We see in order to move; we move in order to see.
William Gibson

GARNER *FORWARD*

TRANSPORTATION PLAN

6.12.2018

Prepared by: Stantec

Garner Forward

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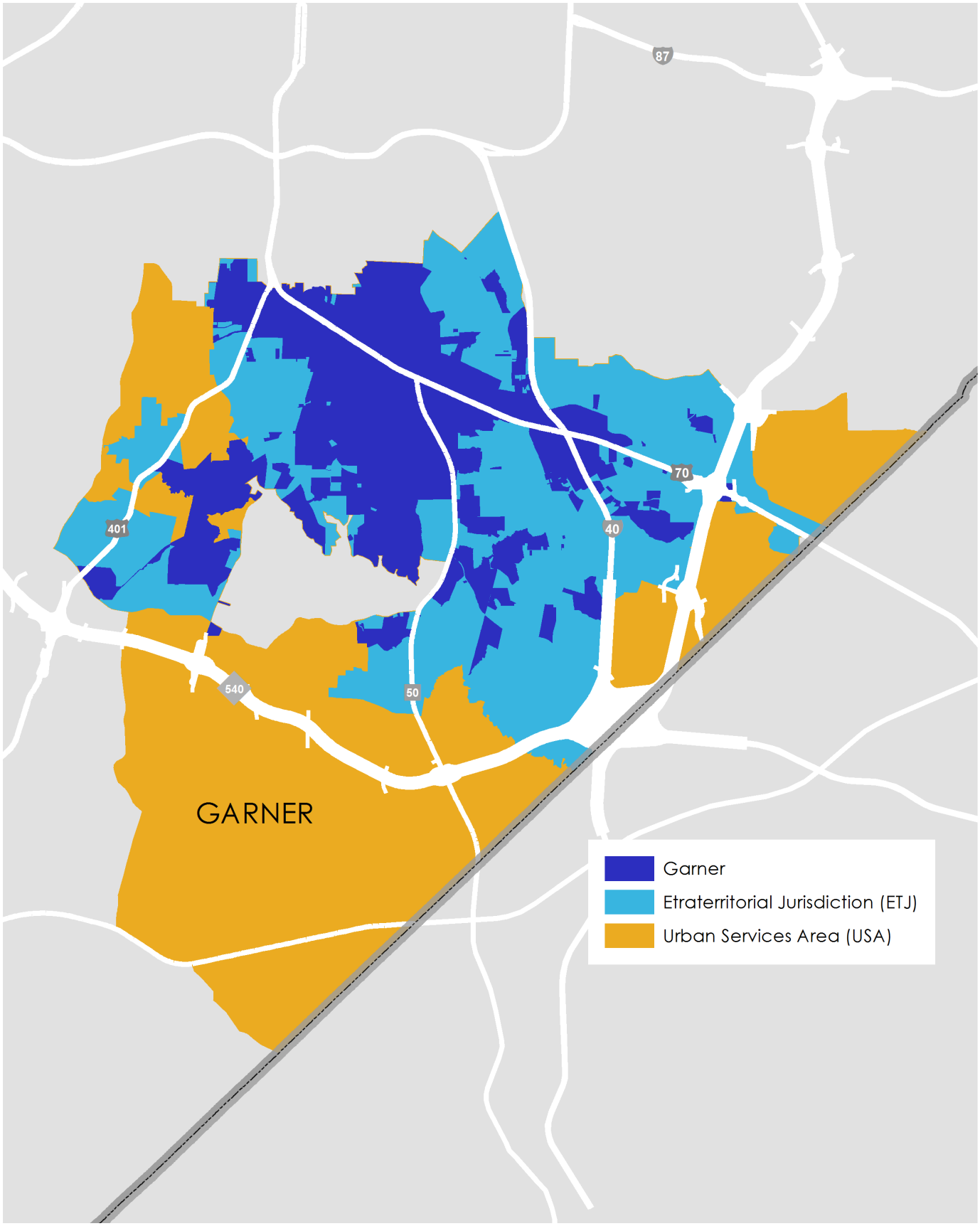
FRONT COVER - Garner Station (US 70 / US 401)


87
70
401
40
540
50
GARNER
Garner
Etraterritorial Jurisdiction (ETJ)
Urban Services Area (USA)

INTRODUCTION AND CONTEXT

The **Garner *Forward*** Transportation Plan is a component of the broad framework of Town planning efforts. This multimodal Transportation Plan provides a vision and strategies for future mobility improvements and investments in Garner.

The Town of Garner has undertaken the update of its Transportation Plan to ensure that as the Town grows, so does its vision of itself as a dynamic community sensitive to a changing transportation environment. Garner's strategic location along a Class I railroad influenced its earliest development, and connections to the City of Raleigh, Raleigh-Durham International Airport, and the Research Triangle Park campus have, along with its small-town character, made it a popular choice for residents and businesses alike. With a rapidly changing transportation environment, including new transit subsidies and the advent of I-540, Garner's Transportation Plan provides direction for Garner's transportation future.

This introduction provides a historical context for the Garner Forward transportation planning process and an overview of the vision and guiding principles for the Plan. The Plan presents an understanding of key issues and needs used to inform recommendations for all modes of transportation, including roadways, walking, bicycling, and transit. Finally, the Plan also provides short and long-term policies and priorities to guide implementation efforts as Garner continues to grow.

A transportation plan helps the community move forward

THE GARNER *FORWARD* PROCESS

The update of the Transportation Plan was part of a larger planning process that produced a new Comprehensive Plan for the Town of Garner. The process took about two years to complete, from inception to adoption.

Garner Forward was a collaborative effort of the public, staff, and consulting team. A partial list of tasks and deliverable items completed during the Transportation Plan update are detailed below in roughly the order in which they were completed. The items highlighted in blue were opportunities for the public or stakeholders (represented by the Steering Committee) to engage the process and project team.

- Development of document style sheet
- Contract inception and negotiation
- Launch of first (issues) survey
- Development of mapping of known infrastructure (greenways, roads, water, sewer)
- Review of past plans and policies
- Focus Group Meetings (9)
- Steering Committee Meetings (7)
- Development of transportation deficiency mapping
- Economics and demographics summary
- Conversion of key statistics into "infographic" images
- First one-day workshop and presentation
- Development of and changes to Existing Conditions + Directions Report
- Development of and numerous refinements to roadway and connectivity map
- Development of new greenway, pedestrian, bicycle, and transit connections
- Three-Day Workshop and Presentation
- Presentations to appointed and elected officials (4)
- Development of policies and action plan
- Launch of second (feedback) survey
- Neighborhood and Civic Group Workshops (2)
- Preparation of Draft and Final Reports (Comprehensive and Transportation Plans)

TOWN HISTORY

WHERE ARE WE COMING FROM?

Transportation has played a major role in defining Garner's history, first with the expansion of the railroad through the area in 1847; then with Garner's position along North Carolina's Central Highway, which linked the mountains to the sea in the early 1900s. Today, Garner's transportation focal point is centered on new corridors that link Triangle communities. US Highway 70 has become the central highway, which now bypasses downtown Garner, but still provides a vital link in the town's and region's transportation system. The Southern Railroad is now owned by the State of North Carolina and is part of a strategic plan to connect the Triangle region and other reaches of the state with passenger and commuter rail.

It would have been hard to envision present-day Garner when the area was originally incorporated in 1883 under the name Garner Station, although its charter was revoked in 1891. It had grown to only a half-square mile when the area was re-incorporated in 1905 as the Town of Garner. By the mid-1910s a portion of Garner Road had been paved with concrete to allay safety concerns, ***the first paved road in the State***.

WHERE ARE WE COMING FROM? (cont.)

By 1950, the passenger rail era had passed and the town's population had reached only 1,200 residents. As state government grew and Raleigh expanded after the 1950s, existing Garner residents and newcomers were drawn to government, education and other jobs in North Carolina's Capital City, the Research Triangle and nearby communities. While the agrarian era has passed, Garner has significant remnants of agricultural and industrial uses within the town limits.

Much of Garner's recent growth, however, has been reflective of its position adjacent to Raleigh and other municipalities, colleges, universities, employment centers, museums and seasonal events like the State Fair. The small-town character combined with proximity to regional job centers, Interstate 40, other key regional corridors and the hub of state government has created an urban and suburban society that is highly dependent on the automobile for daily travel.

Garner's strategic location along the North Carolina Railroad has given the Town an opportunity to re-create its history as a community dependent on the rails. In the early 1900s, one could hop the train to Raleigh for a dime in the morning or afternoon and make the return by noon or 8 o'clock in the evening. Today, it is envisioned that peak period commuter rail services could once again connect downtown Garner to Raleigh, Durham and Greensboro as well as points east to Goldsboro.

Like many North Carolina locales, Garner's downtown has yet to fully recover from the decline in railroad traffic and the impacts of bypassing the central business district. As the town and region grew, the traffic volumes for Garner Road (then US 70) became so burdensome that the State sought a route to relieve downtown Garner from traffic congestion. This was done with little regard for the community and the existing transportation grid. The current alignment of US 70 cuts right through this fabric and is now a congested roadway that will likely require further relief in the future. Meanwhile, the lack of traffic volumes in the tens of thousands per day along Main Street and Garner Road may be seen as an advantage for the Town of Garner and the future of its downtown. The Town's residents now desire a historic and cultural centerpiece for their community and a renewed sense of place for downtown.

Beyond downtown, Garner has grown into a collection of commercial and residential developments, each reflective of its era in terms of design and orientation. The Cloverdale, Hilltop, Forest Hills and Heather Hills housing developments were the first of their kind in Garner and are indicative of 1950s and 1960s era ranch-style homes. The growth patterns since then have primarily followed nationwide trends in modern housing and commercial development practices, with a division of uses and lack of connectivity within the roadway system.

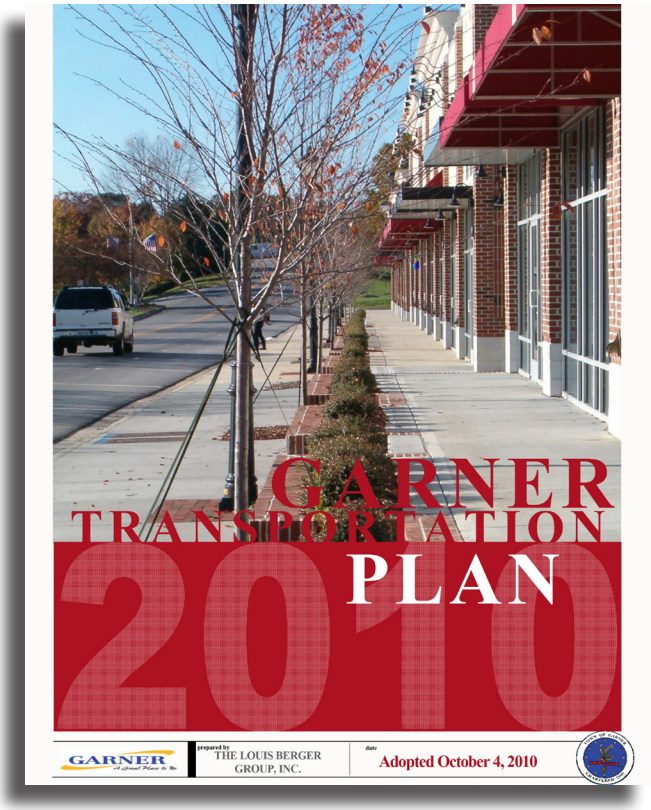
While Garner's recent growth has strained the transportation system to the point that capacity improvements are desired along many of Garner's key corridors, many of these corridors remain unimproved from their original dimensions. When combined with the desires of current residents for more of a sense of place, Complete Streets, and aesthetics, there are many positive examples within Garner to build upon in developing a new Transportation Plan to define how and where Garner's current and future residents will go. Clearly, Garner's history as a crossroads of transportation will also help define its future.

PREVIOUS PLANS

Several planning efforts have been completed since the Transportation Plan was completed in 2010. Below is a summary of those documents and their relevance.

Garner Transportation Plan (2010)

The Garner Transportation Plan was developed as an update to past transportation plans. The history of Garner; input from the public, Town staff, and the steering committee; and relevant recommendations from past plans such as the Comprehensive Growth Plan and Sidewalk Master Plan played a significant role in development of the Garner transportation system recommendations.



Plan Report (source: Town of Garner)

Vision and Goals:
To develop a safe and efficient multi-modal transportation network consistent with land use and other adopted plans

Concerns:
- Poor east-west connectivity in Garner
- Absence of citywide public transit
- Negative attitudes toward connectivity among neighborhoods
- A remarkable number of bicyclists and walkers

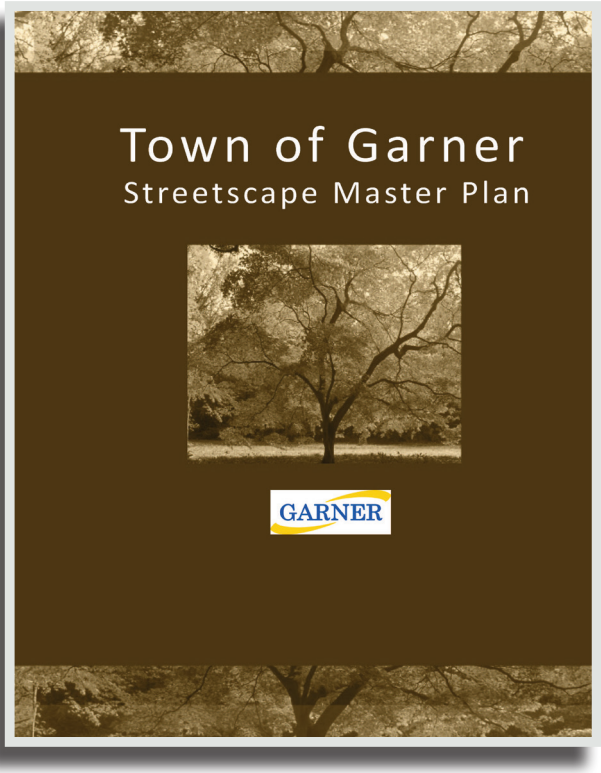
Proposed solutions:
- Future roads
- Transit service
- Bike routes
- Sidewalks
- Trails
- Southeast extension of I-540

Relevancy to current Garner *Forward* Transportation Plan

This document developed a plan for future growth of the transportation network, taking into account freeways, transit service, and bicycle and pedestrian transportation. It included recommendations to enhance safety, connectivity, and level of service through improvements such as the expansion of the Capital Area Transit (CAT) service, addition of the Southern Wake Freeway, and construction of well-connected sidewalks and bike lanes, especially around schools, parks, and commercial areas.

Garner Downtown Streetscape Master Plan (2010)

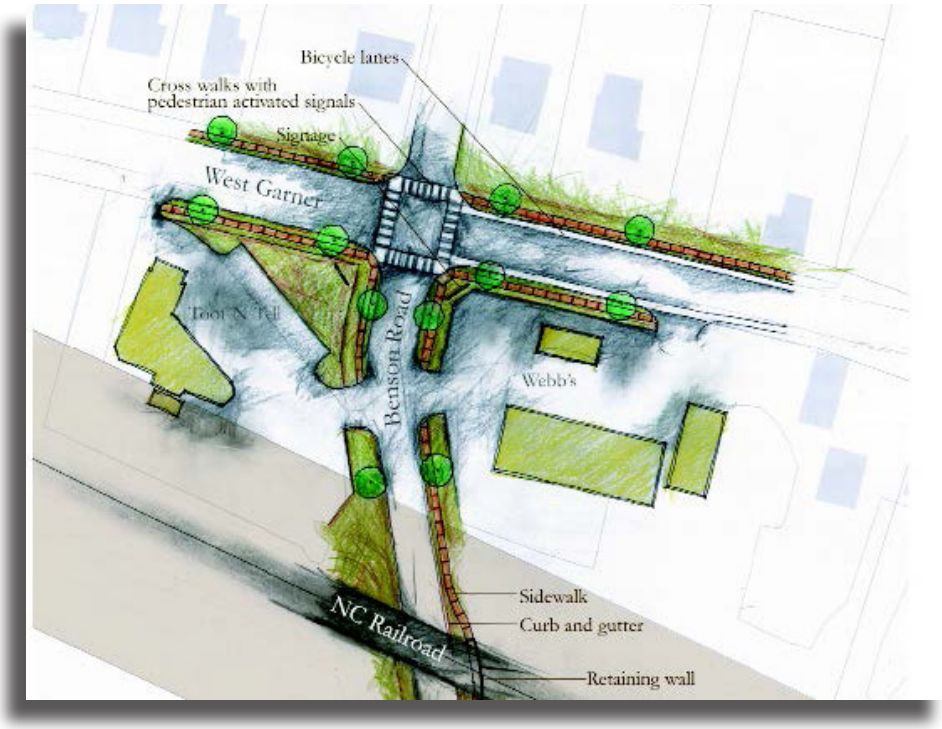
The Garner Downtown Streetscape Master Plan established a vision and conceptual framework for future growth in Downtown and its surrounding intersections. This document considered factors such as connectivity, being "green," utilities, visual messaging, financing, and revitalization, and recommended a detailed streetscape design concept for each of the study areas.



Relevancy to current Garner *Forward* Transportation Plan

This plan portrayed recommendations through informative streetscape concept plans. The Plan incorporated several strategies, including completion of the sidewalk network, public transportation, more accessible green space, environmental sustainability, proper signage and lighting, storm water management, revitalization of historic appearance, the Highway 50 Railway Bridge renovation, eye-catching and unique views, and suitable zoning.

Plan Report and Plan Image (source: Town of Garner)



PREVIOUS PLANS (cont.)

Historic Downtown Garner Plan (2010)

The Historic Downtown Garner planning process consisted of three parts: market analysis, a design charrette, and the implementation plan. The physical analysis and recommendations focused on the study area, which included parcels adjacent to Garner Road, Jones Sausage Road, and Vandora Springs Road, while the demographic and market analyses took a more extensive "trade area" into consideration. The recommendations for the Town Center of Historic Downtown are classified into short-term (Phase 1), medium-term (Phase 2), and long-term (Phase 3), and included improvement costs and funding sources.

Phase 1:

- Short term, 3-5 years
- Develop essential Town Center anchors
- Build related infrastructure improvements

Phase 2:

- Medium term, 5-10 years
- Build Town Center Park
- Add new anchors to support commercial and residential development

Phase 3:

- Long term, 10-20 years
- Fulfill Town Center
- Build single- and multi-family homes around Center
- Add recreational and cultural facilities

Relevancy to current Garner *Forward* Transportation Plan

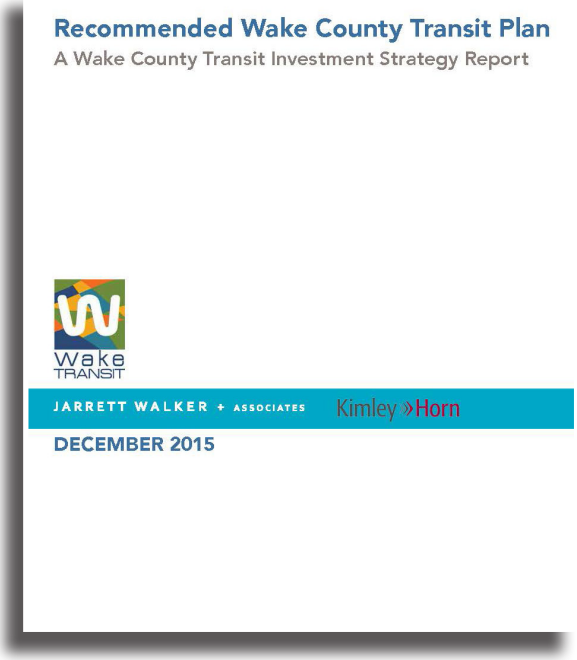
This document provided a detailed plan for Historical Downtown that should be implemented within 20 years. It addressed a number of facets in the study area including land use, zoning, transportation, infrastructure, and economy. The recommendations notably encompassed the extension of Town Center to Highway 70, Montague Street improvements, the creation of an arts and culture gateway at Garner and Benson Road, and construction of a regional physical recreation center along Main Street as a new gateway to Downtown.

Proposed streetscape (source: Downtown Garner)

Recommended Wake County Transit Plan (2016)

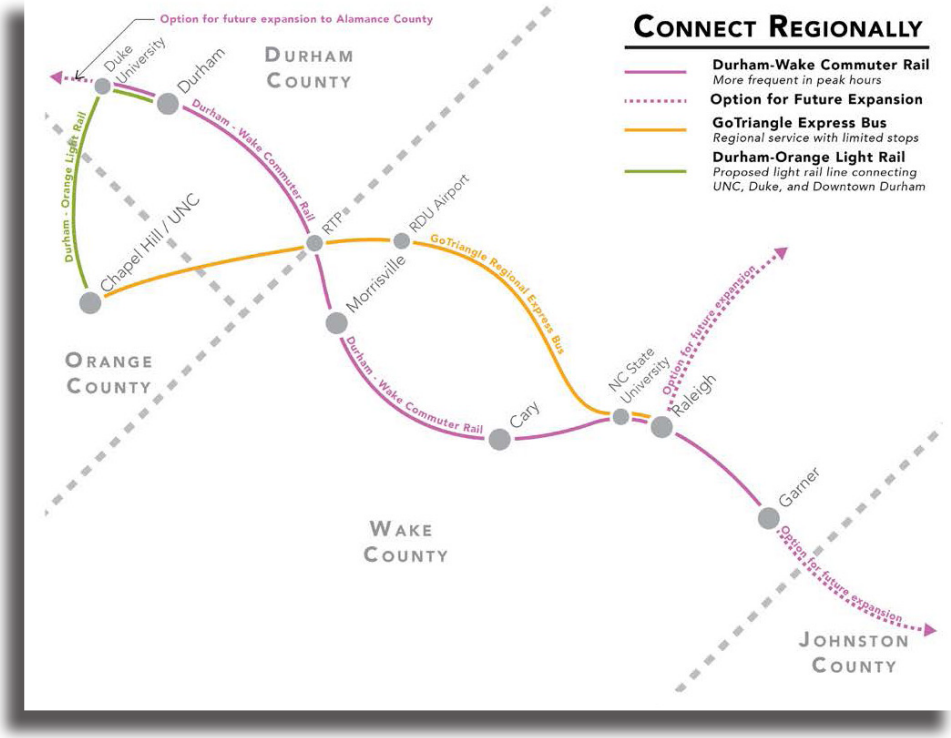
In June 2016, the Recommended Wake County Transit Plan was adopted by the Wake County Board of Commissioners. Wake County collaborated with six funding partners and received direct public input for this plan. The plan outlines four "big moves":

- Enhance the connections across Wake County
- Connect all County communities
- Offer frequent and reliable urban mobility
- Improve access to transit by providing local services, on-street infrastructure, etc.



Relevancy to current Garner *Forward* Transportation Plan

This document indicated a new public attitude toward transit ridership in Wake County communities. The plan outlined several objectives related to the Town of Garner, including: a regional connection from the Town of Garner to the City of Raleigh via Durham-Wake County Commuter Rail; an all-day 30-minute bus service to link Garner to downtown Raleigh; a bus rapid transit (BRT) corridor joining west Garner to downtown Raleigh; access to fixed-route services; and targeted interventions in community funding areas to improve transit access.

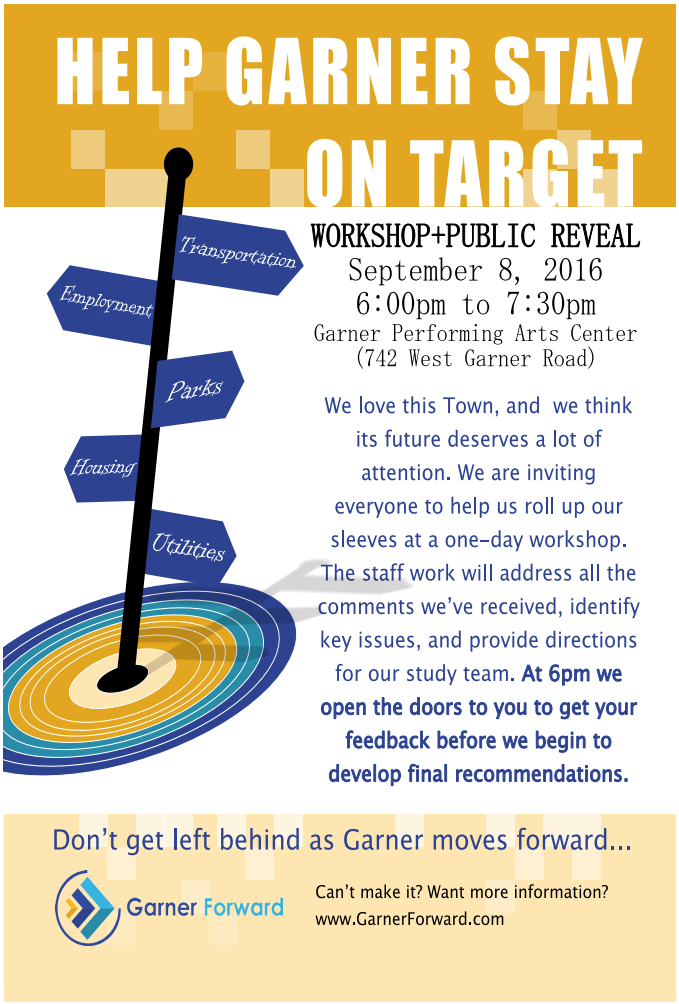


Plan Report and Conceptual Map (source: Wake Transit)

WHAT WE HEARD

A major part of the Garner *Forward* effort and resources went towards communicating with the public, either through representatives on the Steering Committee, focus group meetings, workshops, or surveys. We used public input to inform the planning process from defining existing conditions to developing action plans. The staff and consultants would like to express their **gratitude to everyone who participated.**

STAKEHOLDERS AND OUTREACH



2 SURVEYS

9 FOCUS GROUP MEETINGS

6 STEERING COMMITTEE MEETINGS

4 PUBLIC WORKSHOPS or OPEN HOUSES

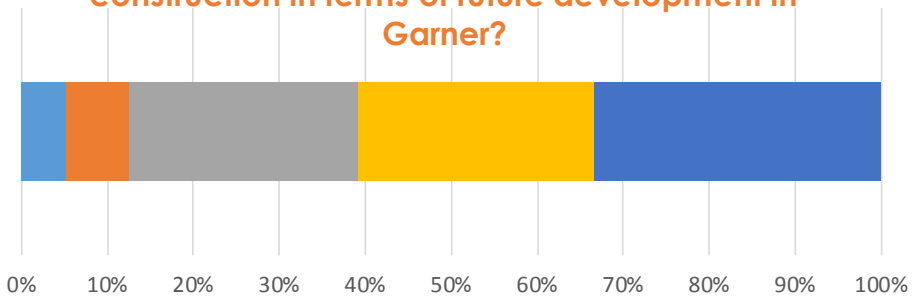
SURVEY

The Garner *Forward* Issues Survey was **completed by 1,140 respondents** over a period of nearly three months (ending in August, 2016).

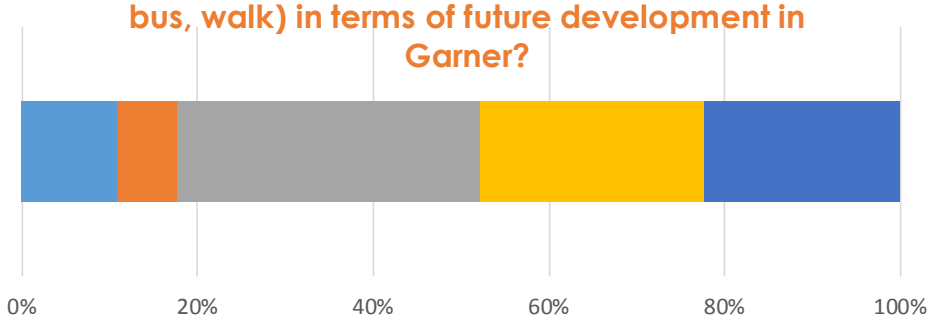
People - **93% of whom identified as Garner residents** - were asked a variety of questions about transportation, development patterns, parks, and their types of concerns for the future.

What did they have to say about transportation?

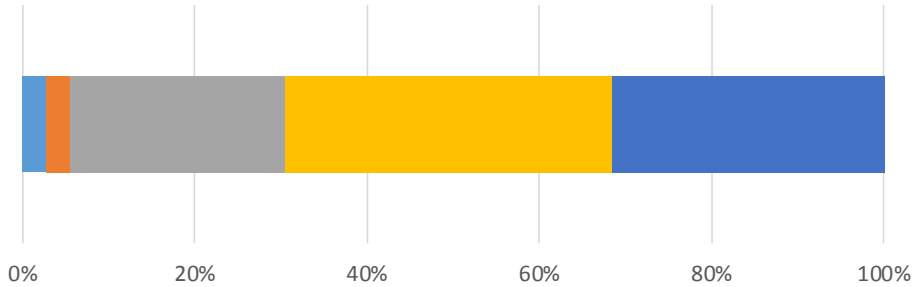
How important is road widening/new road construction in terms of future development in Garner?

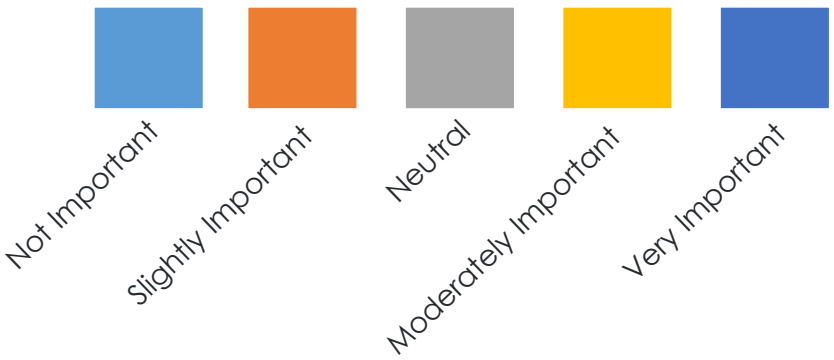


How important are transportation options (e.g. bus, walk) in terms of future development in Garner?



How important is connectivity of roads in terms of future development in Garner?





FOCUS GROUPS AND WORKSHOPS

CONNECTIVITY IS KEY

Garner needs to connect people to the Town's major destinations such as parks, civic organizations, libraries, schools, shopping centers, and older neighborhoods through sidewalks, trails, and greenways. This practice helps to promote health benefits and benefits to community spirit / cohesion. As Raleigh develops its active transportation system, it is imperative that Garner provide access to its citizens and capitalize on our town's proximity to Raleigh's downtown.

PUBLIC TRANSIT DECISIONS

A sales tax referendum passed in November 2010 will help finance major transit improvements in Wake County. Commuter rail stations at US 70/Auburn-Knightdale Road and Downtown, plus downtown bus service to US 401, are shown in this new plan. The BRT service will impact Garner via Tryon Road to Wal-Mart (15-minute service all day); a critical piece is how to get the "community funding area" program funded (town is responsible for 50% of funding on these routes). The 50% routing should consider a White Oak-Downtown-North-South Station route.

I-540 DEVELOPMENT

Garner has very little east-west connectivity, in part because of wetlands that would be expensive to bridge. I-540 and ETJ expansion plans for Garner suggest that we are bringing in an area that cannot be easily accessed from anywhere else in Garner. We stand to make our roads worse with the additional development both within and outside the Town. How will Garner manage and control the land use around the interchange areas of I-540?

VISION AND GUIDING PRINCIPLES

Garner's transportation system provides its citizens with efficient and safe travel options for auto, bicycle, pedestrian, and public transit users that serve transportation needs in a balance with land use development patterns as well as regional and local partnerships.

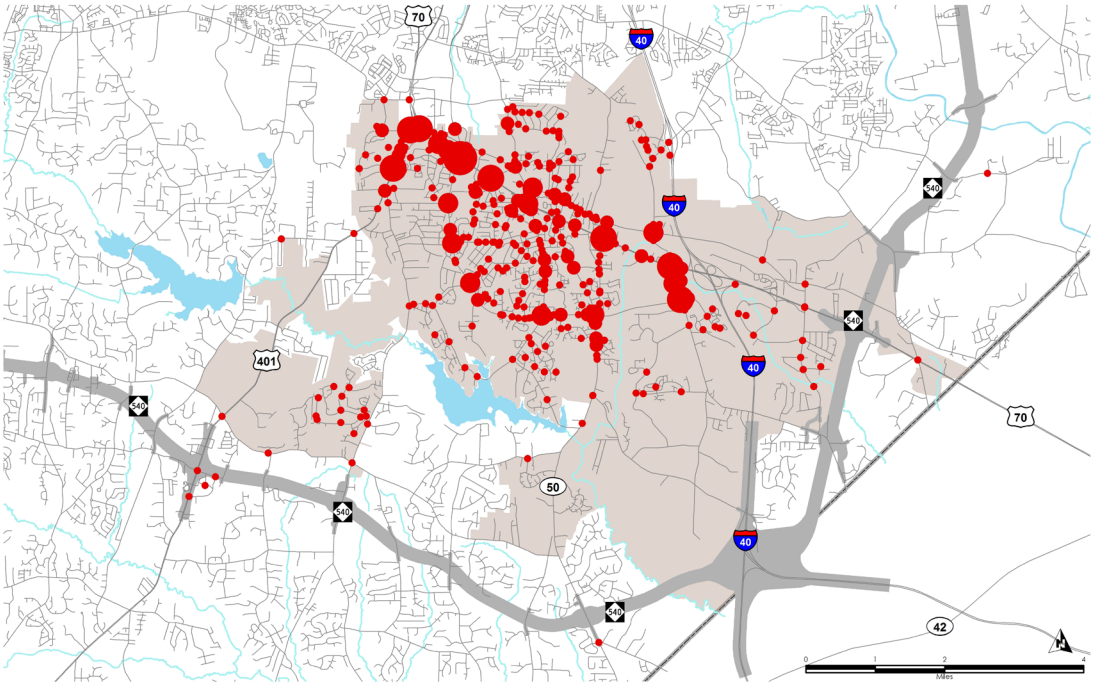
GUIDING PRINCIPLES	
1	The Garner *Forward* Transportation Plan will be a **visionary** document that includes a variety of strategies and partners from adjacent communities and our own to address transportation needs.
2	The Garner *Forward* Transportation Plan is **achievable** because it includes both short-term and longer term actions that respect political and regulatory frameworks, and can be undertaken with currently available or projected resources.
3	The Garner *Forward* Transportation Plan **considers users of all modes** of transportation to produce a community that is more walking-, bicycling-, and public transit-friendly than it is today.
4	The Garner *Forward* Transportation Plan will provide **efficient and reliable access** for its citizens and businesses, while prioritizing their safety.

EXISTING CONDITIONS & FUTURE NEEDS

Garner may have begun with railroads, but it currently depends heavily on automobiles. This section illustrates the current and future conditions of Garner's transportation system. First, this section will provide an overview of system-level conditions, including safety, congestion, and level-of-service (LOS). Then, the existing conditions on ten study corridors will be presented in detail. These corridors were selected because they face special demands, are changing from a land use perspective, or have unique constraints or multimodal conditions that need to be further explored. Finally, existing bicycle, pedestrian, and transit conditions will be discussed.

