Figure 20**). The first is the elimination of the proposed extension of Westridge Drive to Six Forks Road. The second is the development of a pedestrian connection rather than the proposed roadway connection between the retail center parking

north to Rowan Street. Both locations involve constraints that make a full street connection either difficult (Rowan Street) or need careful consideration of impacts (Westridge Drive). In place of specifying the Westridge Drive connection, this plan recommends a focused study of potential connections, including pedestrian-only connections.

The remaining height and land use recommendations from the Six Forks Corridor Study received relatively little comment during the public engagement process, and the noted feedback was largely positive. These reinforced findings included:

- Height guidance at the Six Forks/Millbrook intersection (a maximum of five stories with transitions down to lower-scale areas nearby).
- A recommended land use change along a portion of Six Forks Road from Low Density Residential to Office and Residential Mixed Use.



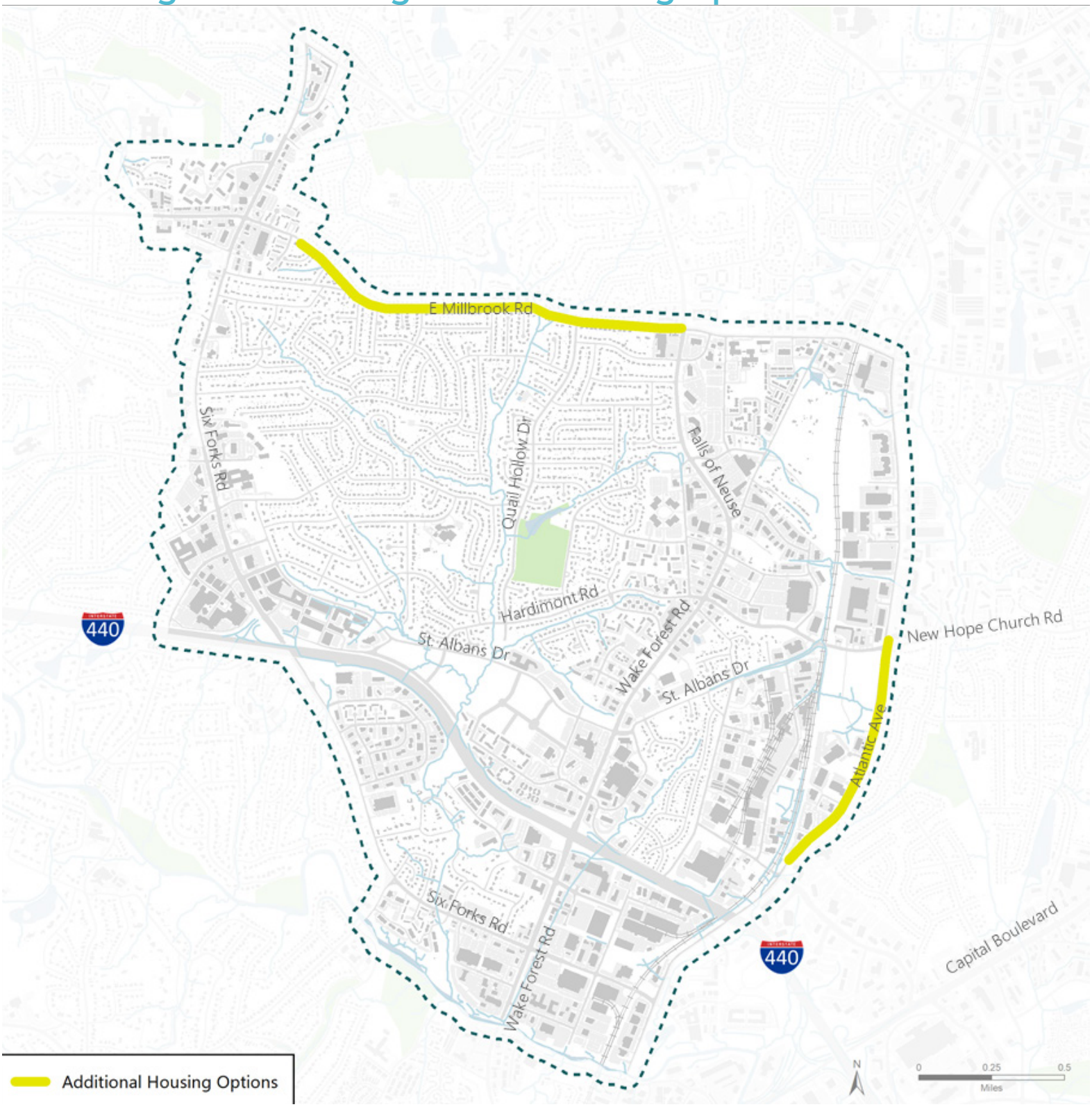
Examples of "Missing Middle" Housing Types

"Missing Middle" Housing Options

The concept of "Missing Middle" housing refers to the lack of housing types such as duplexes, triplexes, and fourplexes that can play a role in providing affordable options for many residents. These housing types, which are common in older neighborhoods, are often indistinguishable from detached single family homes. Younger couples, empty nesters, and others who do not want or need a large yard are likely to find these housing types attractive. However, most residential zoning districts do not permit these housing types, and larger apartments are much more likely to be built in districts that allow more density.

The Midtown-St. Albans area is no exception to this pattern, with most housing either in the form of detached single family houses north of St. Albans Drive or more dense apartments in the core of the area. A key study recommendation that received strong support throughout the public engagement phases is to facilitate these types (i.e. duplexes, triplexes, and fourplexes) in a broader area. This recommendation involves

Figure 21: Missing Middle Housing Options



allowing duplexes, triplexes, and fourplexes along the east side of Atlantic Avenue and both sides Millbrook Road, areas where similar housing types already exist or where demand for detached houses may be declining (**Figure 21**). Specifically, this means a change on the FutureLand Use Map to Moderate Density Residential Future studies may suggest a broader area where these types should be accommodated.

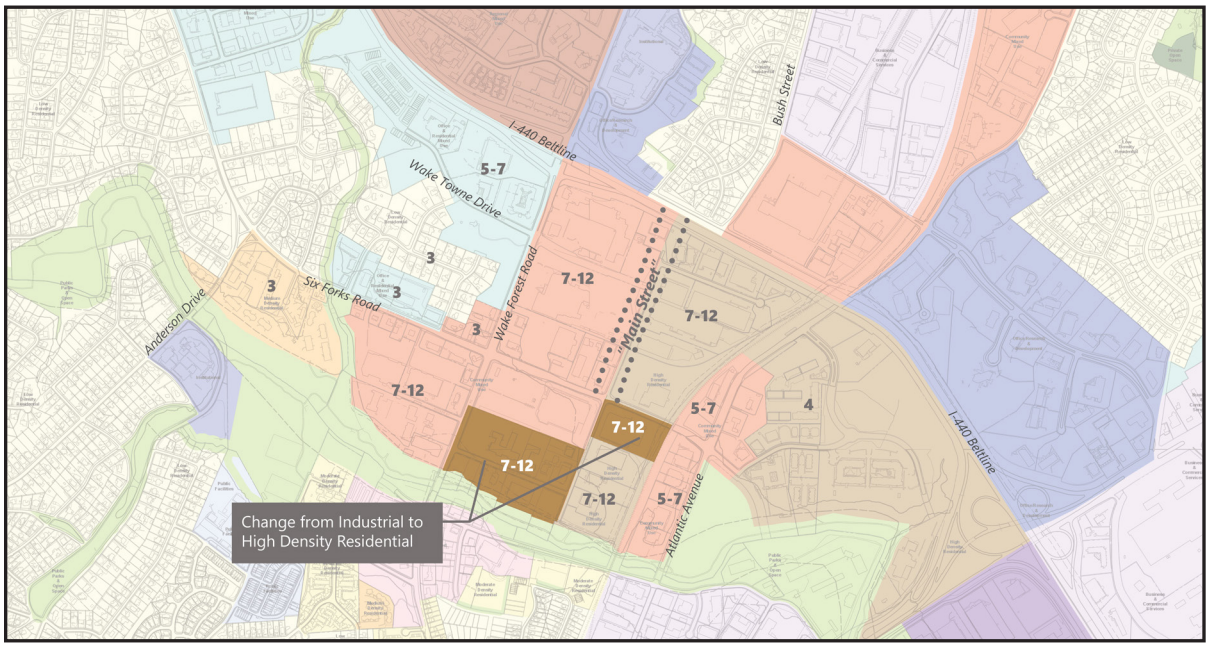
Midtown Waterfront District

The extensive commercial area surrounding the Six Forks Road and Wake Forest Road intersection is an emerging location for new forms of commercial, retail, and residential uses. Several developments in the past five years have repositioned this district for new retail options while new higher density residential, office and hotel uses have emerged. The area is currently designated as a Community Mixed Use district in the City's Comprehensive Plan. With continued growth forecast for the Midtown-St. Albans area, the district is expected to see significant redevelopment as it becomes increasingly attractive for new private investment.

