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ACKNOWLEDGEMENTS

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1 | PLANNING PROCESS & CONTEXT

The NC 62 corridor in Archdale is an important transportation connection stretching between two counties and intersecting with two interstates and one US route. The route connects residents, commuters, and travelers to destinations within the community and to destinations east and west of the city. Up to 19,000 vehicles travel along the corridor daily, demonstrating the importance of the corridor to the City of Archdale and the region's transportation network. Given the corridor's high usage and its ideal location within the City of Archdale, the corridor will undoubtedly experience continued traffic growth as development occurs incrementally along the corridor and connector streets.

Effective improvement of an emerging corridor such as NC 62 requires careful planning and the resolve to protect the investment as development pressure occurs. This Corridor Access Plan for NC 62 has been prepared by the Urban Resource Group (URG) on behalf of the City of Archdale and the High Point Metropolitan Planning Organization (HPMPO) and the North Carolina Department of Transportation (NCDOT). Based on sound engineering and planning principles, strong community outreach, and a solid implementation plan, the plan described herein seeks to address physical changes to the corridor while building upon the community's vision for the corridor.

need for the project

As the NC 62 corridor stands on the verge of evolving from the two lane rural corridor of today, the city leadership and its regional partners have taken a proactive approach towards its future.

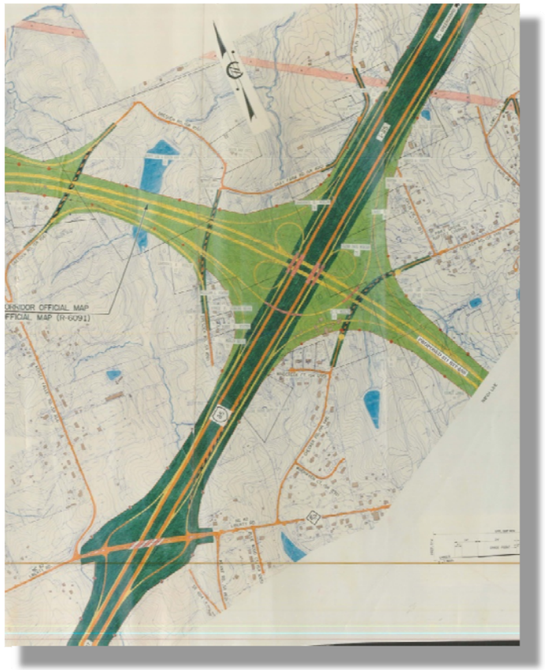
With the future opening of the US 311/I-74 corridor, NC 62 has the potential to experience changes in land development and traffic patterns. In an attempt to plan for these changes, this corridor study incorporates the results of extensive public outreach, traffic analysis, multimodal considerations, design concept, and access management strategies.

NC 62 has already begun to experience an increase in commercial development. The proximity of lively neighborhoods and good quality homes as well as the availability of suitable property helps to drive residential development along the corridor. NC 62's interchange with I-85 and its proximity to the US 311/I-74 corridor along with large suitable land parcels establish strong potential for future development.

This study of NC 62 aims to address the following:

- Develop an access management plan for the corridor
- Develop design standards for the corridor including typical section features, access spacing standards and strategies for access
- Provide bicycle and pedestrian recommendations
- Develop travel safety and mobility recommendations
- Identify corridor strengths, issues, and opportunities.

The development of these directives is essential to achieving the desires of the City of Archdale and its regional partners.



EXISTING COMMITTED PROJECTS

NCDOT oversees the State's Transportation Improvement Program (TIP), a seven-year spending budget that allocates funding for transportation projects throughout the state. **Table 1** lists the TIP projects that are currently under construction in the vicinity of the study area.

TIP projects R-0606 and R-2606 are currently under construction. The projects will complete the construction of a 4-lane median divided interstate facility from I-40 in Forsyth County to US 220 in Randolph County. The limits of TIP project R-0606 are from US 29/70 to just south of NC 62. TIP project. TIP project R-2606 continues from the terminus of R-0606 to a new interchange with US 220 in Randolph County. The TIP projects are proposed to be completed in 2010.