Safety

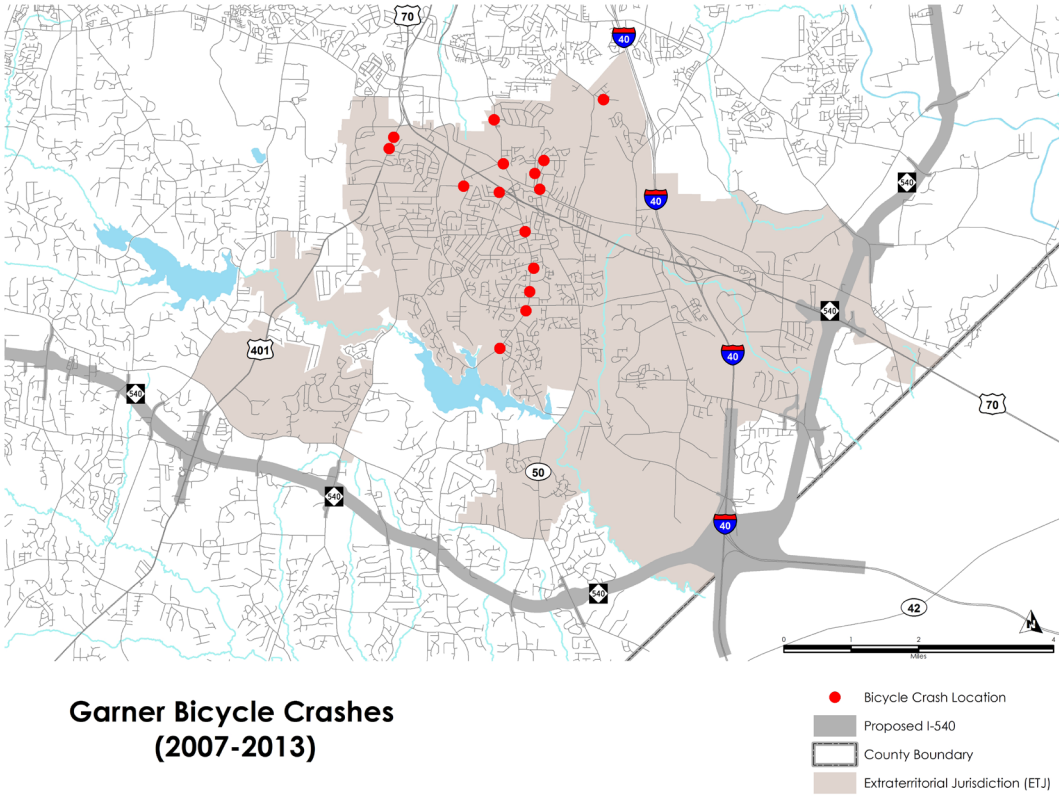
One of this plan's guiding principles is to provide efficient and reliable access for its citizens and businesses, while maximizing their safety. The map below shows five years worth of automobile crash data in Garner from



Garner Crashes (2011- 2016)

Number of Crashes
1 - 9
10 - 29
30 - 60
61 - 127
128 - 219
Proposed I-540
County Boundary
Extraterritorial Jurisdiction (ETJ)

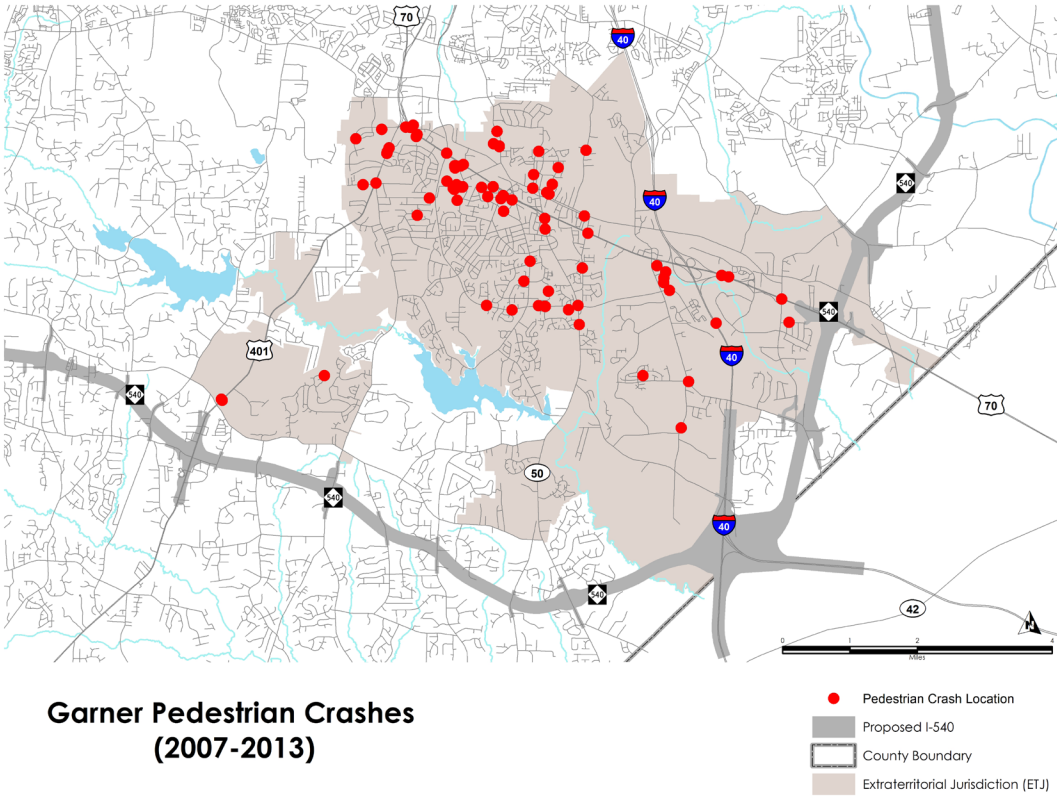
Vehicle crashes aren't the only safety concern. These maps show bicycle and pedestrian crashes in Garner from 2007 to 2013, from NCDOT. These maps help identify hot spots for pedestrian and bicyclists safety interventions and improvements.



Garner Bicycle Crashes (2007-2013)

89%

of survey respondents **Agree or Strongly Agree** that streets should be designed to protect pedestrians from vehicles.



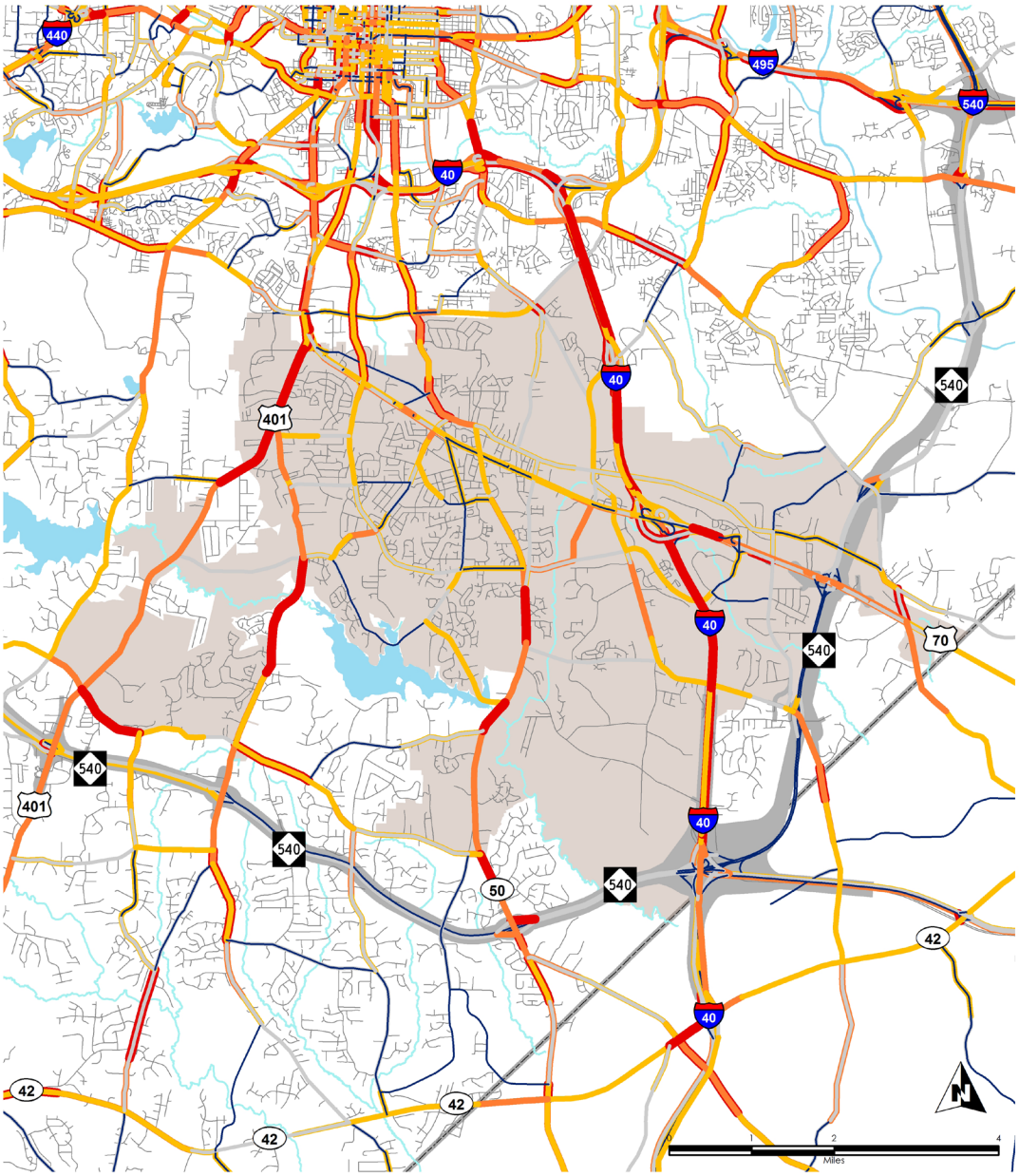
Garner Pedestrian Crashes (2007-2013)

35%

of survey respondents **Disagree or Strongly Disagree** that they can safely walk ride a bike to the park nearest their homes.

Congestion

The two maps here show roadway volumes versus capacity in the AM peak hours under current conditions (2015) and in the future based on forecasted growth in the region, using the network of existing and committed projects in the region for 2040.

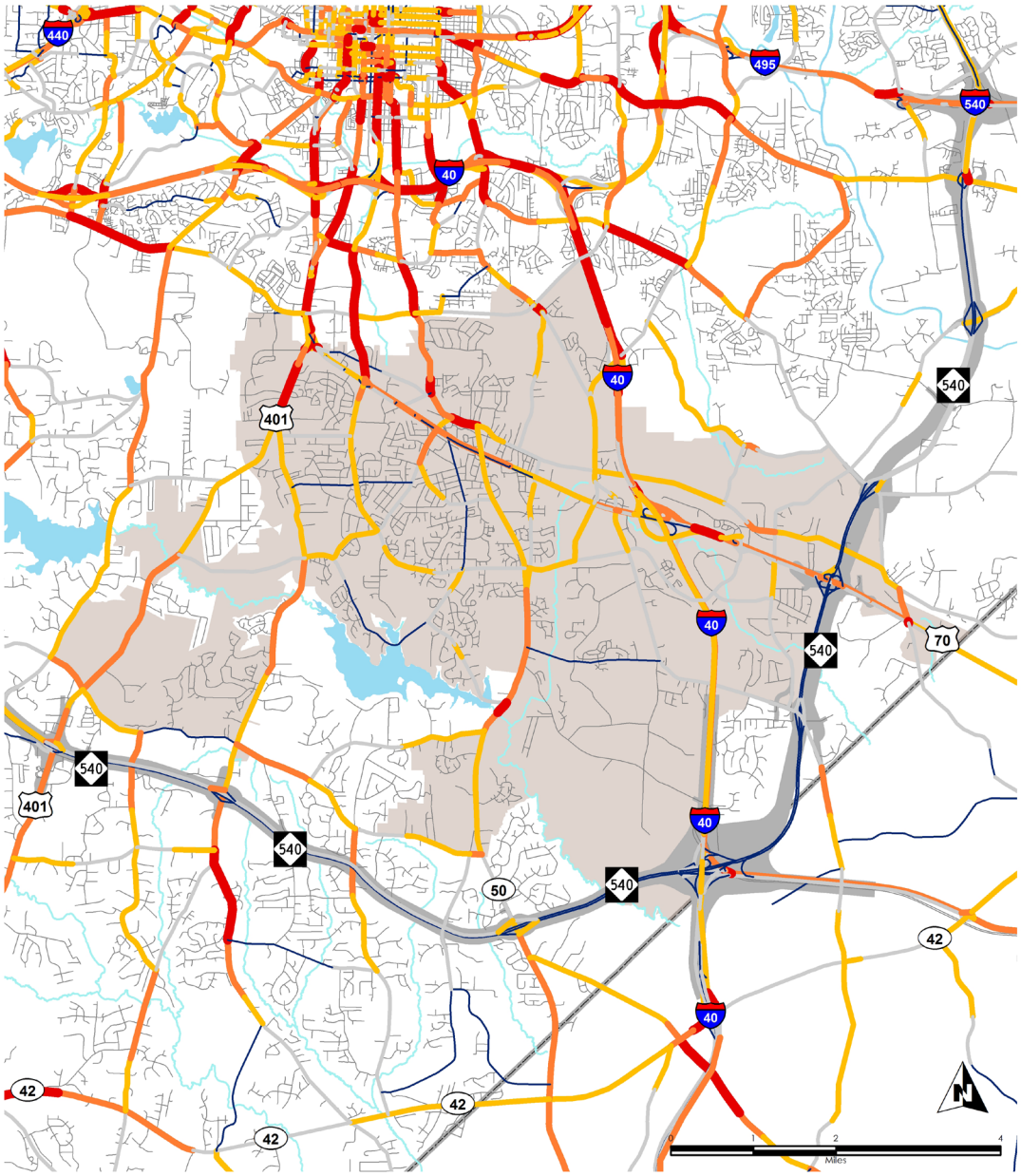


2015 AM
Volume-to-Capacity Ratio

AM V/C Ratio
- 0 - 0.25
- 0.25 - 0.50
- 0.50 - 0.75
- 0.75 - 1.00
- Over 1

- Proposed I-540
- Extraterritorial Jurisdiction (ETJ)
- County Boundary

The Triangle Regional Model was used to produce these mapped results. While the presence of I-540 is forecasted to improve some current congestion issues on I-40, higher volumes are forecasted on many of Garner's arterial and collector roadways due to high population growth in the region.



2040 AM
Volume-to-Capacity Ratio

AM V/C Ratio
- 0 - 0.25
- 0.25 - 0.50
- 0.50 - 0.75
- 0.75 - 1.00
- Over 1

- Proposed I-540
- Extraterritorial Jurisdiction (ETJ)
- County Boundary

Multimodal Level of Service

Level of Service (LOS) is a measure of effectiveness of transportation modes: how well are roadways performing with regards to vehicles, pedestrians, cyclists, and transit? LOS is a report card for the transportation system, with scores from A to F. For vehicles, low LOS indicates long vehicle delays. For pedestrians and cyclists, low LOS indicates uncomfortable conditions, safety issues, and delays. All maps reflect conditions for studied corridors (see page 21).

A

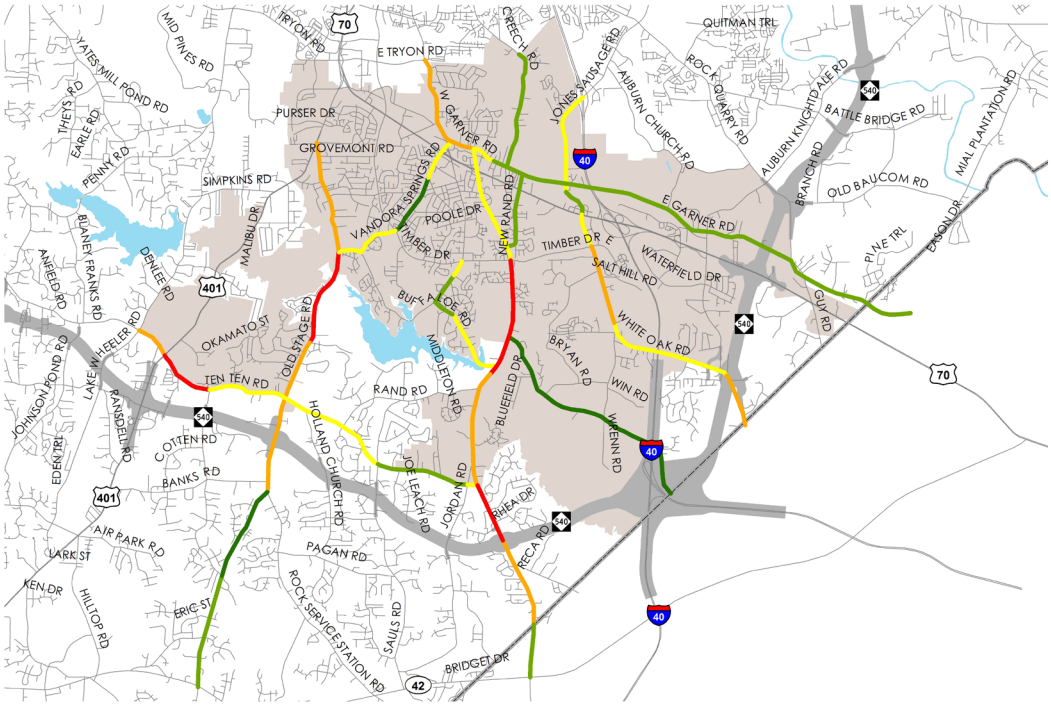
B

C

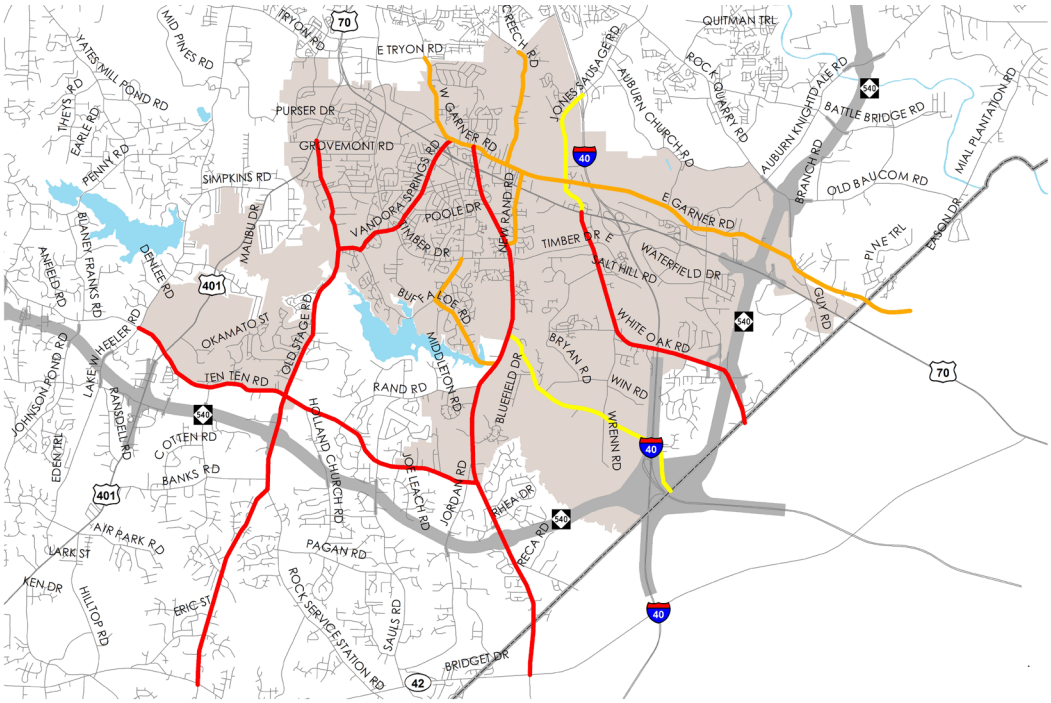
D

E

F

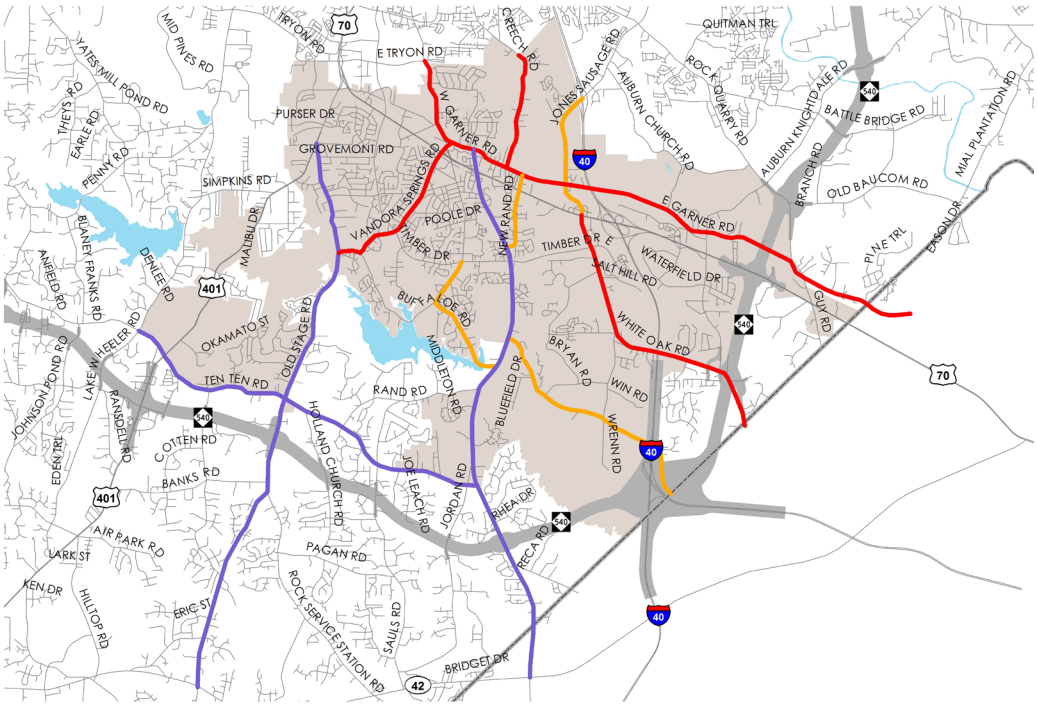


Automobile Level of Service



Bicycle Level of Service

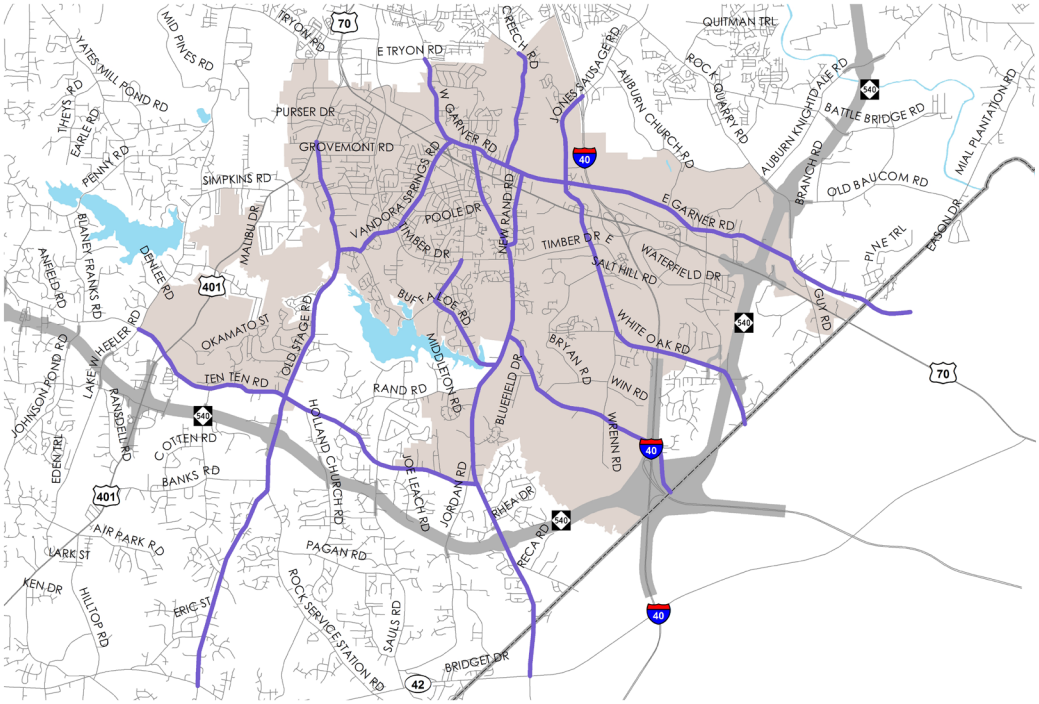
Most of the roads in Garner have a level of service between B and D, with a few corridors along Ten Ten Road, Old Stage Road, and NC 50 showing level of service E. Other modes do not fare as well: all of the study corridors have an LOS of C or below for bicycles and an LOS of D or below for pedestrians. In the next section, we will take a closer look at the features of these corridors to understand how we can improve LOS for all modes.



Pedestrian Level of Service

60%

of survey respondents **Agree or Strongly Agree** that traffic congestion in Garner is an issue that needs to be addressed.



Transit Level of Service

20%

of survey respondents **Agree or Strongly Agree** that regional bus service provides an adequate level of service to the Town of Garner

ROADWAYS AND CONNECTIVITY

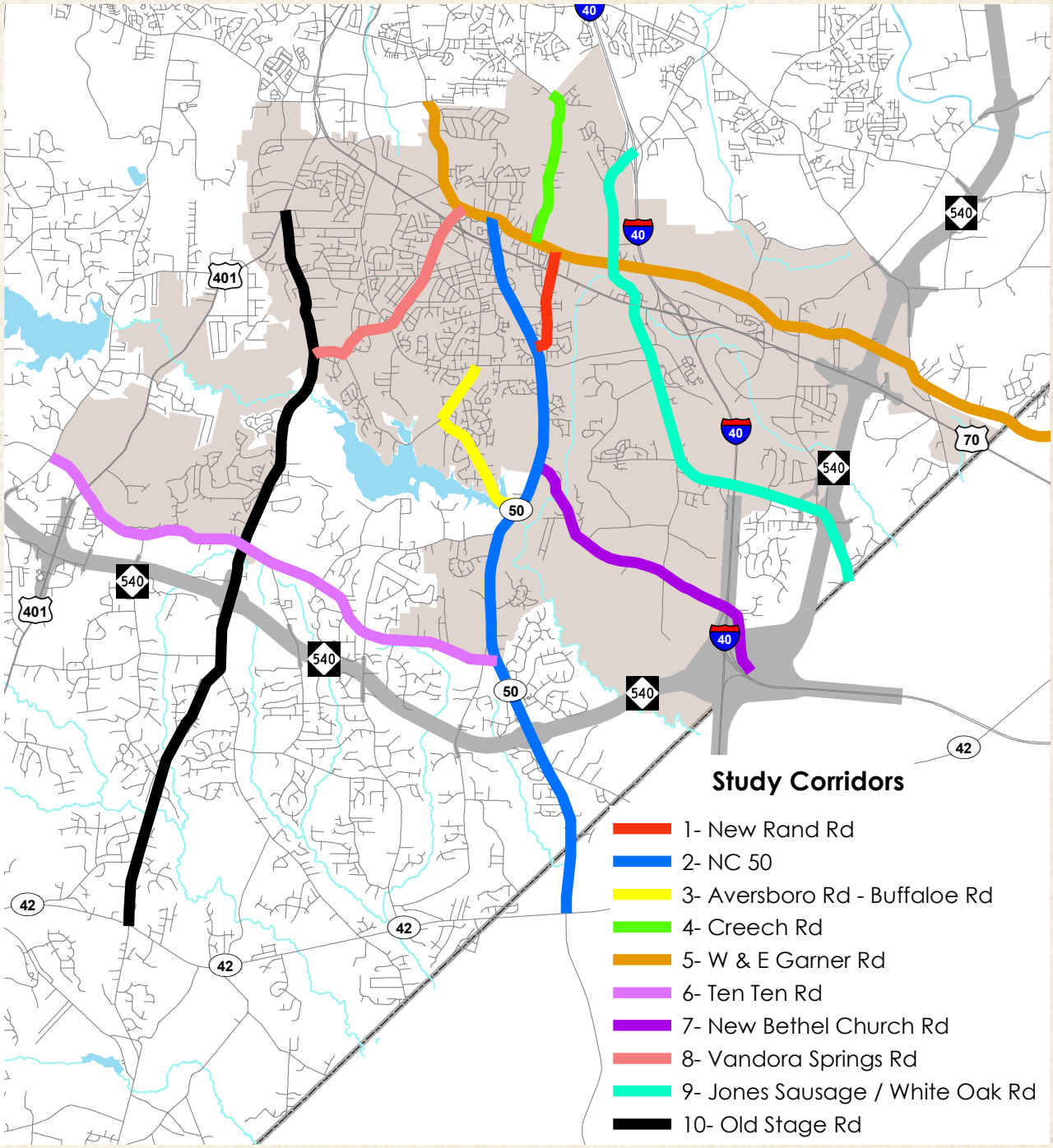
This chapter provides key recommendations for the improvement of Garner's roadways and vehicular transportation network. These recommendations were developed based on direct feedback from the public, key stakeholders and the Steering Committee. The key plan recommendations are highlighted below, with more detailed considerations and recommendations presented in the rest of the chapter.

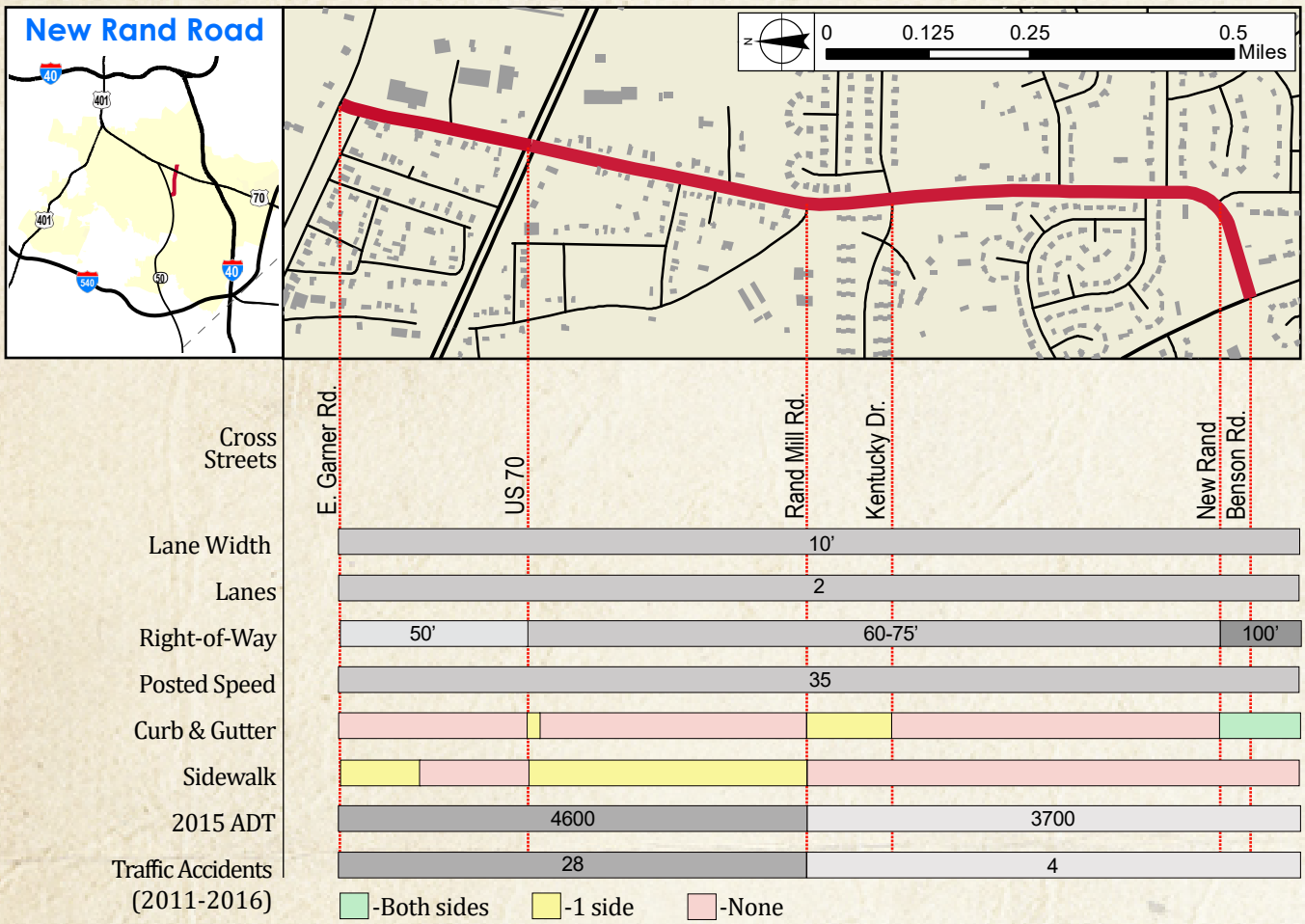
Key Points

While generally in good repair, Garner's roadway system lacks east-west connectivity due to topographic and, now, development constraints. While the addition of the NC 540 Corridor will help divert through traffic, that project is many years away and faces stiff environmental and financial challenges. Recommendations for creating a collector system in less-developed areas of Town, extending thoroughfares, and widening on surface streets are primary recommendations. New interchanges at Timber Drive/ US 70 and I-40/White Oak Road are also longer-term suggestions.

EXISTING ROADWAY CONDITIONS: STUDY CORRIDORS

This section highlights the roadway conditions along ten study corridors. These corridors were selected by the Steering Committee and face special demands, are changing from a land use perspective, or have unique constraints or multimodal conditions that need to be explored. On the following pages, a corridor profile of each roadway is presented including analysis of strengths and future areas for improvement.





New Rand Road (1.2 miles)

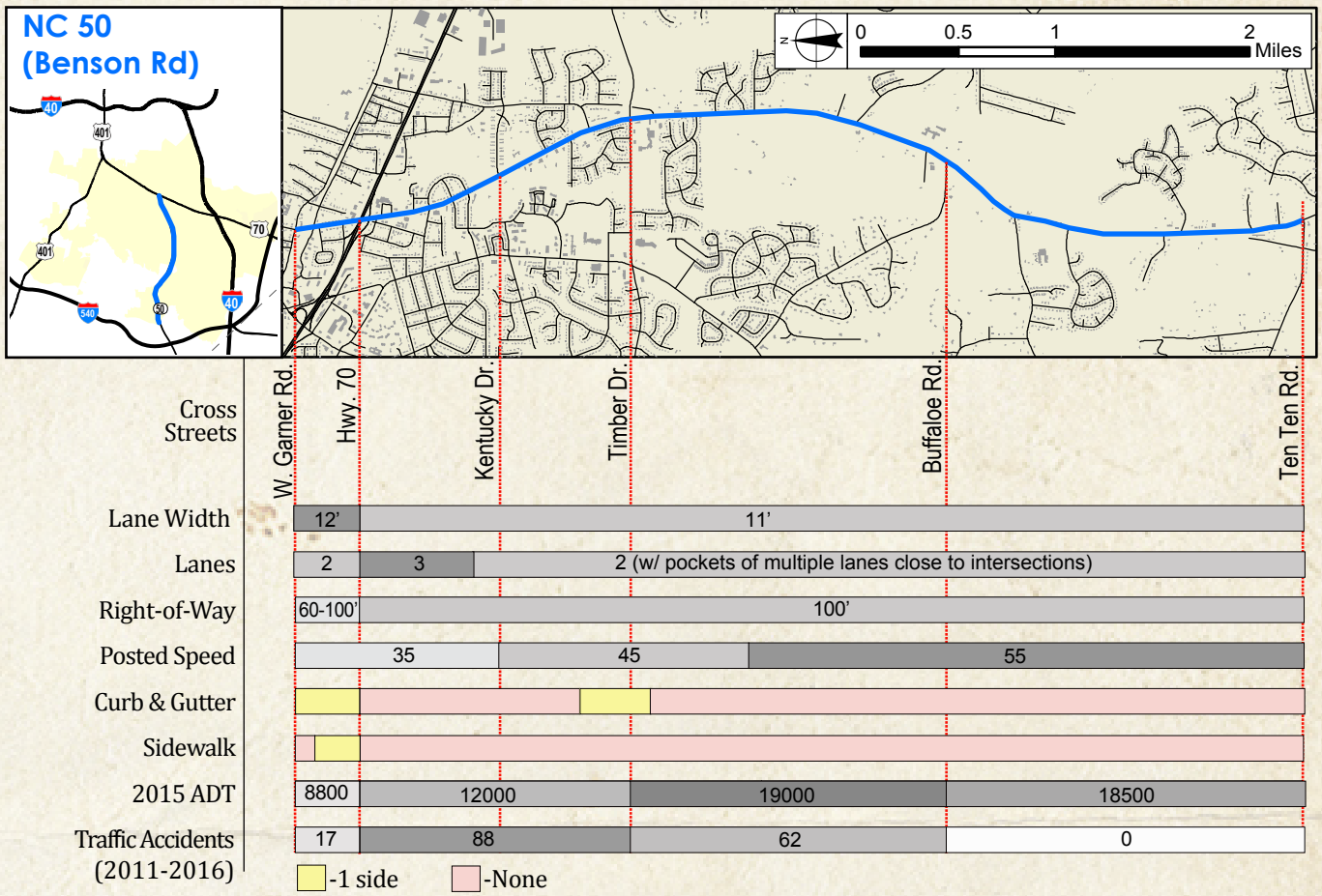
Two-lane roadway connecting the eastern end of the central business district to US Hwy 70 and NC Hwy 50.

Strengths:

- Relatively low-speed, two-lane roadway
- Connects mostly Single Family and Multi Family land uses
- Wide right-of-way (ROW) for potential future improved pedestrian and bicycle connectivity

Areas for Improvement:

- Traffic accident counts are high with relatively low average daily traffic (ADT) (below 5,000 vehicles per day)
- Sidewalks are disconnected
- Curb and gutter is mostly missing
- Improve pedestrian/bike crossing at US-70



NC Highway 50 (5.5 miles)

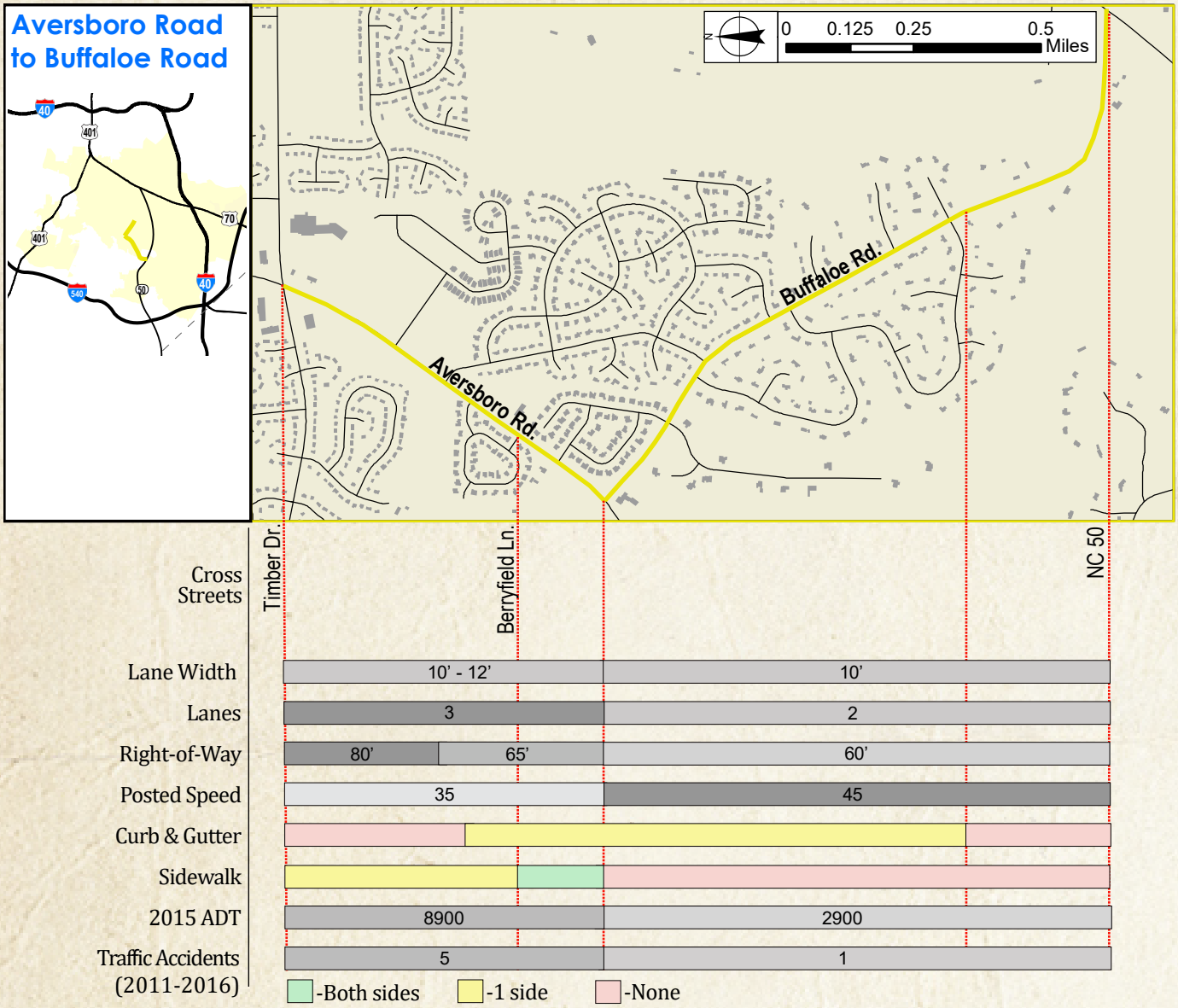
Benson Road (NC Highway 50) is a two- and three-lane arterial roadway connecting the Garner town core on its north end, south through rural lands to Ten-Ten Road. It is mostly bounded by residential land uses, with office/industrial and commercial uses at its main intersections.