With the implementation of this study's recommendation for improved transit along the Six Forks Road corridor, there will likely be increased demand for a mix of residential options to complement the district's emerging growth as an employment center and retail center. The study recommendations for this area include an increased focus on allowing additional housing associated with access to transit, walkability, employment opportunities and retail services.

One area within the district is particularly poised for a substantial repositioning as a higher density residential neighborhood (**Figure 22**). This area includes properties along

Figure 22: Crabtree Creek Land Use Recommendations



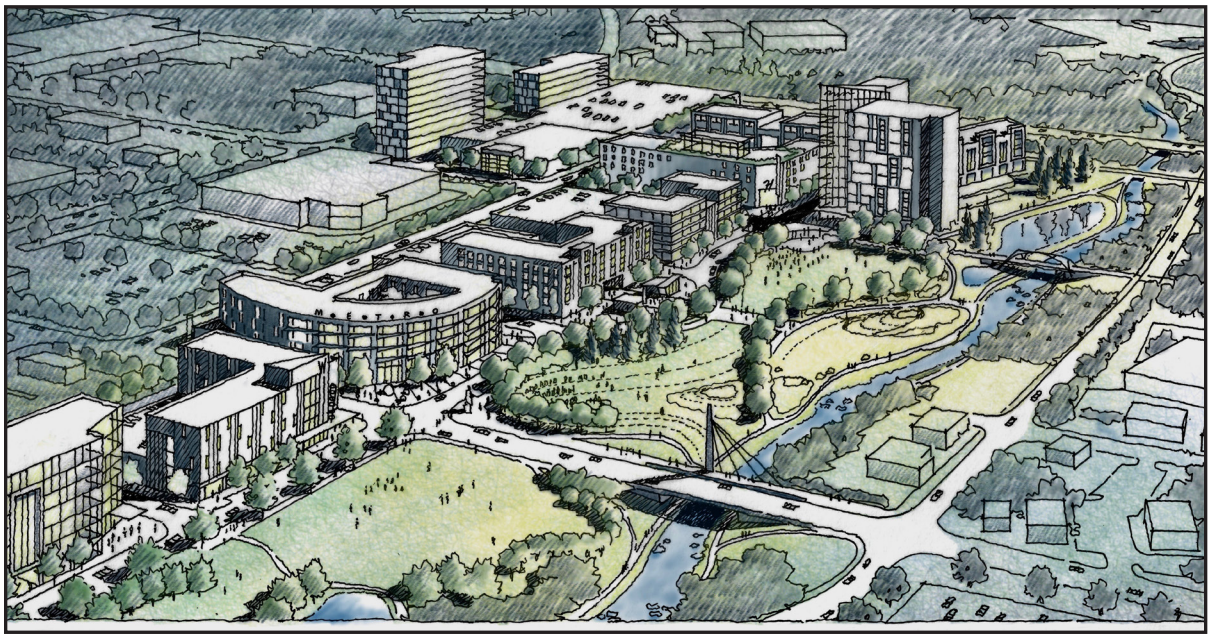
Numbers indicate recommended maximum building height.

the northern edge of Crabtree Creek adjacent to Creekside Drive and Industrial Drive referred to in the study as the Midtown Waterfront District. *There is an intriguing opportunity for redevelopment to shift away from low intensity industrial and retail uses to a more vibrant residential mixed-use neighborhood.*

This study recommends a stronger emphasis in this area for moderate to high density residential as the preferred option to replace land currently utilized by light industrial, specialty retail, and car lot sales. Some of these properties are past their usable life cycle and are increasingly valuable for new uses through redevelopment. Other properties, particularly those near and immediately adjacent to Crabtree Creek experience frequent flooding and are subject to periods of business disruption. Selected properties will be challenging to redevelop at all given their location within the Crabtree Creek floodway.

A more focused assessment was made of the future transformation of the properties immediately north of Crabtree Creek, on both sides of Wake Forest Road including Creekside Drive, Industrial Drive and Rucker Drive. The study recommends changing much of this area from the current Industrial zoning and Community Mixed-Use land use designations to a Residential Mixed-Use zoning (RX) classification and to High Density Residential land use. Higher density and building heights (7 – 12 stories) are recommended. These policy changes will help to realize the plan's vision for this area. This area also falls within one of the City's federally designated Opportunity Zones. This designation may accelerate private investment interest and promote development responses consistent with this study's recommendation for inclusion of affordable and workforce housing.

Figure 23: Crabtree Creek Area Reimagined



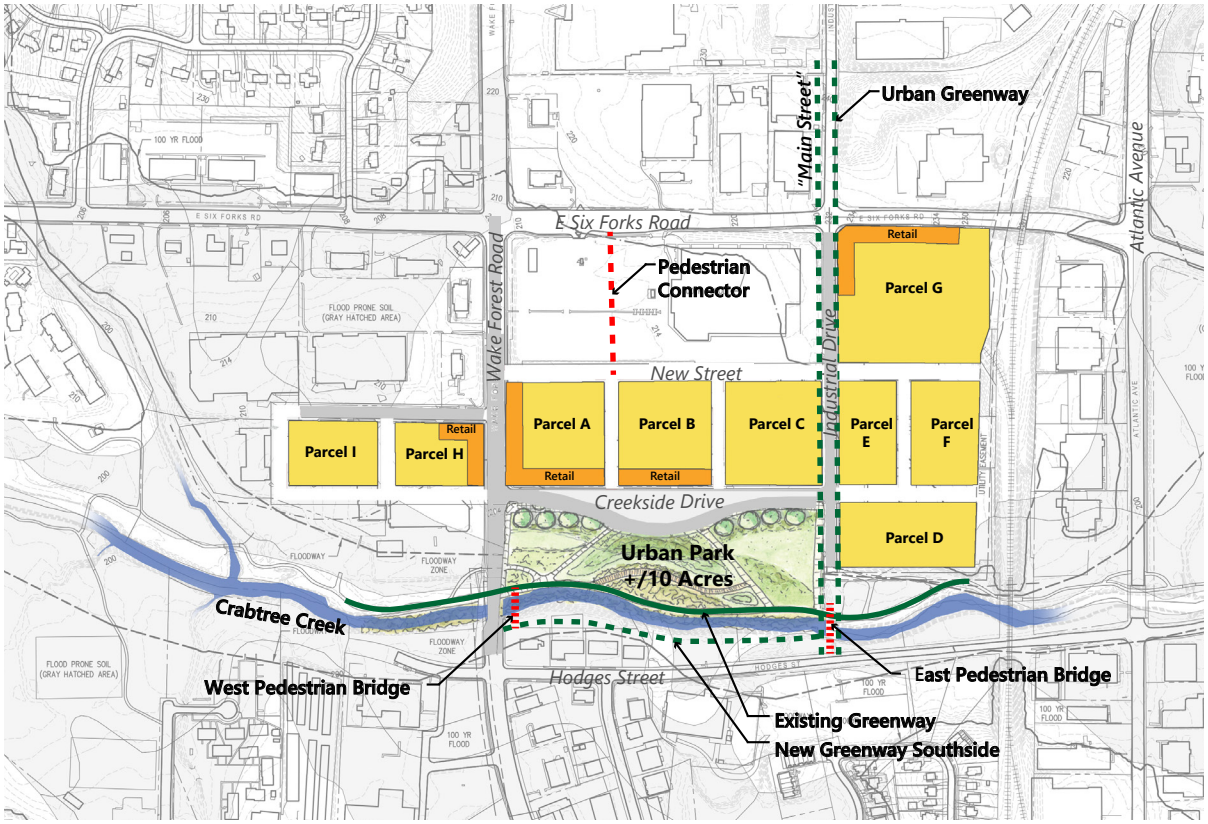
Three City initiatives are recommended to be explored to facilitate this transition. One initiative would be to acquire and construct an urban park along Crabtree Creek on flood-prone property (Projects LU1 and LU2 in **Figure 25**). The second initiative would be for the City to determine the feasibility of public/private investment strategies to promote the development of mixed income and/or affordable housing units on appropriate properties. And thirdly, the plan envisions the establishment of a new public street grid along Creekside Drive and Industrial Drive to support residential use with service retail development patterns, particularly along the frontage of the proposed park.