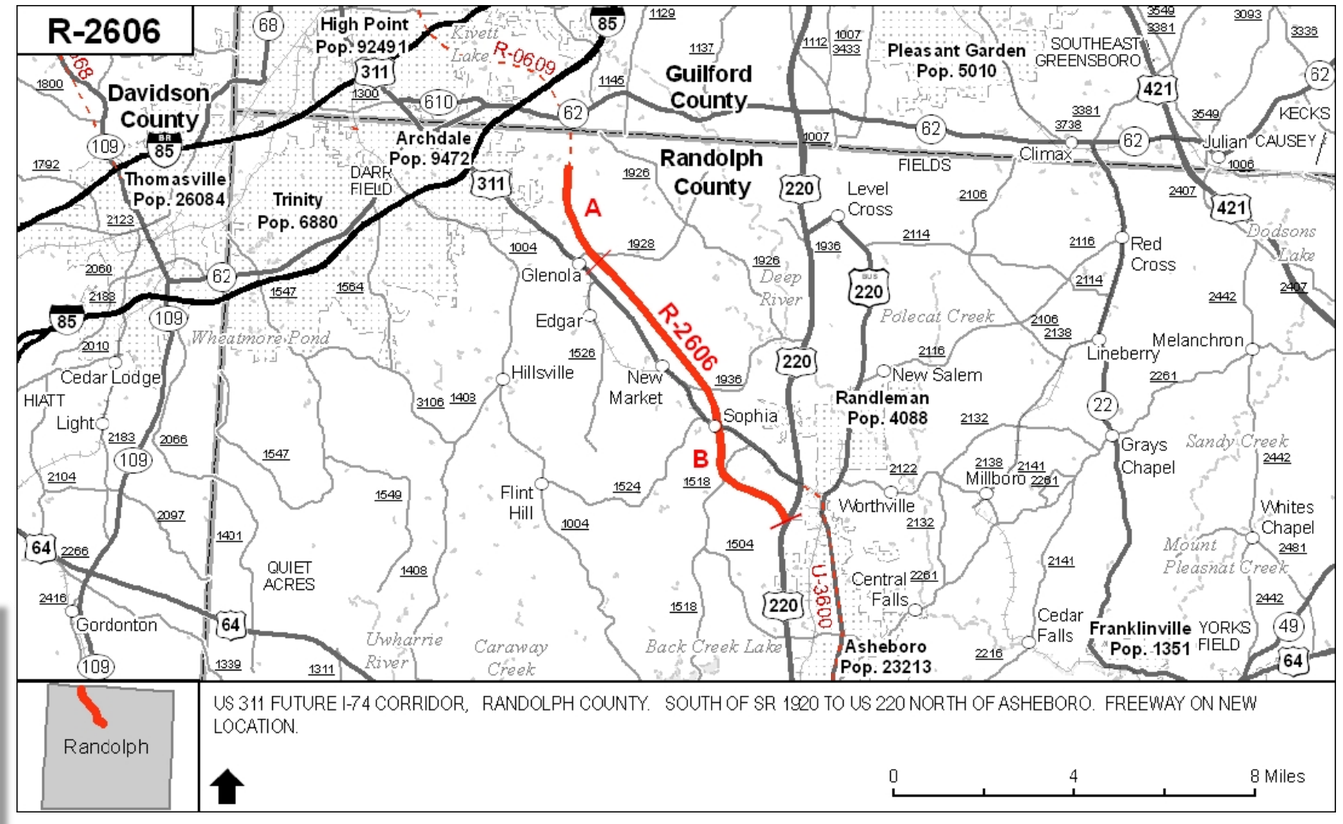


Table 1. TIP Projects Under Construction in the Vicinity of the Study Area		
Project Number	**Description**	**Expected Construction Schedule**
R-2606	A new freeway (I-74) is to be built as part of the US 311 Bypass from south of NC 62 in Randolph County (Archdale) to US 220 in Asheboro.	Under construction
R-0606	US 311 Bypass "East Belt" constructs a 4-lane divided freeway (I-74) from US 29/70 in High Point to south of NC 62 in Randolph County.	Under construction

Source: North Carolina Department of Transportation State Transportation Improvement Program: 2009-2015. Published June 2008.

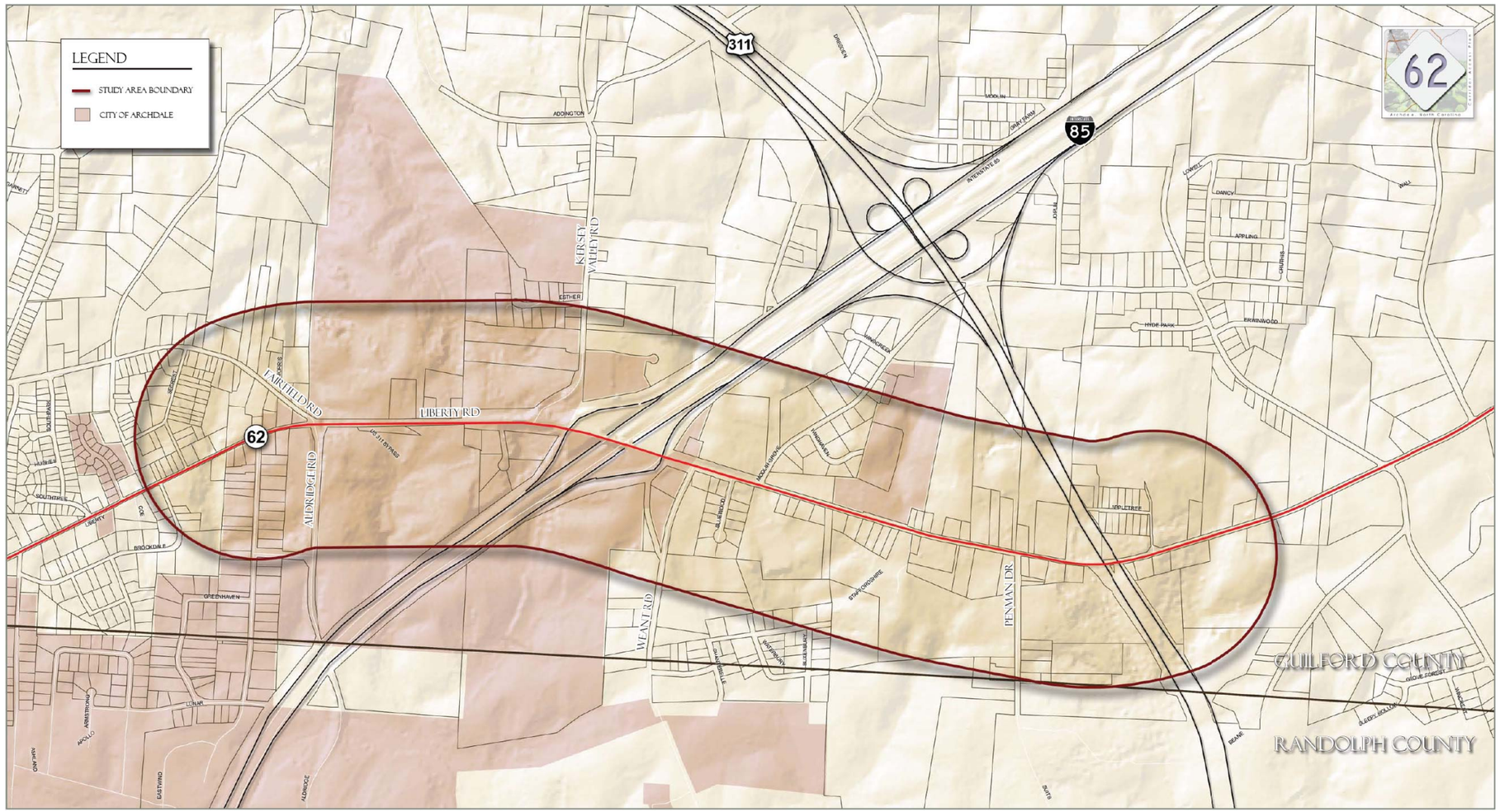
Study area

The study area *(Figure1)* stretches from Longview Drive to the west to the overpass of NC 62 of the US 311/I-74 corridor. This section of NC 62 lies within Guilford County. Just west of Longview Drive, NC 62 passes into Randolph County. Beyond the corridor itself, the project reviewed transportation needs for the area located north of Huff Road to the area south of the US 311/I-74 corridor. Connectivity and traffic safety issues were evaluated within this area.