Strengths:

- 100' ROW poses opportunity to add sidewalk and bicycle route infrastructure
- Connects mostly Single Family and Multi Family land uses
- Total roadway edge-to-edge pavement width along the two-lane sections is only 25'
- Opportunity for "Garner Southern Gateway"
- Connections to future potential greenways found in Garner Open Space Plan (Swift Creek
  Greenway and Panther Branch Greenway)

Areas for Improvement:

- Most of the roadway lacks curb and gutter
- Missing sidewalks for most of corridor, except short connections from Garner Rd.
- High numbers of traffic crashes



Aversboro Road to Buffaloe Road (2.3 miles)

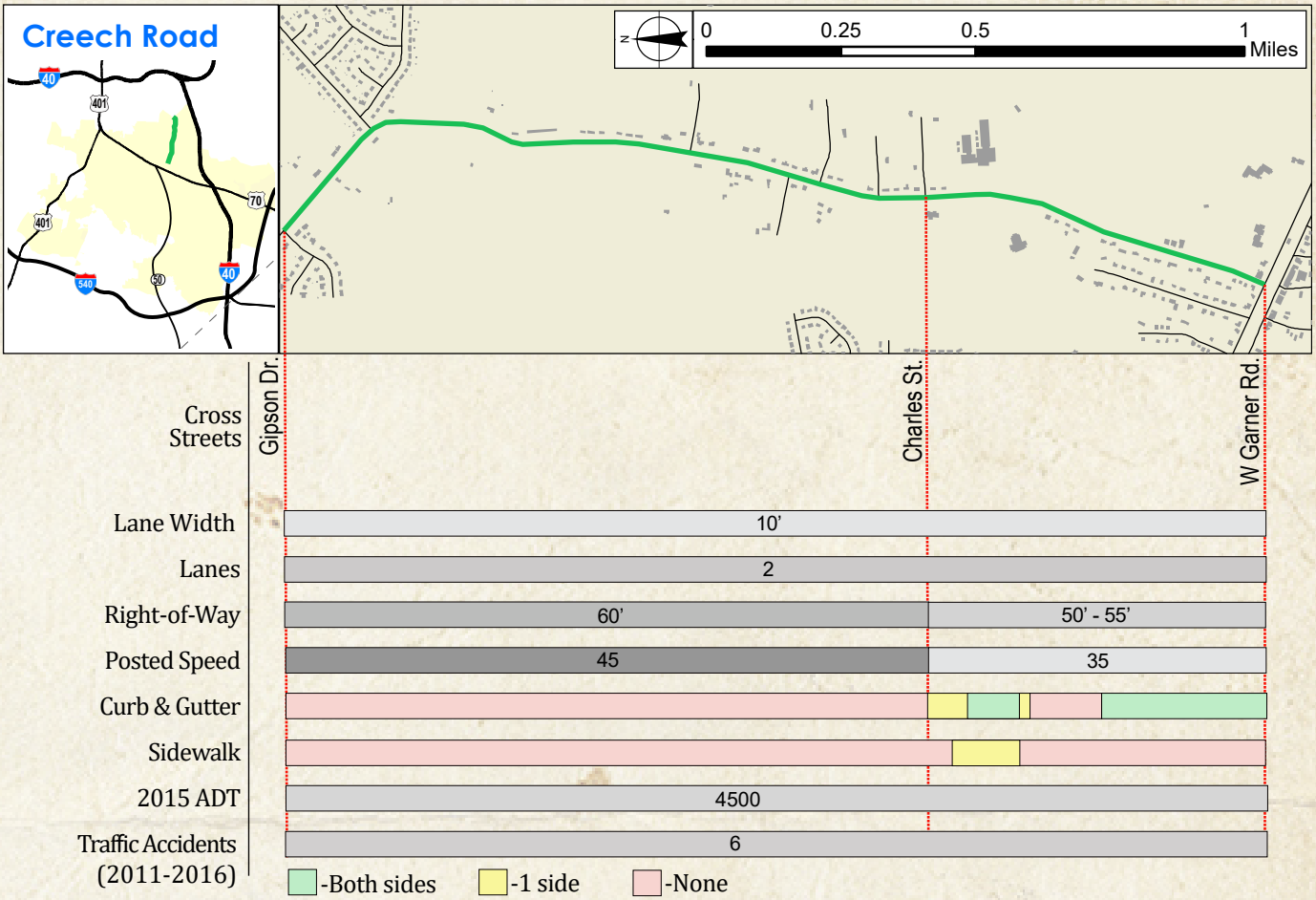
2 to 3-lane roadways connecting residential uses south of Timber Drive and to the east end of Lake Benson.

Strengths:

- Separated sidewalks (along Aversboro Rd.)
- Connects mostly single-family residential uses
- Connections to White Deer Park, Lake Benson Park, and Garner Veterans Memorial
- Connections to South Garner Greenway and future Lake Benson Greenway (*Garner Open Space Plan*)

Areas for Improvement:

- 35 MPH speed limit through residential area
- Missing sidewalks along Buffaloe Road



Creech Road (2 miles)

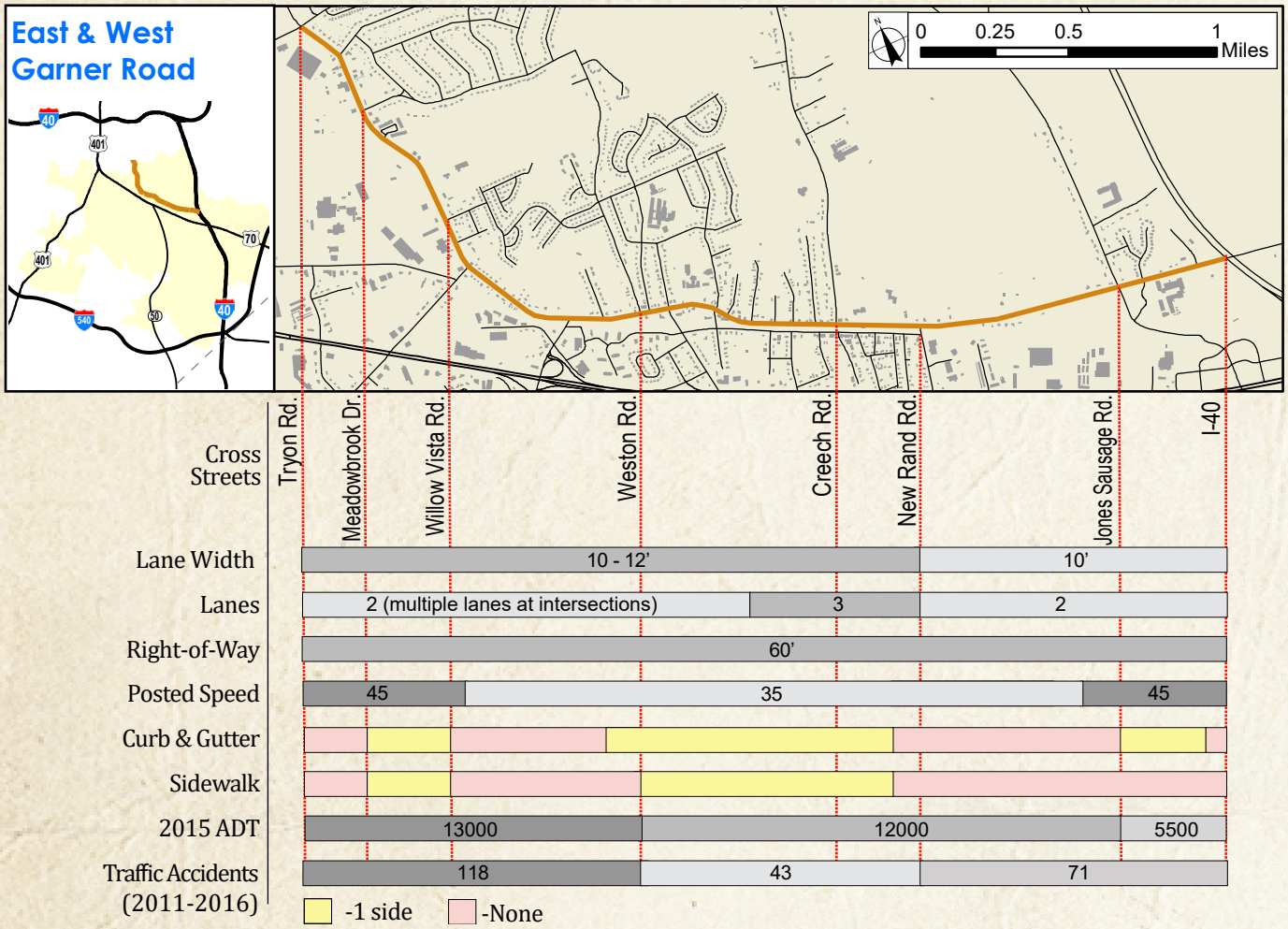
2-lane roadway spine connecting residential uses in the northeastern part of the town

Strengths:

- Total roadway edge to edge pavement width is only 20'
- Opportunity to add bicycle and pedestrian infrastructure with 50-60' ROW
- Connects to Creech Road Elementary School
- Low ADT (4500) presents viable Share The Road opportunity
- Connects directly to Central Business District
- Connections to future potential greenways found in Garner Open Space Plan (North Garner Greenway and Adams Branch Greenway)

Areas for Improvement:

- No sidewalk infrastructure present
- Curb and gutter missing for majority of corridor
- High speed limit (45mph) for a low-volume, residential roadway
- Needs defined pedestrian and bikeway facilities



East & West Garner Road (3.7 miles)

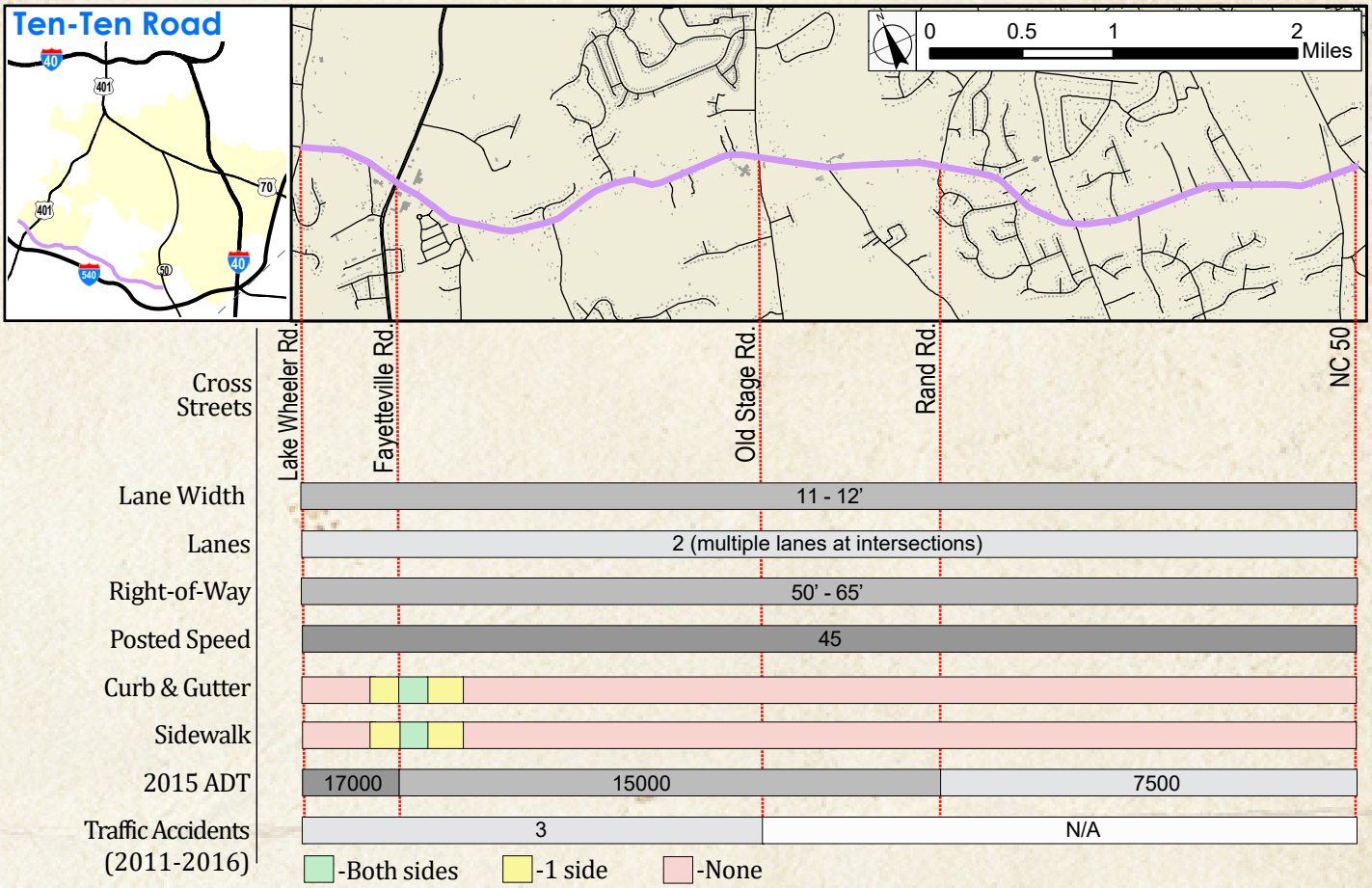
A two-lane collector, Garner Road traverses the Historic Central Business District of Garner.

Strengths:

- Connects a variety of uses including Residential, Industrial and the Central Business District
- Sidewalk is connected through CBD
- In CBD, roadway is directly adjacent to a railroad corridor that potentially could be used for a greenway or multi-use path

Areas for Improvement:

- Although a major gateway between Raleigh and Garner, right-of-way constraints posed by the railroad on one side and historic properties on the other pose hurdles to widening
- Traffic crash counts are high
- Sidewalks are disconnected, as are the curb-and-gutter sections that support them
- Sections of road within and adjacent to the CBD should be developed to promote an identity that complements Main St.



Ten-Ten Road (6.1 miles)

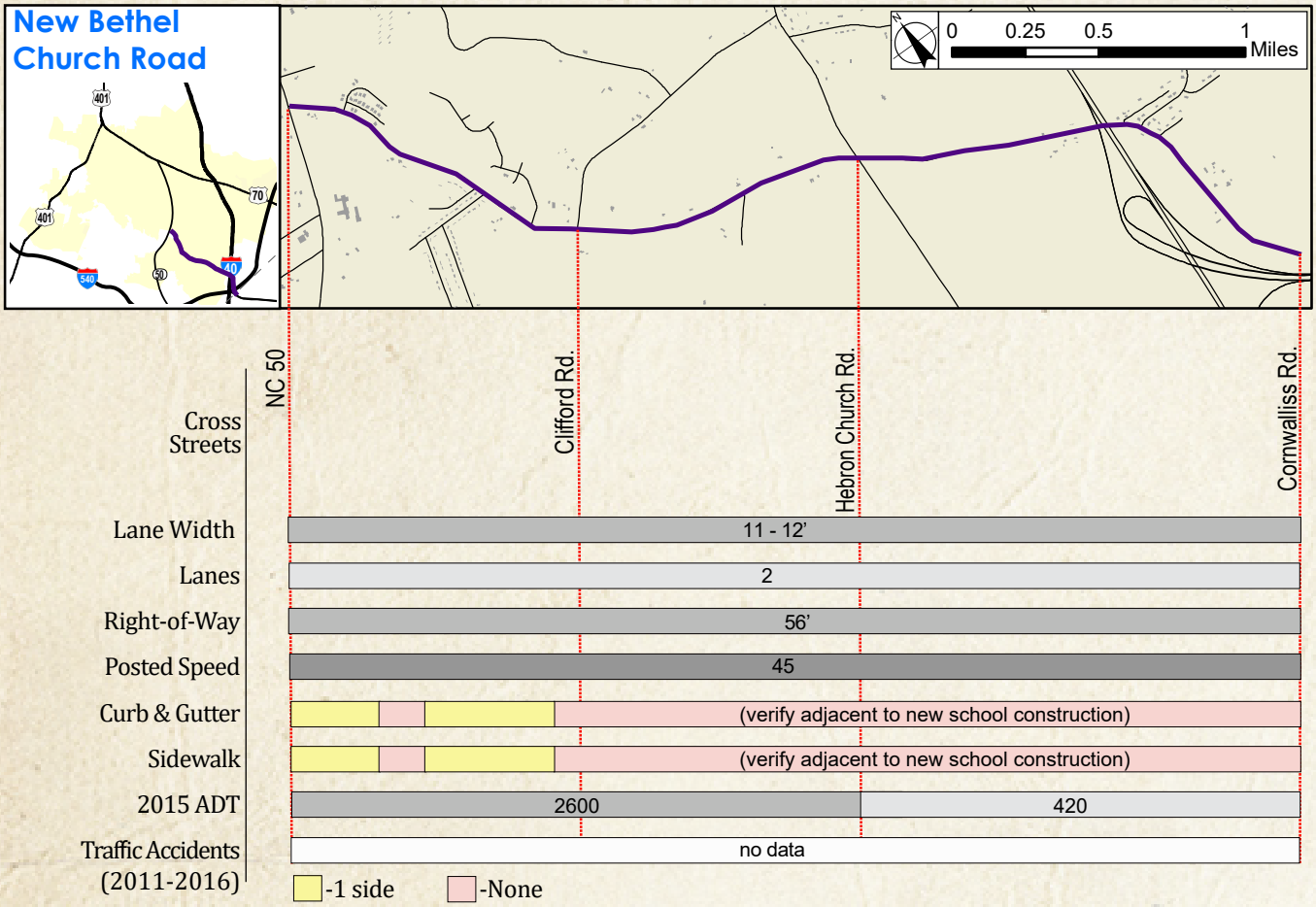
Two-lane arterial roadway connecting the southern end of town from NC 50 to Highway 401, Ten-Ten Road has evolved into a major east-west reliever of I-40/I-440, particularly in the event of delays on the Interstates.

Strengths:

- ROW available for future expansion of roadway and/or addition of bicycle and pedestrian facilities
- Connects Single Family residential and Rural land uses
- Heavily used East-West connector

Areas for Improvement:

- Sidewalks are disconnected and limited
- Curb and gutter is mostly missing
- Limited shoulders
- Ditches need to be maintained



New Bethel Church Road (3.6 miles)

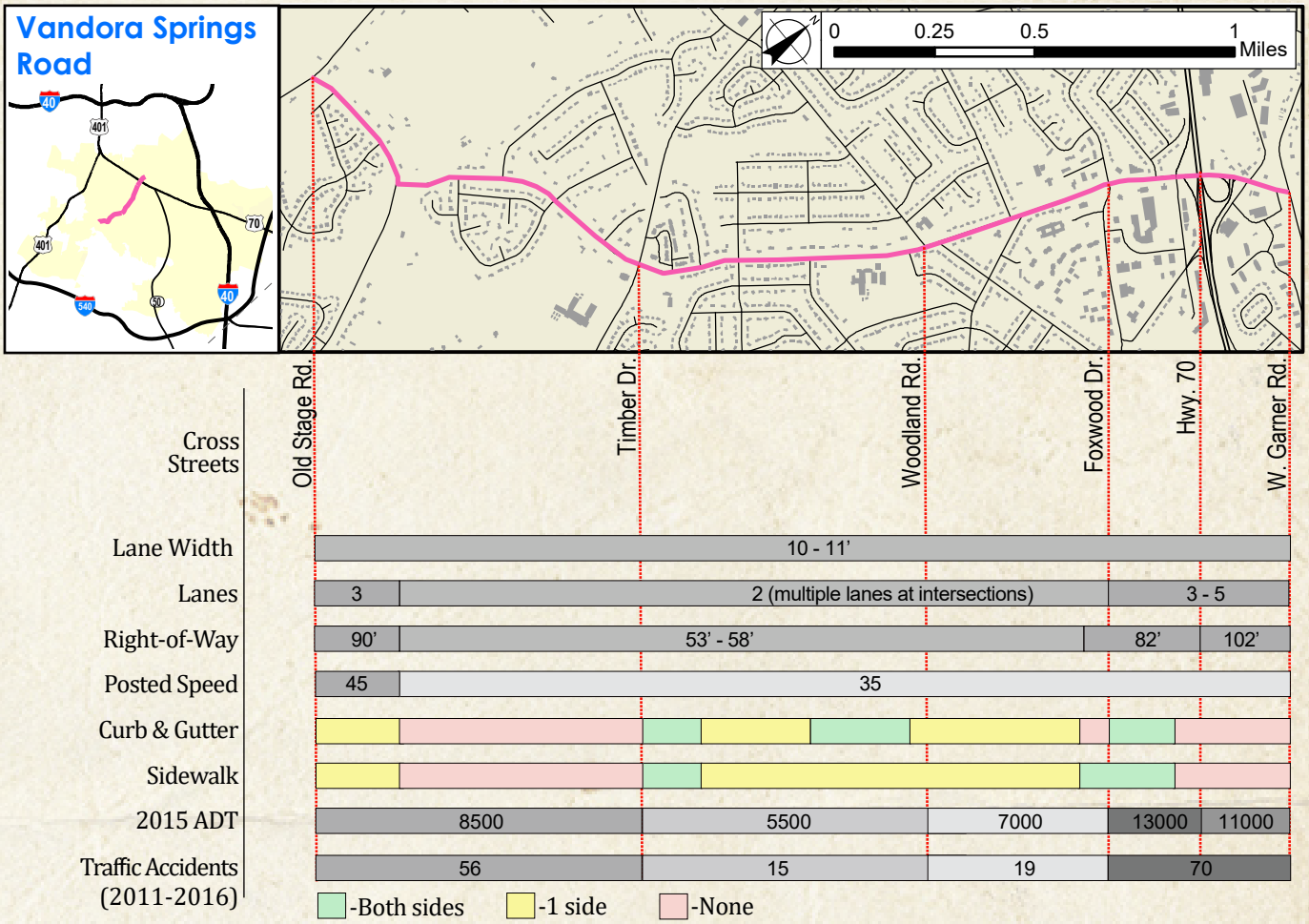
Two-lane collector roadway connecting the future I-540 interchange at I-40, and west to NC 50.

Strengths:

- Connections to the new South Garner High School and Centennial Park
- Probable development opportunities along corridor because of future parallelling I-540
- Future area redevelopment should coincide adding pedestrian and bicycle infrastructure along corridor
- Low current ADT (likely to increase as surrounding development occurs)

Areas for Improvement:

- Missing sidewalks and curb and gutter along majority of corridor



Vandora Springs Road (2.7 miles)

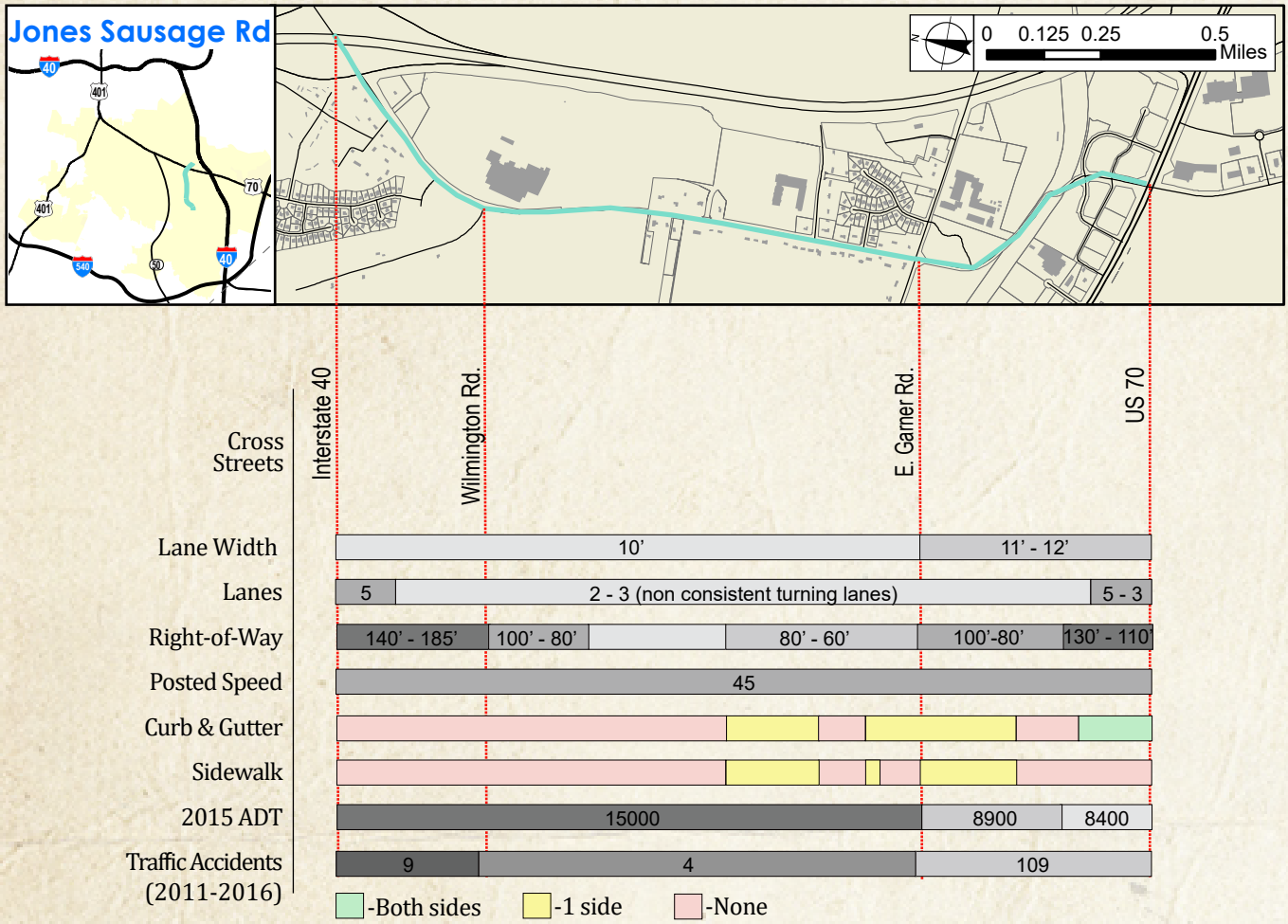
Vandora Springs Road is a two-lane roadway connecting the western end of the town center to Old Stage Rd.

Strengths:

- Connected by detached sidewalks in central residential area of corridor
- Connections to adjacent commercial services
- Adjacent connections to Vandora Springs and Timber Drive elementary schools
- 10' travel lanes
- Fairly low traffic volume in residential areas
- ROW presents opportunities to improve pedestrian and add bicycle connectivity
- Very scenic roadway in certain portions

Areas for Improvement:

- Sidewalk and curb and gutter gaps
- High number of crashes



Jones Sausage Road (2 miles)

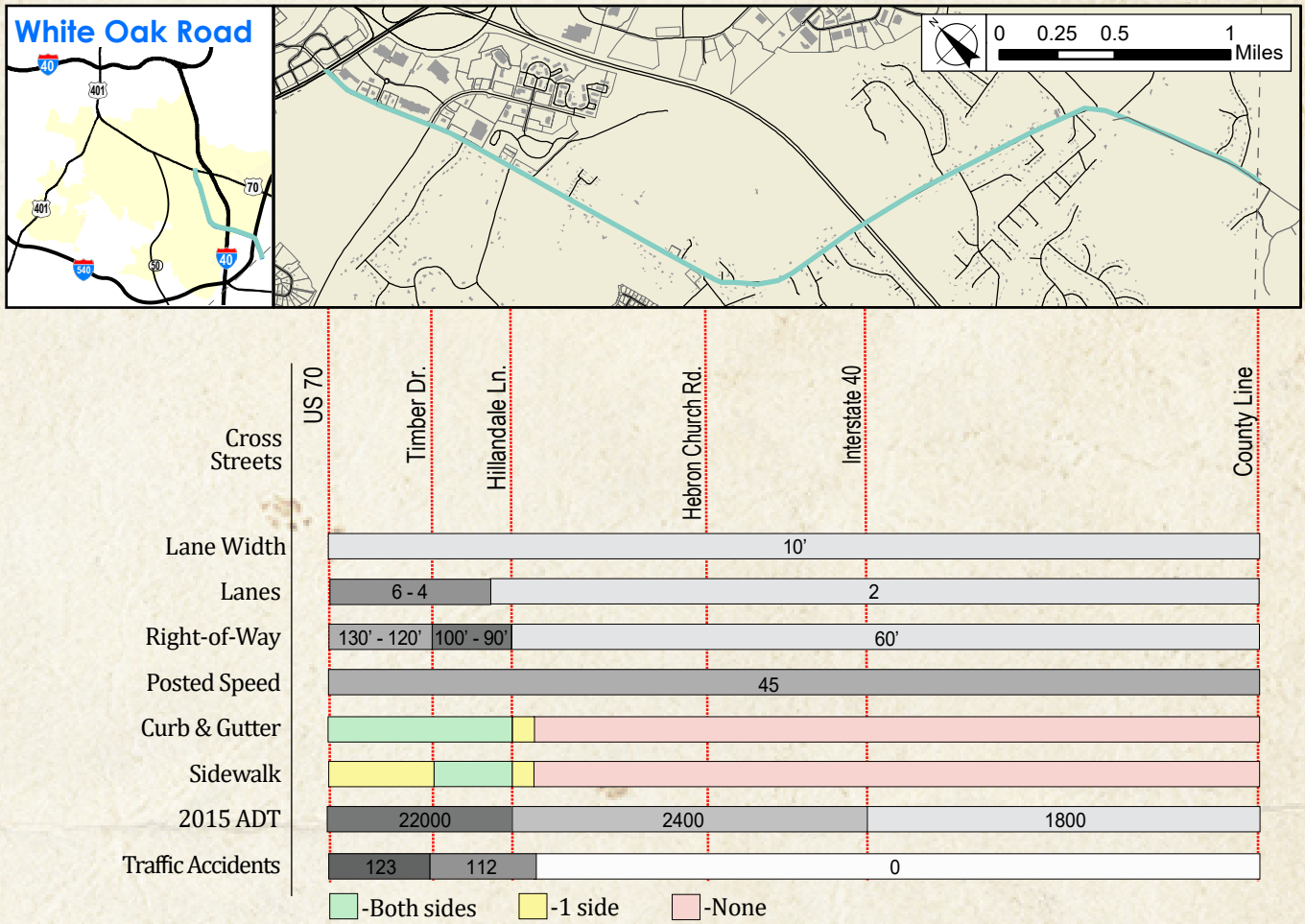
A two-lane collector roadway, Jones Sausage Road connects I-40 to neighborhoods, schools, and commercial developments along US Highway 70.

Strengths:

- Sidewalks adjacent to neighborhoods and schools
- Connects directly to East Garner Magnet Middle School and adjacent to East Garner Elementary School
- Wide ROW for potential future improved pedestrian and bicycle connectivity
- Connections to future potential greenway found in Garner Open Space Plan (White Oak Greenway)

Areas for Improvement:

- High rates of traffic crashes near development at US Highway 70
- Sidewalks are disconnected or nonexistent
- The pedestrian crossing accommodations at US Highway 70 are poor
- Intersection alignment needed at Garner Road and railroad crossing



White Oak Road (4.6 miles)

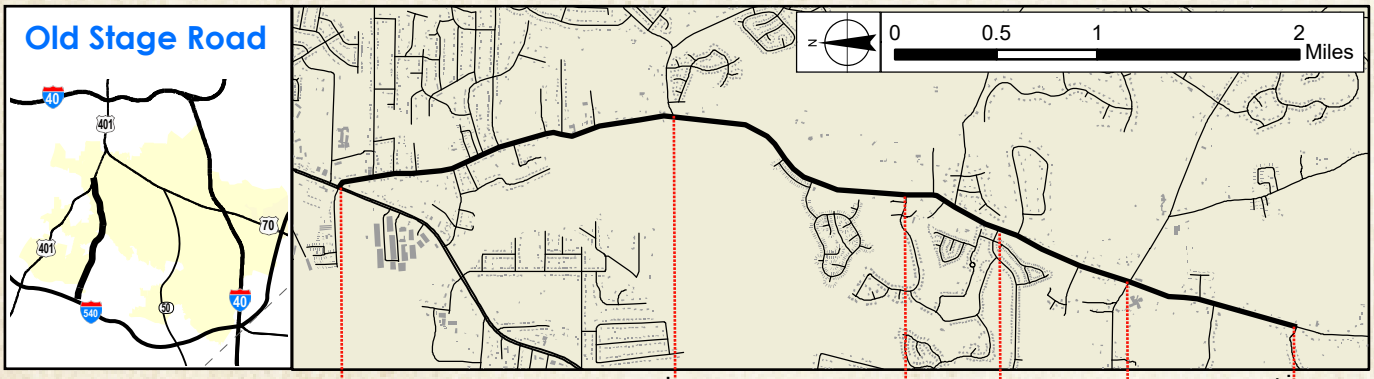
A two-lane collector roadway, White Oak Road connects a future I-540 interchange at the county line to commercial developments along US Highway 70. Multiple new housing developments will bring more traffic and potential congestion to the corridor.

Strengths:

- Sidewalks adjacent to commercial and congested areas
- Wide ROW for potential future improved pedestrian and bicycle connectivity
- With future I-540, opportunity to improve roadway and add multimodal connectivity
- Connections to future potential greenway found in Garner Open Space Plan (White Oak Greenway)

Areas for Improvement:

- High rates of traffic crashes near development at US Highway 70
- Sidewalks are nonexistent past development
- The pedestrian crossing accommodations at US Highway 70 are poor



Cross Streets	US 401	Vandora Springs Rd.		Ten Ten Rd.	Rolling Meadows Dr.
Lane Width	10'				
Lanes	2				
Right-of-Way	56' - 68'				
Posted Speed	45				
Curb & Gutter			-1 side		
Sidewalk			-1 side		
2015 ADT	11000	15500			10000
Traffic Accidents (2011-2016)	8	2			1

-Both sides -1 side -None

Old Stage Road (5 miles)

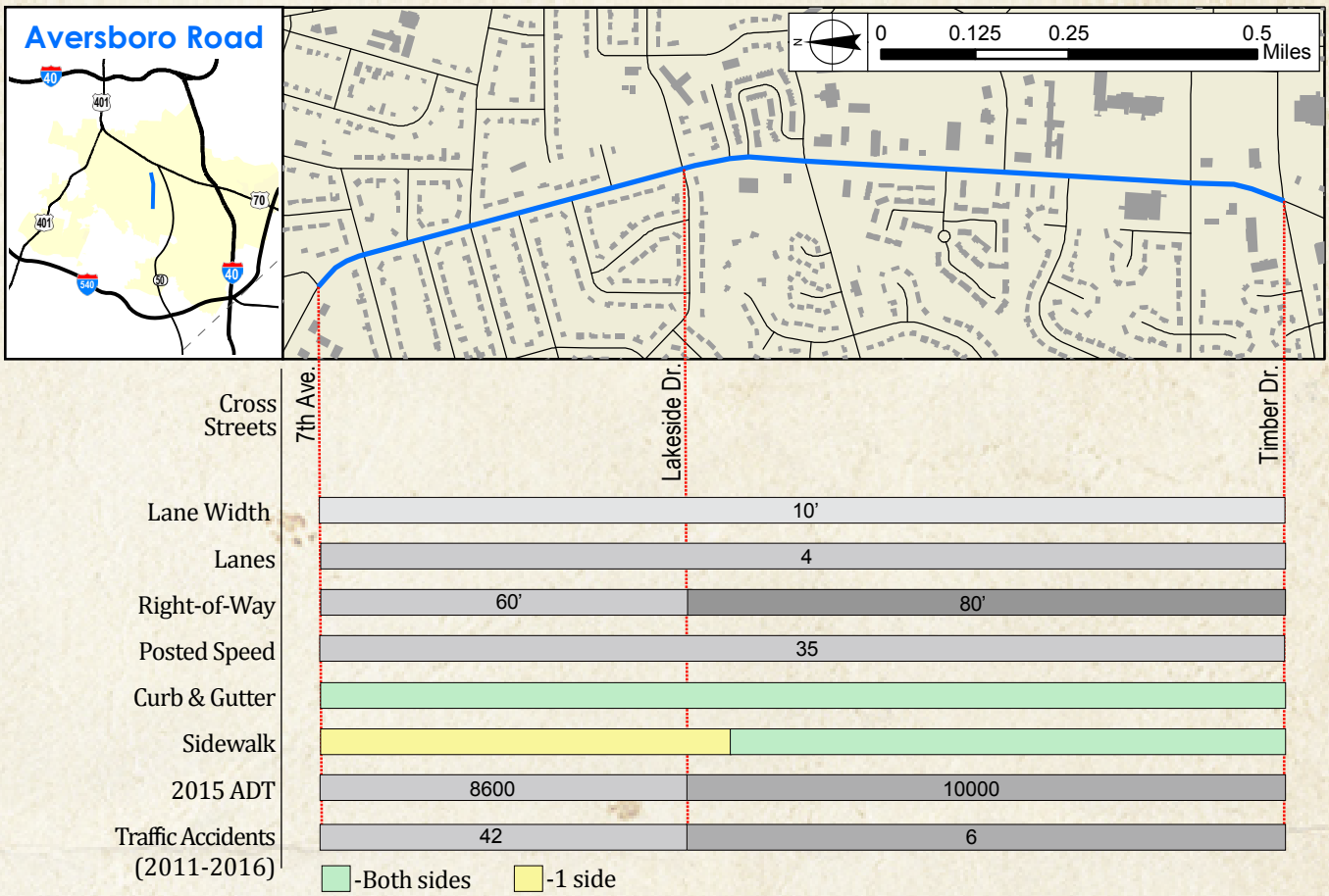
Old Stage Road is a two-lane collector street in West Garner connecting rapidly developing commercial uses and services at US 401 (Fayetteville Rd.) to a future I-540 interchange.