There are several recommendations with regard to the City's posture on land use and zoning policy which, if implemented, may be valuable in shaping the outcomes of redevelopment projects toward goals for the Crabtree Creek sub-district. Those goals for this area include affordable housing integrated

Figure 24: Midtown Waterfront Park Rendering

into market rate housing, creative open space responses to aggregate open space for public use and improved placemaking, and creative responses to stormwater control. The plan envisions heights of up to 12 stories as appropriate in the area, as indicated in **Figure 22**. However, heights beyond five stories should include the provision of some degree of affordable housing, stormwater mitigation, or public space provisions that go beyond code requirements.

Redevelopment of the Creekside Drive sub-district provides a unique opportunity for the City to serve as a catalyst for change **(Figure 23)**. City investment into properties immediately adjacent to the Crabtree Creek floodway would be required. Through a public and private partnership, the opportunity exists to integrate market housing and affordable housing units within the overall redevelopment into a neighborhood.



Potential Layout and Pedestrian Connections for Waterfront Park.

Midtown Waterfront Park

The Midtown Waterfront Park offers the potential to create a signature new public space in the City **(Figure 24)**. Importantly, its creation would come at a reasonable cost while providing numerous benefits across the community. The park itself would be largely passive, not requiring substantial improvements – and it could be activated by the presence of the greenway and waterfront, as well as expected new nearby residential development.

The acquisition and conversion of flood-prone parcels along Crabtree Creek into a "storm-resistant park" provides multiple benefits. Key benefits include:

- The creation of an identity-creating public space for the Midtown-St. Albans area
- A major amenity for the community, City residents, and visitors
- Dual servicer as a significant stormwater facility
- Removing the potential for vulnerable development in a sensitive, flood-prone area
- The potential for "greenway-oriented development" alongside the park

The Crabtree Creek Greenway would access this neighborhood and the Park with a new bridge across Crabtree Creek to the south bank where a second parallel greenway would be built. A second crossing at Wake Forest Road would allow for a safer, more comfortable experience for pedestrians there as well. The park itself potentially can be acquired in phases, with the most flood-prone parcels first and other pieces added later.

How do Area Plans go from Paper to Pavement?

There are three main tools that take an area plan from a community vision to a reality: **policy guidance**, c**apital improvements** and **development regulation**.

Policy Guidance

The 2030 Comprehensive Plan is the blueprint for how Raleigh should grow over the next ten years. Most large cities have a **Comprehensive Plan**, which is a tool commonly used by local governments to understand how our city facilities (i.e., bike lanes, sewer lines, zoning districts, parks, buses and roads) can work together for the everyday benefit of its residents.

The **Comprehensive Plan** is a living document that is adopted and updated by the City Council. It contains over 800 different policies that provide direction on topics like building height, historic preservation, and environmental protection. The policies in the document go from paper to pavement (or from paper to greenway or apartment building) through a few different channels and become part of the Comprehensive Plan's Area Specific Guidance section when they are adopted by City Council. They are implemented through the rezoning process. **Rezoning** is a request to change the zoning, which dictates what is and is not allowed to be built on a piece of property. The Planning and Development Department provides a written evaluation of a **rezoning** request by using the policies in the **2030 Comprehensive Plan**.

For example, the *Walkable Midtown* plan has a policy that states if a property were to be **rezoned** to increase the building height above seven stories, then at least 10% of the housing units in the building should be affordable. The implementation of this

policy happens when the **rezoning** request includes a zoning condition (an additional restriction that goes beyond what is required by the Unified Development Ordinance, or UDO) that will require the property to have these affordable units. In this case, the developer will be legally required to construct them. While zoning conditions can only be offered by the developer, should they choose not to include these affordable units, their rezoning request may be inconsistent with the policy.

Ultimately it is the charge of the City Council to make the final decision on approving a **rezoning** request that may include zoning conditions that implement the policies from the small area plan.

Capital Improvement Program

The Capital Improvement Program or **CIP** is the City of Raleigh's tool to fund and construct infrastructure that we use on a daily basis, such as new sidewalks, sewer lines, pedestrian bridges, and parks. One example from the Midtown-St. Albans plan is the proposed pedestrian and bicycle bridge that will cross over the I-440 Beltline. While the **Comprehensive Plan** and **Unified Development Ordinance** tools rely on private development to implement policies or adhere to zoning regulations, the **CIP** is run by the City and is funded through your tax dollars. The CIP's goal is to be a bridge between the 2030 Comprehensive Plan and the day-to-day infrastructure needs that keep our roads paved, our drinking water flowing, and our toilets flushing.

Development Regulation

The Unified Development Ordinance or **UDO** is the City of Raleigh's regulations for what you can and cannot build on a piece of property (zoning), how much parking is required for different types of business or homes, how much open space needs to be conserved if a piece of property is redeveloped, how stormwater is managed and much more. The **UDO**, unlike the **Comprehensive Plan**, is a regulatory document, which means it is the law of the land and is less open to interpretation.

The **UDO** helps implement small area plans by requiring the construction of physical infrastructure that the **Comprehensive Plan** envisions, such as roads and greenway connections, for particular places. For example, the Avent Ferry Corridor Study provided different guidance for what the street should look like along Lake Johnson and what it should look like next to the more urban Avent Ferry Shopping Center. In other words, a small area plan can produce a streetscape design that will then be legally required to be build either by the City through the **CIP** program or by a developer as part of the permitting process.

Performance Evaluation

Each project is rated in terms of its performance with respect to each of the Planning Principles carried through the process **(Figure 25)**. Although some criteria are objectively quantifiable, most are more qualitative, and the relative weights are subjective.

A blue rating scale of 0 to 3 is used to reflect the projects positive impact on the elements of each Planning Principle:

- **0 = No benefit**
- 1 = Low benefit
- 2 = Medium benefit
- 3 = High benefit

Negative impacts can also be represented by a red rating scale:

- –1 = Low detriment
- –2 = Medium detriment
- –3 = High detriment

These scores attempt to capture not only the magnitude of benefit (or detriment) associated with each project, but also some indication of risk. The benefit of a project might be discounted if the project is expected to be exceptionally controversial, complex, unusual, or expensive. Ideal or "best case" performance is not assumed; scoring is based on more

> *Lastly, the project creates the possibility of a waterway restoration effort that improves the appearance and function of the Crabtree. In addition to performing that work, the city can support the Crabtree and the waterfront area by facilitating the creation of a "friends of" group that can provide enthusiasm and, perhaps, funding.*

Implementation

Stakeholder input and community feedback supported the package of improvement projects developed and recommended through the study process. Public prioritization of projects—through both the workshops and survey—was consistent with an implementation plan that addresses critical immediate concerns while advancing the overall vision of the plan over the long term. The implementation plan also recognizes both practical and fiscal constraints, as well as uncertainties about the future.

The following section summarizes the performance of the recommended projects with respect to the Planning Principles and lays out a three-step implementation schedule. Project prerequisites and interdependencies are identified, along with likely funding responsibilities.

This study and its recommendations should be revisited within 10 years to assess progress, implementation, land use changes, and to account for interdependent developments. A 10 year re-evaluation would address, for example, anticipated changes in residential and commercial land use and the expansion of the BRT network towards the Phase II Midtown connection.