The study area includes the intersections of the following significant roadways with NC 62:

- Aldridge Road/Fairfield Road
- Kersey Valley Road
- Weant Road
- Modlin Grove Road
- Penman Road

Figure 1: Study Area



planning process

Balancing the transportation needs of a growing urbanized area against increasingly competitive funding elements is a challenge that requires careful planning throughout the project. The process requires the collaboration of many public and private entities now and in the future to ensure the plan supports not only transportation goals but also land use, social, and economic goals of the area. This plan reflects lessons learned from past experiences and consideration of current initiatives in order to provide proactive and effective strategies for the future.

From the outset of the project, it was essential to integrate the planning and design process with local and regional planning initiatives to ensure the plan's reinforcement of the community's vision, local corridor context, and land use and environmental goals. Emphasis was placed on the role of local transportation networks, planned land use, and identified natural, historic, and economic resources. Innovative community involvement, resource sharing, and a multi-disciplinary approach were necessary to achieve a successful outcome.

The project's technical methods are rooted in traffic forecasting, operations analysis, and the development of design alternatives. However, stakeholder collaboration and public involvement are pivotal in assuring favorable integration with the community. The planning process included a host of activities involving the community:

- Existing Conditions Inventory
- Public Design Charrette
- Technical Advisory Committee
- Stakeholder Interviews (public and private)
- Design Alternatives
- Public Presentation
- Council Presentation

These activities are described in the following sections in greater detail.

EXISTING CONDITIONS INVENTORY

Before any public outreach activities took place, the project team conducted a field review of the NC 62 Corridor to gain an understanding of its current status in terms of transportation, land use, design characteristics, and other considerations. The team took photographs, gathered field measurements, reviewed aerial images, and researched information relating to the corridor's condition and use. Most of the resource exhibits created during this phase can be found in the appendix.

DESIGN CHARRETTE

The charrette allowed the consultant team to interact with community members, business leaders, and local officials to better understand the local context, identify issues and constraints, and obtain feedback on design options. The charrette occurred over three days (August 18th – 20th) with the majority of its activities taking place in the nearby Archdale Public Library. The charrette was broken down into three distinct activities by day. Day one included stakeholder interviews, public workshops, brainstorming sessions, and other planning activities specifically tailored to generate discussion. Day one was conducted at the Archdale Public Library. Day two occurred at the URG office in Charlotte which included members of the Archdale planning staff. Activities included concept refinement, connector street planning, and land use discussions. Day three returned the charrette back to Archdale for the public presentation and comment

The charrette gave stakeholders, the technical advisory committee members, and the general public the opportunity for "hands-on" involvement by sharing their thoughts on transportation needs in the study corridor without fear of public backlash. Continuous feedback from the charrette participants helped the project team recognize transportation access and mobility concerns, development opportunities, and natural and manufactured constraints while developing ideas for improvement.

Traffic engineers, landscape architects, and land use planners facilitated the charrette activities and developed concept renderings in response to comments from participants. Throughout the charrette process, individual and group participation was encouraged. This continuous collaboration allowed for an open and transparent process with the public which provided direct feedback to the proposed improvements.

What is a Charrette?

The term "charrette" is the French word for "cart." Initially, the term referred to the intense sessions by artists to finish works before they were collected by proctors and carted to salons for viewing and sale.

Today, the term is commonly used to refer to an intense, interactive community-based planning process. The process brings together citizens, stakeholders, local officials, and design professionals to work as a collective group to develop a shared vision and translate it into viable solutions. The benefits of a charrette include:

- **Diverse participation ensures thorough discussion of issues, relationships, and alternatives**
- **Multidisciplinary design teams create realistic alternatives without having to revise work through multiple iterations**
- **Compact time frame challenges participants and facilitators to quickly and openly examine issues and progress toward a collective vision**
- **Public involvement occurs in a transparent, supportive environment conducive to the open discussion of issues and alternatives**
- **On-site locations enhance the design team's understanding of local issues and provides the context to the project's vision**
- **Creative illustrations convey complex solutions**
- **Team produces visual results that are viable**

the charrette

The three-day charrette was the most significant portion of the project's public outreach efforts. The day-by-day events of the charrette are described below.

DAY 1: WHO & WHY?

The first day of the charrette took place at the Archdale Public Library and included both Stakeholder Interviews and the Public Kick-Off Meeting. The objective of the meeting was to open the discussion to identify issues, problems areas, and concerns related to the transportation aspect of the corridor.

As mentioned previously, stakeholder interviews on the first day consisted of conversations with representatives previously listed. These interviews allowed uninterrupted dialogue with individuals in the community having particular knowledge or expertise related to the project. For example, representatives of the fire department were able to identify potential trouble spots for emergency response vehicles. Other potential developers shared their site plans and ideas for the community.