Strengths:

- Narrow (10') travel lanes
- Total roadway edge-to-edge pavement width is only 22' and ROW is 60', so room for future potential multimodal connectivity
- Adjacent connections to shopping and service areas, including Walmart
- Connections to Vance and Smith Magnet elementary schools
- Connections to potential future greenways in the Garner Open Space Plan (Lake Benson Greenway, Old Stage Road Greenway and Panther Branch Greenway) and in Wake County Open Space Land Acquisition Plan (Swift Creek Greenway and Yates Mill Pond Connector)
- Very scenic roadway

Areas for Improvement:

- No or very limited sidewalks
- No curb-and-gutter infrastructure
- High ADT for a two-lane roadway
- No street trees
- Sight distance and safety issues around sharp curves



Aversboro Road (1.3 miles)

Centrally located, Aversboro Road is a four-lane roadway connecting the southern city center edge, south to Timber Drive and towards Lake Benson.

Strengths:

- Curb & gutter throughout corridor
- Separated sidewalks throughout corridor
- Connections to Aversboro Elementary School and Garner Town Hall
- Good mix of land uses from Residential to Commercial
- Very low traffic volumes

Areas for Improvement:

- Aversboro Road benefits from an interested and engaged community that is supportive of transforming the road into a great, multimodal street
- Lack of high-visibility crosswalks throughout corridor
- Pedestrian safety improvements lacking near elementary school
- Complete sidewalk connections are needed on both sides of the street

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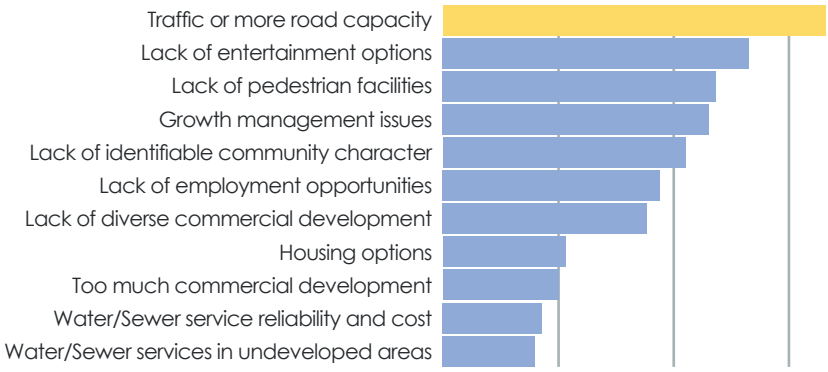
ROADWAYS AND CONNECTIVITY RECOMMENDATIONS

As the number-one issue for Garner residents, Transportation has become critically important to the wellbeing and vitality of this community. A key takeaway from this is the need to look at roads more than just for moving cars, but, for moving people. Providing attractive, reliable, and safe choices of mobility to residents, visitors and businesses allows healthy opportunities for sustainable growth.

Which of the following do you think are areas where Garner faces challenges or shortcomings?

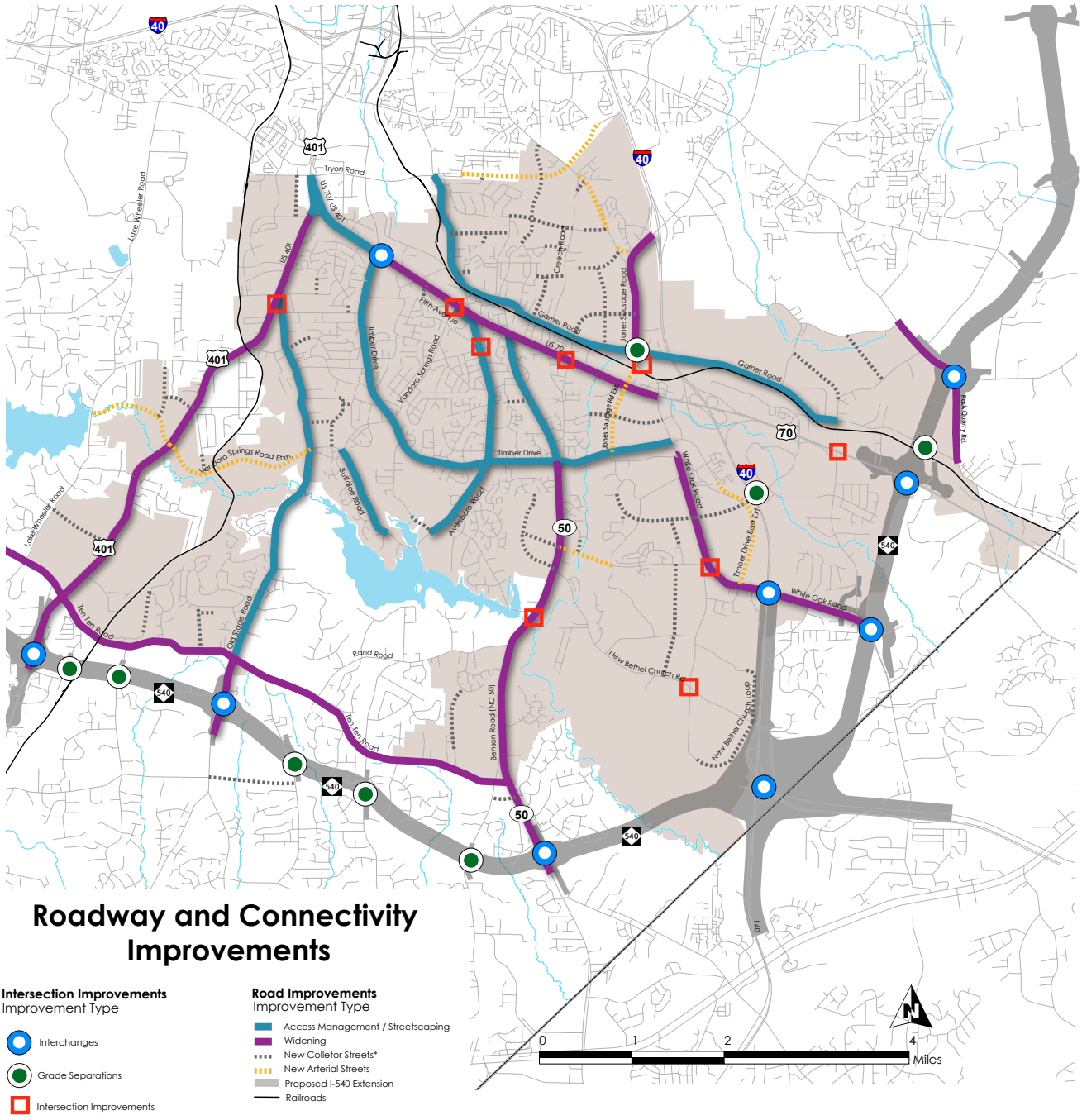


Roadway Considerations

While generally in good condition, Garner's roadway infrastructure lacks east-west connectivity due to topographic and, now, development constraints. While the addition of I-540 will help divert through traffic, that project still needs to go through environmental, design and financial challenges. Recommendations for creating a collector system in less-developed areas of Town, extending arterials, and widening on surface streets are primary recommendations. New interchanges at Timber Drive/US 70 and I-40/White Oak Road are also longer-term suggestions, while three conceptual intersection redesigns can be accomplished in the shorter term.

While the amount of public capital available to create large, new roadways or make major expansions of existing roads has decreased in relative terms, the importance of roads to all kinds of vehicles – cars, buses, bicycles, and walkers – remains the paramount concern in transportation planning and design practice. Today's competitive prioritization for State funded projects makes large capital improvements very difficult as reported by our partners at Capital Area Metropolitan Planning Organization (CAMPO). The Complete Streets best practices and design guidelines presented in this document ensure that the recommendations discussed within the Transportation Plan address every element of the street and its multimodal uses.

When we consider the level of congestion in and around Garner, the problem areas are almost centered on major arterials including I-40, US 70, US 401, and NC 50. One project having the greatest impact to Garner will be the completion of the western leg of the I-540 beltline to I-40 near the Wake and Johnston County boundary. This multi-billion dollar project will provide a viable alternative for the bedroom communities of Johnston County to access Research Triangle Park, RDU Airport, the City of Raleigh and other premier destinations without going through Garner on I-40, Tryon Road, NC 50, US 70 and smaller, less-capable secondary roads. However, this project will also open up opportunities for continued growth away from Garner and centered around the future interchanges along the I-540 corridor. Also, due to the expense and promises tied to this roadway in previous decades and iterations of transportation plans in Garner, examining the impacts of this project were felt to be worthwhile.



*Generally, Collector Streets are two-lane, undivided streets in public rights-of-way built to accepted state and local standards that connect other streets; the alignment may change to accommodate local conditions but must be designed appropriately to accommodate future extensions necessary to complete the full extension by adjacent property owners, if deemed necessary by the Town Staff.

Roadway Recommendations

The recommendations contained within this chapter rely on a balance of improvements, including low-cost access management, Complete Streets and operational remedies as well as capacity (i.e., widening and new location) improvements. Access management projects may include new shoulder and ditch improvements, intersection redesign, driveway closure or consolidation, plantable medians, controlling left turns, and cross access (between complimentary uses) or backdoor access. The results of these Plan recommendations address 90% of the forecasted congestion problems within the Town of Garner (as seen on the map on the next page).

The Roadways and Connectivity Improvements Map on the facing page shows the major project recommendations, which are further detailed below.

Major Widening Projects:

- US 70 (6-lane divided) from Jones Sausage Road to Timber Drive
- US 401 (6-lane divided) from US 70 to the future I-540 interchange
- NC 50 (4-lane divided) from Timber Drive to the future I-540 interchange
- White Oak Road (4-lane divided) from Hillandale Lane to the future I-540 interchange
- Jones Sausage Road from I-40 interchange to US 70 east
- Old Stage Road (4-lane divided) from Ten-Ten Road to the future I-540 interchange

Access Management/Streetscape Projects:

- Timber Drive from US 70 to White Oak Road
- NC 50 from US 70 to Timber Drive
- Aversboro Road (streetscape with bike lanes) from US 70 to Lake Benson Park entrance
- Garner Road from Tryon Road to Auburn Knightdale Road
- Old Stage Road from Ten-Ten Road to US 401
- US 70 from Tryon Road to Timber Drive

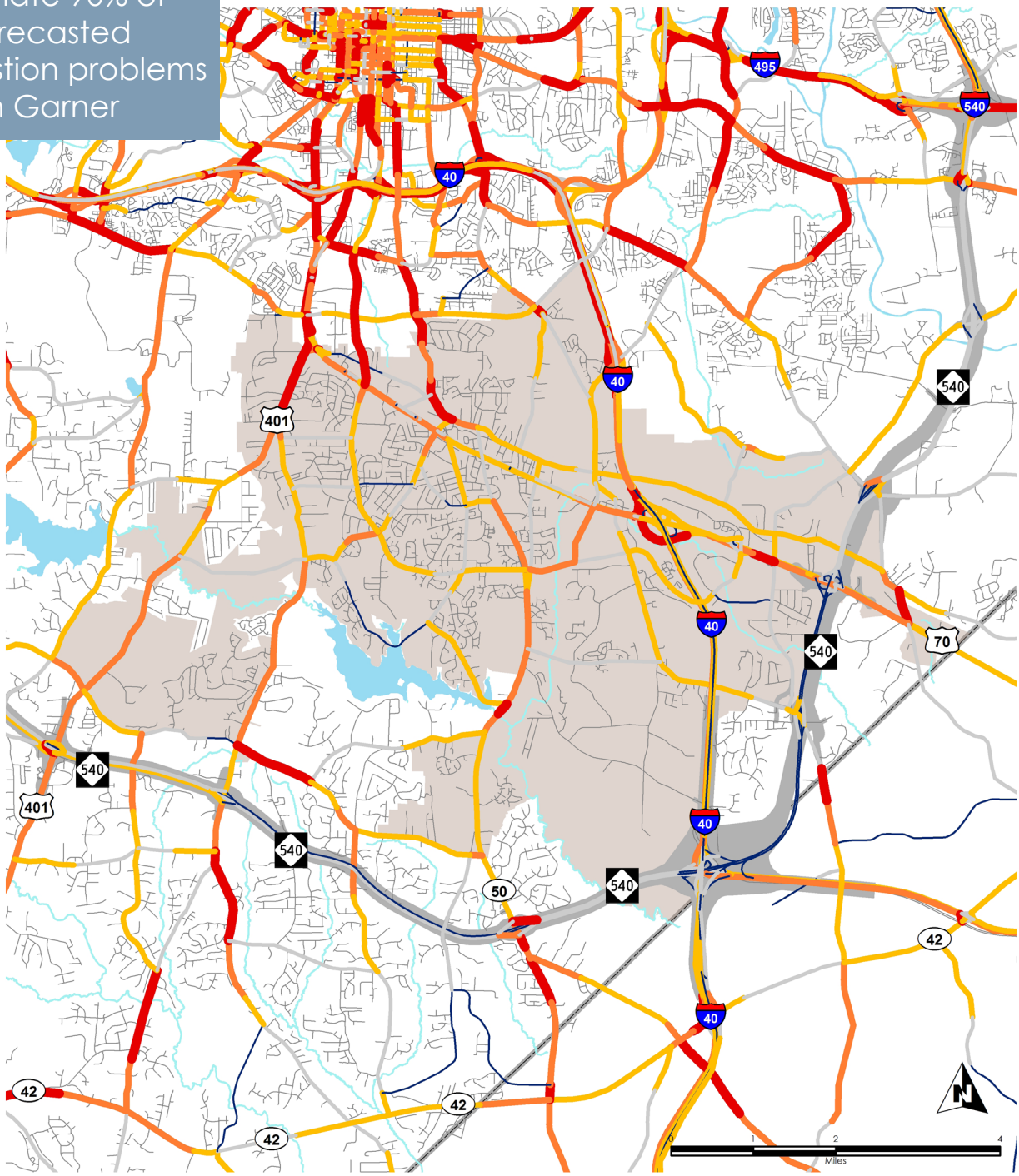
Intersection/Interchange Redesign Projects:

- Aversboro Road at 5th Avenue
- Aversboro Road at US 70
- I-40 at White Oak Road (add ramps)
- US 401 at Old Stage Road
- Ackerman Road/Hebron Church Road at White Oak Road
- Jones Sausage Road at NC Railroad to US 70 east

Detailed proposed intersection and interchange improvement graphics are included later in this chapter.

As we proceed forward, the emphasis with which each of the aforementioned recommendations receives attention, financial or otherwise, will be in part due to the changing course of transportation and its interaction with lives and businesses.

The Roadway Recommendations alleviate 90% of forecasted congestion problems in Garner



2040 PM Volume-to-Capacity Ratio

PM V/C Ratio
- 0 - 0.25
- 0.25 - 0.50
- 0.50 - 0.75
- 0.75 - 1.00
- Over 1

- Proposed I-540
- Extraterritorial Jurisdiction (ETJ)
- County Boundary

The next three pages include intersection redesigns that will help make Garner's roads safer and more comfortable for users of all modes.

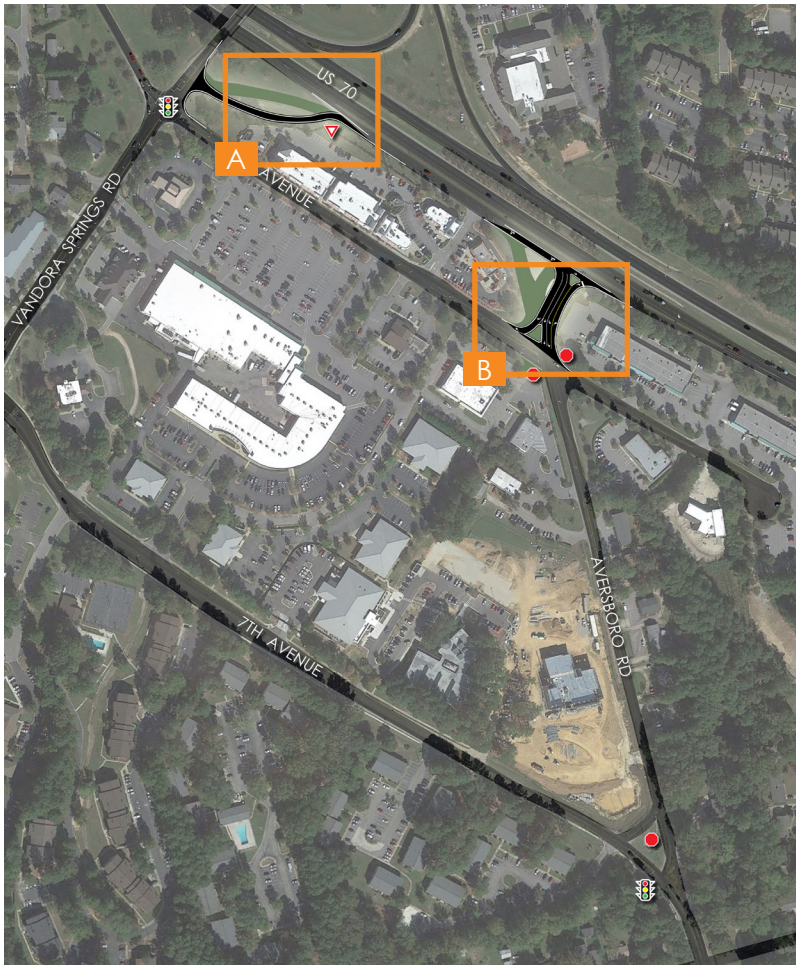
Intersection/Interchange Redesign: 5th Avenue at Aversboro Road

Existing Conditions

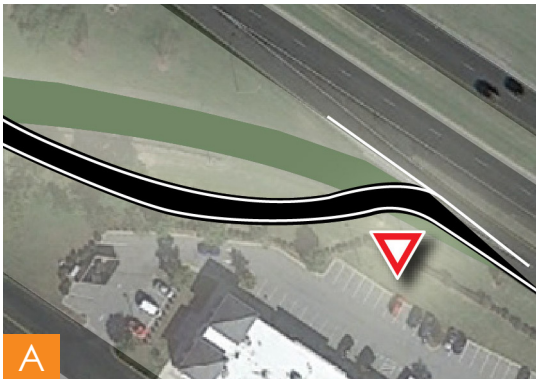
- Realignment of ramp from Vandora Springs to US 70 may assist in reducing traffic speeds along collector distributer
- Realignment of US 70 at Aversboro intersection to form right angle intersection
- Close driveway within the intersection of 5th Avenue at Aversboro Road
- Provide additional access behind First Citizens Bank

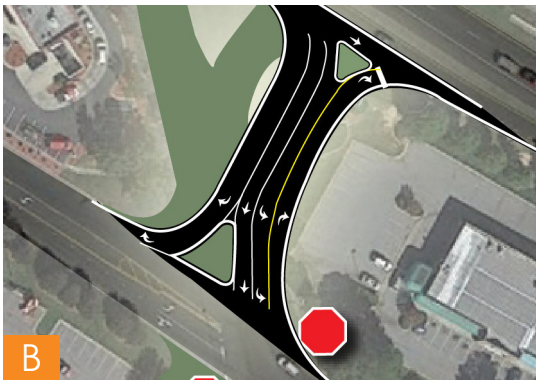
*A detailed traffic study is suggested before improvements are implemented.

Proposed Improvements



Removal of Pavement

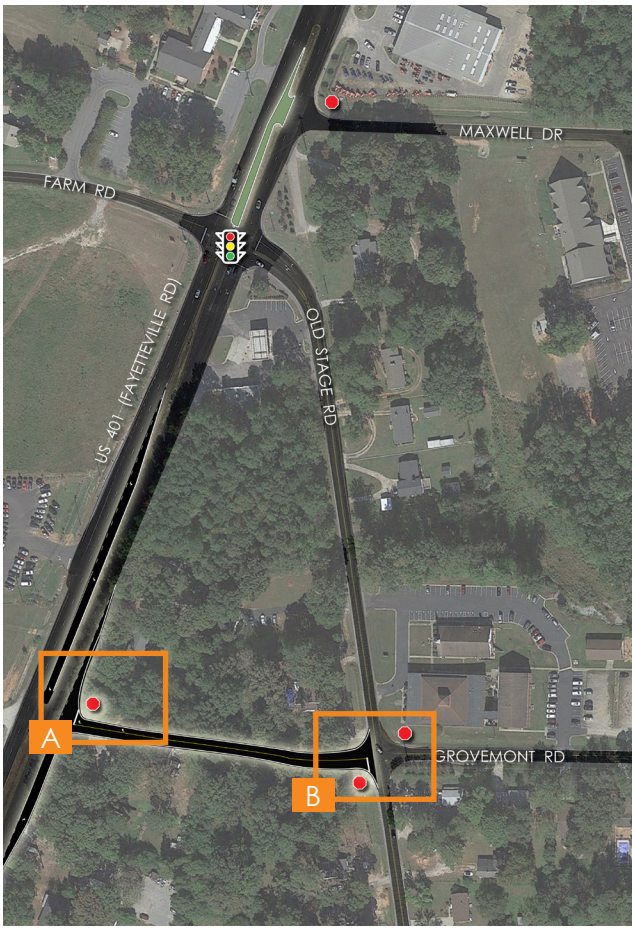




Intersection/Interchange Redesign: US 401 at Old Stage Road

Existing Conditions

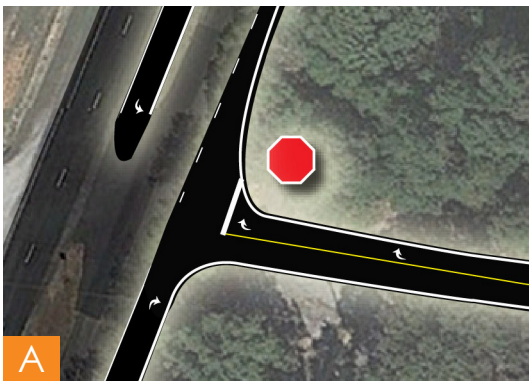
Proposed Improvements

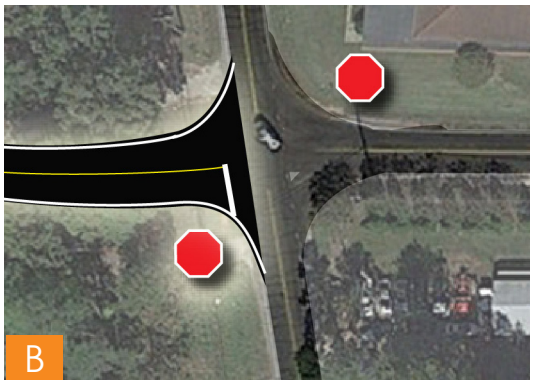


- Close median at Maxwell Drive
- Extend Grovemont Road to US 401 and install traffic signal if warranted
- Remove SB left-turn lane on US 401 at Old Stage Road
- Add NB right-turn lane on US 401 at Grovemont Extension
- Add SB left-turn lane on US 401 at Grovement Extension

*A detailed traffic study is suggested before improvements are implemented.

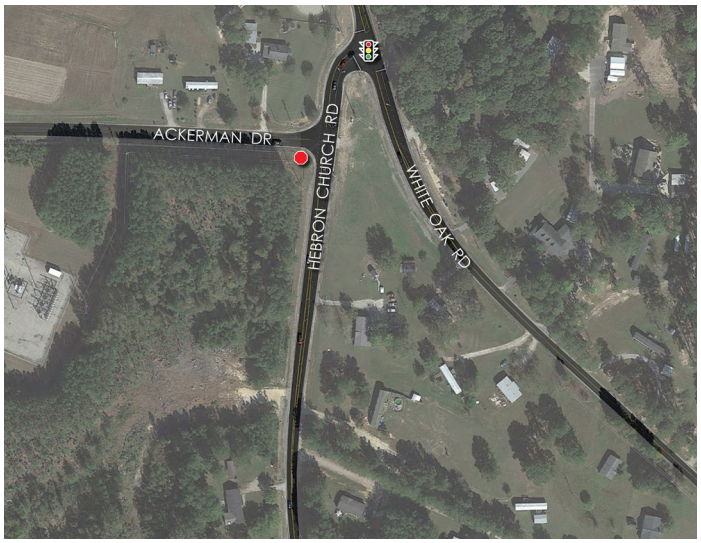
Removal of Pavement



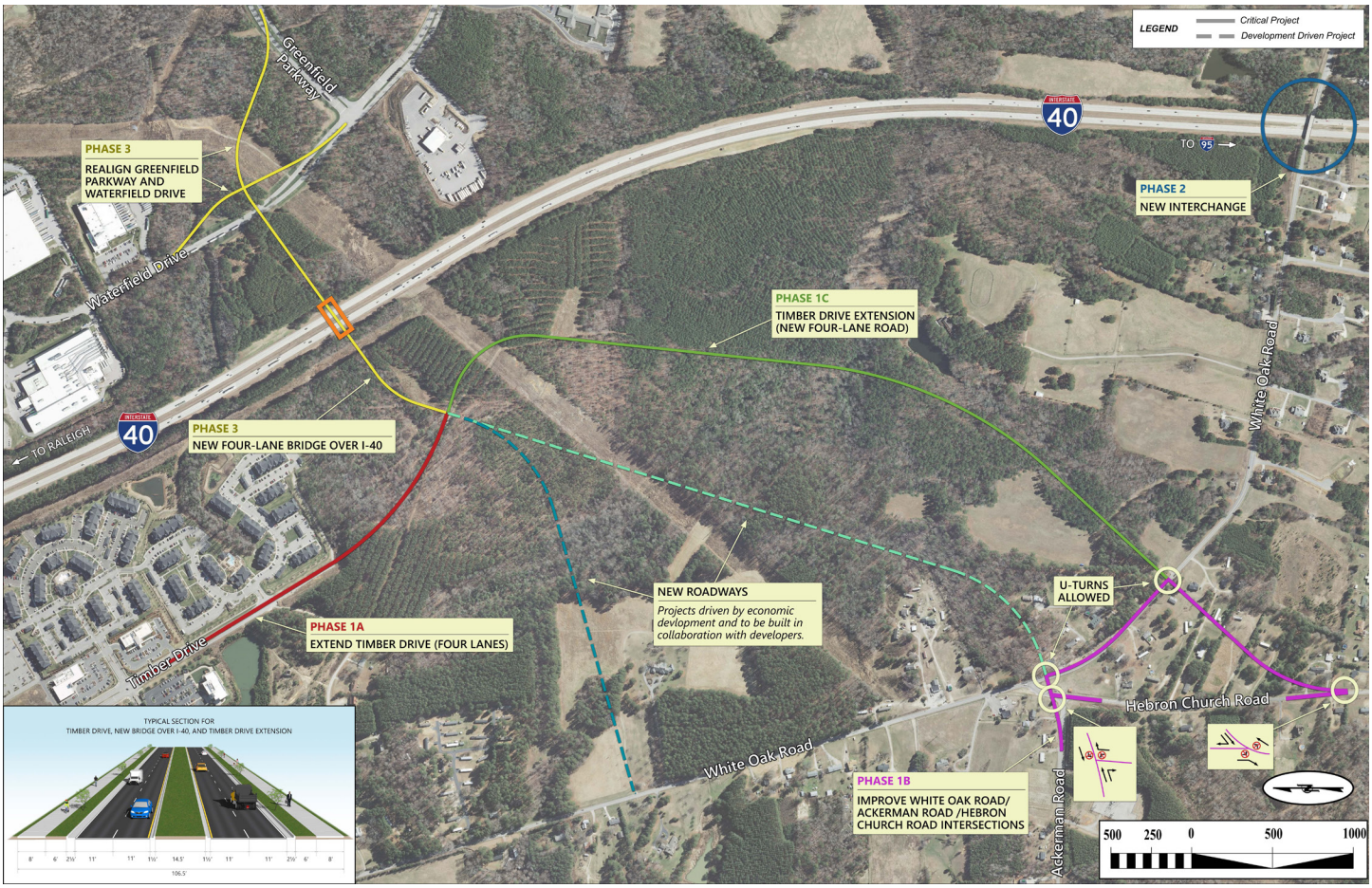


Intersection/Interchange Redesign: White Oak Road at Hebron Church Road

Existing Conditions



At the time of plan adoption the Town of Garner had awarded a contract to redesign this intersection.



* This a conceptual design from the Southeast Area Study (SEAS) and may be updated to address changing conditions.

Complete Streets Cross Sections

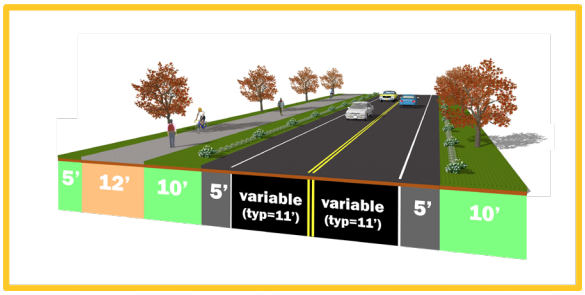
The map on the next page identifies the proposed laneage for all roadway improvements in the town. It also includes specific design details for each proposed cross section. These details reflect streetscape, laneage, and multimodal treatments as described below. More information on these cross-sections can be found in the Complete Streets Guidelines Section of this plan.

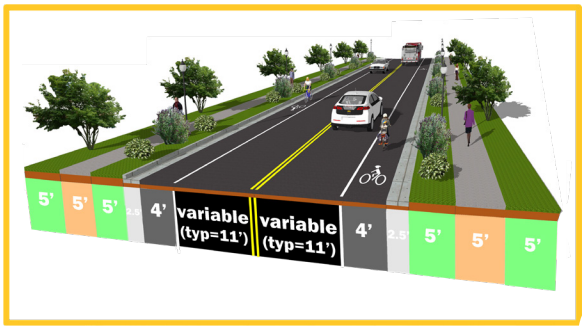
Two-Lane Roadways (yellow): Provide mobility and multimodal connections for adjacent neighborhoods. Design features include street trees, bike lanes, multiuse path or sidewalks, and pedestrian level lighting in some areas.

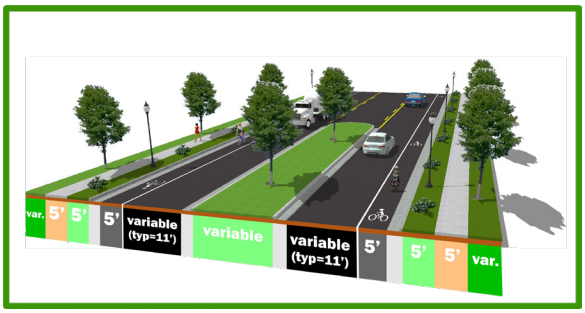
Two-Lane Divided Roadways (green): These roads tend to carry slightly more and faster traveling traffic than the standard two-lane roads. They provide higher mobility, access management and accommodations for bicyclists and pedestrians. Design features include canopy street trees, bike lanes, multiuse path or sidewalks, and pedestrian level lighting.

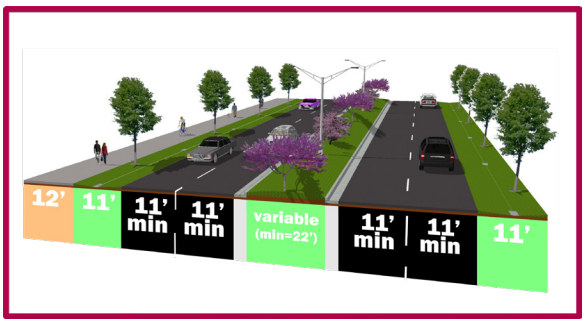
Four-Lane Divided Roadways (purple): These are typically local major arterials that provide primary mobility connection from the minor arterials to principal arterials and/or interstate facilities. Design features incAlude partial control of driveways, medians, street trees, protected bike lanes, multiuse path or sidewalks, and pedestrian-level lighting.

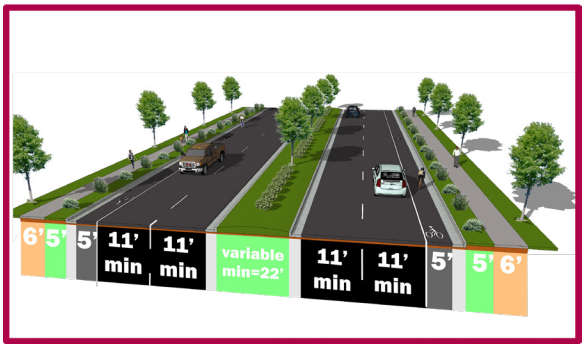
Six-Lane Divided Roadways (blue): These are the primary arterials that provide high mobility through the Garner community and/or interstate facilities. Design features include partial control of access, medians, street trees, no bike lanes, multiuse path or sidewalks, and pedestrian-level lighting.

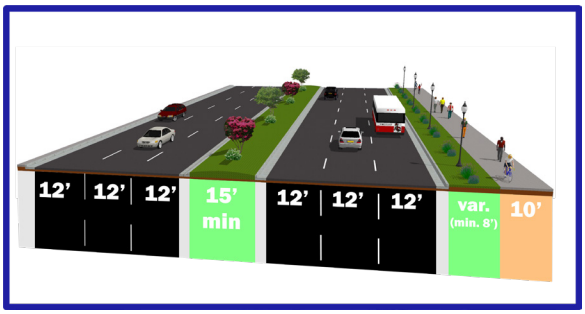


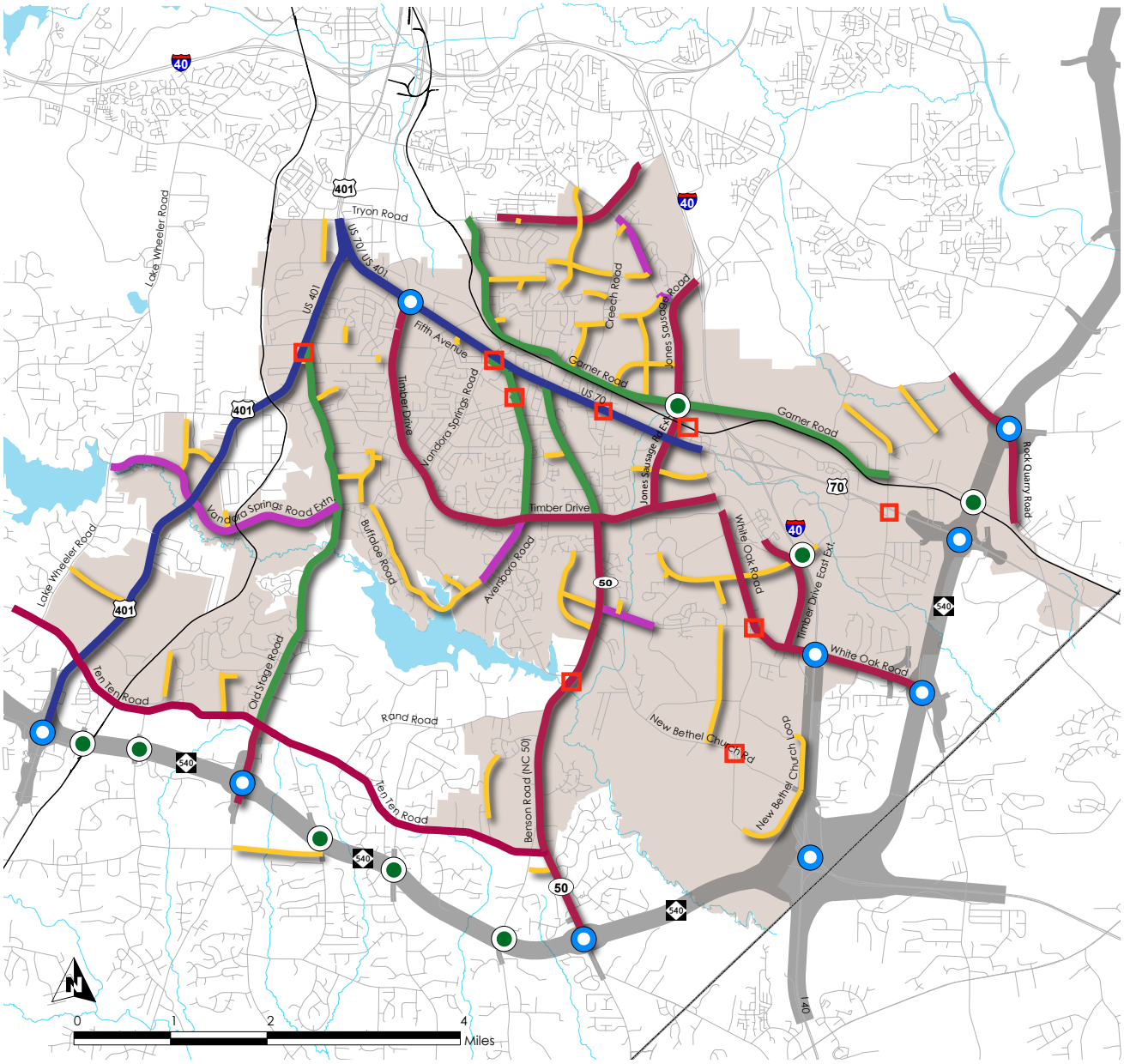












Proposed Laneage Map

Garner Intersection Improvements
Improvement Type

- Interchanges
- Grade Separations
- Intersections

New Laneage Recommendations

- Two Lanes
- Two Lanes Divided
- Three Lanes
- Four Lanes Divided
- Six Lanes Divided
- Proposed I-540 Extension
- Railroad

New collector streets and 2-lane to 3-lane widening projects are the assumed responsibility of the development community. When appropriate, the town may desire to implement a widening project during the development proposal process prior to approval.