Figure 25: Performance Evaluation

	ID	Project	Description	PROJECT IMPACT ON … (0=none, 1=low, 2=some, 3=high)					
				Travel Options & Reliability	Safety & Health	Green & Blue	Aesthetics & Character	Neighborhoods & Housing Choices	Innovation & Opportunity
	BT1	**I-440 Multimodal Bridge** *Navaho Dr - Barrett Dr at Big Branch*	2-lane avenue w/ sidewalks and bike lanes	**3**	**3**	**3**	**1**	**1**	**1**
	BT2	**I-440 Pedestrian-Bicycle Bridge** *Navaho Dr - Industrial Dr at Bush St*	Pedestrian-bicycle only bridge	**2**	**3**	**3**	**1**	**1**	**1**
	BT3	**Six Forks Rd Pedestrian Bridge** *Near Dartmouth Rd*	Pedestrian bridge	**2**	**3**		**1**		**1**
	BT4	**Wake Forest Rd Pedestrian Bridge** *South of St Albans Dr*	Pedestrian bridge	**2**	**3**		**1**		**1**
	BT5	**New Hope Church Rd RR Overpass**	Railroad overpass Evaluate realigning St Albans west to Craftsman Dr	**2**	**3**	**1**			
	BT6	**Wolfpack Ln RR Overpass**	Railroad overpass	**3**	**3**	**1**			
	BT7	**Millbrook Rd RR Overpass**	Railroad overpass	**3**	**3**	**1**			
	BT8	**Six Forks Rd RR underpass widening**	Widen railroad bridge for more tracks	**1**	**1**				
	GS1	**Quail Hollow Drive** *E Millbrook Rd - Barrett Dr at Big Branch*	Stormwater BMPs, traffic calming measures, and improved bicycle facilities or shared-use path	**2**	**3**	**3**	**2**	**1**	**1**
	GS2	**Bush St** *St Albans Dr - Navaho Dr*	Stormwater BMPs, traffic calming measures, and improved bicycle facilities	**2**	**3**	**2**	**1**	**1**	**1**
	GS3	**Wake Towne Drive** *Barret Dr - Wake Forest Rd*	Stormwater BMPs, traffic calming measures, and improved bicycle facilities or shared-use path	**2**	**3**	**2**	**1**	**1**	**1**
	GS4	**Hardimont Rd** *St Albans Dr - Wake Forest Rd*	Stormwater BMPs, traffic calming measures, and improved bicycle facilities	**2**	**3**	**1**	**1**	**1**	**1**

	ID	Project	Description	PROJECT IMPACT ON … (0=none, 1=low, 2=some, 3=high)					
				Travel Options & Reliability	Safety & Health	Green & Blue	Aesthetics & Character	Neighborhoods & Housing Choices	Innovation & Opportunity
	BP2	**New Hope Church Rd** *Wake Forest Rd - St Albans Dr*	Improved bicycle facilities (separated preferred)	**2**	**3**	**2**			
	BP3	**Industrial Dr** *Front St - Crabtree Creek Trail*	Traffic calming measures, bicycle facilities, and pedestrian facilities	**2**	**3**	**2**	**1**		**1**
	BP4	**Millbrook Rd** *Six Forks Rd - Falls of Neuse Rd*	Improved bicycle facilities (separated preferred)	**2**	**2**	**2**			
	BP5	**Cheyenne Rd Connection** *Apache Dr - Bush St*	Bicycle and pedestrian connection	**2**	**2**	**1**			
	BP6	**Pinecrest Dr Connection** *Apache Dr - Bush St*	Bicycle and pedestrian connection	**2**	**2**	**1**			
	BP7	**Utica Dr Connection** *Manovil Pl - Cheyenne Dr*	Bicycle and pedestrian connection	**2**	**2**	**1**			
	BP9	**Hines Dr Connection** *North to Wake Towne Dr*	Bicycle and pedestrian connection	**1**	**1**	**1**		**1**	
	X1	**Six Forks Rd & Anderson Dr Crossing**	Improved pedestrian crossing	**2**	**3**				
	X2	**Six Forks Rd & Dartmouth Rd Crossing**	Improved pedestrian crossing	**2**	**3**				
	X3	**Six Forks Rd & Lassiter Mill Rd Crossing**	Improved pedestrian crossing	**2**	**3**				
	X4	**Six Forks Rd & Millbrook Rd Crossing**	Improved pedestrian crossing	**2**	**3**				
	X5	**Falls of Neuse Rd & Millbrook Rd Crossing**	Improved pedestrian crossing	**2**	**3**				
	X6	**Sweetbriar Dr @ Millbrook Rd Crossing**	Improved pedestrian crossing	**1**	**2**			**1**	
	X7	**Quail Hollow Dr @ Millbrook Rd Crossing**	Improved pedestrian crossing	**1**	**2**			**1**	
	--	**Wake Forest Rd** *I-440 to St Albans*	Improved bicycle and pedestrian facility (shared use path)	**2**	**3**				
	--	**Other crossing improvements**	Suite of pedestrian visibility enhancements for intersections with noted safety concerns. Inclusive of high visibility crosswalk markings, inroad signage, advance warning signage, curb bump outs, lighting, and other elements.	**1**	**2**	**1**			
	--	**Six Forks Rd Corridor Study Recommendations**	Separated bike lanes along both sides of Six Forks Road from Lynn Rd to Dartmouth Rd. Pedestrian refuge islands at North Clift, Loft, Millbrook, Windel, Shelley, Northbrook, Lassiter Mill, Dartmouth, and Front at N Hill St.	**2**	**3**	**1**	**2**		

	ID	Project	Description	PROJECT IMPACT ON … (0=none, 1=low, 2=some, 3=high)					
				Travel Options & Reliability	Safety & Health	Green & Blue	Aesthetics & Character	Neighborhoods & Housing Choices	Innovation & Opportunity
	T2	**Bus Stop Improvements**	Bus stop improvements could include concrete pads, benches, bike racks, access ramps, and sidewalks.	**1**	**2**			**1**	
	T3	**Wake County Transit Plan - Bus Service Improvements**	Route 8 (Six Forks Midtown) - 15 min. headways Route 8L (Six Forks North) - 30 min. headways Route 16 (Centennial-Midtown) - 15 min. headways Route 10 (St Albans-Wolfpack) - 15 min headways	**3**	**1**			**1**	
	T4	**Midtown High Frequency Bus Service** *Study future Route 8 Alternatives or additions*	St Albans/I-440 Crossing/Wake Towne/Industrial/Six Forks Ext	**2**	**1**			**1**	**1**
	T5a	**Future Midtown Rapid Transit** *BRT extension from Capital Blvd*	Study feasibility, routing options, and related considerations.	**3**	**1**			**1**	**1**
	T5b	**Future Midtown Rapid Transit** *BRT extension from Capital Blvd*	Some combination of Six Forks, Wake Forest, Atlantic, and I-440 corridor options	**3**	**1**			**1**	**1**
	SC1	**Benson Dr Extension** *Dresser Ct - St Albans Dr*	Avenue 2-Lane Undivided	**2**	**1**			**1**	
	SC2	**Benson Dr Extension** *North to Hardimont Rd*	Avenue 2-Lane Undivided	**2**	**1**			**1**	
	SC3	**Bland Rd Complete Street Improvements** *Falls of Neuse Rd - Hardimont Rd*	Road diet	**1**	**2**	**1**	**2**	**2**	**1**
	SC4	**Craftsman Dr Extension** *Sorghum Ct - N Market Dr*	Avenue 2-Lane Undivided	**2**	**1**	**-1**			**1**
	SC5	**Pacific Dr Extension** *Old Wake Forest Rd - Craftsman Dr Ext*	Avenue 2-Lane Undivided	**2**	**1**	**-1**			**1**
	SC6	**Pacific Dr Extension** *Craftsman Dr Ext - Atlantic Ave*	Includes RR overpass	**2**	**1**	**-1**			
	SC7	**Six Forks Rd Extension to Capital Blvd**	Avenue 4-Lane, Divided	**3**	**1**	**-2**			**2**
	SC8	**Wake Towne Rd Extension** *West to Barrett Dr*	Avenue 2-Lane Undivided	**2**	**1**	**-1**			**1**
	SC9	**Navaho Dr Realignment** *Quail Hollow Dr - Benson Dr*	TBD (develoment-dependent)	**2**	**1**				**1**
	SC10	**Future Benson Dr Extension** *Hardimont Rd - Bland Rd/Pacific Dr*	Avenue 2-Lane Undivided	**1**	**1**				
	SC12	**St Albans Dr Widening A** *BensonDr - Wake Forest Rd*	Avenue 4-Lane, Divided	**3**	**2**		**1**		
	SC13	**St Albans Dr Widening B** *Church at N Hills St - Hardimont Rd*	Avenue 2-Lane, Divided/Turn lanes	**2**	**1**		**1**		
	SC14	**St Albans Dr Widening C** *Midtown East Access Rd - Benson Dr*	Avenue 2-Lane, Divided/Turn lanes	**1**	**1**		**1**		
	SC15	**Millbrook Road Diet Study**	Possible 2-laning depending on anticipated traffic demands	**2**	**2**			**1**	**1**