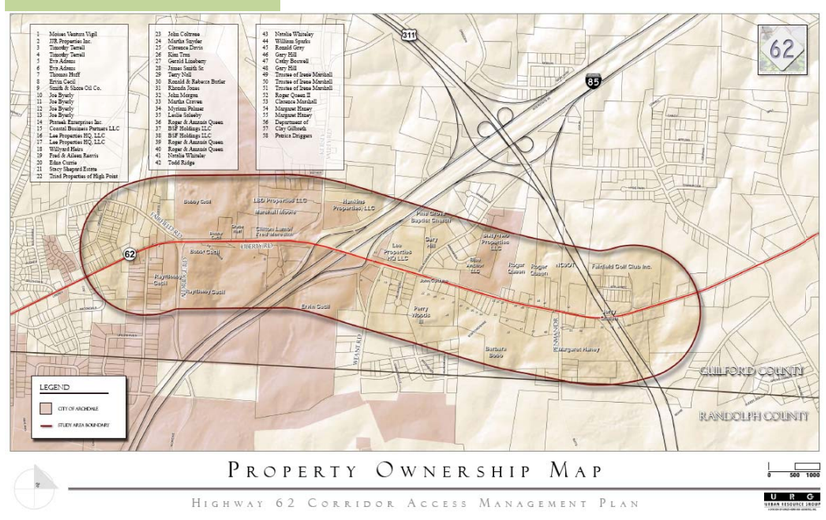
The public kick-off meeting, held later that evening, was open to all community members. With more than 50 attendees, the project team and community leaders actively engaged participants to integrate them into the planning process. An overview presentation introduced the purpose of the charrette, described the planning process, defined the corridor study area, and offered ways for the public to remain involved throughout the planning process. Following the presentation, a large-group discussion and many one-on-one conversations clarified questions and revealed concerns for the project and its impact to the community.

Some of the concerns related to the following issues:

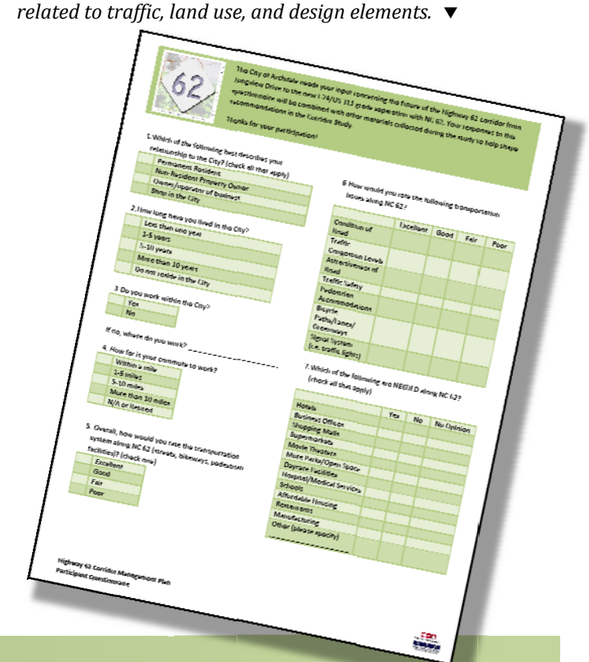
- planning process
- image and perception
- safety (both vehicular and pedestrian)
- bike/pedestrian facilities
- traffic calming
- schedule and funding aspects of implementation

▲ *A charrette facilitator summarizes the events of the charrette.*

This map used at the charrette lists the property owners located within the study area.



Participants were asked to provide input via a survey which asked questions related to traffic, land use, and design elements. ▼



Continuous feedback gathered throughout the planning process along with the information assembled from the stakeholder interviews was considered in developing the conceptual designs presented at the end of the charrette.

DAY 2: WHAT & WHERE?

During the second day of the charrette, the project team along with Archdale planning staff returned to the URG office in Charlotte to review the feedback from day 1, and translated observations and input into conceptual designs.

The team reviewed the comments submitted and voiced at the previous night's public meeting and considered them alongside the issues identified at the stakeholder interviews. The team summarized what they had heard into the following primary concerns and issues to be addressed during the planning study.

Once they clarified the concerns of interested parties, the project team worked to address the comments and respond appropriately in the conceptual design. The team developed an overall access strategy for the corridor and established improvements that would fit within the context of that vision.

DAY 3: HOW & WHEN?

The third day of the charrette focused on blending the comments and ideas from the previous two days into a cohesive plan that combined the issues, concerns, and needs for the project. The project team prepared their findings, recommendations, and conceptual designs for presentation at the final workshop hosted at the Archdale Public Library. During the previous two days, project designers had used the feedback offered at the first public meeting to revise the cross-section options, access strategy, and connectivity recommendations.

Citizens were invited to review maps illustrating the alignment and other project-related plans. The maps and accompanying diagrams displayed large-scale concepts and regional connectivity (roads, bicycle, pedestrian and greenways) as well as location-specific improvements such as intersection treatments, gateways, and catalyst redevelopment projects.

TECHNICAL ADVISORY COMMITTEE

The Technical Advisory Committee (TAC) was formed to provide input relative to the technical aspects of the project but to also help ensure a valuable final result. The committee consisted of members from NCDOT, High Point MPO, and the Archdale Planning Department. The group met monthly between June and September 2009 to review technical aspects of the project and to provide feedback on the overall study progress. The TAC also helped in decision-making, including selecting the preferred design alternative to present to the Planning Board and City Council.

STAKEHOLDER INTERVIEWS

Numerous stakeholders were interviewed during the planning process to gather a local perspective and specific information for developing successful design alternatives. During the three-day charrette, stakeholders representing the following groups were interviewed:

- Business Owners
- Realtors and Brokers
- Property Owners
- Civic and Community Organizations

DESIGN ALTERNATIVES

After identifying problem areas and corridor issues prior to and at the charrette (Day 1) and gathering citizen input, the project team produced conceptual design options and access and connectivity strategies that were presented to the public on Day 3. With the TAC taking on an advisory role and with traffic analysis providing operations information, the project team refined the alternatives and chose a recommended alternative to explore in greater detail and present to the Planning Board and City Council.

PUBLIC PRESENTATION

The design alternatives, access, and connectivity strategies were presented for refinement to the TAC. Based on suggested revisions, the project team presented findings, results, and final recommendations to the Planning Board and City Council during an open public forum.

The property owners session was the largest attended stakeholder's session.