PEDESTRIANS AND BICYCLES

This chapter provides key recommendations for the improvement of Garner's pedestrian and bicycle connectivity. These recommendations were developed based on direct feedback from the public, key stakeholders and the Steering Committee. The key plan recommendations are highlighted below, with more detailed considerations and recommendations presented in the rest of the chapter.

Key Points

The Steering Committee focused on increasing connectivity around schools and access to parks and shopping areas, resulting in a program of 62 projects totaling 41.9 miles in length prioritized into three tiers (short-, medium- and long-term). Priorities include finishing the downtown pedestrian "loop" and connecting Lake Benson and Lake Wheeler parks.

Bicycle recommendations include 19 miles of sharrow pavement markings, 23 miles of bicycle lanes (plus six miles from new road construction), and 12 miles of paved outside shoulders. A road "diet" (narrowing of the number of travel lanes) is proposed for Aversboro Road and 19 small projects for intersection treatments are also recommended.

EXISTING PEDESTRIAN CONDITIONS

Garner has pockets of well-connected streets, including those in some of Garner's older neighborhood developments, that accommodate every form of travel, support diverse uses, and enhance pedestrian access to adjacent properties. More recent suburban and commercial growth has either not accommodated pedestrian travel or implemented sidewalks that are disconnected from the overall sidewalk system. There are also significant physical barriers in the town that limit sidewalk connectivity like NC 50, US 70, and the railroad corridor that parallels the town center. Also, some neighborhood developments use cul-de-sac streets with sparse land use patterns that drastically limit present or potential sidewalk

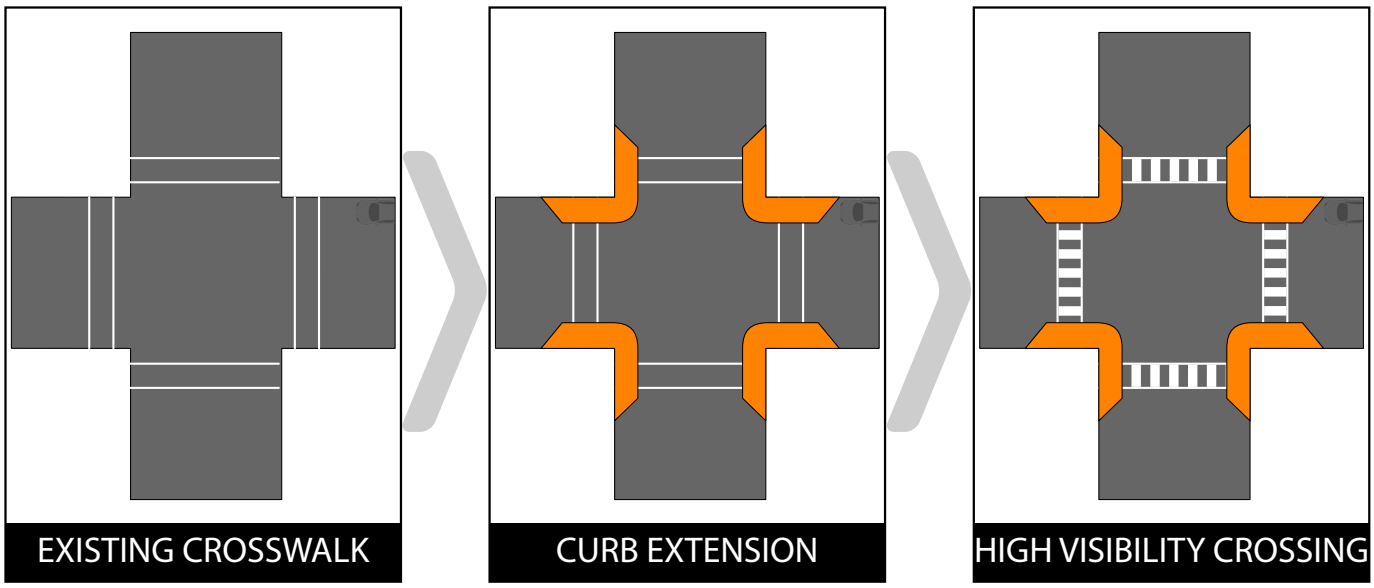
Many of the new subdivisions have young families who would love to be safely mobile by ***foot!***

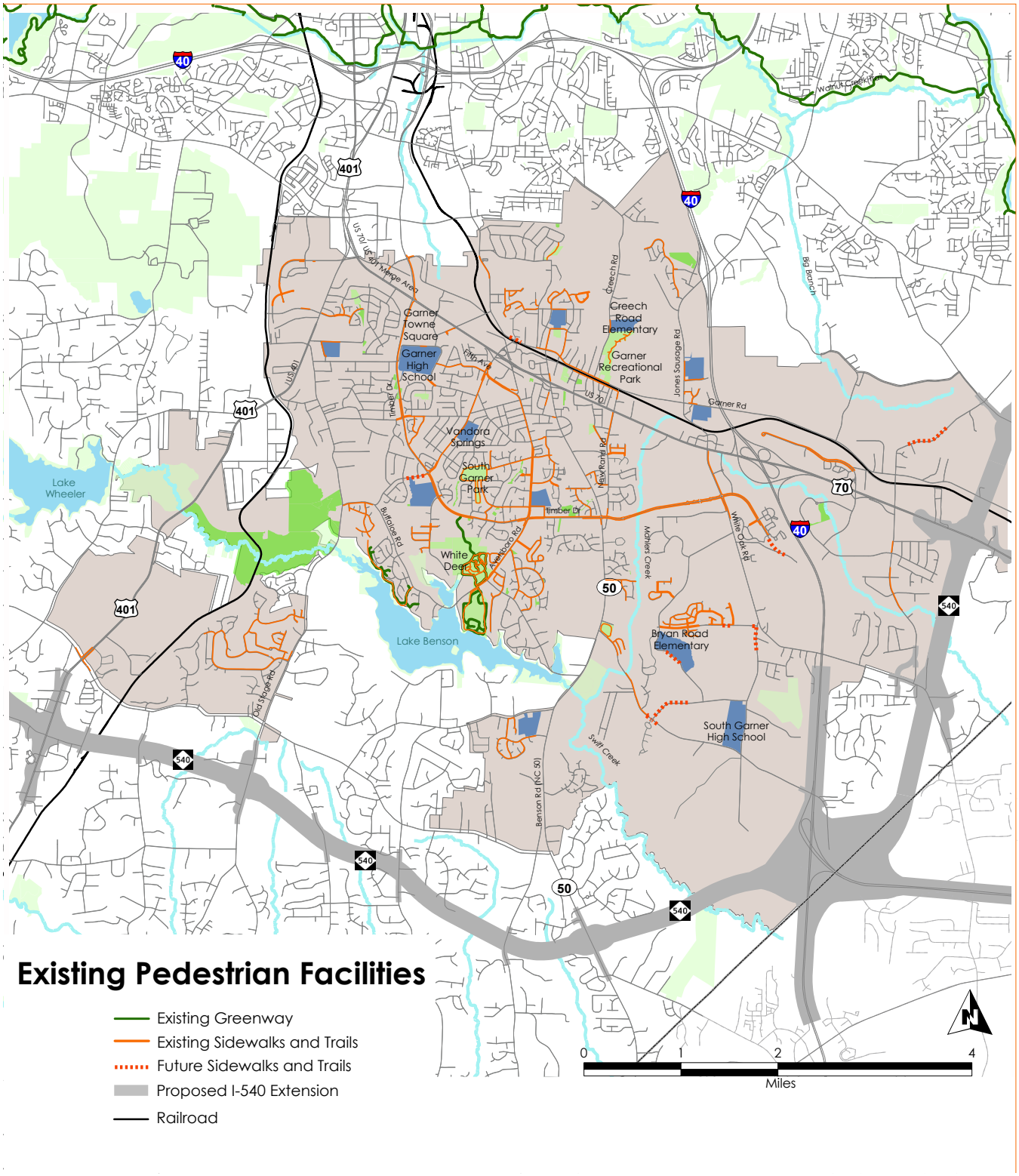
--Survey Respondent

This photo shows a lack of sidewalk in some newer suburban developments (source: Town of Garner)

The **map on the facing page** shows the concentration of sidewalks on major roads like Aversboro Road, Vandora Springs Road, and Timber Drive. Sidewalks along 7th Avenue complete a 4.5-mile central loop for pedestrian mobility, and connects destinations like Garner Town Hall, Southeastern Wake Regional Library, and Forest Hills Shopping Center, as well as Vandora Springs, Timber Drive, and Aversboro elementary schools. Garner Road and Main Street also have sidewalks that connect to destinations like the Garner Performing Arts Center, the Garner Senior Center, the downtown recreation center, and North Garner Middle School via collector streets, although peripheral connections are limited by rail and highway barriers. There are also a number of neighborhood developments close to Lake Benson like Summers Walk, Heather Woods, and Rosemoor Place with sidewalk systems that connect to the inner city loop and to walking paths within White Deer Park. Other neighborhood developments including Vandora Pines, Eagle Ridge, Bingham Station, and Arbor Greene have interconnected sidewalk systems but have major gaps in connecting to the overall system.

Intersections are the most dangerous areas for pedestrian travel. Although some intersections along the central walking loop and town core do have pedestrian countdown signals, most do not. High visibility "ladder" crosswalks are also rare. With many opportunities to cut down pedestrian crossing distances at most intersections, curb bulb-outs and pedestrian refuge islands are also nonexistent. However, Garner is enhancing accessibility by improving and implementing curb ramps.




Existing Pedestrian Facilities
Existing Greenway
Existing Sidewalks and Trails
Future Sidewalks and Trails
Proposed I-540 Extension
Railroad
0
1
2
4
Miles
N
Lake Wheeler
Lake Benson
Garner Towne Square
Garner High School
Vandora Springs
South Garner Park
White Deer
Creech Road Elementary
Garner Recreational Park
Bryan Road Elementary
South Garner High School
US 70/ US 401 Merge Area
Fifth Ave
Timber Dr
Buffaloe Rd
Avenboro Rd
Creech Rd
Jones Sausage Rd
Garner Rd
New Rand Rd
Mahlers Creek
White Oak Rd
Swift Creek
Benson Rd (NC 50)
Old Stage Rd
Big Branch
Walnut Creek Trail
40
401
70
50
540

EXISTING BICYCLE CONDITIONS

Bicycle travel routes can be derived from either on-street or off-street facilities. On-street facilities include bike lanes, shared roadway systems, paved shoulders, and separated facilities such as cycle tracks. Off-street facilities include greenway and multi-use trail systems, and multi-use side paths which are parallel to roadways.

Currently there are no designated on-street bicycle facilities in Garner. However, there are plenty of opportunities for "road diets" on town roadways to accommodate bike lanes and/or buffered or separated facilities. There are also opportunities to designate low use roadways (below 5,000 vehicles per day, preferably) into shared use systems and/or bicycle boulevard conversions. Elements to accommodate shared use systems include sharrow pavement markings, signage, and traffic calming strategies.

71%

of survey respondents **Agree or Strongly Agree** that connectivity of walking paths and trails are important to the future development in Garner.

21%

of survey respondents **ride a bike** one or more times a week.

SHARROW

NOUN

A shared-lane graphic street marking, typically depicting a cyclist, that indicates a roadway or travel lane dually supports automobile and bicycle traffic.

Garner has a very popular park system and several greenway trails that are enjoyed by cyclists and pedestrians. By focusing on specific projects to join the parks from north to south, the Town invests in an interconnected trail and greenway system through the center of the city. Upon completion of the large links the remaining short gaps can be closed by smaller projects.

As Garner closes connectivity gaps on the greenway trail and connects to on-street multi-use side path bicycle facilities, the Town will provide a viable option for its residents to use bicycle travel for both recreation and tranpsortation throughout the Town.

Greenways provide bicycling and recreation opportunities throughout Garner (source: Town of Garner)

PEDESTRIAN AND BICYCLE RECOMMENDATIONS

This section presents the pedestrian and bicycle project recommendations for the Garner Transportation Plan. Projects identified within the plan will enhance the Town's bicycle and pedestrian infrastructure making it safer and more bicycle- and pedestrian- friendly. In order to identify a wide range of projects to serve a variety of users, the recommendations include on-road projects such as adding sidewalks and bike lanes along roadways, to off-road projects such as greenway trails and small neighborhood connections. Projects also address trail and street crossings to make it easier for pedestrians and cyclists to pass through intersections or cross major roads. All of these improvements will help to create an interconnected pedestrian and bicycle network in Garner.

A key theme from previous planning efforts that continues to this day is the need to focus on increasing bike and pedestrian connectivity around schools and access to parks and shopping areas. Through the vetting of the 2010 Plan as well as subsequent sidewalk and greenway improvements, the resulting program recommends 194 projects totaling 64.1 miles in length of new sidewalks, 79.8 miles of bikeways (sharrows, bicycle lanes, plus six miles from new road construction) and 34.1 miles of new trails. These projects have been prioritized into three tiers (short, medium- and long-term). Priorities include finishing the downtown pedestrian "loop" and connecting Lake Benson, White Deer Park, intersection treatments and Lake Wheeler parks.

The bicycle and pedestrian needs for the Garner community were vetted against the previous recommendations from the 2010 Transportation Plan. However, the Steering Committee wanted a higher level of vetting relative to the greenway system. That is, previous plans including the updated Wake County Greenway Plan included a multitude of improvements that relied on utility easements and stream alignments throughout the town. This update focused on vetting these important trail connections with an emphasis on connecting to existing multiuse trails and key destinations.

64 MILES OF NEW SIDEWALKS

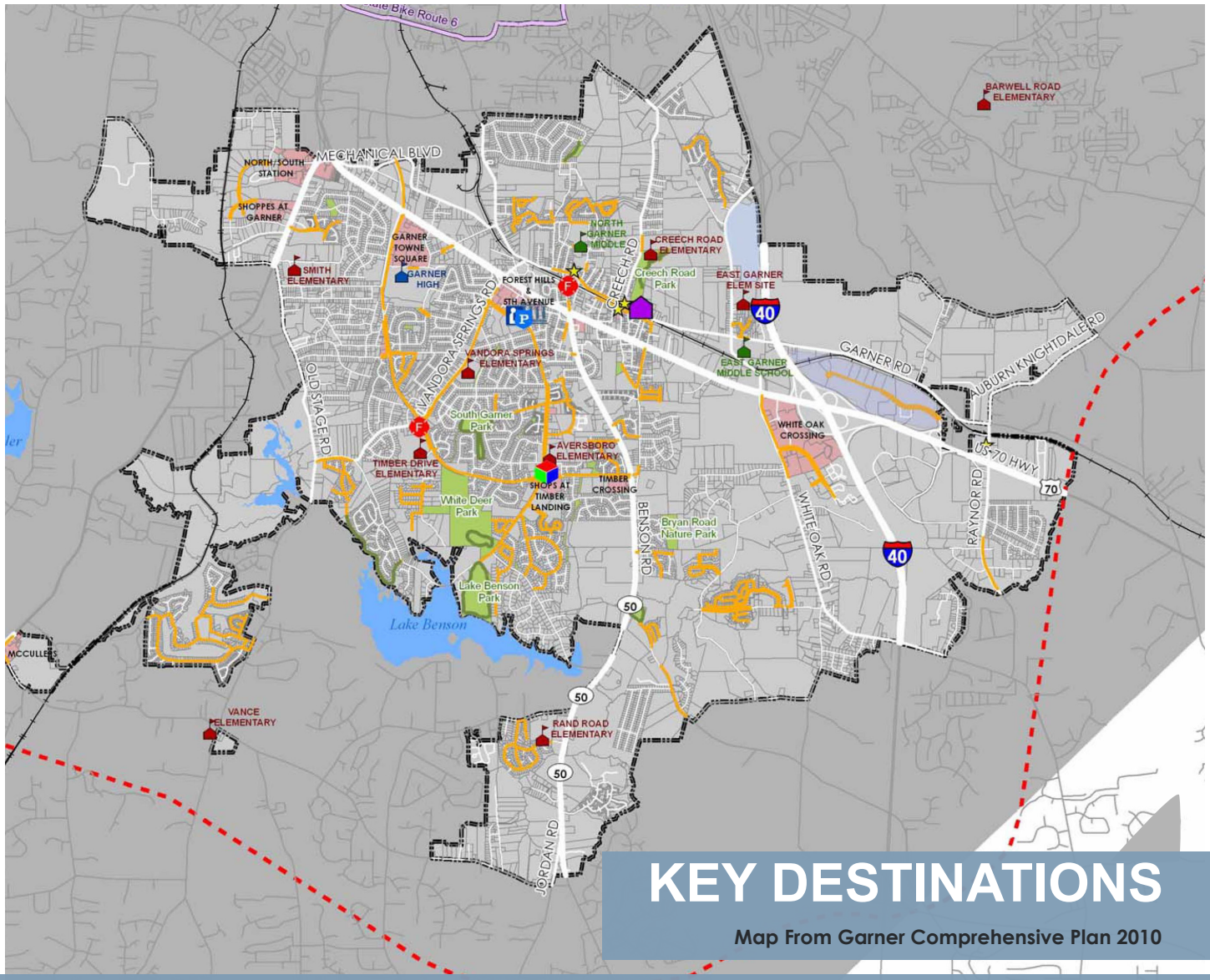
80 MILES OF NEW BIKEWAYS

34 MILES OF NEW TRAILS

194 MILES OF BICYCLE AND PEDESTRIAN IMPROVEMENTS

Pedestrian and Bicycle Considerations

The beginning point of a well-connected multimodal network is understanding the key destinations and attractions for cyclists and walkers alike. The map below highlights the key destinations within Town. Making bicycle-pedestrian infrastructure connections that are safe and convenient to these destinations, as well as connecting existing trail systems (including Neuse River Trail system), is essential to creating a well-connected multimodal network.

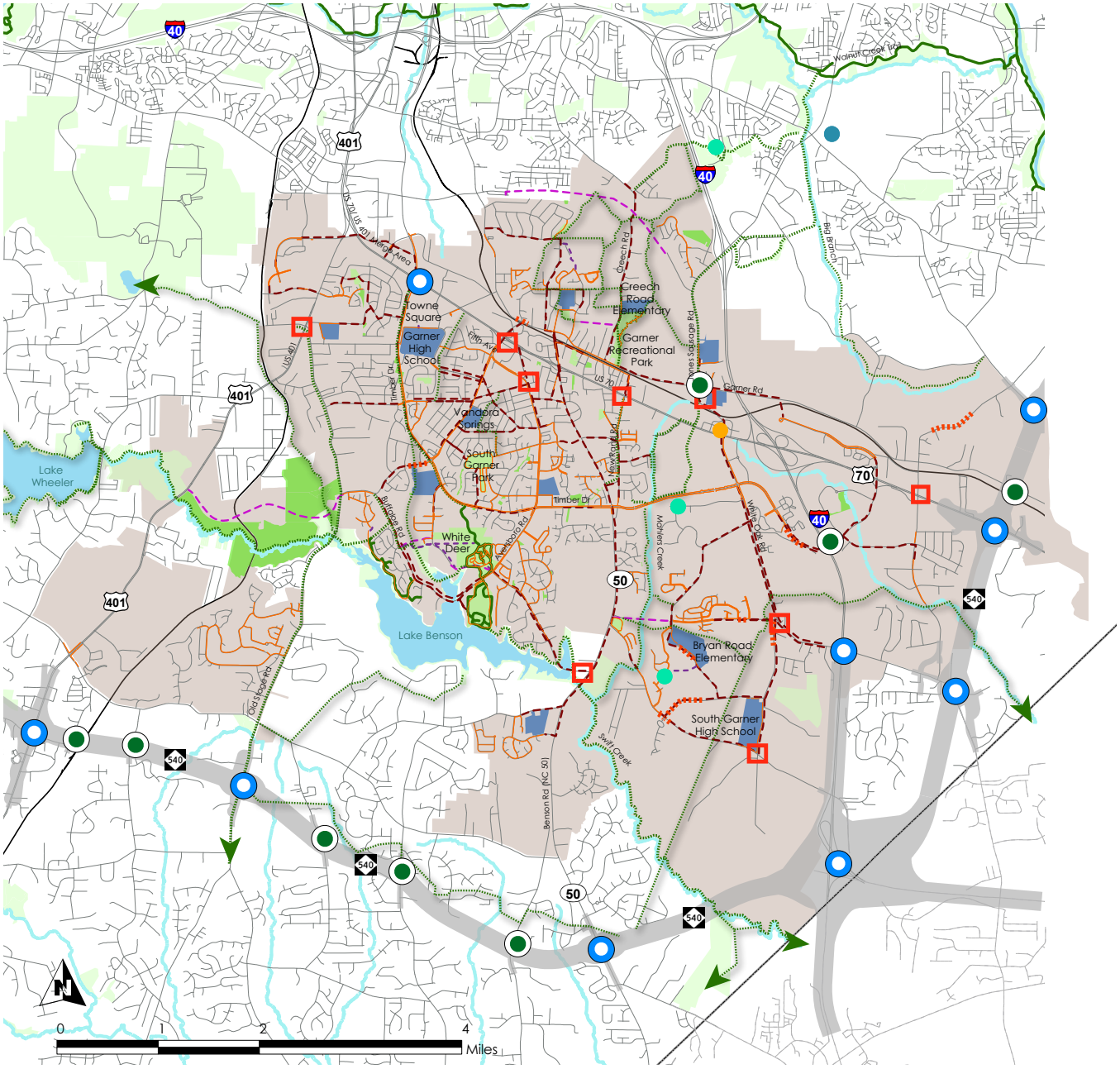


KEY DESTINATIONS

Map From Garner Comprehensive Plan 2010

Recommendations

Project recommendations are organized into three sections below: bicycle projects, pedestrian projects, and multimodal intersection improvements. The bicycle projects identified in the Plan include on-road and off-road facilities like bike lanes, sharrows, sidepaths, multiuse trails, and paved shoulders to accommodate all levels of cyclists. The pedestrian projects include a variety of sidewalk recommendations based on safety and economic considerations. The proposed intersection improvements include safety enhancements of various roadway crossings throughout the town.



Pedestrian Facilities

Garner Intersection Improvements
Improvement Type

- Interchanges
- Grade Separation
- Intersections

- Traffic Signal
- Bridge
- Culvert
- Railroad
- Existing Sidewalks and Trails
- Future Sidewalks
- Proposed I-540 Extension

Greenways and Trails
- Existing Greenway
- Proposed Greenway or Sidepath

Pedestrian Facilities
- New Roadway - Bike Lanes & Sidewalk
- Proposed Sidewalk
- Proposed Trail

Pedestrian Recommendations

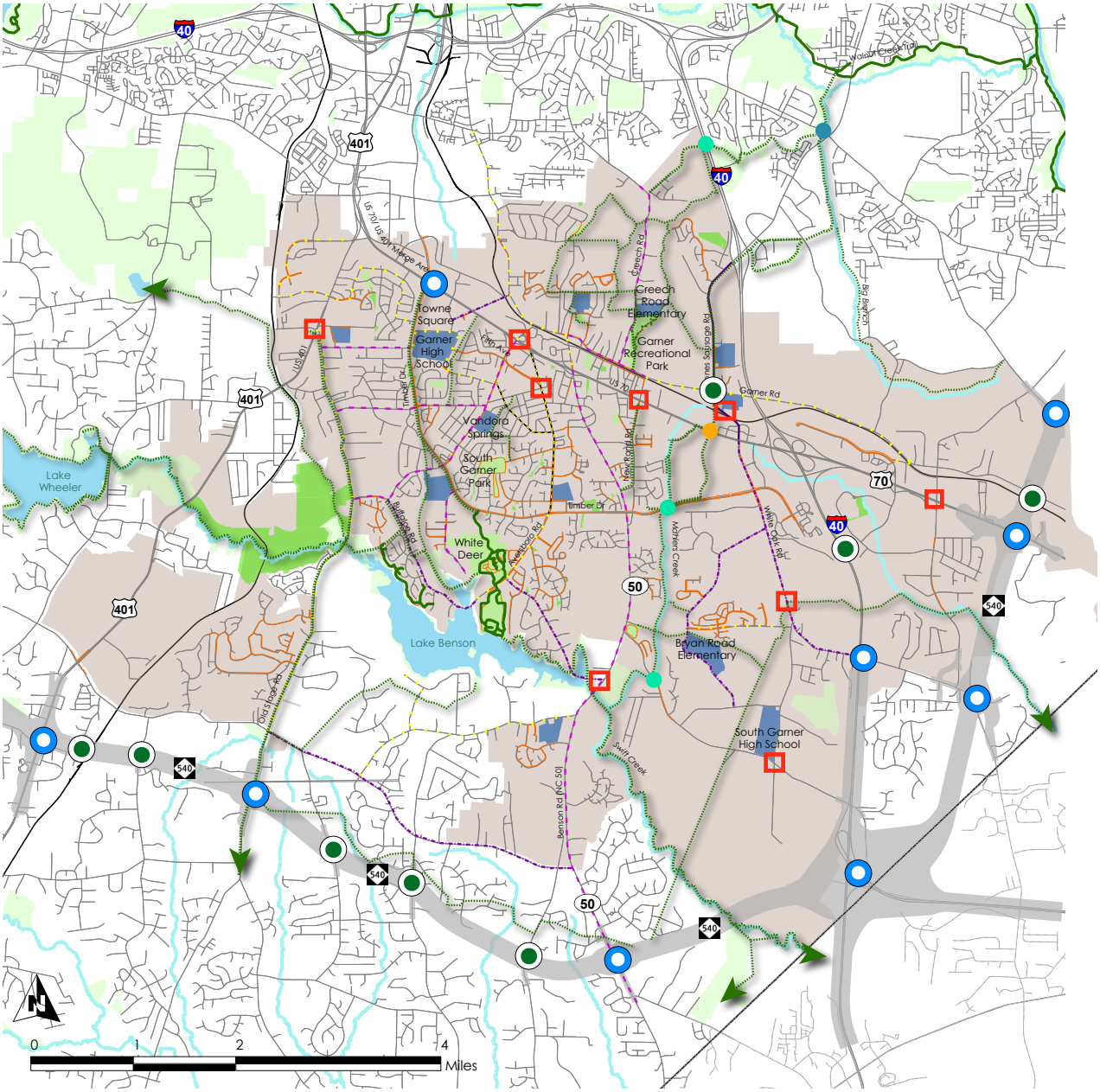
Pedestrian facility recommendations within this Comprehensive Transportation Plan update include sidewalks and intersection improvements. Such facilities can be built "incidentally" as part of a roadway construction project, or independently. The Transportation Plan identifies a number of proposed pedestrian facilities that can help make Garner a more walkable community. Several of these projects originated from the 2010 Comprehensive Transportation Plan and were vetted as a part of this planning process.

Several different factors were used to develop the pedestrian network improvements. The process initially utilized the 2010 Comprehensive Transportation Plan improvements as a basis. This list was vetted to account for improvements made over the past seven years since the plan was initially adopted. Most of these improvements involved simple sidewalk installation. The network was then evaluated to ensure that sidewalk "gaps" were improved as well as making important connections to key attractions and destinations, as seen in the Key Destinations map on at the beginning of this chapter. Lastly, the pedestrian network was overlaid with the proposed roadway and connectivity map to ensure new sidewalk connections along future proposed roadway facilities.

Priority Level	Definition
High Priority	To be implemented **immediately**
Short-Term	To be implemented within **2-5 years**
Med-Term	To be implemented within **6-10 years**
Long-Term	To be implemented within **10-20 years**

Once the network of pedestrian improvements were identified, a vetting of individual project prioritization was conducted. Each project was categorized into one of four tiers: High Priority, Short-term, Mid-term, and Long-term. A number of factors were used to qualify the individual pedestrian project including: public input, project characteristics (i.e., access to schools, parks, existing sidewalks, etc.), constructability and costs. Recommended locations and treatments for each project type are summarized in the table on the following pages. The table shows the project, phasing and estimated construction costs.

While these project priorities represent community input on the importance of access to key destinations and connectivity to existing sidewalks, the town should take advantage of unplanned opportunities that may arise for new sidewalk construction. Such opportunities might include roadway reconstruction, development community sidewalks, or access to location-specific funding, such as through a Safe Routes to School grant or Spot Safety Program (NCDOT). Flexible decision-making and the combination of independent and incidental construction will allow the Town to most effectively apply limited resources toward implementation of sidewalk segments that will, in the end, create a highly connected pedestrian network.



Greenways and Bicycle Facilities

Garner Intersection Improvements
Improvement Type

- Interchanges
- Grade Separation
- Intersections

- Traffic Signal
- Bridge
- Culvert
- Railroad
- Existing Sidewalks and Trails
- Proposed I-540 Extension

Greenways and Trails
- Existing Greenway
- Proposed Greenway or Sidepath

Proposed Bicycle Facilities
- Bike Lanes
- Paved Shoulders
- Road Diet
- Sharrows

On-road bike facilities can be, at times, very easy to implement. Most often they represent a cost-effective measure to improving the bicycle-friendliness of a town. Frequently, on-road projects require little more than additional painting and signage on a road. Other times, on-road projects can be constructed incidentally to other roadway improvements (such as a resurfacing or widening), which can save on mobilization and construction costs. The map on the facing page highlights the recommended bicycle and trail system for the Town of Garner.

Another key component for improving bikeways in the Garner community is through the implementation of Road Diets. Road Diets are a common practice for converting a roadway relatively easily into a cross-section that better accommodates bicyclists. One such example is Aversboro Road from Timber Drive to the Forest Hills Shopping Center near 5th Avenue. This road is currently four-lane undivided and carries less than 7,500 vehicles per day. Having no median or center turn lane makes this road potentially dangerous. Also, with the low traffic volumes, Aversboro Road can easily be served with two lanes. The road diet would maintain two through lanes, include streetscape elements, bike lanes and sidewalks, and a middle lane for left turns with plantable median islands. Aversboro Road could become Garner's signature Complete Street. The figure on the following pages shows the plan view for the proposed Aversboro Road Complete Street design.

All of these practices should be considered in the implementation of the Plan, keeping in mind that bicycle-related improvements can often make roadways safer for vehicles and improve maintenance conditions by providing additional shoulder width.

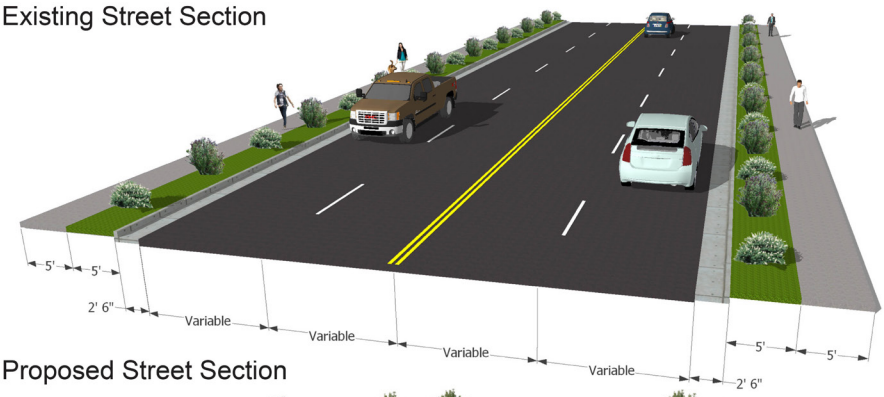
ROAD DIET

NOUN

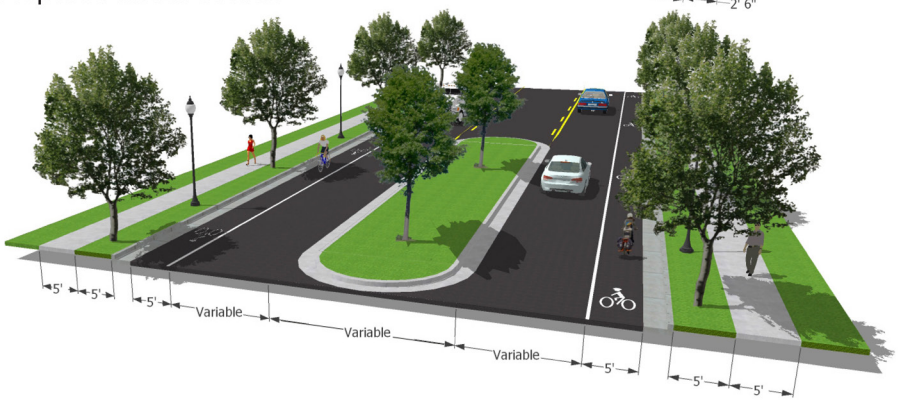
Removing travel lanes from roadways and utilizing space for other uses and travel modes (Federal Highway Administration Safety Program)

The figures to the right show the existing Aversboro Road cross-section compared to the new road diet cross-section, which is more bike and pedestrian-friendly, with bike lanes and sidewalks.

Existing Street Section



Proposed Street Section



Aversboro Great Street: Northern Portion

Aversboro Great Street: Southern Portion

Pedestrian and Bicycle Intersection Improvements

As a pedestrian or bicyclist, getting across a busy street safely can be a daunting task. Many of the intersections in Garner lack high-visibility crosswalks and pedestrian refuge treatments that can provide the quality of safety that pedestrians need. Crossing improvements are a critical step in creating a safe and convenient pedestrian and bicycle network. Safe crossings are necessary to provide access across major roads and bridges, as well as through key intersections that could otherwise be major barriers to walking and biking. In the absence of these facilities, crossing on US-70 are so dangerous they create major gaps in the current system.

Primarily, crossing improvements involve adjusting traffic signal timing to allow adequate time to cross, pedestrian countdown signals, high-visibility crosswalks, pedestrian level lighting and in some cases, shade trees. At some intersections, signage might be provided to alert motorists of the potential presence of pedestrians and cyclists, and in some cases, medians might be installed to offer refuge to pedestrians and cyclists on large roads with wide crossing distances. The following table summarizes recommended crossing improvements for Garner, along major roads and bridges, and over railroads.

The Sidewalk Crossings Table identifies intersections requiring improvements to enhance pedestrian and bicyclist safety. Many of these intersections were identified within the 2010 Transportation Plan. Since then, improvements were made at the intersection of Vandora Springs Road at 7th Avenue, which received new crosswalks and pedestrian signals; and at the intersection of Benson Road at Timber Drive, which received new pedestrian signals. As part of the Unified Development Ordinance (UDO) update should include a provision to provide sidewalks on both sides of the street when possible.