	ID	Project	Description	PROJECT IMPACT ON … (0=none, 1=low, 2=some, 3=high)					
				Travel Options & Reliability	Safety & Health	Green & Blue	Aesthetics & Character	Neighborhoods & Housing Choices	Innovation & Opportunity
	SC16	**Six Forks School & Connectivity Study** *North of Rowan St*	Detailed study of school and connectivity issues	**2**	**2**			**1**	
	SC17	**Wake Forest Rd Corridor Reconditioning** *St. Albans to E Millbrook*	Complete Streets upgrade: access management; lane-width increase; streetscape; bike-ped & transit accomodation	**2**	**2**		**1**		**1**
	I1	**Wake Forest Rd & Executive Dr Intersection Improvements at St Albans Dr & Navaho Dr**	Signal and lane configuration changes; pedestian accomodations; internal cirulation changes	**3**	**2**				
	I2	**Bush St Roundabouts** *Wolfpack Ln & Navaho Dr*	Single-lane roundabouts with bike-ped accommodations	**2**	**2**		**1**		
	LU1	**Midtown Waterfront Park Acquisition**	Acquisition of parcels adjacent to Crabtree Creek for new public park space	**1**	**2**	**3**	**3**	**3**	
	LU2	**Midtown Waterfront Park Study**	Formal study of the park space, uses, necessary improvements, and coordinated development		**1**	**1**	**1**	**1**	
	LU3	**Stormwater Drainage Basin Study**	Updated review of the stormwater drainage basins in the Midtown-St. Albans study area and implications for existing and planned stormwater infrastructure		**1**	**3**			
	LU4	**Comprehensive Plan Amendments**	Adopt Future Land Use Map, Urban Form Map, and other area-specific guidance	**2**	**2**	**2**	**2**	**3**	**3**

typical expectations. Finally, depending on the nature and magnitude of the benefit, and on the groups affected, a project yielding a small benefit to many people may or may not score similar to a project offering a more substantial benefit to a smaller group. For example, eliminating a single fatality would outweigh a few seconds of time savings for several thousand travelers.

Implementation Priorities and Phasing

Project prioritization is determined (and constrained) by several factors. This process attempts to assess the relative importance of each project, its feasibility, and the ability to fund it. Issues of equity, policy, and interdependencies among projects (such as one project being contingent on another) must also be weighed and balanced.

In terms of implementation schedule, three windows or phases are identified in **Figure 24**:

- 0 - 3 years (short-range)
- 3 - 7 years (medium-range)
- 7+ years (long-range)

Being designated a medium- or long-range project does not necessarily indicate less importance than a short-range project; it may be that other projects needed to be completed first; that the later project requires more time to plan, design, and build; or that funding was not available sooner.

To indicate the relative importance of projects relative to each other, a three-level priority rating is used:

- High
- Medium
- Low

Though subjective, these ratings are derived from each project's relative performance across the criteria embodied in the Planning Principles that guided this study.

Funding Sources

For each project, likely responsible parties (typically the sources of funding) are identified, based on the nature of the project **(Figure 26)**.

- **Some depend on private development and would be listed as Private or Public Private Partnership (PPP) for partnerships with City, State, or other agency.**
- Others are clearly City responsibilities, although they may be further categorized:

Figure 26: Implementation and Funding Sources

	ID	Project	Description	Status	IMPLEMENTATION PRIORITY			Contingency	Responsibility / Funding Source
					0-3 YRS	3-7 YRS	7+ YRS		
	BT1	**I-440 Multimodal Bridge** *Navaho Dr - Barrett Dr at Big Branch*	2-lane avenue w/ sidewalks and bike lanes, connection with Church at North Hills Drive			HIGH		Realignment of Navaho Dr & Barrett Dr	Raleigh possibly w/ NCDOT
	BT2	**I-440 Pedestrian-Bicycle Bridge** *Navaho Dr - Industrial Dr at Bush St*	Pedestrian-bicycle only bridge			Medium	Medium	Ped/bike improvements on Bush St & Industrial Dr	Raleigh
	BT3	**Six Forks Rd Pedestrian Bridge** *Near Dartmouth Rd*	Pedestrian bridge			HIGH	HIGH	Redevelopment; PPP	Raleigh + Private
	BT4	**Wake Forest Rd Pedestrian Bridge** *South of St Albans Dr*	Pedestrian bridge				low	Redevelopment; PPP	Raleigh + Private
	BT5	**New Hope Church Rd RR Overpass**	Railroad overpass Evaluate realigning St Albans west to Craftsman Dr	STIP (2020-23)	HIGH				NCDOT
	BT6	**Wolfpack Ln RR Overpass**	Railroad overpass	MTP		HIGH			NCDOT
	BT7	**Millbrook Rd RR Overpass**	Railroad overpass	STIP (2021-22)	HIGH				NCDOT
	BT8	**Six Forks Rd RR underpass widening**	Widen railroad bridge for more tracks	MTP			Medium		NCDOT
	GS1	**Quail Hollow Drive** *E Millbrook Rd - Barrett Dr at Big Branch*	Stormwater BMPs, traffic calming measures, and improved bicycle facilities or shared-use path		HIGH	HIGH			Raleigh DOT w/ Stormwater & Parks
	GS2	**Bush St** *St Albans Dr - Navaho Dr*	Stormwater BMPs, traffic calming measures, and improved bicycle facilities		HIGH	HIGH			Raleigh DOT w/ Stormwater & Parks
	GS3	**Wake Towne Drive** *Barret Dr - Wake Forest Rd*	Stormwater BMPs, traffic calming measures, and improved bicycle facilities or shared-use path			Medium		I-440 crossing emphasizes need	Raleigh DOT w/ Stormwater & Parks
	GS4	**Hardimont Rd** *St Albans Dr - Wake Forest Rd*	Stormwater BMPs, traffic calming measures, and improved bicycle facilities			Medium	Medium		Raleigh DOT w/ Stormwater & Parks
	GW1	**Crabtree Greenway Connector** *Quail Hollow Dr - Crabtree Creek Trail*	Extension of bicycle and pedestrian facility to existing greenway			HIGH		I-440 crossing	
	BP1	**St Albans Dr** *Hardimont Rd - New Hope Church Rd*	Improved bicycle facilities and continuous pedestrian facilities or shared use path		HIGH			Coordinate with development	Raleigh & Private
	BP2	**New Hope Church Rd** *Wake Forest Rd - St Albans Dr*	Improved bicycle facilities (separated preferred)			Medium		Coordinate with development	Raleigh DOT
	BP3	**Industrial Dr** *Front St - Crabtree Creek Trail*	Traffic calming measures, bicycle facilities, and pedestrian facilities		HIGH	Medium		Coordinate with development	Raleigh DOT
	BP4	**Millbrook Rd** *Six Forks Rd - Falls of Neuse Rd*	Improved bicycle facilities (separated preferred)		HIGH				Raleigh DOT
	BP5	**Cheyenne Rd Connection** *Apache Dr - Bush St*	Bicycle and pedestrian connection				low		Raleigh DOT