2 | NC 62 "TODAY"

corridor context & land use

The existing transportation network, land use framework, and environmental features of the NC 62 area all were considered during the development of the plan. Examining these elements helped establish a framework for determining critical improvements in the context of future growth and the existing development pattern.

For the two miles of the NC 62 corridor, a diverse mix of land uses and patterns is present. It traverses east out of Archdale, through residential neighborhoods, through rolling farms, and across junctions with Interstate 85, and through a mix of highway commercial uses, transistioning to intermingled commercial and established residential uses before crossing over the US 311/I-74 corridor to rural pastorial houses and farms. The corridor is bounded to the north and west by the US 311/I-74 corridor and divided by I-85 in the middle. Established neighborhoods and farms bound the corridor to the south.

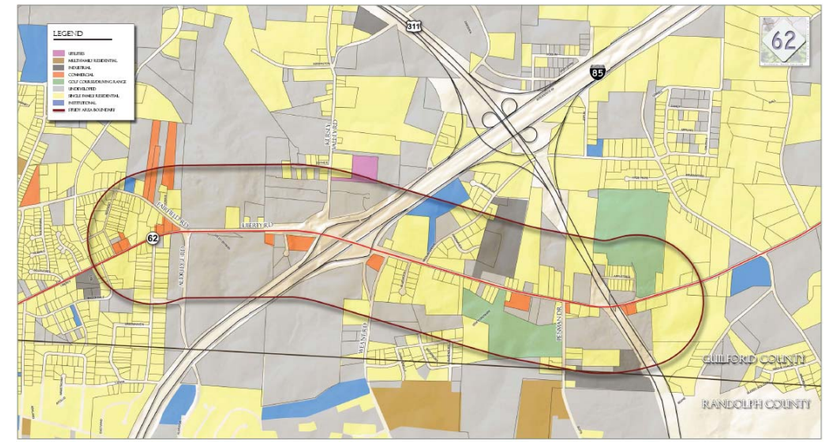
For many years, NC 62 has existed as a typical rural two-lane state highway, interconnecting the small communites and crossroads it intersected as it meanders east. Beginning in Thomasville, NC 62 winds its way through five counties before passing into Virginia just east of Danville.

The street area for this plan begins just west of the signalized intersection of Aldridge Road/Fairfield Road. This segment of the street area includes established neighborhoods and a small neighborhood commercial node at the intersection of Aldridge Road/Fairfield Road. Continuing eastward, the corridor traverses through large undeveloped tracts of land primarily used for farming. As you approach the interchange with I-85, highway commercial land uses including a hotel and gas stations are present. Crossing over I-85 the corridor quickly begins to transistion back to established resdiential as older homes line the street. Throughout this section of the corridor, older commercial development is intermingled between the homes. Signs of redevelopment opportunites and occurances are present through this section of the corridor, including numerous for sale signs and the recently approved industrial park. Other unique land uses include a fishing lake and driving range. Upon crossing the US 311/I-74 corridor, NC 62's development pattern begins to spread out further, with separation between houses growing to several hundered feet. The residential developments are peppered amongst the large farms that exist in this area.

environmental

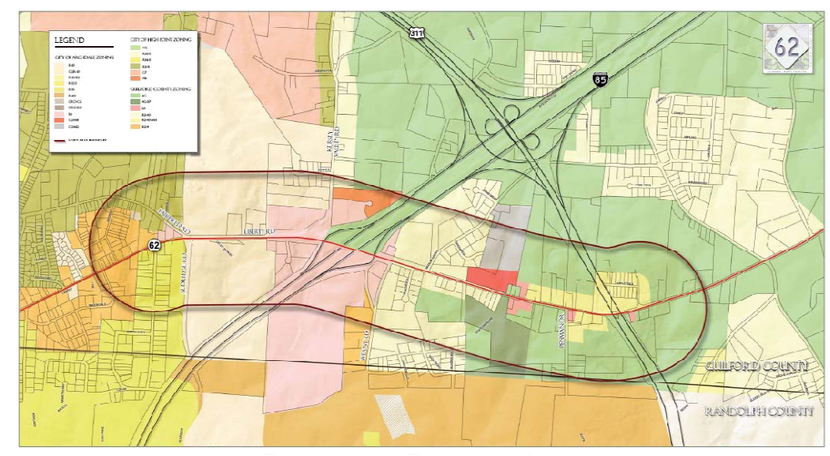
Throughout the study area, NC 62 follows a natural ridge line which in turn allows this section of NC 62 to avoid any major stream or creek crossings. Just east of I-85 the corridor begins to slope towards a crossing of Deep River. While no stream crossings impact the corridor, the street area is located within the Water Supply Watershed for Randleman Lake. The recently completed Randleman Lake has been created to supply drinking water to multiple communities in the Piedmont Triad.

Several small farm ponds exist throughout the NC 62 corridor. One of particular interest is the Woods Lake which lies just south and east of the intersection of Modlin Grove Road with NC 62. The recreational fish pond is associated with a commercial business but also is located within 75 feet of the travel lane.



Existing Land Use Map

Highway 62 Corridor Access Management Plan



Existing Zoning Map

Highway 62 Corridor Access Management Plan

Figure 2. *NC 62 diverse corridor character*

These photographs provide a perspective of typical land uses and travel conditions on NC 62.

Transportation

NC 62 is one of several thoroughfares for the City and serves east-west traffic connecting surrounding counties and communites with I-85. Roadways classified as thoroughfares are intended to operate at higher speeds, provide high mobility, provide significant capacity, may have access control, and serve longer distance travel. While most thoroughfares connect to higher order streets, (in the case of NC 62, I-85), they also connect to other thoroughfares and collector streets.

Even though NC 62 is a thoroughfare on the periphery of the City, the corridor lacks overall connectivity. The future US 311/I-74 corridor prohibits any future north-south connectivity beyond what has already been planned for in the construction. Directly within the corridor, only Kersey Valley Road will connect to points north of the US 311/I-74 corridor. In the span of two miles, only Aldridge Road and Suits Road (Penman Road)have direct connections to US 311 Business to the south. Weant Road ties into Suits Road prior to intersecting US 311 Business. Other than NC 62, only US 311 Business provides east-west mobiliy. No additional collector or local street connections occur in either direction, which limits mobility and increases traffic upon NC 62.