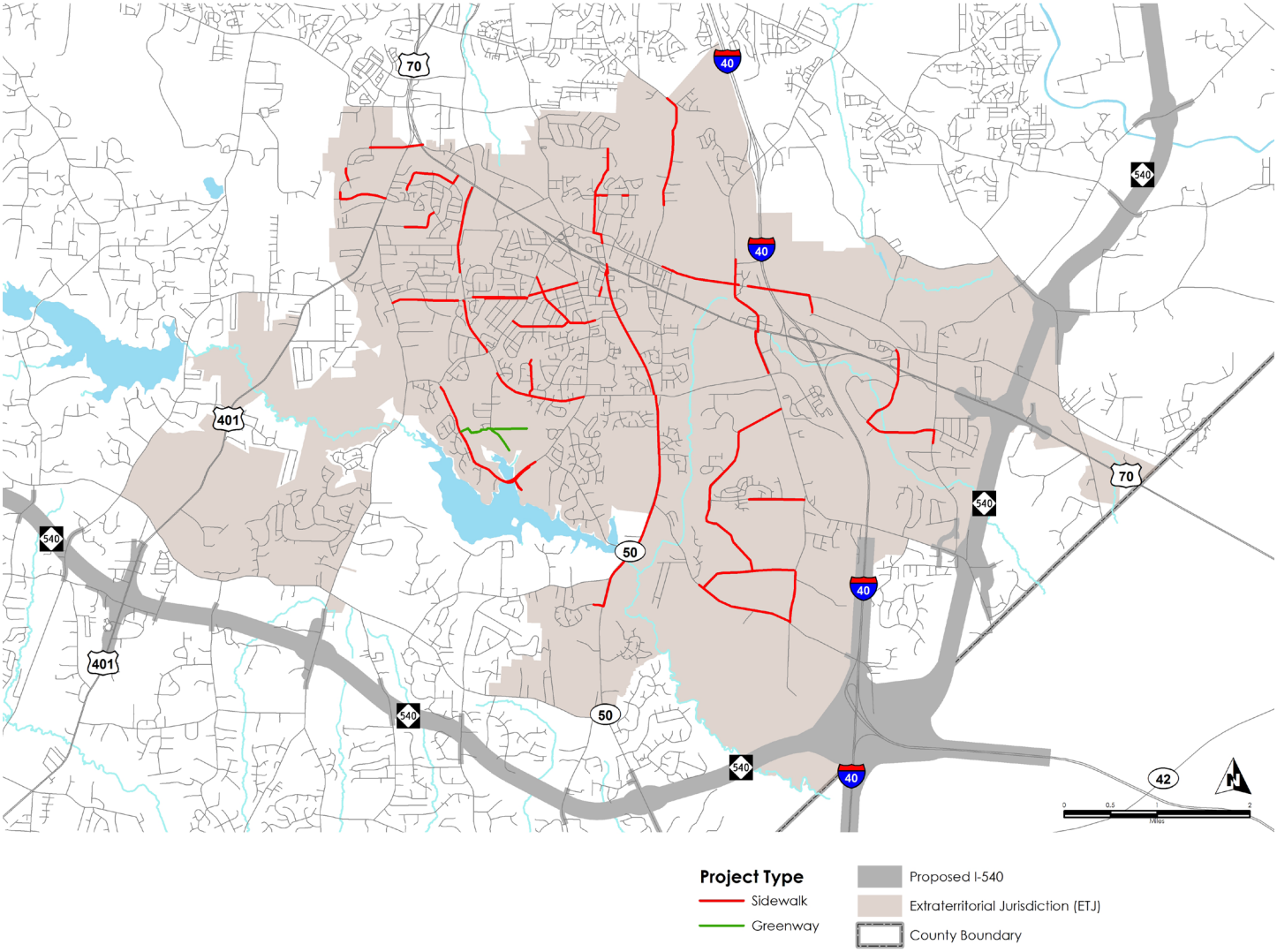
Sidewalk Project Implementation Table

Priority Level	Location	From	To	Cost
High Priority	Buckingham Rd	Flanders Rd	Leary Rd	$140,000
High Priority	South Garner Greenway Extn.	Buffalo Rd	White Deer Park	$2,360,000
Short-term (2-5 years)	Lakeside Dr	Aversboro Rd	Existing Sidewalk	$20,000
Short-term	St Mary's St	Forest Dr	Existing Sidewalk	$20,000
Short-term	Curtiss Dr	Weston Rd	Avery St	$50,000
Short-term	Vandora Springs Rd	Tifffany Circle	Buffalo Road	$45,000
Short-term	West Garner Rd	Creech Road Park (Existing Sidewalk)	New Rand Rd	$20,000
Short-term	Weston Rd 2	Garner Rd	Curtiss Dr	$100,000
Short-term	Woodland Rd 1 (south side)	Brompton Ln	Vandora Springs Rd	$110,000
Mid-term (6-10 years)	US 401	Garner Station Blvd	Purser Dr	$150,000
Mid-term	Ackerman Rd	White Oak Rd	Existing Sidewalk	$170,000
Mid-term	E Garner Rd	New Rand Rd	Ashlyn Ridge Dr (Existing Sidewalk)	$200,000
Mid-term	Northeast Corner of Clifford Rd	Clifford Rd	Hebron Church Rd	$50,000
Mid-term	Maxwell Dr	Vanessa Dr	Greenbrier Rd	$160,000
Mid-term	Meadowbrook Dr	W Garner Rd	Weston Rd	$200,000
Mid-term	St Mary's St (South)	Existing Sidewalk	Benson Rd	$10,000
Mid-term	Park Ave	Vandora Springs Rd	Lakeside Dr	$160,000
Short-term	Timber Dr 1 (west side)	US 70	South to Existing Sidewalk	$170,000
Short-term	Timber Dr 2	Woodland Ave	Vandora Springs Rd	$160,000
Mid-term	Vandora Ave	Vandora Springs	Aversboro Rd	$140,000
Mid-term	Vesta Dr	Longneedle Ct (Existing Sidewalk)	US 70	$200,000
Mid-term	Weston Rd 1	Curtiss Dr	Meadowbrook Dr	$140,000
Mid-term	Woodland Rd 2 (north side)	Ford Gates	Vandora Springs Rd	$150,000

Sidewalk Improvements Table (cont.)

Priority Level	Location	From	To	Cost
Long-term (11+ years)	Lakeside Dr	Vandora Springs Rd	Aversboro Rd	$210,000
Long-term	Waterfield Dr	Greenfield Pkwy	Raynor Rd	$240,000
Long-term	Creech Rd	Creech Rd Elementary	Existing sidewalk on E. Garner Rd	$240,000
Long-term	Jones Sausage Rd	WKBQ Radio Station Rd	E Garner Rd	$240,000
Long-term	N Greenfield Pkwy	Existing Sidewalk	Waterfield Dr	$240,000
Long-term	Buffaloe Rd	Misty Meadow Ln (Existing Trail)	Vandora Springs Rd	$260,000
Long-term	Clifford Rd (north side)	New Bethel Church Rd	Hebron Church Rd	$270,000
Long-term	Benson Rd 1 - Side Path	Timber Dr	Centennial Park	$280,000
Long-term	New Bethel Church Rd	Existing Sidewalk	South Garner High School	$280,000
Long-term	Garner Station Blvd 2	Junction Blvd	Fayetteville Rd (north side)	$280,000
Long-term	Garner Station Blvd 1 (south side)	Existing Sidewalk	Fayetteville Rd	$310,000
Long-term	Benson Rd 2 - Side Path	Circle Dr	Timber Dr	$370,000
Long-term	Benson Rd 3 - Side Path	Centennial Park	Buffaloe Rd	$380,000

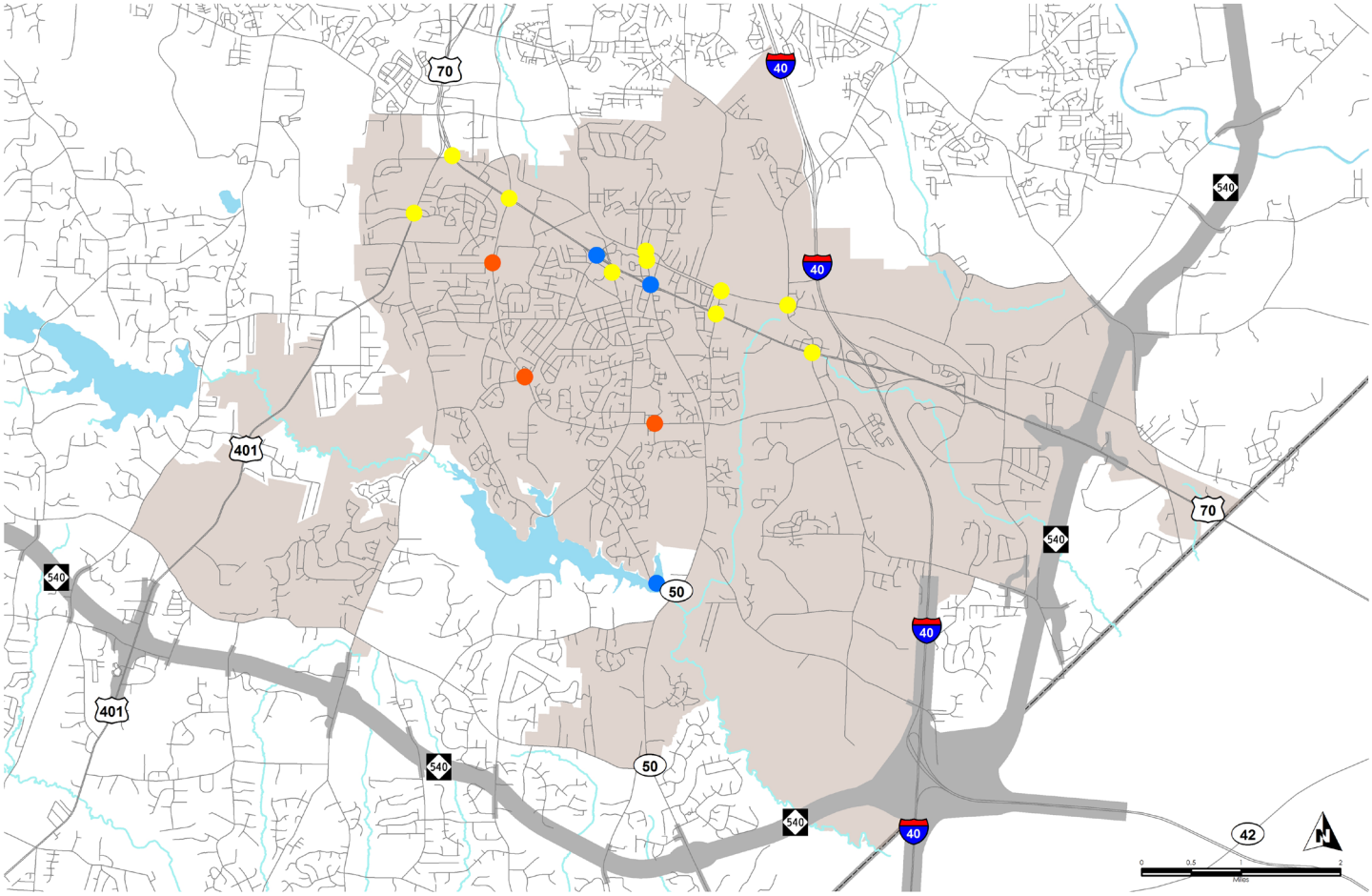
Sidewalk Improvements Map



Crossing Improvements Table

Location	Recommendation	Crossing Type	SRTS Eligibility	Cost
Timber Dr @ Harth Dr	Add high-visibility crosswalks and median refuge island	School	Yes	$15,000
Timber Dr @ Vandora Springs Rd	Add high-visibility crosswalks & pedestrian signal actuation	School	Yes	$16,000
Garner Rd @ New Rand Rd	Add crosswalks & traffic signal with pedestrian actuation	Pedestrian		$365,000
US 70 @ New Rand Rd	Add pedestrian refuges at slip lanes and median; high-visibility crosswalks & pedestrian signal actuation	Pedestrian		$38,000
Garner Rd @ Benson Rd	Remove slip lane	Pedestrian		$3,000
Fayetteville Rd @ Purser Dr	Add high-visibility east-west crosswalks (2); 800' of sidewalk to Wal-mart Supercenter	Pedestrian		$203,000
Timber Dr @ Grovemont Rd	Add pedestrian signal actuation	School	Yes	$11,000
Buffaloe Rd @ Lake Benson Bridge	Add sidewalks and shoulder/bike lane on new bridge	Bridge Improvement		$391,000
Garner Rd @ Jones Sausage Road	Add pedestrian signal actuation and crosswalks	Pedestrian	Yes	$12,000
Mechanical Blvd @ US 70	Add high-visibility crosswalks, pedestrian signal actuation w/midblock button, 1,400' of sidewalk, curb ramps (8), lighting, and median refuge islands (6)	Pedestrian		$428,000
Timber Dr @ US 70	Remove SB slip-right, add median refuge islands (2), crosswalks & pedestrian actuation signal	Pedestrian		$7,000
Aversboro @ 5th Avenue	Improve intersection (refer to Aversboro concept), textured/colored crosswalks, LED beacon (2)	Pedestrian		$33,000
Jones Sausage Rd @ US 70	Add crosswalks, pedestrian signal actuation, create median refuges (2)	Pedestrian		$12,000
Vandora Springs @ US 70	Extend sidewalks to 5 ft on bridge	Bridge Improvement		$13,000
Benson Rd @ US 70	Improve sidewalk approaches to bridge (840' of sidewalk)	Bridge Improvement		$220,000

Crossing Improvement Map



Improvement Type

- Bridge Improvement
- Pedestrian
- School

- Proposed I-540
- Extraterritorial Jurisdiction (ETJ)
- County Boundary

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PUBLIC TRANSIT SYSTEM

This chapter provides key recommendations for the improvement of Garner's public transit system and improve the level of service. These recommendations were developed based on direct feedback from the public, key stakeholders and the Steering Committee. The key plan recommendations are highlighted below, with more detailed considerations and recommendations presented in the rest of the chapter.

Key Points

Expanding the GoRaleigh/GoTriangle transit service is an important mid-term recommendation, and can be potentially funded with the recently passed Wake County sales tax increase. The proposal provides a circulator route in the center of town that would connect to the existing local and express routes providing service to downtown Raleigh. Ultimately, rail service on the existing Norfolk Southern/ NCRR line would tie into downtown and suburban park-and-ride stations.

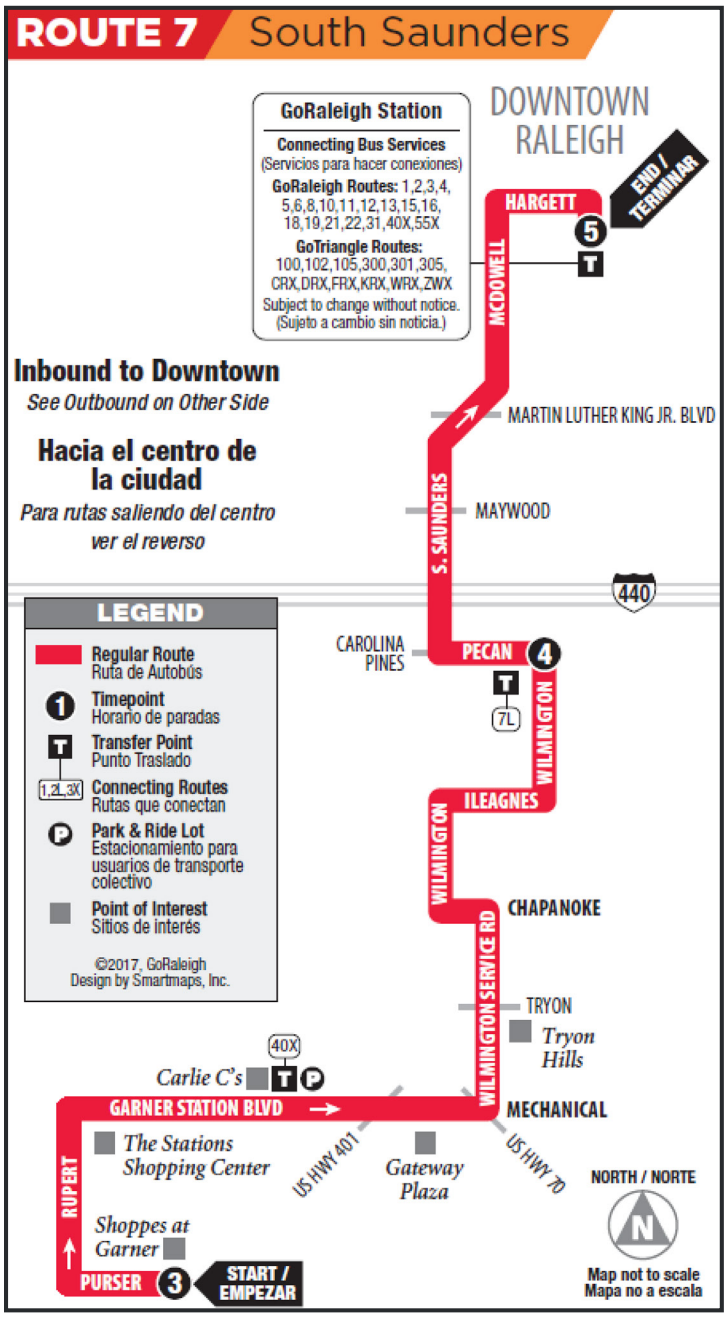
Even as these fixed-route systems become more robust, technology is changing the nature of how we're think about public transport. Peer ridesharing, car-sharing, and responsive route deviation routing are going to be a part of the solution set for Garner.

PUBLIC TRANSIT CONDITIONS

Currently, transit service in Garner is limited, with two routes and one express route to Wake Technical College.

GoRaleigh offers one route serving northwest Garner, known as the South Sanders route or Route #7**.** The route offers 14 (including bidirectional) stops along the Hwy 70 and Fayetteville Road corridors close or adjacent to WalMart Supercenter, The Stations Shopping Center, Tryon Hills Shopping Center, the Shoppes at Garner and Chapanoke Shopping Center. This route also offers two Park and Ride locations in Garner at Lowe's Home Improvement on US 70 and at Super Kmart on Fayetteville Road.

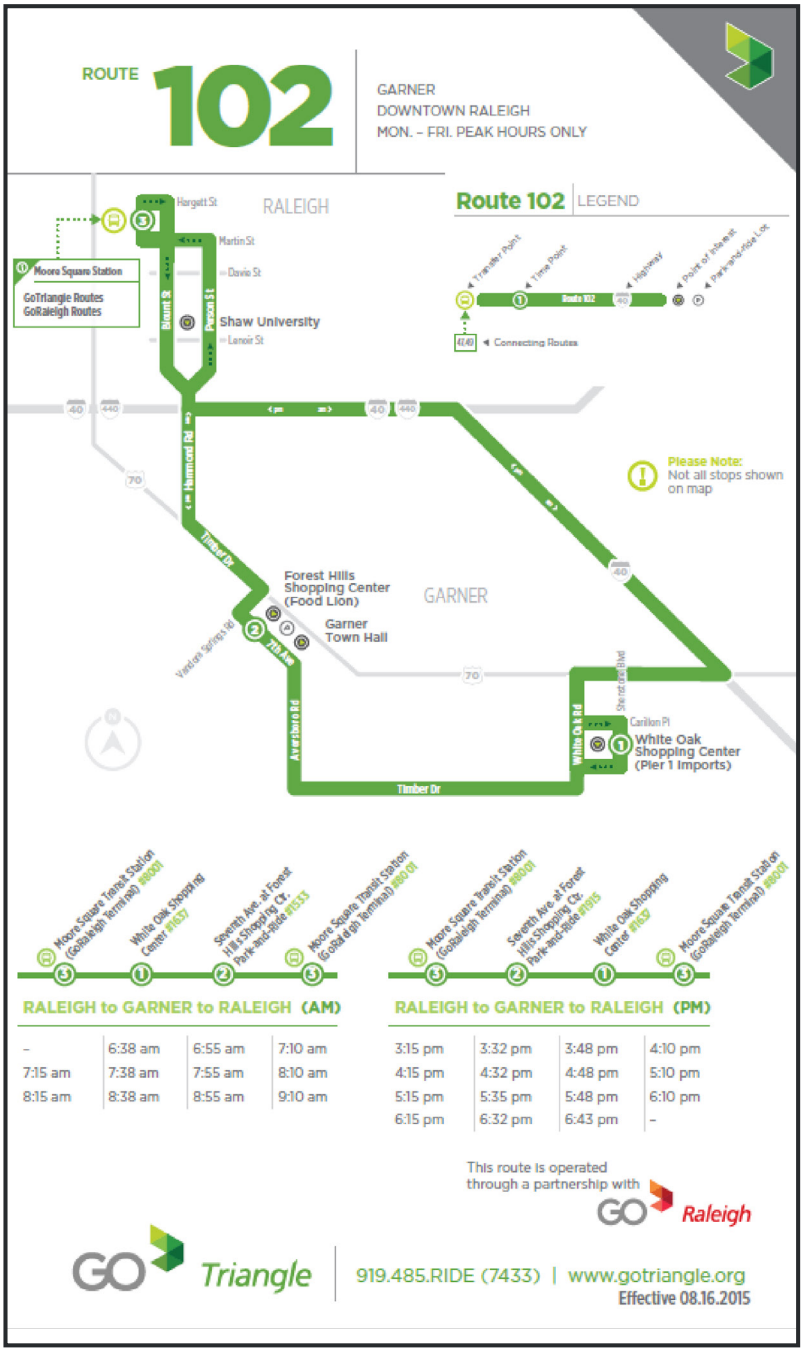
Go Raleigh also offers the Wake Tech Express route (#40X) with two stops along Garner Station Blvd. in northwest Garner. This route is free for students with a valid Wake Technical Community College ID.



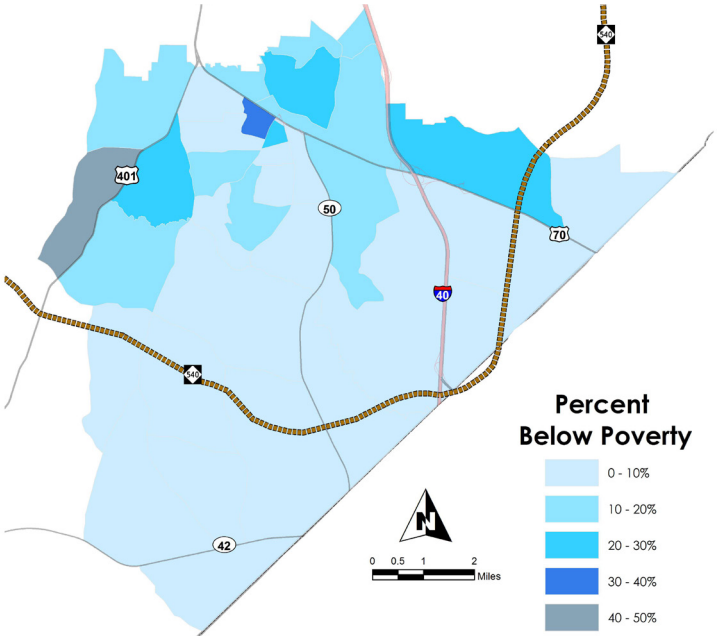
Route 7 connects Garner and Downtown Raleigh (source: goraleigh.org)

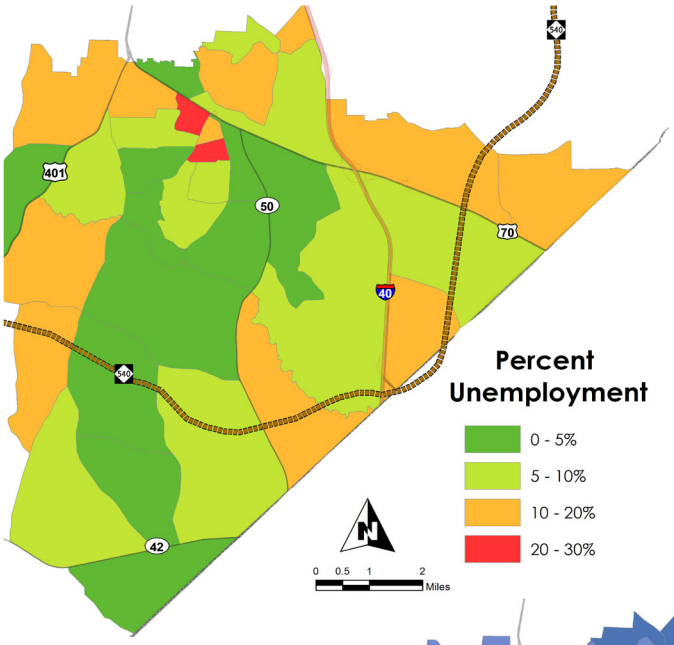
GoTriangle currently offers one route offering service to central Garner, known as the Raleigh-Garner route or Route #102. The route offers 18 (including bidirectional) stops along Hammond Dr., Vandora Springs Rd., 7th Ave., Aversboro Rd., Timber Dr., Timber Drive East, and White Oak Rd. Destinations include Forest Hills Shopping Center, Garner Town Hall, White Oak Shopping Center, Timber Crossings Shopping Center, and Aversboro Elementary School.

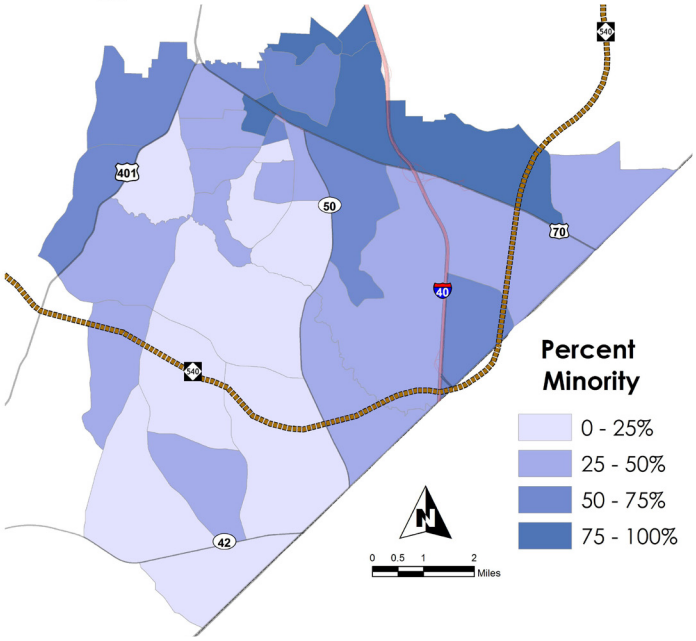
Transit service is limited in Garner, but with the recent passage of the Half Cent Sales Tax Referendum, which could be used to fund potential new bus stops and routes connections further into Garner, along with the improvements identified within the completed Wake County Transit Plan, the Town has an opportunity to improve transit connections and provide additional choices for its residents. Ultimately, a rail service on the existing Norfolk Southern/NCRR line also would tie into downtown and suburban park-and-ride stations.



Route 102 connects Garner and Downtown Raleigh (source: gotriangle.org)


401
50
70
40
540
42
Percent
Below Poverty
0 - 10%
10 - 20%
20 - 30%
30 - 40%
40 - 50%
N
0 0.5 1 2
Miles


401
50
70
40
540
42
Percent
Unemployment
0 - 5%
5 - 10%
10 - 20%
20 - 30%
N
0 0.5 1 2
Miles


401
50
70
40
540
42
Percent
Minority
0 - 25%
25 - 50%
50 - 75%
75 - 100%
N
0 0.5 1 2
Miles

PUBLIC TRANSIT RECOMMENDATIONS

Transit services in the Town of Garner are limited today. However, with the recent completion of the Wake County Transit Plan and the passage of the ½ Cent Sales Tax, Garner's transit options could very well expand. In preparation for these future transit options, the Town of Garner can begin exploring and enacting policies to provide for existing and future transit services. By establishing policies to promote existing and future transit, Garner can improve its position within the region as a community that will be a future candidate for more fixed-route regional services, such as commuter rail or bus rapid transit.

Starting in 2017, funding from the adopted ½ Cent Sales Tax referendum will allow the Wake County Transit Plan to offer improved bus stops, more park-and-ride options and expanded midday, evening and weekend bus service in Raleigh and Garner and to Raleigh Durham International Airport and Research Triangle Park.

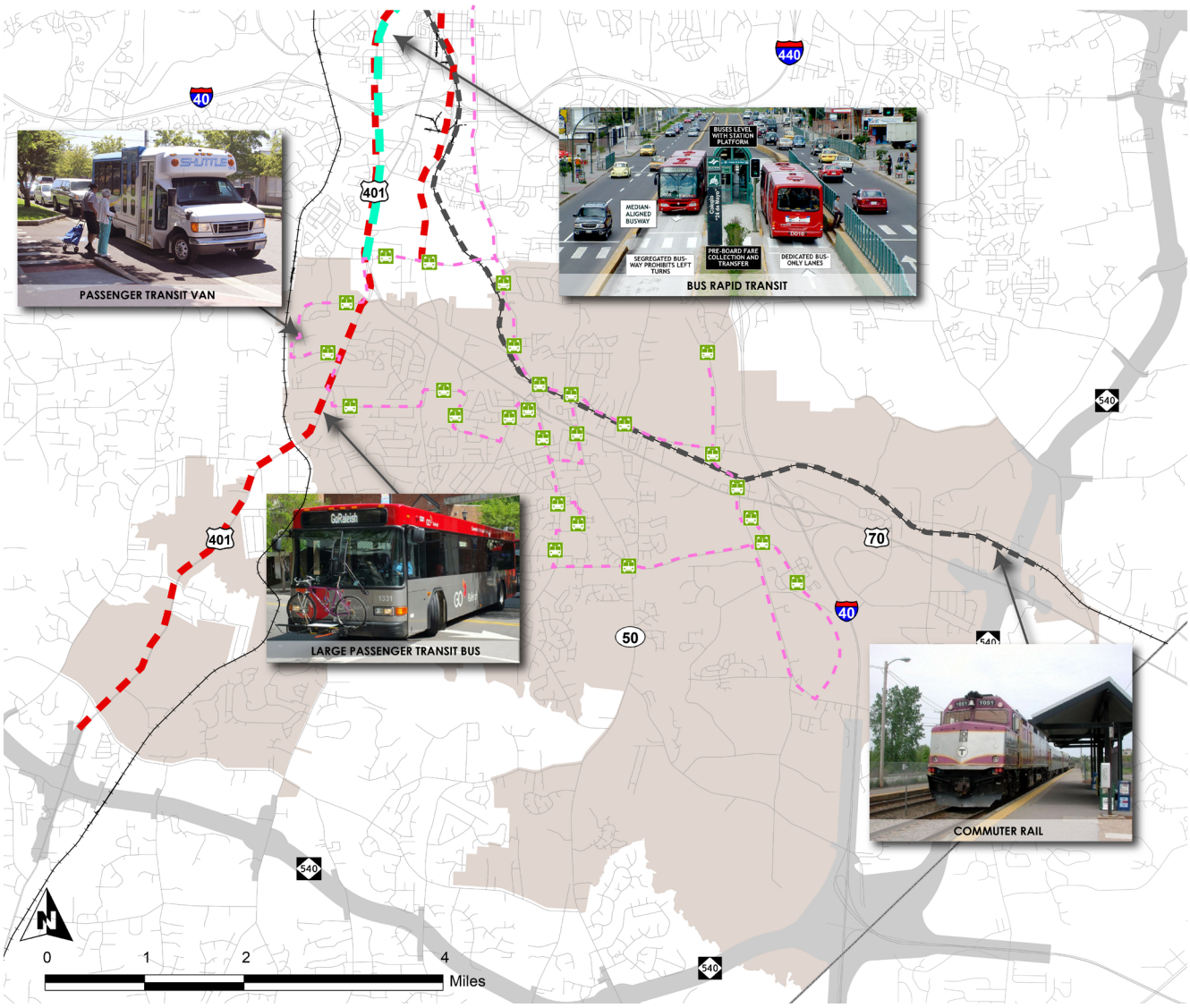
Over the next 10 years, this transit investment strategy promises to make commuting options even more convenient, with a tripling of county-wide bus service, an expansion of routes running every 15 minutes or less, and new bus rapid transit and commuter rail systems. Accessibility will be enhanced with a transit stop within three-quarters of a mile of 80 percent of the homes and 80 percent of the jobs in Wake County.

Considerations

The following provides a brief synopsis of transit options available to Garner through short- and long-term policies and actions that can be implemented by the community following the adoption of the Transportation Plan. Of primary interest are the pursuit of regional bus service to Garner, which can be achieved utilizing a phased approach and coordination with City of Raleigh, GoTriangle, and CAMPO. Coordination with transit authorities includes considerations to modify existing services and routes servicing Garner. Another consideration regarding bus transit service includes development of a circulator loop connecting to future premium transit services including Commuter Rail and Bus Rapid Transit. This Plan also advocates for future rail station locations (two options) along the proposed commuter rail service that would extend from downtown Raleigh to Goldsboro. It also recommends locations for Park-N-Ride facilities.

Recommendations

The map on page 70 provides a detailed illustration of the proposed transit services and facilities for the Town of Garner. Only through direct coordination with the appropriate agencies will these short- and long-term transit services be realized. Some amenities will require full funding from local resources while other transit services may only require in-kind or partial funding. The above-mentioned considerations may be completed in two different phases. Short-term considerations include making modifications to existing fixed routes servicing Garner to create the eastern half of the circulator loop. The second phase, long-term considerations, includes development of the western half of the circulator loop connecting to Commuter Rail and Bus Rapid Transit once those projects are realized. Additionally, extensions to Garner Technology Center (GTC) and further east to planned residential development in Garner are identified to be included within the long-range vision for transit services within Garner.



Transit Recommendations

2016 Transit Location Recommendations

- Bus Stops
- Park & Ride
- Rail Station
- Transit Loop Route Recommendation 30 or 60 Minute (Contraflow)

Wake County Transit Plan Recommendations

- Bus Rapid Transit (BRT)
- Commuter Rail
- Fixed Route - 30 Minute

Expanded Bus Service and New Circulator:

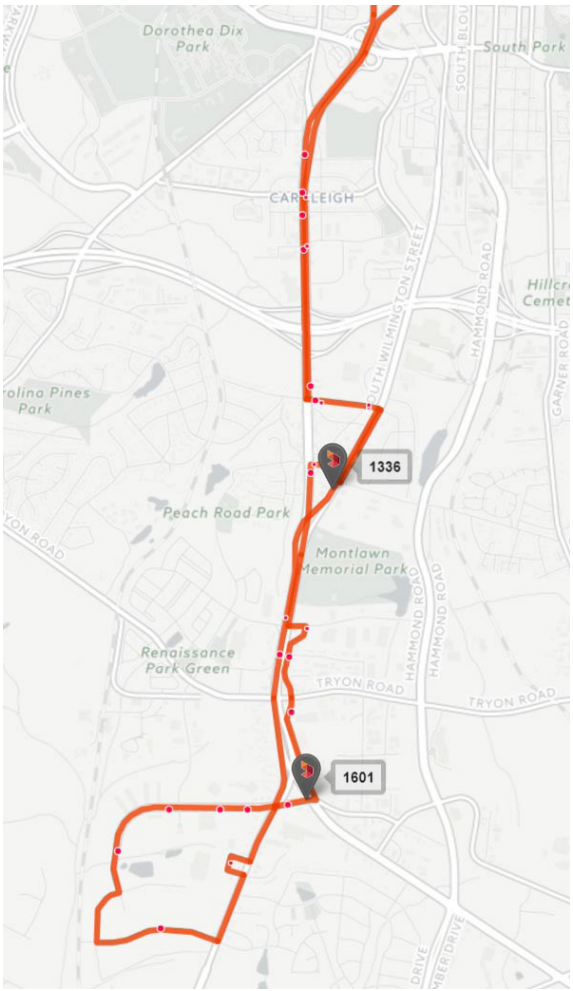
Transit services today for the Town of Garner are limited to the western fringes of the Town and are focused on Wake Technical College students and commuters. By working with existing service agencies to link these routes, either through extension or development of a circulator route, the Town of Garner should work to provide service to likely ridership generators, such as high-density residential areas (including apartment complexes), downtown Garner, the Senior Center, the senior residences located in the old school, White Oak Shopping Center and areas near Town Hall and the Library. This new circulator would also provide a link to the proposed Transit Oriented Development located near the existing Wal-Mart off US 401.

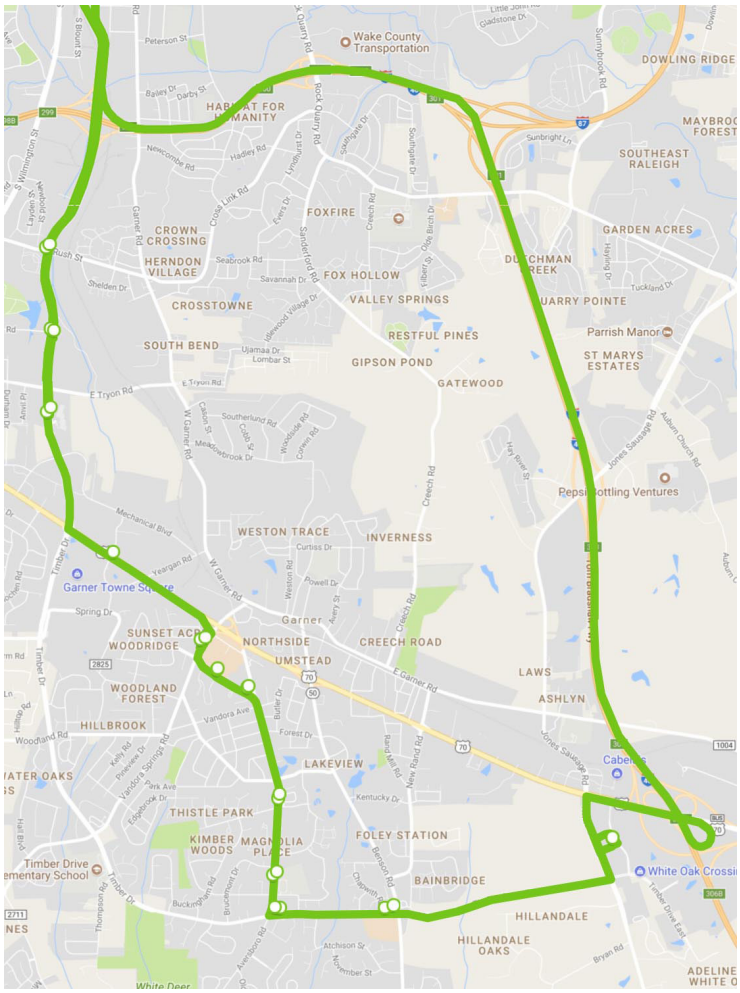
The proposed circulator route was adjusted based on the original recommendations from the 2010 CTP. Current demographics and Census information were used to identify concentrated populations for potential ridership. This data included areas of unemployment, minority, and poverty populations. Once identified, these areas were used to modify the proposed routing for the circulator.

Other fixed route services include the US 401 corridor through town and Garner Road with a proposed 30-minute headway. These enhancements will provide transit users with more options and predictability of services heading to/from downtown Raleigh, ultimately, making Garner very attractive for residential growth. A funding mechanism for the circulator service could be provided by the Sales Tax program through matching funds to municipalities that choose to develop and operate local bus service.

Existing Routes:

There is an existing route to the Wake Technical College main campus (Express Route 40) for which Raleigh would like to have a park-and-ride location (outside the Town), and the Wal-Mart shopping center (No. 7) which cannot be extended without the provision of an additional bus. The Town would need to provide 12% of the vehicle cost. The Fuquay-Varina Express Route initially was funded by the North Carolina Department of Transportation as a temporary service to help mitigate the traffic effects of the Fortify I-40/440 rebuild project. The Wake County Transit Plan would continue the route when the Fortify project and NCDOT funding end. Fuquay-Varina has built a park-and-ride lot to support transit efforts.





Map views of Routes 7 and 102 as provided by GoRaleigh and GoTriangle websites

Commuter Rail Transit (CRT):

The CTP Transit element, with support from the Wake County Transit Plan and subsequent Sales Tax referendum introduces Commuter Rail Transit (CRT) to the region. This service would connect Goldsboro to downtown Raleigh through Garner, making citizen commutes easier and stress-free.

CRT will use existing railroad tracks to provide comfortable passenger service that allows riders to relax or work on their way to key destinations and employment centers.