	ID	Project	Description	Status	IMPLEMENTATION PRIORITY			Contingency	Responsibility / Funding Source
					0-3 YRS	3-7 YRS	7+ YRS		
	BP6	**Pinecrest Dr Connection** *Apache Dr - Bush St*	Bicycle and pedestrian connection				low		Raleigh DOT
	BP7	**Utica Dr Connection** *Manovil Pl - Cheyenne Dr*	Bicycle and pedestrian connection				low		Raleigh DOT
	BP9	**Hines Dr Connection** *North to Wake Towne Dr*	Bicycle and pedestrian connection			low			Raleigh DOT
	X1	**Six Forks Rd & Anderson Dr Crossing**	Improved pedestrian crossing		**HIGH**				Raleigh DOT
	X2	**Six Forks Rd & Dartmouth Rd Crossing**	Improved pedestrian crossing	Included in Six Forks Corridor Study	**HIGH**			Six Forks Widening	Raleigh DOT
	X3	**Six Forks Rd & Lassiter Mill Rd Crossing**	Improved pedestrian crossing	Included in Six Forks Corridor Study	**HIGH**			Six Forks Widening	Raleigh DOT
	X4	**Six Forks Rd & Millbrook Rd Crossing**	Improved pedestrian crossing	Included in Six Forks Corridor Study	**HIGH**			Millbrook ped/bike improvements (BP4)	Raleigh DOT
	X5	**Falls of Neuse Rd & Millbrook Rd Crossing**	Improved pedestrian crossing			Medium		Millbrook ped/bike improvements (BP4)	Raleigh DOT
	X6	**Sweetbriar Dr @ Millbrook Rd Crossing**	Improved pedestrian crossing			Medium		Millbrook ped/bike improvements (BP4)	Raleigh DOT
	X7	**Quail Hollow Dr @ Millbrook Rd Crossing**	Improved pedestrian crossing			Medium		Millbrook ped/bike improvements (BP4)	Raleigh DOT
	--	**Wake Forest Rd** *I-440 to St Albans*	Improved bicycle and pedestrian facility (shared use path)		**HIGH**			Diverging diamond; Navaho & St Albans intersection improvements (I1)	NCDOT
	--	**Other crossing improvements**	Suite of pedestrian visibility enhancements for intersections with noted safety concerns. Inclusive of high visibility crosswalk markings, inroad signage, advance warning signage, curb bump outs, lighting, and other elements.		**HIGH**	Medium	low		Raleigh possibly w/ NCDOT
	--	**Six Forks Rd Corridor Study Recommendations**	Separated bike lanes along both sides of Six Forks Road from Lynn Rd to Dartmouth Rd. Pedestrian refuge islands at North Clift, Loft, Millbrook, Windel, Shelley, Northbrook, Lassiter Mill, Dartmouth, and Front at N Hill St.	Phase I Planning & Design 2019	**HIGH**			Six Forks Widening	Raleigh DOT
	T1	**Midtown Transit Center**	The Transit Center, planned to be located near the North Hills Shopping Center and Six Forks Road, will accommodate multiple routes with enhanced amenities	Planning & Design FY 2020 Construction FY 2021	**HIGH**				GoRaleigh
	T2	**Bus Stop Improvements**	Bus stop improvements could include concrete pads, benches, bike racks, access ramps, and sidewalks.	Ongoing	**HIGH**	Medium	low		GoRaleigh
	T3	**Wake County Transit Plan - Bus Service Improvements**	Route 8 (Six Forks Midtown) - 15 min. headways Route 8L (Six Forks North) - 30 min. headways Route 16 (Centennial-Midtown) - 15 min.	FY 2024 FY 2024 FY 2024		Medium	low		GoRaleigh

Figure 26 - Implementation and Funding Sources

	ID	Project	Description	Status	IMPLEMENTATION PRIORITY			Contingency	Responsibility / Funding Source
					0-3 YRS	3-7 YRS	7+ YRS		
	T4	**Midtown High Frequency Bus Service** *Study future Route 8 Alternatives or additions*	St Albans/I-440 Crossing/Wake Towne/Industrial/Six Forks Ext			Medium	Medium	Implementation of frequent routes; adequate ridership	GoRaleigh
	T5a	**Future Midtown Rapid Transit** *BRT extension from Capital Blvd*	Study feasibility, routing options, and related considerations.			Medium			GoRaleigh
	T5b	**Future Midtown Rapid Transit** *BRT extension from Capital Blvd*	Some combination of Six Forks, Wake Forest, Atlantic, and I-440 corridor options				low	Six Forks Rd Extension (SC7)	GoRaleigh
	SC1	**Benson Dr Extension** *Dresser Ct - St Albans Dr*	Avenue 2-Lane Undivided		Medium			Development assisted	Raleigh & Private
	SC2	**Benson Dr Extension** *North to Hardimont Rd*	Avenue 2-Lane Undivided			Medium	Medium	Development assisted	Raleigh & Private
	SC3	**Bland Rd Complete Street Improvements** *Falls of Neuse Rd - Hardimont Rd*	Road diet			**HIGH**			Raleigh
	SC4	**Craftsman Dr Extension** *Sorghum Ct - N Market Dr*	Avenue 2-Lane Undivided	Raleigh St Plan		Medium	Medium	Development assisted	Raleigh & Private
	SC5	**Pacific Dr Extension** *Old Wake Forest Rd - Craftsman Dr Ext*	Avenue 2-Lane Undivided	Raleigh St Plan		Medium	Medium	Depends on Craftsman Rd ext (SC4) Development assisted	Raleigh & Private
	SC6	**Pacific Dr Extension** *Craftsman Dr Ext - Atlantic Ave*	Includes RR overpass	Raleigh St Plan			low	Depends on Pacific & Craftsman Rd exts (SC5, SC6). Development assisted	Raleigh & Private
	SC7	**Six Forks Rd Extension to Capital Blvd**	Avenue 4-Lane, Divided	Raleigh St Plan		**HIGH**			Raleigh possibly w/ NCDOT
	SC8	**Wake Towne Rd Extension** *West to Barrett Dr*	Avenue 2-Lane Undivided	Raleigh St Plan		**HIGH**		I-440 crossing adds importance	Raleigh
	SC9	**Navaho Dr Realignment** *Quail Hollow Dr - Benson Dr*	TBD (develoment-dependent)			**HIGH**		Development driven I-440 crossing adds importance	Private
	SC10	**Future Benson Dr Extension** *Hardimont Rd - Bland Rd/Pacific Dr*	Avenue 2-Lane Undivided				low	Development-driven	Raleigh & Private
	SC12	**St Albans Dr Widening A** *Benson Dr - Wake Forest Rd*	Avenue 4-Lane, Divided			**HIGH**		Development-driven	Raleigh & Private
	SC13	**St Albans Dr Widening B** *Church at N Hills St - Hardimont Rd*	Avenue 2-Lane, Divided/Turn lanes	Raleigh St Plan		low		Development-driven	Raleigh & Private
	SC14	**St Albans Dr Widening C** *Midtown East Access Rd - Benson Dr*	Avenue 2-Lane, Divided/Turn lanes	Raleigh St Plan		low		Development-driven	Raleigh & Private
	SC15	**Millbrook Road Diet Study**	Possible 2-laning depending on anticipated traffic demands		low	Medium			Raleigh
	SC16	**Six Forks School & Connectivity Study** *North of Rowan St*	Detailed study of school and connectivity issues		**HIGH**				Raleigh

Figure 26 - Implementation and Funding Sources

	ID	Project	Description	Status	IMPLEMENTATION PRIORITY			Contingency	Responsibility / Funding Source
					0-3 YRS	3-7 YRS	7+ YRS		
	SC17	**Wake Forest Rd Corridor Study** *St. Albans to E Millbrook*	Complete Streets upgrade: access management; lane-width increase; streetscape; bike-ped & transit accomodation			Medium	Medium		Raleigh
	I1	**Wake Forest Rd & Executive Dr Intersection Improvements at St Albans Dr & Navaho Dr**	Signal and lane configuration changes; pedestian accomodations; internal cirulation changes		**HIGH**	Medium		Wake Forest Rd Diverging Diamond	Raleigh
	I2	**Bush St Roundabouts** *Wolfpack Ln & Navaho Dr*	Single-lane roundabouts with bike-ped accommodations			low	Medium	Bush St ped-bike improvements (GS2)	Raleigh
	LU1	**Midtown Waterfront Park Acquisition**	Acquisition of parcels adjacent to Crabtree Creek for new public park space		**HIGH**				Raleigh
	LU2	**Midtown Waterfront Park Study**	Formal study of the park space, uses, necessary improvements, and coordinated development		**HIGH**			Park acquisition (LU1)	Raleigh
	LU3	**Stormwater Drainage Basin Study**	Updated review of the stormwater drainage basins in the Midtown-St. Albans study area and implications for existing and planned stormwater infrastructure		Medium				Raleigh
	LU4	**Comprehensive Plan Amendments**	Adopt Future Land Use Map, Urban Form Map, and other area-specific guidance		**HIGH**				Raleigh

Figure 26 - Implementation and Funding Sources

Table 1 - Annual Cost Escalation

Year	Annual Escalation Percent*
2020	10%
2021	21%
2022	33%
2023	46%
2024	61%
2025	77%
2026	95%
2027	114%
2028	136%
2029	159%
*Based on 10% annual escalation	

  - GoRaleigh (and GoTriangle)
  - Parks, Recreation, & Cultural Resources
  - Stormwater Management
  - Public Utilities
- Some are clearly NCDOT projects.
- Many are combinations, or unresolved at this time; these will require additional exploration to determine the ultimate funding sources.