TRAFFIC TODAY

Traffic volumes signify the total number of vehicles traveling along a roadway segment on an average day. **Table 2** shows average annual daily traffic (AADT) in 2009. With traffic ranging from 4,200 vehicles per day to 19,800 vehicles per day. These volumes are expected to increase in the future with the completion of the US 311/I-74 corridor.

To better understand how traffic is operating in the morning and evening rush hours, historical turning movement counts were taken and using the newly released version of the Piedmont Triad Regional Model, turning movement projections were developed for critical intersections along the corridor. Capacity analysis was performed for the AM and PM peak hours for the existing (2009) traffic conditions using Synchro 7 software to determine the operating characteristics of the adjacent roadway network.

Capacity is defined as the maximum number of vehicles that can pass over a particular road segment or through a particular intersection within a set time duration. Capacity is combined with Level-of-Service (LOS) to describe the operating characteristics of a road segment or intersection. LOS is a qualitative measure that describes operational conditions and motorist perceptions within a traffic stream. The Highway Capacity Manual defines six levels-of-service (LOS A through F) with A representing the shortest average delays and F representing the longest average delays. LOS D typically is the accepted standard for signalized intersections. For signalized intersections, LOS is defined for the overall intersection operation.

For unsignalized intersections, only the movements that must yield right-of-way experience control delay. Therefore, LOS conditions at an intersection are best represented by reporting the delay to the side street approaches and movements. Results between LOS A and LOS C for the side street approach are assumed to represent short delays. For descriptive purposes, results between LOS D and LOS E for the side street approach are assumed to represent moderate delays, and LOS F for the side street approach is assumed to represent long delays. It is typical for stop sign controlled side streets and driveways intersecting major streets to experience long delays during peak periods, while the majority of the traffic moving through the intersection on the major street experiences little or no delay. **Table 3** lists the LOS control delay thresholds published in the Highway Capacity Manual for signalized and unsignalized intersections, as well as the unsignalized operational descriptions assumed herein.

Table 2. Average Daily Traffic Volumes (2009)

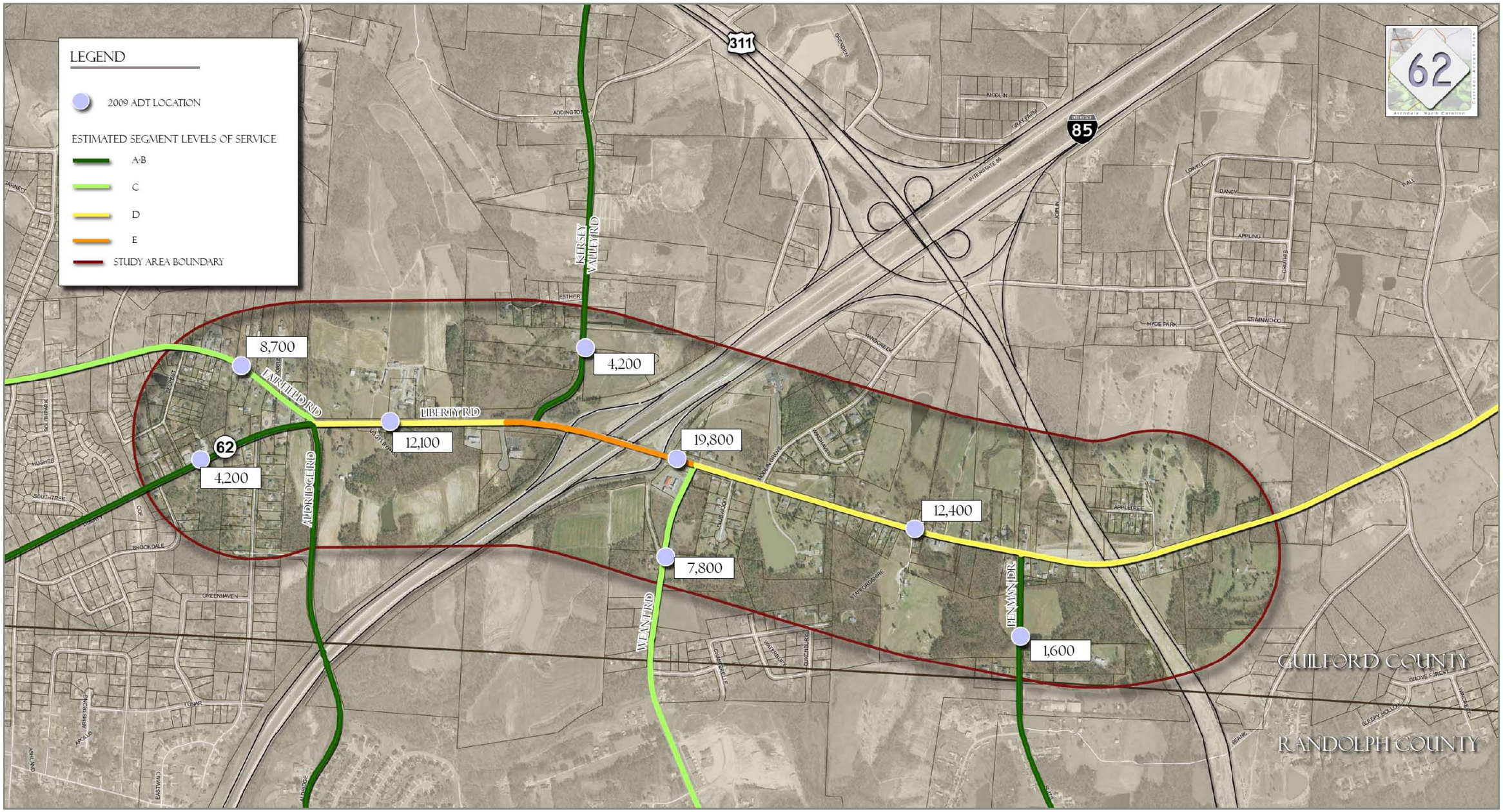
NC 62 Segment	2009 AADT	2009 LOS
Longview to Aldridge	4,200	B
Aldridge to Kersey Valley	12,100	D
Kersey Valley To Weant	19,800	E
Weant to Penman	12,400	D
Weant Road	7,800	C
Fairfield Road	8,700	C