- 37 miles of CRT would be in place from Garner to downtown Raleigh, N.C. State University, Cary, Morrisville and the Research Triangle Park continuing to Durham;
- Up to eight trips would run in each direction during peak hours;
- One to two trips would run each way during midday and evening hours; and
- The CRT will leverage the bus network to connect riders with key destinations like RDU Airport.

Source: Wake County Transit Plan 2016

COMMUTER RAIL

NOUN

Fixed guideway (rail) service for extended urban areas. Often shares track with freight trains (Federal Highway Administration Safety Program)

Potential Station Locations along the North Carolina Railroad:

The Town of Garner is in an advantageous position as its proximity to downtown Raleigh has the potential for residents to be offered a limited-stop option for a commute to downtown or a short ride to a connecting service to Research Triangle Park or points west in Wake County or Durham.

One potential location for a future rail station is east of downtown near the interchange of Interstate 40 and US Highway 70, near Auburn Church Road (see map on page 70). While this location could be very beneficial to commuters from the White Oak area, eastern Wake County, and Johnston County, it is not likely to be beneficial to the Town of Garner or many of its residents in terms of transit access or potential for transit-oriented development. The prospects of locating such a station at this regional transportation hub will be a service to long-haul commuters from points south and east of the interchange to use as a park-and-ride lot on their daily commutes.

A second option for a future rail in Garner is west of the existing downtown core. It is recommended that Garner pursue a downtown station in addition to the Interstate 40 / US Highway 70 station. This is a common occurrence in many of the existing commuter rail services in the United States that serve two distinct markets within their services areas – commuters and historical small town / suburban centers. This location also provides the opportunity for a much-needed redevelopment along the Garner Road corridor, creating a vibrant, mixed-use transit node.

The opportunity sites also speak to future transit and its viability in two locations.

The rendering at top-right illustrates a set of complementary uses that have to respect environmental and pre-existing residential developments. Multifamily, office, and commercial support a potential rail station.

At bottom-right, a second potential rail station would support Garner's downtown, with potential for higher-intensity commercial redevelopment to complement the new recreation center.

(see also pages 48 and 52 of the Garner Forward Comprehensive Plan)

Bus Rapid Transit (BRT):

BRT involves building dedicated bus lanes on local roads, so bus operators can bypass traffic and keep their routes on schedule. Approximately 20 miles of BRT-related infrastructure improvements are planned within Wake County to implement the first BRT projects.

Four initial BRT corridors have been identified: New Bern Avenue between Raleigh Boulevard and WakeMed; Capital Boulevard between Peace Street and the Wake Forest Road intersection; Western Boulevard between Raleigh and Cary; and South Wilmington Street towards Garner. This potential BRT corridor (see map on page 70) along South Wilmington Street and the US 401 corridor would connect downtown Raleigh to Tryon Road. This service would provide a connection to the proposed transit circulator and the proposed TOD development node near the US 401/US 70 split.

Along these BRT corridors, transit signal priority enhancements are typically made to ensure priority for buses at traffic signals and to enhance the transit level of service.

The figure to the right shows a before and after example of a BRT corridor. In the area formerly occupied by a median, there are dedicated bus lanes, a bus station with raised platforms, and signage and wayfinding. (source: Wake County Transit Plan 2016)

BUS RAPID TRANSIT

NOUN

A bus-based public transit system wherein buses typically have dedicated lanes and stations in the center of the roadway going both directions. This set-up is designed to improve capacity and reliability and increase public transit ridership.

ACTION PLAN

How do we make these recommendations a reality? This chapter outlines Garner's Transportation Action Plan:

- Complete Streets Design Guidelines
- Policies and Regulation
- Action Plan: Next Five Years and Long-Term Vision

COMPLETE STREETS POLICY AND GUIDELINES

What are Complete Streets?

"Complete Streets" is a term used to describe the transformation of vehicle-dominated roadways to community-oriented streets that are safe and convenient for all modes of travel. Complete Streets provide choice for users because they are designed to be accessible for all modes of transportation, including cars, walking, bicycling, and public transportation.

Adopting a Complete Streets Policy

A Complete Streets policy provides a platform for planners and designers to incorporate all modes of transportation into the planning process, both for building new projects and for retrofitting existing roadways. The North Carolina Department of Transportation (NCDOT) has adopted a Complete Streets policy and companion design guide that ensures that right-of-ways are planned, designed, constructed, operated, and maintained to provide safe, comfortable access for all users. The reasons these guidelines were created included issues with speeding motorists, unsafe and unpleasant walking and biking conditions, and lack of transit amenities. While ideally Complete Streets accommodate all modes and users of all abilities, sometimes right-of-way and design constraints exist. In these cases, Complete Streets policies can help assess trade-offs to determine the best implementation approach. In addition to Complete Streets, it is important to consider access management for roadway safety and capacity. Guidance for access management is detailed further in Appendix A.

Complete Streets in Garner

As identified through the stakeholder and public outreach process, residents within the Aversboro Road neighborhoods were supportive of rethinking the role of their street to incorporate Complete Streets principles. The 2010 Transportation Plan called for a similar measure by creating a "road diet" whereby a new turn lane replaces two through lanes to reduce crashes/ delays, and opens the roadway up to more biking, walking, and aesthetic improvements. Aversboro isn't the only street with potential: other neighborhood streets and second-tier arterials can be similarly provided with better walking, biking, and architectural design elements to foster economic activity, increase property values, and increase the tax base.

Complete Streets Context Zones

Complete Streets include distinct street zones that foster interaction between different modes of travel and adjacent land uses: the pedestrian, travelway, and building zones. Together these zones define the space where interaction between modes and the built environment occur. The context zones are defined by the overall environment and framework of the corridors. They stress context-specific treatments for travelway modal integration (bike, transit, vehicular), pedestrian space and design treatments, and building form and massing.

TRAVELWAY ZONE

- Defined by edge of pavement or curb line that traditionally accommodates travel or parking lanes needed for vehicles in the transportation corridor
- Recommendations focus on modes of travel and medians
- The Travelway Zone focuses on two objectives:
  - Achieve greater balance between travel modes sharing the corridor
  - Promote human scale for the street and minimize pedestrian crossing distances and barriers

PEDESTRIAN ZONES

- Extends between the outside edge of the sidewalk and the face-of-curb located along the street
- Quality of the pedestrian realm is achieved through four primary areas:
  - Continuous pedestrian facilities (on both sides of the road if possible) to maximize safety and mobility needs
  - High-quality buffers between pedestrians and moving traffic
  - Safe and convenient opportunities to cross the street
  - Consideration for shade, lighting, and wayfinding

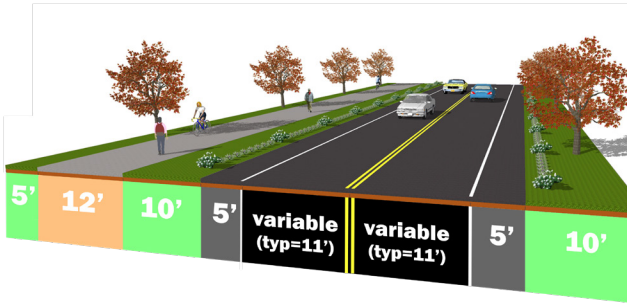
BUILDING ZONE

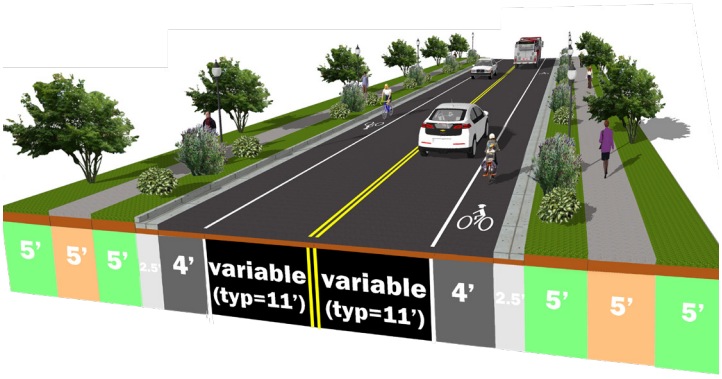
- Defined by the buildings that frame the major roadway
- Building scale and massing has a focus on two areas:
  - Orientation and footprint of the building, including setbacks, accessibility to entryways, location of parking, etc.
  - Design and architectural character that include height-to-street width ratio; void-solid ratio; quality of materials; degree of interaction with the street and passersby

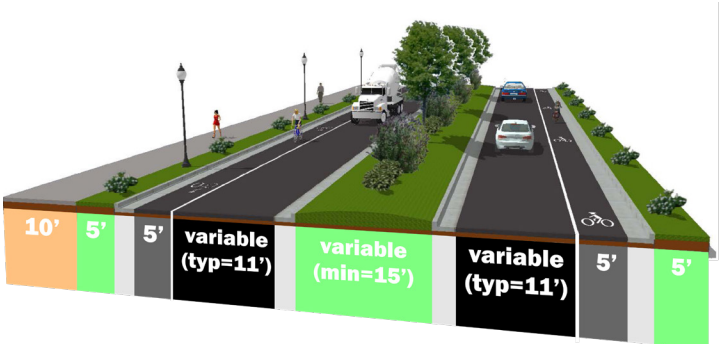
Complete Streets Design Guidelines

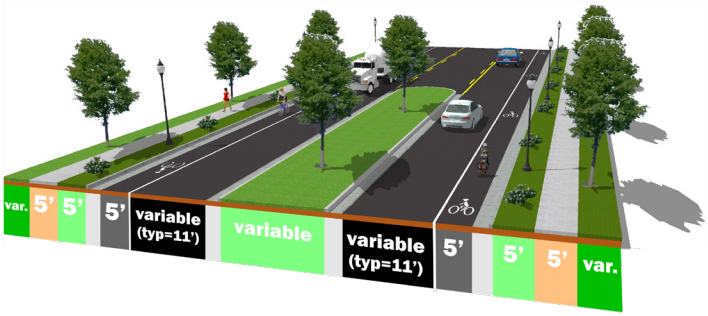
The following cross-sections are suggestions for ideal Complete Streets in Garner. As new projects are constructed or existing roadways are retrofitted, these cross-sections should be used as guidance for street design, considering current and future demand, the context of development patterns, and availability of resources. Additional street design guidance can be found in the Appendix.

Two-Lane Roadways:
Two-lane roads can typically handle 12,000-16,000 vehicles per day. A variety of these streets exist, including more urban variations with sidewalks and bike lanes (below) to accommodate a range of users. A more rural variation is illustrated at the top to the right, showing how two-lane roads can be made safer and accommodate users at the edge of the roadway. Versions with medians can help provide safety and access management benefits. Right-of-way requirements typically range from 60'-72' across.



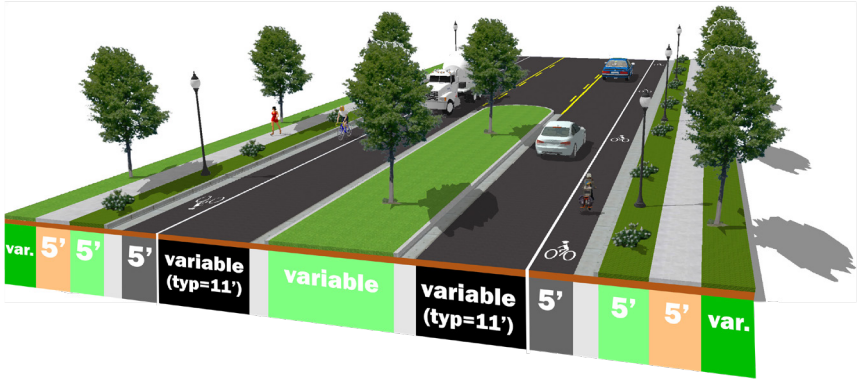


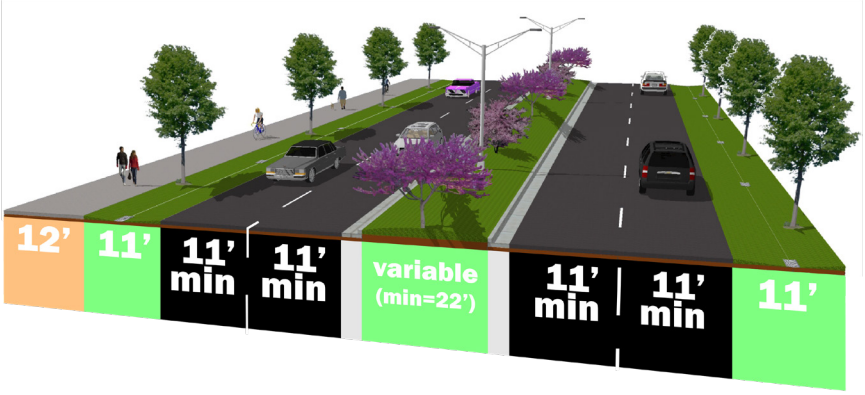




Four-Lane Roadways:

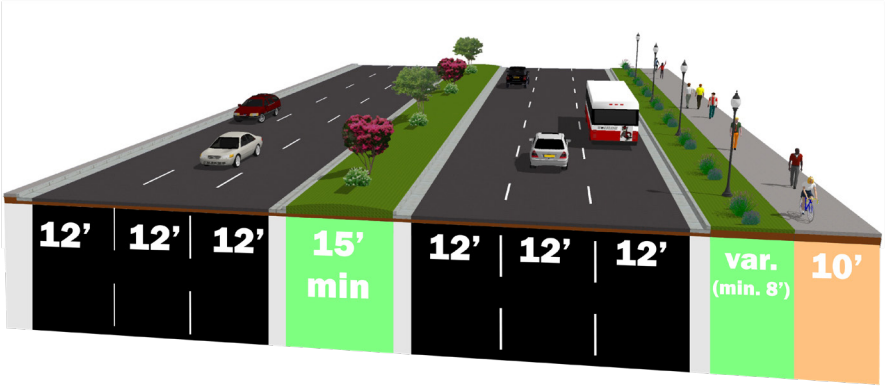
Four-lane roads serve longer travel distances and are particularly valuable to freight shippers due to higher speed limits and greater reliability. The preferred versions contain a median to help limit conflict points, reduce crash rates, and create opportunities for lighting and landscaping. Even with higher-speed facilities, it is possible to create beautiful and pedestrian-friendly roadways. Right of way requirements are typically approximately 100' across.





Six-Lane Roadways:

This cross-section provides major through capacity at something less than freeway speeds. While provisions for bicyclists and pedestrians are still recommended, the walking and biking environments become more strained, especially as people attempt to cross heavy, high-speed traffic. Greater setbacks from sidewalks or paths away from the road corridor may be necessary to serve these users. Typical right-of way widths may range from 100' to over 120'.



Complete Streets for Bicycle and Pedestrian Travel

Pedestrian and Bicycle are two distinct modes of travel, often lumped together for the sake of convenience but embodying different characteristics of maneuverability, skills, and mobility. The following are some of the key elements to better integrate bicycle and pedestrian design in the pursuit of Complete Streets, broken out into three categories: along the street, across the street, and parking.

Along the Street:

Bicycling facilities have to be carefully tailored to their environments. Variations on facilities include separated bicycle lanes, cycle tracks, and bicycle boulevards (to name a few). Parallel paths can also be designed to accommodate cyclists and pedestrians together, but should be at least 10' to 12' in width to help separate the two kinds of traveler. More common are sidewalks, typically 5' in width but expanding to 8' or greater in downtown or heavily-traveled areas where pedestrians congregate and interact, often in tandem with pedestrian-oriented business activity. Bicycle boxes and stencils indicating the most favorable position for triggering signal detection equipment are helpful to cyclists and serve as reminders to motorists that bicycles may be present in the roadway.

When streets become too wide, too congested, or have speeds that are too high, then a separated path is recommended. Greenways provide even novice bicyclists and children with an opportunity to access important destinations and recreational activities. Major "trunk" greenways may have totally separate spaces for pedestrians and bicyclists (see image on previous page) using 14' or more of paved width; more common are 10'-12' greenways that utilize careful design, pavement markings, and other treatments to create off-road corridors. Landscaping, seating, trash receptacles, lighting, and pet stations – as well as continuous maintenance – are paramount to creating a successful greenway facility.

Across the Street:

Getting pedestrians (and bicyclists) across the street is perhaps the most crucial element of street design. Pedestrian and bicycle accessibility in urban cores and along transit routes is a great influencer of the success of public transportation as well as creating livable areas in our cities and towns, accommodating lower-income persons without ready access to private automobiles, and generally creating a supportive business environment that attracts visitors as well as new companies. The figure on the facing page shows traffic calming treatments that can help slow traffic and facilitate safer crossings. Generally, as the population density, proximity to schools or other places where children congregate, and vehicle volumes increase, the level of provisions increases similarly.

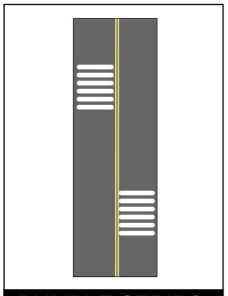
Parking:

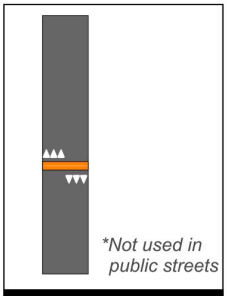
Parking for bicycles should be included in every municipal and county ordinance for shopping, school, and multifamily residential development districts (over 50 units), generally at the rate of one, two-position rack for every 20 students or automobile spaces. The bicycle parking facilities should be within 50-100 feet of the main entrance, covered from the weather, well-lit, and be secured to the ground considering the space requirements.

Parking areas are where all motorists become pedestrians. Having well-lit, secure parking with uniform lighting across a parking area and more intense, non-glare lighting at cleared building entrance ways provides a safer medium for walking. Parking areas are often poorly designed, such as layouts that encourage the majority of traffic to pass directly in front of a storefront. Ordinances requiring at least 50% of all parking to be in side or rear areas will help improve the appearance of commercial developments, but also encourage developers to invest more in the rear of their properties – which often front the yards of concerned residents.

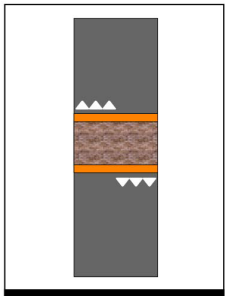
TRAFFIC CALMING TREATMENTS

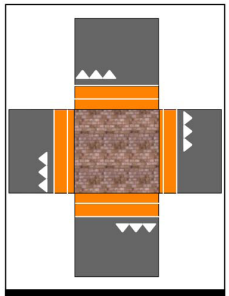
DRIVE OVER

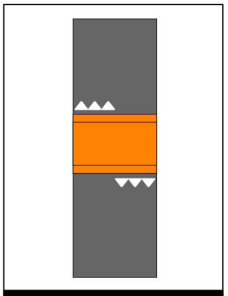

RUMBLE STRIPS



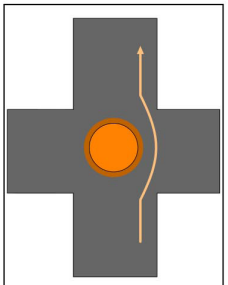
SPEED BUMP

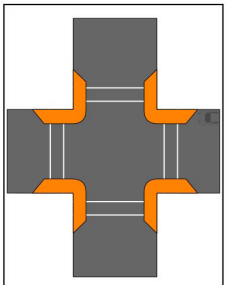

RAISED X-WALK


RAISED INTERSECTION


SPEED HUMP

DRIVE AROUND


TRAFFIC CIRCLE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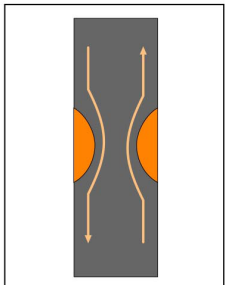
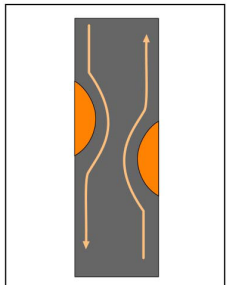
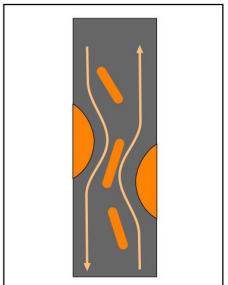
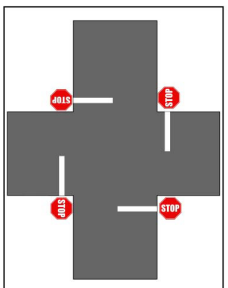

CHOKER

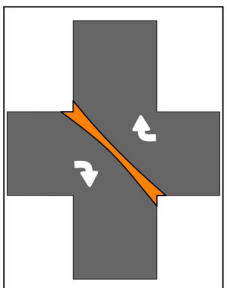

CHICANE

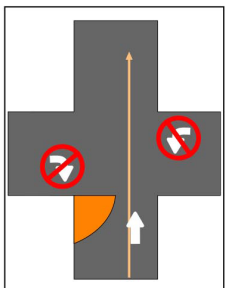
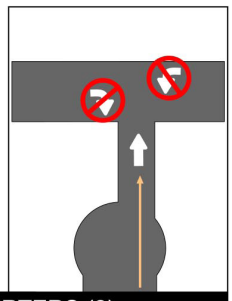

IMPELLER

RESTRICT PATH



ALL-WAY STOPS


DIAGONAL DIVERTER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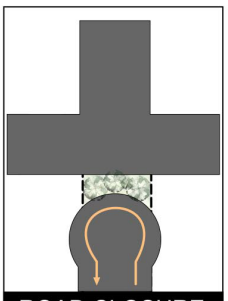
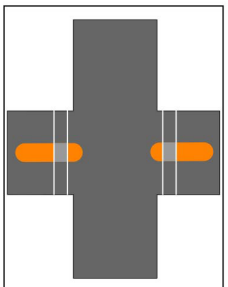
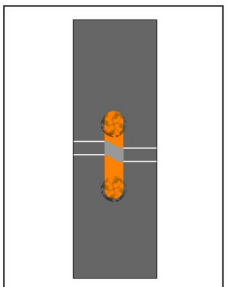

ROAD CLOSURE

CONTEXT SHIFT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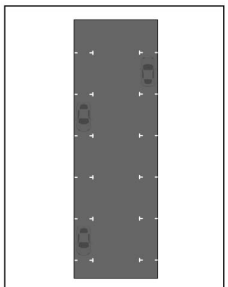
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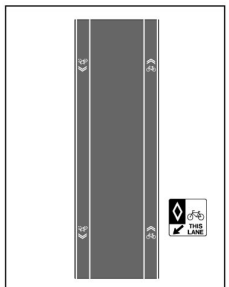
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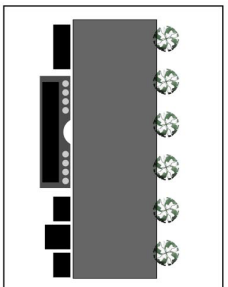
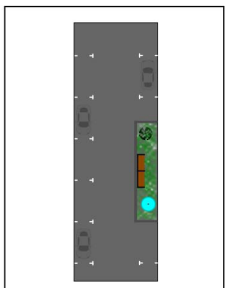

STREETSCAPING

BEHAVIOR

STREET EVENTS

ENFORCEMENT


PARKING CONVERSION

UNIQUE SIGNAGE

PACECAR PROGRAM

POLICIES AND REGULATIONS

The Town of Garner has adopted and amended policies, development ordinances, and programs to create a better environment for its citizens and more opportunities for economic development. Examples of beneficial programs and policies include the Music on Main concert series; the Garner Road and Timber Drive Overlay Districts that discourage unsightly and dangerous "strip" development patterns; the creation of an Economic Development Department; creation of a Signage Enforcement Policy and a Neighborhood Traffic Calming Program. State and federal regulations and financial implications must be considered in the development of any new policy. Examples in the transportation arena include NCDOT policies on driveway design or street standards and federal guidance, particularly the *Manual on Uniform Traffic Control Devices*, *Highway Capacity Manual*, *Policy on Geometric Design of Highways and Streets*, and *NCDOT Complete Streets Policy and Design Guidelines*. The following are recommendations for the Town to continue to build on its history of effective and practical policies in the specific area of transportation. For ease of implementation, these recommendations are couched in the same order and under the same headings as existing development ordinances adopted by the Town. It is noted where additional research is required prior to the creation of detailed recommendations. These are only recommendations; the adoption of these recommendations in the Transportation Plan does not indicate immediate compliance but rather a concept that would require further details and submittal to the usual review process for an ordinance amendment.

Recommendation: Modification to TND and MXD Planned Development Districts (Unified Development Ordinance: Article 6.13 and 6.14). Traditional Neighborhood Development (TND) and Mixed Use District (MXD) are "floating" zoning categories that encourage non-homogenous land uses which, in turn, promote fewer automobile trips, reduce fuel consumption and pollution, and promote walking, bicycling and public transportation as viable forms of transportation. Reducing the minimum tract size allows smaller properties to implement mixed use development in TND and MXD districts.

Reduce minimum tract size for TND use from 40 acres to 25 acres.

Reduce minimum tract size for MXD use from 75 acres to 40 acres.

Recommendation: Modifications to the Traffic Impact Analyses Requirements (Unified Development Ordinance: Article 3.5.L).

Include mitigation measures for pedestrian and bicycling modes of travel, including interconnectivity and construction of proposed greenway trail and sidewalk network on the property; intersection improvements that may include enhanced crossing measures or signalization; and construction of sidewalk on public right-of-way from proposed major subdivisions to nearby (1/4-mile) major pedestrian generators (parks, schools, and shopping centers or office complexes of greater than 50,000 GLA).

Traffic Impact Analyses (TIAs) or studies are used to help determine the impact that new or expanded business or residential land uses have on surrounding streets.

Include a requirement for calculation of internal trip capture and trip generation rates, respecting the mix of land uses, internal and external connectivity by biking/walking, and transit facilities and services.

For all new public and private development or redevelopment projects, require the dedication of trail easements and construction of proposed bicycle facilities and/or greenway segments for those facilities identified in adopted plans, such the Transportation Plan and previously adopted greenway plans.

Recommendation: Adoption of a Town-Wide Complete Streets Policy

The town will respect the diverse needs of its communities as well as the demands placed on its valuable street infrastructure and right-of-way by developing and adopting a Complete Streets policy that brings it into alignment with both the 2009 NCDOT policy as well as the best thinking of successful towns and cities across the country. Hallmarks of Complete Streets policies include: recognition that many streets are places unto themselves; lowering speeds while raising the level of streetscaping, amenities, and pedestrian/bicycle accommodations; and supporting property and community values. The underlying principle: design all streets for all people and all uses - back off of that position only under regulatory restraints.

The action consists of (1) adoption of a resolution, (2) creation of a policy and process, and (3) creating guidelines for local, collector, and arterial streets.

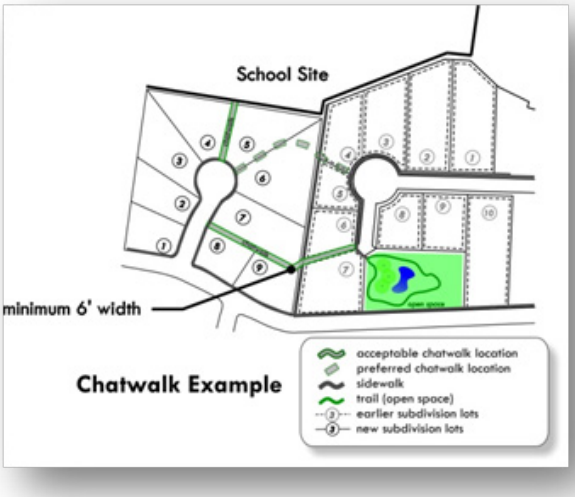
An important aspect of complete street design is creating a great pilot project: Aversboro Road from Timber to US 70 is the chosen first (but not last) demo project.

Partnerships necessarily include NCDOT and the Capital Area Metropolitan Planning Organization, but also local community leaders, private developers, and the Planning Board working with engineering/planning staff from the Town.

Recommendation: Discourage the use of the cul-de-sac (Unified Development Ordinance: Article 8).

Cul-de-sacs promote housing segregation to achieve higher purchasing prices but demote the interconnectivity of streets; increase traffic on and reduce thoroughfare performance; discourage transportation-motivated walking and cycling; and are less accessible to emergency vehicles. Strategies to mitigate the negative effects of cul-de-sacs include: reduce maximum allowable cul-de-sac length; implement a connectivity ordinance; or reduce maximum block lengths or perimeters. For all new public and private development or redevelopment projects, require direct pedestrian connections between cul-de-sacs to provide more walkable developments, and/or require greenway connections between adjacent cul-de-sacs and/or from cul-de-sacs to nearby schools, greenways, or other major public destinations.

This recommendation is often difficult to achieve, must respect the different land use characteristics of different neighborhoods, and should be undertaken with a task force that includes various private development interests, including at least one private developer that has a regular history of promoting interconnected and mixed use developments.



Recommendation: Modify Timber Drive, US 401/ US 70, Timber Drive East, and I-40 Overlay Districts (Unified Development Ordinance: Articles 4.10 - 4.12, 4.15).

Another type of overlay zoning category, the overlay district specifies types of acceptable development and various design criteria to make development more amenable to adjacent property owners (e.g., zero foot-candle luminosity from lighting fixtures at property boundaries in the Timber Drive Overlay District).

Clarify that the restricted placement of "bus stations" does not include bus transfer centers or bus stops.

Modify the section on Street Access Standards to clarify that the access management guidelines in Appendix D of this Plan should be observed.

Add an element to the I-40 Overlay District that restricts new driveways within its area to one per existing parcel, and that this one access point may be required to be a right-in, right-out (RIRO) configuration if the property has adjacent access to another connecting street or to the parking area of an adjacent development.

Recommendation: Modify Swift Creek Conservation District to allow for pervious pavements for sidewalks, trail areas, and lightly used or overflow parking areas (Unified Development Ordinance: Article 4.13).

Pervious pavements allow for infiltration of groundwater, albeit at a sometimes reduced rate compared with natural vegetation. Pervious pavements also require maintenance agreements.

Add an element to allow for pervious pavements for sidewalks, outlying parking areas, and trails/greenways such that these areas are not counted against the impervious surface calculations contained in this Article.

Additional research on both the form of the maintenance agreement and its content (e.g., suction of debris to maintain a given level of perviousness) is required.

Stipulate that a maintenance agreement with the Town must be in place prior to final approval that will maintain and keep in good repair and functioning condition the public area sidewalks and trails that use these technologies.

Recommendation: Modify Off-Street Parking Requirements. The values for required parking spaces do not accommodate shared parking or complimentary parking arrangements (Unified Development Ordinance: Article 7.4).

Some additional research will be required to derive exact values for various categories of land use. Require bicycle parking installations at new commercial and institutional developments, as well as at high-density residential developments. A bicycle parking requirement can be achieved as a percentage of motor vehicle parking requirements, or assigned on a per-use basis (e.g., require one bike parking space for every four students at a new school site, etc). Examples of bicycle parking ordinances and specifications are available at http://www.bicyclinginfo.org/engineering/parking.cfm. The Town should also develop a retrofit plan for existing facilities at libraries, parks, shopping centers, and municipal facilities where racks are not present.

Create parking maximums for general categories of use, particularly retail establishments and office uses.

The current section on joint parking use is couched as voluntary; this should be made mandatory unless clear hardship on one of the property owners is established.

Require that no more than 25% of the parking of any new development occur between the fronting roadway and the front of the main structure for non-residential uses. An additional requirement may be considered such that no more than 25% of the parking be located to the side of the building (implying that at least 50% of the parking area is to the rear of the building).

Recommendation: Improve street design standards for more cycling and walking, as well as general updates and conformity checks (Unified Development Ordinance: Article 8.2).

The current street design standards do not seem to conform to the most recent comprehensive land use plan and include design standards for wide local streets and non-uniform provisions for other modes of travel. See also the Best Practice Design Guidance in Section 5.1 of this Plan as well as the Access Management Guidance in Appendix D.

Modify the Table Inset in Part (I) to note that local streets and rural streets (those with existing or anticipated traffic volumes of 5,000 vehicles per day or greater) should have sidewalk on both sides of the roadway.

Modify the street design standards so that local and non-commercial collector streets have a back-to-back curb width of no more than 27 feet (implying 11' travel lanes instead of 12' and 29' back-to-back widths).

Modify street design standards to require bicycle facilities on collector streets and thoroughfares. Generally, bicycle lanes are preferred where there are fewer driveway or street intersections that break the plane of a bicycle lane; wide outside lanes or sharrows are preferred in conditions where there is a prevalence of on-street parking or many curb cuts.

Bicycle and Pedestrian Improvements and Policies

Local policies, plans, and programs influence the walkability and bikeability of a community, and significantly shape the pedestrian and bicycle environment over time. Creating strong policies and programs that actively promote improvements to bicycle and pedestrian infrastructure will encourage a more balanced future transportation network with shared private/public burden for implementing multimodal transportation infrastructure enhancements. Policy amendments and planning activities can often be achieved at a low cost to a municipality and result in notable progress for developing a more livable community in Garner.

Garner and Wake County are experiencing significant growth and development now and are projected to continue to see steady growth in the years to come. The quality of future development will impact the pedestrian- and bicycle-friendliness of the Town. If the Town works with the development community to create a multi-modal transportation network that includes sidewalk connections, bicycle facilities and greenways, Garner will continue to stand out as a Town with a high quality of life that attracts new residents, businesses and further economic development.

While private/public partnerships are important, it is also recommended that the Town create new policies to help guide Town staff in serving local pedestrians' and cyclists' needs. Such policies will help "institutionalize" good pedestrian and bicycle design and programming throughout all Town departments, and create a balanced and comprehensive approach to implementing the Bicycle and Pedestrian Element of the Transportation Plan. Policy changes might include local bicycle parking requirements, or a set of "green streets" design guidelines to encourage an environmentally sound approach to future streetscaping, roadway and sidewalk projects. Safe Routes to School programming or a bicycle and pedestrian safety education campaign could be implemented to encourage and educate the public about the benefits of biking and walking, and practicing safe driving behavior. The recommendations beginning on the next page summarize opportunities for policy and program changes in Garner that would enhance the biking and walking environment.

POLICY: BICYCLE AND PEDESTRIAN ADVISORY COMMITTEE (BPAC)

- A Bicycle and Pedestrian Advisory Committee or Task Force can be formed to assist the Planning Board, Town Council and Garner staff in implementing and evaluating the policy and program recommendations.
- Oversee the implementation of the bicycle and pedestrian elements of the Transportation Plan
- Coordinate local bicycle and pedestrian policies and actions.
  - Coordinate annual bicycling events,
  - Promote human scale for streets and minimize pedestrian crossing distances and barriers,
  - Review development plans for bicycle and pedestrian friendliness,
  - Create other educational and encouragement material and programs specific to Garner.
- The Committee and/or town staff should also consider creation of a bicycle and pedestrian program website to inform the public of their efforts and help to track progress on the Plan's implementation.

POLICY: ROAD CONSTRUCTION AND MAINTENANCE

- Bicycle facilities such as bike lanes, sharrows, bicycle parking, bicycle-friendly drainage grates and signage should be considered on all new streets, roadway construction projects, and in all transportation maintenance projects.
- Garner should require other entities responsible for construction to consider bicycle facilities.

POLICY: INTERCONNECTED STREETS

- The funds available from traditional federal, state and local (public) revenue sources to finance major new roadway capacity projects continues to shrink. The status of North Carolina as a "Dillon's Rule" state translates into fewer opportunities for adding new public revenue sources by local governments.
- Although the NC legislature modified a statute to allow counties to construct and maintain roadways, there has been no accompanying divestiture of state funding to accomplish county-level roadway construction.
  - The need to interconnect streets has become more important to the mobility and economic development of every community.
  - This is accomplished through a combination of site ordinances that require connections to the edge of property lines; development and adherence to a collector street plan; and longer-term planning that speaks to both capacities of public transportation infrastructure and the allowable types and traffic generation characteristics of future land development.
  - Each of these should be undertaken to ensure that the street system becomes more connected, and monitored using a simple statistic that compares the number of street intersections to the number of street segments to provide a target and performance benchmark. Any new ordinance and practice should be developed with the input of private sector developers to fashion a fair but meaningful standard.

POLICY: SCHOOL SITING POLICY

- The Town should work with Wake County to consider pedestrian needs during all new school placement decisions, especially when determining a rural/suburban site for a new school that is not within walking/biking distance of any residential development.

SIDEWALK and FACILITY MAINTENANCE

- Maintenance is a key issue that is too easily overlooked in favor of new projects that gather more attention. However, cumulative maintenance problems create a perception of inattention which can translate to increased criminal activity and suppressed property values. Several actions should be considered to redress maintenance concerns for not only sidewalks, but other public facilities like greenways, parks, transit stops, and streetscaping (these are shown in approximate order of sequencing and importance).
  - Continuously improve asset management by hiring an asset management director that coordinates municipal assets across departments of the Town.
  - Develop an Operations and Maintenance Plan that addresses priorities for the Town based in part on public input.
  - Develop an asset management database and system; such systems are readily available through several software vendors and can be customized to meet the specific conditions in Garner.
  - Conduct regular asset management condition inventories and use that information as well as cost data and risk analysis that will translate into objective CIP budget items and help forecast typical as well as special set-asides for major maintenance items.
  - Over time as the Town grows, incorporate stormwater, energy conservation, sustainability/resilience, and community goals into the Operations and Maintenance Plan.

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ACTION PLAN

The success of the Garner CTP will hinge on the collaboration of local, regional, and state officials with the private sector. The Action Plan sets the stage for the successful orchestration of the programs, policies, and projects recommended throughout the CTP. At the core of the Implementation Plan is a series of Action Plan tables that list specific projects, a timetable (25 year horizon), available funding sources, and agencies responsible for implementing the vision. This approach serves two purposes: (1) it provides a blueprint for decision makers to enable them to track progress and schedule future improvements, and (2) provides clearly defined action items to help the Town identify public and private investment opportunities that are healthy, sustainable, and achievable though well-guided transportation and land use policies that encourage quality design and environmental stewardship.