Appendix

Cost Estimates

The following high-level estimates of probable costs are intended for general planning purposes only. Detailed design work and field investigation are required to obtain more precise estimates of probable costs. To determine probable project construction costs, a linear unit rate for the various typical projects types is established using unit rates from the Comprehensive Guide For Raleigh Development Fees – Development Fee Schedule (July 4, 2018 – June 30, 2019). Costs for drainage, sidewalk, curb, paving, striping, landscape, erosion control, and traffic control have been included within these typical linear unit rates. These unit rates were projected with assumed typical construction quantities for common elements of each cross-section type.

City of Raleigh standard construction details were utilized to establish typical proposed improvements for the 2 Lane Undivided Avenue extensions, 2 Lane Divided Avenue

widenings, 4 Lane Divided Avenue extensions, 4 Lane Divided Avenue widenings, Pedestrian and Bicycle Infrastructure improvements, and Greens Street improvements.

For each project's overall pricing, this study has assumed 30% miscellaneous/contingency, 4% Construction Mobilization, 15% Engineering Design and Construction Inspection costs relative to construction costs, and escalation based on the recommended timeframe of implementation. Costs for relocation of utilities owned by others including power, telecommunications, gas, and others are anticipated to be covered by the applicable owners and have not been included in the construction costs.

Escalation is estimated based on a 10% increase annual, and escalation for the next 10 years is shown in Table 1. The escalation rate was estimated from the previous 5-year historical trend; however, this rate may be revisited due to recent changes in NCDOT project delivery. Minimal cost to tie into existing adjacent street networks has been assumed.

For each project, 15% of total construction costs have been included for Engineering Design and Construction Inspection fees. Other soft costs such as survey, environmental review, wetland delineation, and all necessary permitting review

and approval fees have not been included with the project costs. Most permitting fees cannot be calculated until project detailed design has been completed. Also, Right-of-Way and/or easement costs are not included in the proposed pricing.

Project costs estimates are included below (**Figure 27**).

Cost Estimates for Transportation Projects

Pedestrians and Bicycles

ID	Project	Description	Feet	Cost/Feet	Costs	Signals 80k-$350k+ eac	Boardwalk $65/SF	SUP Culvert $22,000/LF	Bridge $120-$300/SF	TOTAL	Misc. & Mobil. (+34%)	E&C (+15%)	TOTAL	Escalation	ROUNDED TOTAL
BP1	**St Albans Dr** *Hardimont Rd - New Hope Church Rd*	Improved bicycle facilities	125	$ 180	$ 22,500	$ 80,000				$ 102,500					
		Shared Use Path (SUP)	7400	$ 90	$ 666,000		$ 273,000			$ 939,000	$ 354,110	$ 156,225	**$ 1,551,835**	10%	$ 1,710,000
		Project Total								$ 1,041,500					
BP2	**New Hope Church Rd** *Wake Forest Rd - St Albans Dr*	Improved bicycle facilities (separated preferred)	2325	$ 180	$ 418,500	$ 80,000				$ 498,500	$ 169,490	$ 74,775	**$ 742,765**	33%	$ 990,000
BP3	**Industrial Dr** *Front St - Crabtree Creek Trail*	Traffic calming measures, bicycle facilities, and pedestrian facilities	3000	$ 180	$ 540,000	$ 250,000				$ 790,000	$ 268,600	$ 118,500	**$ 1,177,100**	21%	$ 1,424,000
BP4	**Millbrook Rd** *Six Forks Rd - Falls of Neuse Rd*	Improved bicycle facilities (separated preferred)	8550	$ 180	$ 1,539,000	$ 160,000				$ 1,699,000	$ 577,660	$ 254,850	**$ 2,531,510**	21%	$ 3,100,000
BP5	**Cheyenne Rd Connection** *Apache Dr - Bush St*	Bicycle and pedestrian connection (SUP)	180	$ 90	$ 16,200					$ 16,200	$ 5,508	$ 2,430	**$ 24,138**	136%	$ 57,000
BP6	**Pinecrest Dr Connection** *Apache Dr - Bush St*	Bicycle and pedestrian connection (SUP)	220	$ 90	$ 19,800					$ 19,800	$ 6,732	$ 2,970	**$ 29,502**	136%	$ 70,000
BP7	**Utica Dr Connection** *Manovil Pl - Cheyenne Dr*	Bicycle and pedestrian connection (SUP)	260	$ 90	$ 23,400					$ 23,400	$ 7,956	$ 3,510	**$ 34,866**	136%	$ 82,000
BP9	**Hines Dr Connection** *North to Wake Towne Dr*	Bicycle and pedestrian connection (SUP)	160	$ 90	$ 14,400					$ 14,400	$ 4,896	$ 2,160	**$ 21,456**	95%	$ 42,000
GW1	**Crabtree Greenway Connector** *Quail Hollow Dr - Crabtree Creek Trail*	Extension of bicycle and pedestrian facility to existing greenway	6250	$ 90	$ 562,500		$ 676,000	$ 8,800,000		$ 10,038,500	$ 3,413,090	$ 1,505,775	**$ 14,957,365**	46%	$ 21,800,000

ID	Project	Description	Feet	Cost/Feet	Costs	Signals 25k-$250k+ eac	Intersection Lump Sum $ 12,500.00			TOTAL	Misc. & Mobil. (+34%)	E&C (+15%)	TOTAL	Escalation	ROUNDED TOTAL
X1	**Six Forks Rd & Anderson Dr Crossing**	Improved pedestrian crossing	300	$ 10	$ 3,000	$ 30,000	$ 12,500			$ 45,500	$ 15,470	$ 6,825	**$ 67,795**	10%	$ 75,000
X5	**Falls of Neuse Rd & Millbrook Rd Crossing**	Improved pedestrian crossing	460	$ 10	$ 4,600	$ 30,000	$ 12,500			$ 47,100	$ 16,014	$ 7,065	**$ 70,179**	46%	$ 102,000
X6	**Sweetbriar Dr @ Millbrook Rd Crossing**	Improved pedestrian crossing	300	$ 10	$ 3,000	$ 250,000	$ 12,500			$ 265,500	$ 90,270	$ 39,825	**$ 395,595**	46%	$ 578,000
X7	**Quail Hollow Dr @ Millbrook Rd Crossing**	Improved pedestrian crossing	360	$ 10	$ 3,600	$ 225,000	$ 12,500			$ 241,100	$ 81,974	$ 36,165	**$ 359,239**	46%	$ 524,000

Bridges & Tunnels

ID	Project	Description	Feet	Cost/Feet	Costs	Borrow Excavation $15/CY	Retaining Wall Keystone $21/SF	Retaining Wall Pour-Place $625/CY	Bridge $120-$300/SF	TOTAL	Misc. & Mobil. (+34%)	E&C (+15%)	TOTAL	Escalation	ROUNDED TOTAL
BT1	**I-440 Multimodal Bridge** *Navaho Dr - Barrett Dr at Big Branch*	2-lane avenue w/ sidewalks and bike lanes	500	$ 461	$ 230,500	$ 390,000		$ 1,437,500	$ 6,987,500	$ 9,045,500	$ 3,075,470	$ 1,356,825	**$ 13,477,795**	46%	$ 19,700,000
BT2	**I-440 Pedestrian-Bicycle Bridge** *Navaho Dr - Industrial Dr at Bush*	Pedestrian-bicycle only bridge	600	$ 90	$ 54,000	$ 70,000	$ 260,000		$ 1,800,000	$ 2,184,000	$ 742,560	$ 327,600	**$ 3,254,160**	61%	$ 5,200,000
BT3	**Six Forks Rd Ped Bridge** *North of Dartmouth Rd*	Pedestrian bridge	600	$ 58	$ 34,800	$ 40,000	$ 210,000		$ 520,000	$ 804,800	$ 273,632	$ 120,720	**$ 1,199,152**	46%	$ 1,800,000
BT4	**Wake Forest Rd Ped Bridge** *South of St Albans Dr*	Pedestrian bridge	600	$ 58	$ 34,800	$ 40,000	$ 210,000		$ 300,000	$ 584,800	$ 198,832	$ 87,720	**$ 871,352**	136%	$ 2,100,000