Table 3. Intersection Level-of-Service Control Delay Thresholds

Level-of-Service	Average Control Delay (sec/veh)		
	Signalized	Unsignalized	
A	≤ 10	≤ 10	Short Delays
B	> 10 – 20	> 10 – 15	
C	> 20 – 35	> 15 – 25	
D	> 35 – 55	> 25 – 35	Moderate Delays
E	> 55 – 80	> 35 – 50	
F	> 80	> 50	Long Delays

Source: *Highway Capacity Manual*, 2000

Figure 2: 2009 AADT volumes



All of the intersections along NC 62 currently operate at an acceptable LOS D or better (Table 4) based on the traffic counts and existing signal timing information provided from NCDOT and field observations. However, field obersvations indcate that significant queuing occurs on Weant Road, northbound, in the AM peak hours. Additional congestion is also present around the I-85 interchange in the AM peak hour. At Fairfield Road/Aldridge Road, significant queuing is also present in the PM peak hours for the Fairfield approach. The intersection skew contributes to the inefficient operations of this intersection.

Table 4. Intersection Level-of-Service Summary (Existing)

Condition	Peak-Hour LOS (Delay)	
	AM	PM
Aldridge/Fairfield	B (15.5)	C (20.3)
Kersey Valley	*C (20.4)*	*C (23.9)*
I-85 SB Ramps	A (6.2)	B (10.3)
I-85 NB Ramps	B (16.9)	B (17.5)
Weant Road	*C (23.2)*	*C (18.1)*
Penman Road	*B (14.3)*	*B (13.7)*

Unsignalized intersections indicated in *italics* and LOS and delay represent that of the most delayed minor street approach.

SAFETY

Figure 3 highlights the top four intersections of interest based on a combination of factors including number of crashes, crash type, severity index, and crash rate. Listed in order based on the number of crashes reported, the frequency of rear-end and angle crashes for the intersections is expected since the roadway is an undivided two-lane section. Rear-end type crashes commonly occur on these types of roads when vehicles stop in the travel lane to turn left. The angle crashes are indicative of motorists attempting to turn left through inadequate gaps in traffic because of traffic queuing behind them or congested flow in the opposite direction.

BICYCLE & PEDESTRIAN

Currently, there are no sidewalks present along the corridor. No specific bike accommodations exist along the corridor. However, three bike routes pass within close proximity to the study area, and utilize the corridor both east and west of the study area. Bike routes 2, 5, and 8 are all within 1 mile of the study area for NC 62.