The implementation strategies in this section recognize the effects transportation improvements have on travel safety and mobility, commerce, development patterns, and the visual appeal of Garner. Some improvements will be implemented through the development review process, while major infrastructure improvements likely will require state and federal funding as well as self-financing mechanisms. Funding for these major projects is limited and competitive. The purpose of the Action Plan is to recognize these challenges and suggest strategies and resources to address each challenge. With this in mind, the Action plan identified next-step items for each category described in detail throughout this report. Ultimately, these recommendations can be administered concurrently or as priorities and regional initiatives present themselves.

The following series of tables represent specific action items for the roadway, bike, pedestrian and transit projects, as well as programs and policies. The tables are based on the findings and recommendations presented in the corresponding elements of the CTP.

Action Plan: Roadway and Connectivity Projects

Description	Time Frame	Up-Front Capital Cost ($1000)	Potential Funding	Responsible Party
Ackerman Road / Hebron Church Road at White Oak Road	2020	$3,400	Bond, LAPP, Private, Spot Safety	NCDOT, CAMPO Garner
Aversboro Road (streetscape with bike lanes) from US 70 to Lake Benson Park entrance	2022	$2,900	TIP, Bond, LAPP	NCDOT, CAMPO Garner
US 70 from Tryon Road to Timber Drive (access management/ streetscape)	2024	$1,500	TIP, Bond, LAPP, Hazard Elimination	NCDOT, CAMPO Garner
Jones Sausage Road at NC Railroad to Timber Drive	2025	$79,400	TIP, Bond, LAPP, Hazard Elimination	NCDOT, CAMPO Garner
NC 50 (4-lane divided) from Timber Drive to the future I-540 interchange	2025	$21,100	TIP, TIGER, Bond	NCDOT, Garner
Garner Road from Tryon Road to Auburn Knightdale Road (access management/ streetscape)	2027	$5,800	TIP, Bond, LAPP, Hazard Elimination	NCDOT, CAMPO Garner
US 70 (6-lane divided) from Jones Sausage Road to Timber Drive	2028	$79,400	TIP, TIGER	NCDOT, Garner
Aversboro Road at 5th Avenue	2028	$700	Bond,LAPP, Spot Safety, Hazard Elimination	NCDOT, CAMPO Garner
Timber Drive from US 70 to White Oak Road (access management/ streetscape)	2030	$2,100	TIP, Bond, LAPP, Hazard Elimination	NCDOT, CAMPO Garner
Old Stage Road from Ten-Ten Road to US 401 (access management/ streetscape)	2030	$4,900	TIP, Bond, LAPP, Hazard Elimination	NCDOT, CAMPO Garner
NC 50 from US 70 to Timber Drive (access management)	2032	$1,500	TIP, Bond, LAPP, Hazard Elimination	NCDOT, CAMPO Garner
White Oak Road (4-lane divided) from Hillandale Lane to the future I-540 interchange	2035	$22,500	TIP, TIGER, Bond, Private	NCDOT, Garner, Private
I-40 at White Oak Road (add ramps)	2035	$1,200	TIP, Private, LAPP	NCDOT, CAMPO

Action Plan: Roadway and Connectivity Projects (cont.)

Description	Time Frame	Up-Front Cost	Potential Funding	Responsible Party
US 401 at Old Stage Road	2035	$1,100	Bond, LAPP, Spot Safety, Hazard Elimination	NCDOT, CAMPO Garner
US 401 (6-lane divided) from US 70 to the future I-540 interchange	2038	$85,900	TIP, TIGER	NCDOT, Garner
Jones Sausage Road from I-40 interchange to US 70 east	2040	$8,900	TIP, TIGER, Bond	NCDOT, Garner
Old Stage Road (4-lane divided) from Ten-Ten Road to the future I-540 interchange	2040	$3,400	TIP	NCDOT
Aversboro Road at US 70	2040	$600	Bond, LAPP, Spot Safety, Hazard Elimination	NCDOT, CAMPO Garner
Rock Quarry Road from Wall Store Rd to Garner Road	2040	$14,000	Bond, TIP, LAPP	NCDOT, CAMPO, Garner

Action Plan: Transit Projects

Description	Time Frame	Capital Cost Estimate	Potential Funding	Responsible Party
Circulator Route (East)	2023	$1.5 million	Sales Tax (with matching bond funds)	Wake County, Garner, Private
Circulator Route (West)	2025	$1.5 million	Sales Tax (with matching bond funds)	Wake County, Garner, Private
Bus Rapid Transit (BRT)	2025	$1.3 million	Sales Tax	Wake County
Commuter Rail Service (CRT)	2030	$4 million	Sales Tax	Wake County

Action Plan: Pedestrian and Bicycle Facilities				
Description - New Sidewalks	**Time Frame**	**Up-Front Cost**	**Potential Funding**	**Responsible Party**
Buckingham Rd from Flanders Rd to Leary Rd	2020	$140,000	Bond, SRTS	Garner, NCDOT
South Garner Greenway Extension from Buffalo Rd to White Deer Park	2020	$2,360,000	Bond, SRTS	Garner, NCDOT
Lakeside Dr from Aversboro Rd to Existing Sidewalk	2025	$20,000	Bond, SRTS	Garner, NCDOT
St Mary's St from Forest Dr to Existing Sidewalk	2025	$20,000	Bond, SRTS	Garner, NCDOT
Curtiss Dr from Weston Rd to Avery St	2025	$50,000	Bond, SRTS	Garner, NCDOT
Vandora Springs Rd from Tiffany Circle to Buffalo Rd	2025	$45,000	Bond, SRTS	Garner, NCDOT
East Garner Rd from Garner Recreation Park (existing sidewalk) to New Rand Rd	2025	$20,000	Bond, SRTS	Garner, NCDOT
Weston Rd (2) from Garner Rd to Curtiss Dr	2025	$100,000	Bond, SRTS	Garner, NCDOT
Woodland Ave Rd (1) from Brompton Ln to Vandora Springs Rd (south side)	2025	$110,000	Bond, SRTS	Garner, NCDOT
US 401 from Garner Station Blvd to Purser Dr	2030	$150,000	Bond, SRTS	Garner, NCDOT
Ackerman Rd from White Oak Rd to Existing Sidewalk	2035	$170,000	Bond, SRTS	Garner, NCDOT
Northeast corner of Clifford Rd and Hebrew Church Rd	2035	$50,000	Bond, SRTS	Garner, NCDOT
Maxwell Dr from Vanessa Dr to Greenbrier Rd	2035	$160,000	Bond, SRTS	Garner, NCDOT
Meadowbrook Dr from W Garner Rd to Weston Rd	2035	$200,000	Bond, SRTS	Garner, NCDOT
St. Mary's St (south) from Existing Sidewalk to Benson Rd	2035	$10,000	Bond, SRTS	Garner, NCDOT
Park Ave from Vandora Springs Rd to Lakeside Dr	2035	$160,000	Bond, SRTS	Garner, NCDOT
Timber Dr (1) from US 70 south to Existing Sidewalk (west side)	2035	$170,000	Bond, SRTS	Garner, NCDOT
Timber Dr (@) from Woodland Rd to Vandora Springs Rd	2035	$160,000	Bond, SRTS	Garner, NCDOT

Action Plan: Pedestrian and Bicycle Facilities (cont.)

Description - New Sidewalks	Time Frame	Up-Front Cost	Potential Funding	Responsible Party
Vandora Ave from Vandora Springs Rd to Aversboro Rd	2035	$140,000	Bond, SRTS	Garner, NCDOT
Vesta Dr from Longneedle Ct (Existing Sidewalk) to US 70	2035	$200,000	Bond, SRTS, LAPP	Garner, NCDOT, CAMPO
Weston Rd (1) from Curtiss Dr to Meadowbrook Dr	2035	$140,000	Bond, SRTS	Garner, NCDOT
Woodland Rd from Ford Gates to Vandora Springs Rd (north side)	2035	$150,000	Bond, SRTS	Garner, NCDOT
Lakeside Dr from Vandora Springs Rd to Aversboro Rd	2045	$210,000	Bond, SRTS, LAPP	Garner, NCDOT, CAMPO
Waterfield Dr from Greenfield Pkwy to Raynor Rd	2045	$240,000	Bond, SRTS, LAPP	Garner, NCDOT, CAMPO
Creech Rd (2) from Creech Rd Elementary south to Existing Sidewalk on E Garner Rd	2045	$240,000	Bond, SRTS, LAPP	Garner, NCDOT, CAMPO
Jones Sausage Rd from WKBQ Radio Station Rd to E Garner Rd	2045	$240,000	Bond, SRTS, LAPP	Garner, NCDOT, CAMPO
N Greenfield Pkwy from Existing Sidewalk to Waterfield Dr	2045	$240,000	Bond, SRTS, LAPP	Garner, NCDOT, CAMPO
Buffaloe Rd (4) from Misty Meadow Ln (Existing Trail) to Vandora Springs Rd	2045	$260,000	Bond, SRTS, LAPP	Garner, NCDOT, CAMPO
Clifford Rd from New Bethel Church Rd to Hebron Church Rd (north side)	2045	$270,000	Bond, SRTS, LAPP	Garner, NCDOT, CAMPO
Benson Rd (4) from Timber Dr to Centennial Park - Side Path	2045	$280,000	Bond, SRTS, LAPP	Garner, NCDOT, CAMPO
New Bethel Church Rd (2) from Existing Sidewalk to South Garner High School	2045	$280,000	Bond, SRTS, LAPP	Garner, NCDOT, CAMPO
Garner Station Blvd (2) from Junction Blvd to Fayetteville Rd (north side)	2045	$280,000	Bond, SRTS, LAPP	Garner, NCDOT, CAMPO

Action Plan: Pedestrian and Bicycle Facilities (cont.)

Description - New Sidewalks	Time Frame	Up-Front Cost	Potential Funding	Responsible Party
Benson Rd (3) from Circle Dr to Timber Dr - Side Path	2045	$370,000	Bond, SRTS, LAPP	Garner, NCDOT, CAMPO
Benson Rd (5) from Centennial Park to Buffaloe Rd - Side Path	2045	$380,000	Bond, SRTS, LAPP	Garner, NCDOT, CAMPO
Description - New Crossings	**Time Frame**	**Capital Cost Estimate**	**Potential Funding**	**Responsible Party**
Timber Dr @ Harth Dr; add high-visibility crosswalks, median refuge island	2020	$15,000	Bond, Spot Safety, SRTS	Garner, NCDOT
Timber Dr @ Vandora Springs Rd; add high-visibility crosswalks, pedestrian signal actuation	2025	$16,000	Bond, Spot Safety, SRTS	Garner, NCDOT
Garner Rd @ New Rand Rd; add crosswalks & traffic signal with pedestrian actuation	2025	$360,000	Bond, Spot Safety, LAPP	Garner, NCDOT, CAMPO
US 70 @ New Rand Rd; add pedestrian refuges at slip lanes and median, high-visibility crosswalks, pedestrian signal actuation	2025	$38,000	Bond, Spot Safety	Garner, NCDOT
Garner Rd @ Benson Rd; remove slip lane	2025	$3,000	Bond, Spot Safety	Garner, NCDOT
Fayetteville Rd @ Purser Dr; add high-visibility east-west crosswalks (2), 800' of sidewalk to Wal-mart Supercenter	2025	$203,000	Bond, Spot Safety	Garner, NCDOT
Timber Dr @ Grovemont Rd; add pedestrian signal actuation	2025	$11,000	Bond, Spot Safety, SRTS	Garner, NCDOT
Buffaloe Rd @ Lake Benson Bridge; add sidewalks and shoulder/bike lane on new bridge	2025	$391,000	Bond, Spot Safety, LAPP	Garner, NCDOT, CAMPO
Garner Rd @ Jones Sausage Rd; add pedestrian signal actuation and crosswalks	2025	$12,000	Bond, Spot Safety, SRTS	Garner, NCDOT
Mechanical Blvd @ US 70; add high-visibility crosswalks, pedestrian signal actuation w/ midblock button, 1,400' of sidewalk, curb ramps (8), lighting, and median refuge islands (6)	2025	$428,000	Bond, Spot Safety, LAPP	Garner, NCDOT, CAMPO
Timber Dr @ US 70; remove SB slip-right, add median refuge islands (2), crosswalks & pedestrian actuation signal	2025	$7,000	Bond, Spot Safety	Garner, NCDOT

Action Plan: Pedestrian and Bicycle Facilities (cont.)

Description - New Crossings	Time Frame	Up-Front Cost	Potential Funding	Responsible Party
Aversboro @ 5th Avenue; improve intersection, textured/colored crosswalks, LED beacon (2)	2025	$33,000	Bond, Spot Safety	Garner, NCDOT
Jones Sausage Rd @ US 70; add crosswalks, pedestrian signal actuation, create median refuges (2)	2025	$12,000	Bond, Spot Safety	Garner, NCDOT
Vandora Springs @ US 70; extend sidewalks to 5 ft on bridge	2025	$13,000	Bond, Spot Safety	Garner, NCDOT
Benson Rd @ US 70; improve sidewalk approaches to bridge (840' of sidewalk)	2025	$220,000	Bond, Spot Safety	Garner, NCDOT

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APPENDIX A:

ACCESS MANAGEMENT

The intent of the access management guidelines is to permit reasonably convenient and suitable access to land abutting the road system included in the Garner Transportation Plan while preserving the regional flow of traffic in terms of safety, capacity, and speed. Appropriate access management will protect the substantial public investment in the Garner roadway system and reduce the future need for construction measures that are costly to taxpayers, the environment, and local residents and businesses.

In North Carolina as in few other states, the state owns and maintains nearly all of the public street system. Ultimately, the North Carolina Department of Transportation is responsible for regulating the location, design, construction, and maintenance of street and driveway connections to the roadways that it owns. However, Garner is responsible for regulating land use and development patterns within its town limits and Extra-Territorial Jurisdiction (ETJ: the limits beyond the town boundaries where Garner exercises planning and zoning control with Wake County). Both the State and Garner have a vested interest in working together to address transportation and land use issues that protect the integrity of the roadway system.

Administration: The Policy on Street and Driveway Access to North Carolina Highways published by the North Carolina Department of Transportation (NCDOT) establishes a minimum criteria for granting access connections: however, a provision in the policy manual defers evaluation of a Street and Driveway Access Permit to criteria established by the local government when they are deemed more restrictive than NCDOT requirements. The criteria contained within these guidelines meet or exceed minimum requirements established in the Policy on Street and Driveway Access to North Carolina Highways and should be used for evaluating access connection permits. If there is a conflict between any provisions in the Garner Access Management Guidelines and any provision of Garner's zoning, subdivision, or other regulation, the more restrictive provision shall apply.

An approval of a development application by Garner does not confer any obligation on the North Carolina DOT to allow the same number, location, or design of any of the access or traffic control measures illustrated on the approved development plan without first securing a Street and Driveway Access Permit from the NCDOT for the exact same improvements.

The Garner Town Engineer or his designee shall administer and enforce the provisions of the access management guidelines in cooperation with the North Carolina DOT. Approval of a Street and Driveway Access Permit from Garner and the North Carolina DOT is required prior to any one of the following events; additionally, an encroachment agreement may be required separately.

- The approval of any land subdivision, conditional use permit, interim use permit, site plan, or zoning-related permit for any property located within Garner or the Garner ETJ.
- The construction of any new public or private access to a public street in Garner or the Garner ETJ.

- The reconstruction or relocation of any existing public or private access to a public street.
- A substantial enlargement or improvement occurs at an existing development, defined as an increase in gross floor area (GFA) of a primary or secondary structure by 25% or 500 square feet, whichever is greater, or an increase in parking stalls by 25% or five (5) stalls, whichever is greater.
- An application for a site-specific Street and Driveway Access Permit shall be submitted to the North Carolina DOT and Garner in accordance with the minimum rules and procedures as set forth in the Garner Access Management Guidelines and the Policy on Street and Driveway Access to North Carolina Highways.

Requests for new median openings shall be submitted to Garner and the North Carolina DOT in accordance with the minimum rules and procedures as set forth in the Garner Access Management Guidelines and the Median Crossover Guidelines for North Carolina Streets and Highways. It is the sole responsibility of the property owner to provide the justification necessary for a new median opening.

Requests regarding access locations and /or new median openings requested as part of a development application will be coordinated between the Garner Engineer and the District Engineer for the North Carolina DOT.

Definitions: For purposes of this guideline, the following definitions will apply. If not defined in the guidelines, the definitions used in Garner's zoning or subdivision ordinances or in the Policy on Street and Driveway Access to North Carolina Highways or Median Crossover Guidelines for North Carolina Streets and Highways.

Access – A public or private roadway used to enter or leave a public highway from adjacent land using an on-road motor vehicle. An access may be a driveway or a street.

Access Point – The intersection of an existing or proposed access with the public right of way.

AADT – Average annual daily traffic volume – The total two-way yearly traffic volume on a section of roadway, divided by 365; often referred to as the average daily traffic (ADT).

Applicant – The person or organization applying for a driveway permit.

Change of Land Use – Any proposed property use that is different from the current use of the property, or current use that is different than the use identified in a pre-existing driveway permit.

Connectivity – A term used to infer connections between adjoining properties for vehicular and/or pedestrian usage.

Corner Clearance – The minimum distance, measured parallel to a highway, between the nearest curb, pavement or shoulder line of an intersecting public way and the nearest edge of a driveway excluding its radii.

Cross-Access – A service drive providing vehicular access between two or more continuous properties so that the driver need not enter the public street system to travel between adjacent uses.

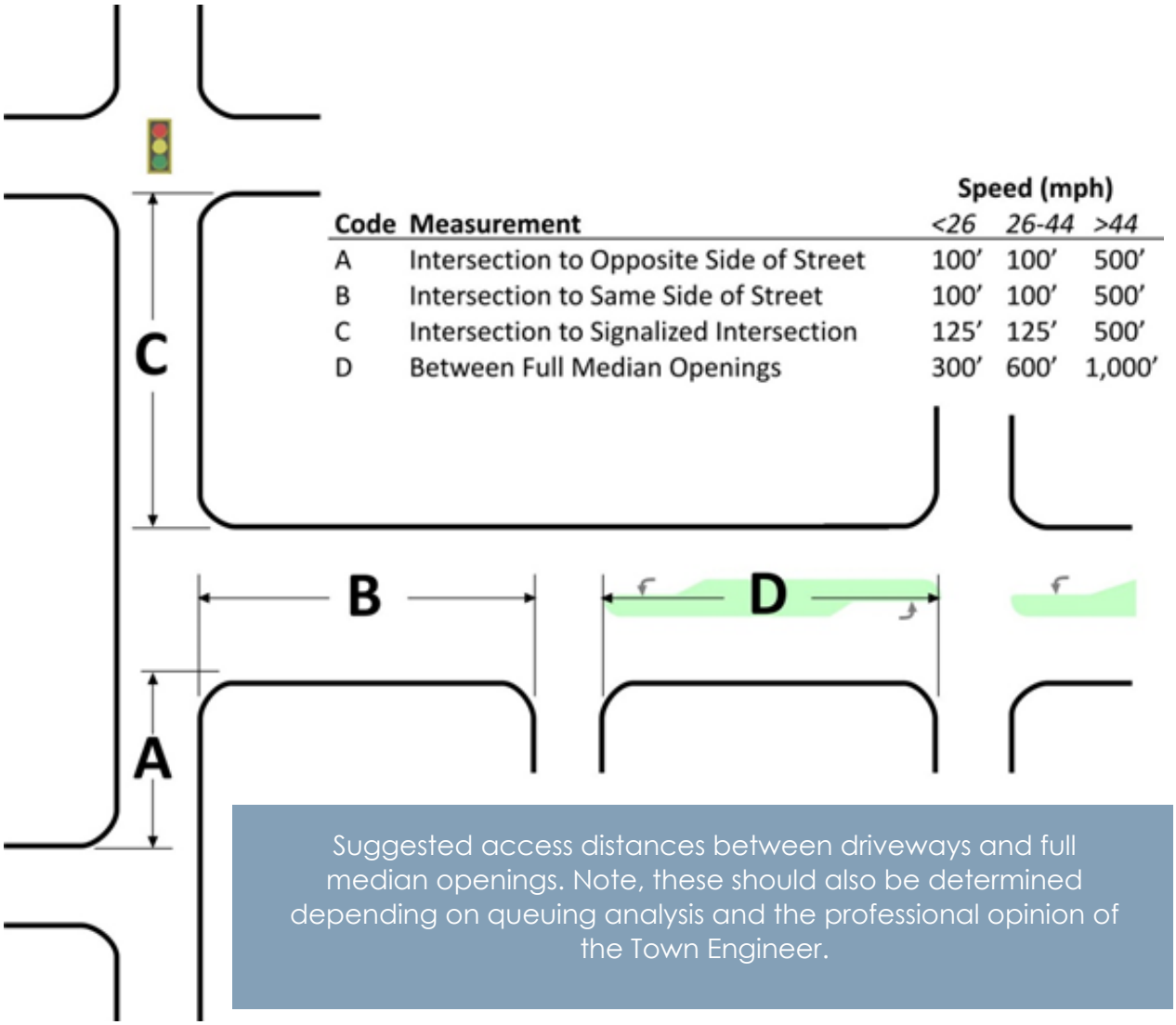
Directional Median Opening – An opening in a restrictive median which provides for U-turns and or left-turn ingress or egress movements.

Driveway – An entrance used by vehicular traffic to access property abutting a street. As used in this guideline, the term includes private residential, non-residential, and mixed-use driveways.

Driveway Throat – The portion of a driveway between the public road and the internal circulation system or area where parking maneuvers occur.

Frontage – The length along the street right-of-way line of a single property tract or roadside development area between the edges of the property lines. Property at a street intersection (i.e., corner lot) has a separate frontage along each street.

Full Median Opening – An opening in a restrictive median that allows all turning and through movements to be made.



Code	Measurement	Speed (mph) <26	26-44	>44
A	Intersection to Opposite Side of Street	100'	100'	500'
B	Intersection to Same Side of Street	100'	100'	500'
C	Intersection to Signalized Intersection	125'	125'	500'
D	Between Full Median Openings	300'	600'	1,000'

Suggested access distances between driveways and full median openings. Note, these should also be determined depending on queuing analysis and the professional opinion of the Town Engineer.

Fully Developed (Type of Area) – The land use adjacent to the roadway is less than 10% vacant.

ITE – Institute of Transportation Engineers.

Joint Driveway – A single access point connecting two or more contiguous sites to a public roadway that serves more than one property or development, including those in different ownership or in which access rights are provided in legal descriptions.

Major Intersection – An intersection with high volumes exceeding the MUTCD warrants for signalization.

Median – The portion of a divided highway separating the traveled ways for traffic in opposing directions.

Median Opening Spacing – The spacing between openings in a restrictive median that allow for crossing the opposing traffic to access property or U-turns. The distance is measured from centerline to centerline of the openings.

MUTCD – Manual on Uniform Traffic Control Devices.

NCDOT – North Carolina Department of Transportation.

Posted Speed – The speed limit set and maintained by the NCDOT or Garner.

Sight Distance – This is the area that establishes a clear line of sight for a waiting vehicle to see oncoming traffic and make turning movements into or out of a street or driveway connection safely or for traffic to see entering or waiting vehicles.

Storage Length – Additional lane footage added to a turning lane to hold the maximum number of vehicles likely during a peak period so as not to interfere with through travel lanes.

Throat Length – The distance between the edge of the nearest travel lane to the near edge of an internal drive interior to the site that represents the first opportunity for a car to make a turn into a parking lot.

Traffic Impact Study – A report initiated in response to a proposed development that compares the anticipated roadway conditions with and without the development. The report may include an analysis of mitigation measures.

Access Connections: All connections in Garner shall meet or exceed the minimum connection spacing requirements as specified in the Table at the bottom of this page.

- Spacing between driveways or medians shall be measured along the right-of-way line between the tangent projection of the inside edges of adjacent driveways, opposite street driveways or median openings.
- The Garner Town Engineer may reduce the connection spacing requirements for situations where they prove impractical, but in no case shall the permitted spacing be less than 85% of the standard. Spacing below 85% of the standard will require the issuance of a variance.
- For sites with insufficient road frontage to meet minimum spacing requirements, consideration shall first be given to providing access via connection to a side street, utilization of a joint or shared driveway with an adjacent property that meets the recommended spacing requirement, or development of a service road to serve multiple properties.
- The Garner Town Engineer, in coordination with the North Carolina DOT, may grant access approval for a permanent use not meeting the spacing requirements of these guidelines on an interim basis if an access plan is submitted that demonstrates how spacing requirements will ultimately be met and appropriate assurances in the form of a recordable and enforceable easement of access agreement will be provided insuring future provision of a conforming access.
- Deviation from these spacing standards may be permitted at the discretion of the Garner Engineer in cooperation with the North Carolina DOT where the effect would to enhance the safety and operation of the roadway. Examples might include a pair of one-way driveways in lieu of a two-way driveway, or alignment of median openings with existing access connections. Approval of a deviation or variance from the minimum spacing standards in this guideline may require the applicant to submit a study prepared by a registered engineer in the State of North Carolina that evaluates whether the proposed change would exceed roadway safety or operational benefits of the guideline standards.
- All road and driveway connections to a single parcel shall be brought into compliance with the minimum connection spacing requirements set forth in the guidelines when the lane use(s) on the single parcel is modified or expanded.
- The North Carolina DOT may additionally prohibit, restrict, or modify the placement of any connection, at any time, to a single property in the interest of public safety and mobility on state-maintained streets.

Posted Speed Limit	Signal Spacing	Full Median Spacing	Directional Median Opening	Adjacent Driveway Spacing	Opposite Street Driveway
> 45MPH	2,000 ft	2,000 ft	1,000 ft	500 ft	500 ft
26-44 MPH	1,200 ft	1,200 ft	600 ft	100 ft	100 ft
< 25 MPH	600 ft	600 ft	300 ft	100 ft	100 ft

Corner Clearances: Corner clearance is the distance between an intersection and the first point of ingress or egress to a corner property's driveway. The purpose of corner clearance is to remove conflicting movements from the functional area of intersections and provide sufficient stacking space for queued vehicles at intersections so that the driveways are not blocked. No driveway will be permitted to enter directly into an intersection. Driveways must turn traffic into the traffic stream of the highway and/or intersecting road or street before it is permitted to pass through the intersection. Unless an exception is granted, the minimum corner clearance for entrances will be established by a queuing analysis or 100 feet for unsignalized intersections and 125 feet for signalized intersections, whichever is larger. If an exception is requested and approved at an intersection where no provision has been made for sight distance or clear vision areas (flared right-of-way), no part of a driveway entrance or exit may be permitted to connect with either the highway or crossroad or street within 50 feet from the outside shoulder line of the adjacent street and the access will be a right-in/right-out. Exceptions may be approved if as a result of Garner or the North Carolina DOT action the property would become landlocked. No part of a driveway entrance or exit may be permitted within a corner radius.

Near a signalized intersection, the location for a full movement driveway connection may be required to exceed the minimum spacing requirements set forth in the guidelines to avoid interference with the operations of the traffic signal and resulting traffic queues. The radius of a full movement driveway connection shall not encroach on the minimum corner clearance.

The minimum lot size for any new corner lot created through the subdivision process shall be of adequate size to provide for the minimum corner spacing as specified in the guidelines.

Joint and Cross Access

Non-residential and Mixed-Use Projects

- Adjacent land uses classified as major traffic generators shall provide a cross access drive and pedestrian access to allow circulation between sites.
- A system of joint use driveways and cross access easements shall be established if deemed feasible by the Garner Engineer and the building site shall incorporate the following:
    - A continuous service drive or cross access corridor extending the entire length of the property frontage and to provide driveway separation in order to provide the minimum spacing requirements as contained in the guidelines.
    - A design speed of ten miles per hour and sufficient width to accommodate two-way travel aisles designed to accommodate automobiles, service vehicles, and loading vehicles.
    - Stub-out connections and other design features that make it visually obvious that the abutting properties may be tied-in to provide cross access via a service drive.
    - A unified access and circulation system plan that includes coordinated or shared-use parking areas wherever feasible.
    - The property owner shall record an easement with the deed for the property that allows cross access to and from other properties served by a joint use driveway, cross-access, or service drive.
    - The property owner shall record a joint maintenance agreement with the deed for the property defining maintenance responsibilities of the adjacent property owners.

Joint and Cross Access continued:

Residential Projects

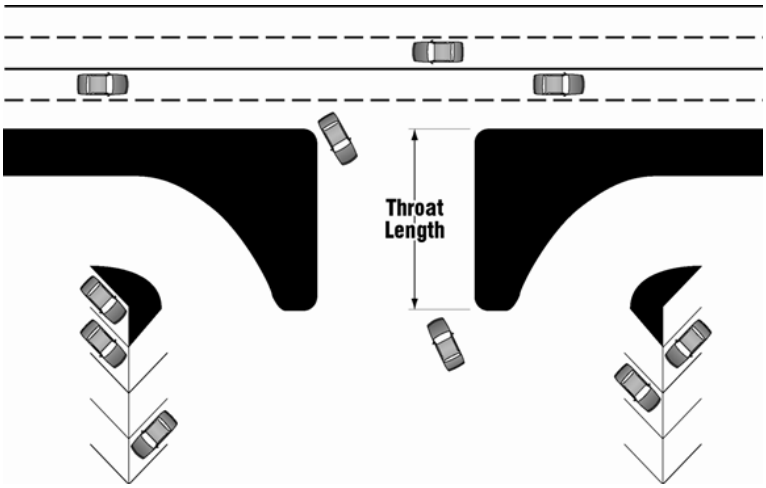
- Residential subdivisions with lots fronting along the Garner Thoroughfare System shall be designed with joint access points to the highway. Normally a maximum of two access points shall be allowed regardless of the number of lots served.
- The property owner shall enter into a written agreement with Garner, recorded with the deed for the property, that pre-existing connections along the frontage will be closed and eliminated after construction of joint use driveways.
- The Garner Town Engineer may modify or waive the requirements of this section where the characteristics or layout of abutting properties would make implementation of joint use driveways or development of a shared access circulation system impractical, provided that all the following requirements are met:
  - Joint access driveways and cross access easements are provided wherever feasible.
  - The site plan incorporates a unified access and circulation system.

Median Openings

- No new median openings shall be allowed along roadways with an existing center median unless it is in conformance with latest edition of Median Crossover Guidelines for North Carolina Streets and Highways published by the North Carolina DOT. In all circumstances, new median openings shall not encroach on the functional area of an existing median opening or intersection. Approval of any new opening lies ultimately with the North Carolina DOT Traffic Engineering and Safety Systems Branch.
- Minimum criteria for evaluating a request for a new median opening may include, but not be limited to, the following:
  - Median openings shall not be located where intersection sight distance (both vertical and horizontal) cannot meet current design criteria required by the North Carolina DOT.
  - Median openings shall not be placed in areas where the grade of the crossover will exceed five percent. Special consideration should be given to the vertical profile of any proposed new median opening that has the potential for future signalization.
  - A median opening shall not be provided where the median width is less than sixteen feet.
  - Median openings that require a traffic signal, or where one may be expected in the future, should be avoided.
  - It is the responsibility of the property owner to provide the justification for new medians.

Throat Length Distances

The connection depth of a driveway (throat length) as measured from the edge of the abutting roadway to the near edge of the internal circulation road or buffer area shall be of sufficient length to allow a driver to enter the site without interfering with the mainline of traffic. The Table to the right shows the minimum throat lengths based on the site activities.



Minimum Driveway Throat Lengths

Site Activity	Throat Lengths
Regional Shopping Center (Malls)	250'
Community Shopping Center (Supermarket, drugstore)	80'
Small Strip Shopping Center	30'
Regional Office Complex	250'
Office Center	80'
Small Commercial Developments	30'

Sight Distance Requirements: Driveways shall not be permitted to connect with any highway, road, street or frontage road at a location if it does not meet the minimum stopping sight distance criteria, based on vertical or horizontal alignment, terrain or other reasons which will cause an undue hazard to the traveling public. Any driveway application that does not provide adequate sight distance as outlined in the above listed design manual shall be denied. In order to provide adequate sight distance in both directions when entering the highway, driveway entrances and exits should be at a 90 degree angle. Angles less than 90 degrees should not be constructed unless justified by an engineering analysis and in no case shall be less than 60 degrees with the highway.

Additional Design Criteria

- Offset Access Connections: On undivided roadway segments, access connections on opposing sides of the highway shall be offset at an adequate distance to minimize overlapping left turns and other maneuvers that may result in safety hazards or operational problems.
- Auxiliary Lanes: Auxiliary lanes (left or right turn lanes) shall be required for new driveways where they meet the North Carolina DOT or ITE warrants.
- Out-parcel Access: All access to an out-parcel shall be internalized using the shared circulation system of the principal development. Access to out-parcels shall be designed to avoid excessive movement across parking aisles and queuing across surrounding parking and driving aisles.

Minimum On-Site Vehicle Storage Area: Adequate storage must be provided within the internal circulation system for properties that include either a drop-off loop or drive-through facility so that vehicles do not queue onto the highway system. Specific storage areas will be determined by the Garner Engineer in cooperation with the North Carolina DOT on a case-by-case basis during the development review process. However, the following minimum storage lengths are required for specific development types:

- For single-lane drive-in banks, storage to accommodate a minimum queue of six vehicles will be provided. Banks having several drive-in service windows will have storage to accommodate a minimum of four vehicles per service lane.
- For single-lane drive-through full service car washes, storage to accommodate a minimum of twelve vehicles will be provided. Automatic or self-service car washes having a multi-bay design will have a minimum vehicle storage length of three vehicles per bay.
- For fast-food restaurants with drive-in window service, storage within the site to accommodate a minimum of eight vehicles per service lane from the menu board/ ordering station will be provided.
- For service stations where the pump islands are parallel to the pavement edge, a minimum setback of 35 feet between the pump islands and the public right-of-way will be provided. For service stations where the pump islands are not parallel to the pavement edge, minimum vehicle storage of 50 feet in length between the pump islands and the public right-of-way will be provided.
- For land uses that require an entry transaction or have service attendants, gates or other entry control devices, the vehicle storage will have an adequate length so that entering vehicles do not queue back on the adjacent right-of-way. No portion of a parking area, attendant booth, gates, signing or parking activity shall encroach on the public right-of-way.
- For schools, adequate storage for parental drop-off and pick up areas should be provided entirely on the school campus site.

Crossroad Access Spacing at Interchanges: Minimum access spacing on crossroads for freeway interchange areas is critical for avoiding traffic backups and providing safe maneuvering distances for turning and weaving vehicles to enter the appropriate lanes. No driveway, intersection, or median opening will be allowed less than 500 feet from the end of the taper of the ramp furthest from the interchange. If the proposed distances are less than the minimum spacing then a written justification demonstrating why the recommended distances cannot be met shall be submitted to the Garner and NCDOT for approval as an exception.

Traffic Impact Assessment: A traffic impact assessment (TIA) study may be required by the Garner Engineer or the North Carolina DOT District Engineer to evaluate one or all access locations proposed in a development application. The estimated trip generation shall be based on the latest edition of the ITE Trip Generation Report. If required according to the Garner Unified Development Ordinance Article 3.5, the traffic study shall be completed in conformance with the minimum rules and procedures set forth in the Policy on Street and Driveway Access to North Carolina Highways.

Variances: The granting of a variance shall be in harmony with the purpose and intent of the Garner Access Management Guidelines and shall not be considered until every feasible option for meeting the minimum access management standards is explored.

Applicants for a variance from the standards must provide proof of unique or special conditions that make strict application of the provisions impractical. This shall include proof that:

- Indirect or restricted access cannot be obtained.
- No engineering or construction solutions can be applied to mitigate the conditions.
- No alternative access is available from a side street.
- Under no circumstances shall a variance be granted, unless not granting the variance would deny all reasonable access, endanger public health, welfare or safety, or cause an exceptional and undue hardship on the applicant. No variance shall be granted where such hardship is self-created.

Business Impact Mitigation: An important aspect of minimizing the impact of access management projects and medians is to maintain open access to businesses during the construction phase. Potential actions to mitigate construction impacts include:

- Clearly sign business entrances from the roadway;
- Provide temporary and/or secondary business access points, where feasible;
- Schedule construction during after-business hours or during times of low usage for seasonally-oriented businesses;
- Avoid blocking business entrances with construction equipment or construction barriers;
- Provide alternative parking if possible, and avoid taking or blocking parking spaces;
- Establish a single point of contact in the agency about the construction project to communicate with property and business owners; and
- Provide regular project progress reports to business and property owners.

DRIVEWAY ACCESS REVIEW CHECKLIST

The following checklist is intended to be used by the Garner engineering staff for an initial review of access permit requests. Standards to be applied are from the Policy on Street and Driveway Access to North Carolina Highways and this guideline.

YES	NO	
		The distance between driveways and adjacent intersections or other intersections meet corner clearances and spacing standards. Comment:
		Sight distance at the proposed location is sufficient. Proposed signs and/or landscaping do not obscure sight distance. Comment:
		Driveway grades and widths meet standards. Comment:
		The driveway throat length meets standards and is sufficient to provide storage for vehicles waiting to enter or exit without creating conflicts. Comment:
		Shared driveways, frontage roads, rear service driveway or connecting driveways have been considered if appropriate. Comment:
		Driveway radii for both inbound and outbound are sufficient to accommodate the type of vehicular traffic that is expected to enter the site. Comment:
		Pedestrian traffic has been accommodated and ADA requirements have been met. Comment:
		Alternative access to a side street has been considered where available. Comment:
		Where possible the driveway is aligned with driveways across the street. Comment:
		For driveways that meet the trip generation standards a traffic impact analysis was conducted. The need for bypass lanes, turn lanes, deceleration lanes, deceleration tapers, and width and number of ingress/egress lanes has been evaluated. Comment:

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Garner's transportation system provides its citizens with efficient and safe travel options for auto, bicycle, pedestrian, and public transit users that serve transportation needs in a balance with land use development patterns as well as regional and local partnerships.

Downtown Concept
Hand rendered images: Zanetta Illustrations

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Stantec

Garner Forward