Green Streets

ID	Project	Description	Feet	Cost/Feet	Costs	6' Bioretention $162/lf	Permeable Parking $127/LF		Boardwalk $65/SF	TOTAL	Misc. & Mobil. (+34%)	E&C (+15%)	TOTAL	Escalation	ROUNDED TOTAL
GS1	**Quail Hollow Drive** *E Millbrook Rd - Hardimont Rd*	Stormwater BMPs, traffic calming measures, and Shared Use Path	5700	$ 132	$ 752,400	$ 184,700				$ 937,100	$ 318,614	$ 140,565	**$ 1,396,279**	21%	$ 1,689,000
		Stormwater BMPs, traffic calming measures, and improved bicycle facilities	5700	$ 23	$ 131,100	$ 184,700				$ 315,800	$ 107,372	$ 47,370	**$ 470,542**	21%	$ 569,000
GS2	**Bush St** *St Albans Dr - Navaho Dr*	Stormwater BMPs, traffic calming measures, and improved bicycle facilities	3850	$ 23	$ 88,550	$ 124,700				$ 213,250	$ 72,505	$ 31,988	**$ 317,743**	21%	$ 384,000
GS3	**Wake Towne Drive** *Barret Dr - Wake Forest Rd*	Stormwater BMPs, traffic calming measures, and improved bicycle facilities	3000	$ 23	$ 69,000	$ 97,200				$ 166,200	$ 56,508	$ 24,930	**$ 247,638**	46%	$ 362,000
GS4	**Hardimont Rd** *St Albans Dr - Wake Forest Rd*	Stormwater BMPs, traffic calming measures, and improved bicycle facilities	5100	$ 23	$ 117,300	$ 165,200				$ 282,500	$ 96,050	$ 42,375	**$ 420,925**	46%	$ 615,000

Traffic Operations, Connectivity, and Access Management

ID	Project	Description	Feet	Cost/Feet	Costs	Signals $80k-$350k+ each	Utilities 12" WM = $170/LF	Bridge $120-$300/SF	TOTAL	Misc. & Mobil. (+34%)	E&C (+15%)	TOTAL	Escalation	ROUNDED TOTAL
SC1	**Benson Dr Extension** *Dresser Ct - St Albans Dr*	Avenue 2-Lane Undivided	455	$ 461	$ 209,755				$ 209,755	$ 71,317	$ 31,463	**$ 312,535**	21%	$ 378,000
		Alter. Water Ext.					$ 77,350.00		$ 287,105	$ 97,616	$ 43,066	**$ 427,786**	21%	$ 518,000
SC2	**Benson Dr Extension** *North to Hardimont Rd*	Avenue 2-Lane Undivided	340	$ 461	$ 156,740				$ 156,740	$ 53,292	$ 23,511	**$ 233,543**	95%	$ 455,000
		Alter. Water Ext.					$ 57,800.00		$ 214,540	$ 72,944	$ 32,181	**$ 319,665**	95%	$ 623,000
SC3	**Bland Rd Complete Street Improvements** *Falls of Neuse Rd - Hardimont Rd*	Road diet	2400	$ 23	$ 55,200				$ 55,200	$ 18,768	$ 8,280	**$ 82,248**	46%	$ 120,000
SC4	**Craftsman Dr Extension** *Sorghum Ct - N Market Dr*	Avenue 2-Lane Undivided	2840	$ 461	$ 1,309,240				$ 1,309,240	$ 445,142	$ 196,386	**$ 1,950,768**	95%	$ 3,804,000
		Alter. Water Ext.					$ 482,800.00		$ 1,792,040	$ 609,294	$ 268,806	**$ 2,670,140**	95%	$ 5,207,000
SC5	**Pacific Dr Extension** *Old Wake Forest Rd - Craftsman Dr Ext*	Avenue 2-Lane Undivided	980	$ 461	$ 451,780	$ 250,000.0			$ 701,780	$ 238,605	$ 105,267	**$ 1,045,652**	95%	$ 2,039,000
		Alter. Water Ext.					$ 166,600.00		$ 868,380	$ 295,249	$ 130,257	**$ 1,293,886**	95%	$ 2,523,000
SC6	**Pacific Dr Extension** *Craftsman Dr Ext - Atlantic Ave*	Includes RR overpass	640	$ 461	$ 295,040			$ 1,687,500.00	$ 1,982,540	$ 674,064	$ 297,381	**$ 2,953,985**	159%	$ 7,651,000
		Alter. Water Ext.					$ 108,800.00		$ 2,091,340	$ 711,056	$ 313,701	**$ 3,116,097**	159%	$ 8,071,000
SC7	**Six Forks Rd Extension to Capital Blvd**	Avenue 4-Lane, Divided	1685	$ 599	$ 1,009,315			$ 2,430,000.00	$ 3,439,315	$ 1,169,367	$ 515,897	**$ 5,124,579**	46%	$ 7,482,000
		Alter. Water Ext.					$ 286,450.00		$ 3,725,765	$ 1,266,760	$ 558,865	**$ 5,551,390**	46%	$ 8,105,000
SC8	**Wake Towne Rd Extension** *West to Barrett Dr*	Avenue 2-Lane Undivided	3050	$ 461	$ 1,406,050			$ 2,250,000.00	$ 3,656,050	$ 1,243,057	$ 548,408	**$ 5,447,515**	46%	$ 7,953,000
		Alter. Water Ext.					$ 518,500.00		$ 4,174,550	$ 1,419,347	$ 626,183	**$ 6,220,080**	46%	$ 9,081,000
SC9	**Navaho Dr Realignment** *Quail Hollow Dr - Benson Dr*	Avenue 2-Lane Undivided	2845	$ 461	$ 1,311,545			$ 1,968,750.00	$ 3,280,295	$ 1,115,300	$ 492,044	**$ 4,887,640**	46%	$ 7,136,000
		Alter. Water Ext.					$ 483,650.00		$ 3,763,945	$ 1,279,741	$ 564,592	**$ 5,608,278**	46%	$ 8,188,000
SC10	**Future Benson Dr Extension** *Hardimont Rd - Bland Rd/Pacific Dr*	Avenue 2-Lane Undivided	2700	$ 461	$ 1,244,700	$ 250,000.00			$ 1,494,700	$ 508,198	$ 224,205	**$ 2,227,103**	159%	$ 5,768,000
		Alter. Water Ext.					$ 459,000.00		$ 1,953,700	$ 664,258	$ 293,055	**$ 2,911,013**	159%	$ 7,540,000
SC12	**St Albans Dr Widening A** *BensonDr - Wake Forest Rd*	Avenue 4-Lane, Divided	710	$ 599	$ 425,290				$ 425,290	$ 144,599	$ 63,794	**$ 633,682**	61%	$ 1,020,000
		Alter. Water Ext.					$ 120,700.00		$ 545,990	$ 185,637	$ 81,899	**$ 813,525**	61%	$ 1,310,000
SC13	**St Albans Dr Widening B** *Church at N Hills St - Hardimont Rd*	Avenue 2-Lane, Divided/Turn lanes	1000	$ 403	$ 403,000				$ 403,000	$ 137,020	$ 60,450	**$ 600,470**	77%	$ 1,063,000
		Alter. Water Ext.					$ 170,000.00		$ 573,000	$ 194,820	$ 85,950	**$ 853,770**	77%	$ 1,511,000
SC14	**St Albans Dr Widening C** *Midtown East Access Rd - Benson Dr*	Avenue 2-Lane, Divided/Turn lanes	2780	$ 403	$ 1,120,340				$ 1,120,340	$ 380,916	$ 168,051	**$ 1,669,307**	77%	$ 2,955,000
		Alter. Water Ext.					$ 472,600.00		$ 1,592,940	$ 541,600	$ 238,941	**$ 2,373,481**	77%	$ 4,201,000
SC17	**Wake Forest/Falls of Neuse Reconditioning** *I-440 - E. Millbrook Rd*	Avenue 6-Lane, Divided/Turn lanes	10050	$ 700	$ 7,035,000	$ 2,250,000.00			$ 9,285,000	$ 3,156,900	$ 1,392,750	**$ 13,834,650**	95%	$ 26,978,000
		Alter. Water Ext.					$ 1,708,500.00		$ 10,993,500	$ 3,737,790	$ 1,649,025	**$ 16,380,315**	95%	$ 31,942,000
I1	**Wake Forest Rd/Executive Dr Intersection Improvements** *St Albans Dr - Navaho Dr*		1000	$ 220	$ 220,000	$ 450,000			$ 670,000	$ 227,800	$ 100,500	**$ 998,300**	21%	$ 1,208,000
I2	**Bush St Roundabouts** *Wolfpack Ln & Navaho Dr*	Single Lane Round-about with Bike Lanes	400	$ 405	$ 162,000				$ 162,000	$ 55,080	$ 24,300	**$ 241,380**	61%	$ 389,000

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