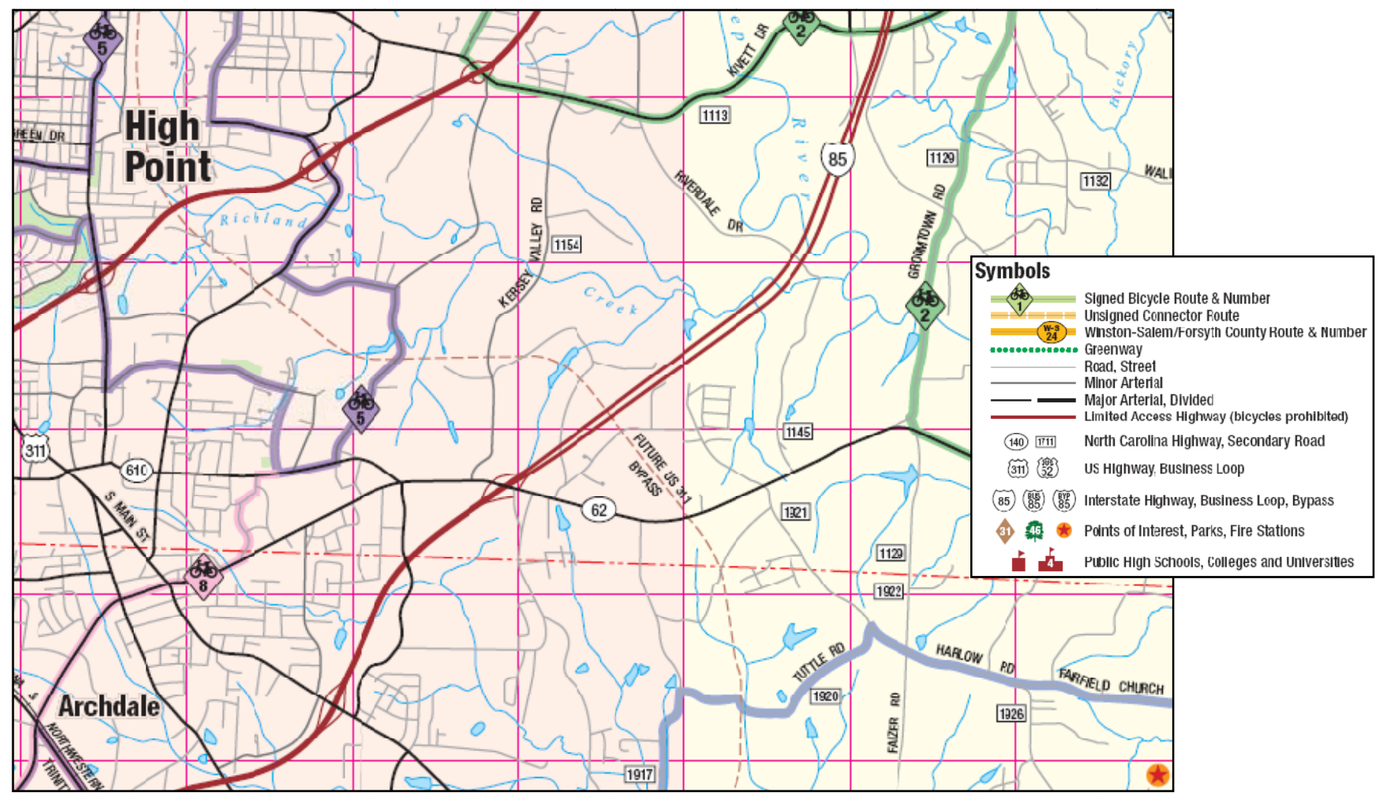
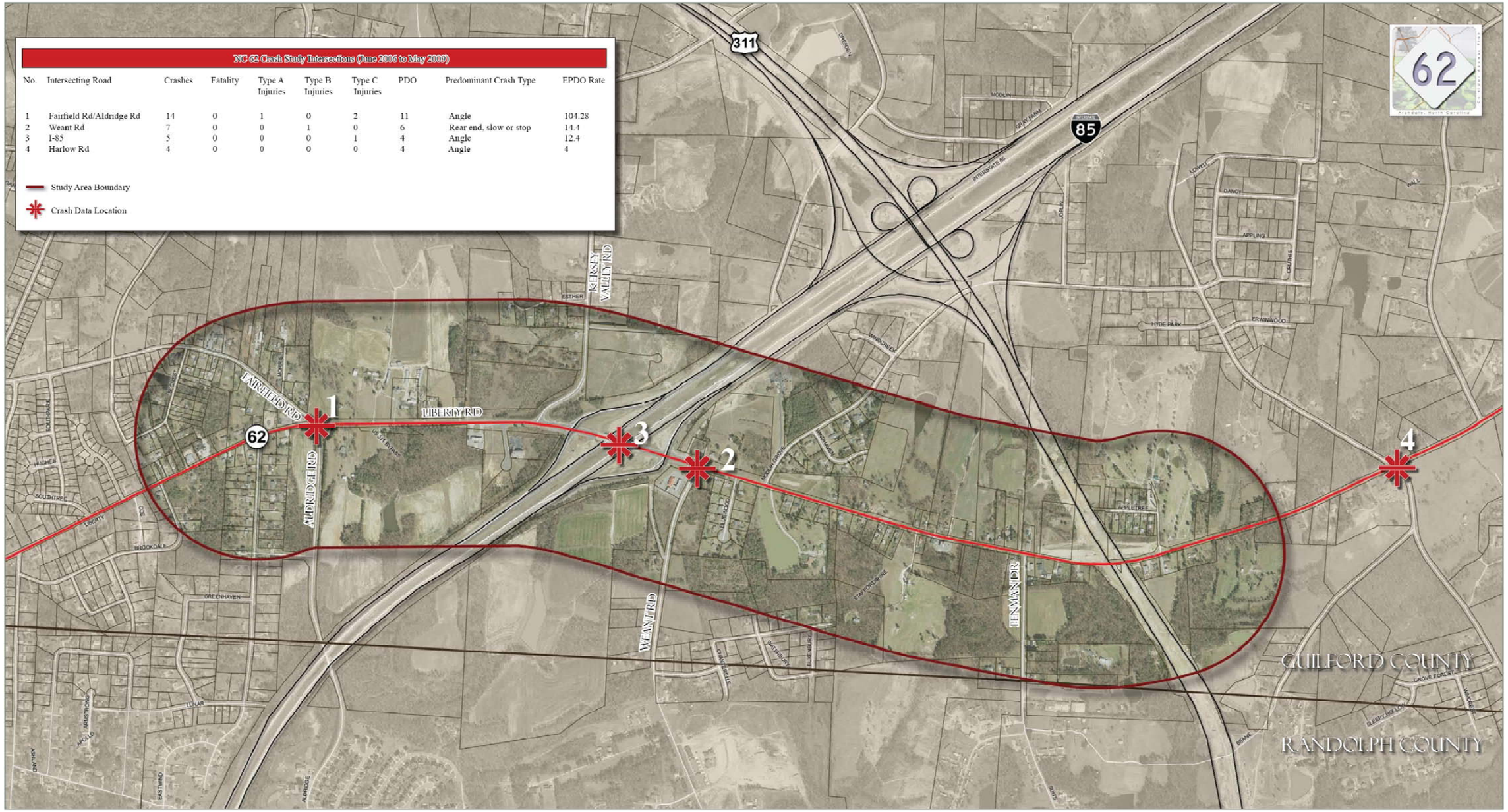


Figure 3. Intersection Crash Analysis, 2006-2009



No.	Intersecting Road	Crashes	Fatality	Type A Injuries	Type B Injuries	Type C Injuries	PDO	Predominant Crash Type	EPDO Rate
1	Fairfield Rd/Aldridge Rd	14	0	1	0	2	11	Angle	104.28
2	Weant Rd	7	0	0	1	0	6	Rear end, slow or stop	14.4
3	I-85	5	0	0	0	1	4	Angle	12.4
4	Harlow Rd	4	0	0	0	0	4	Angle	4

Traffic queues on Fairfield Road during the mid-day period.

3 | FUTURE CONDITIONS

The findings and recommendations that follow are based on the initial findings developed prior to the charrette, information and planning details discovered and developed during the charrette, and subsequent refinement of roadway design, traffic operations, and land use planning ideas.

system improvements

CONNECTIVITY

As described in the previous chapter, the lack of connectivity between NC 62 and other east-west arterials in the City is problematic which is further complicated by the I-85 and US 311/I-74 corridors.

Healthy neighborhoods and regions require an interconnected network of streets of varying sizes, providing transportation alternatives to its residents and visitors. The NC 62 corridor is surrounded by a wide variety of uses, including neighborhoods, farming, and commercial land uses. In many locations, it is difficult to move between destinations without accessing NC 62, adding to the congestion and delays already experienced on the corridor due to through trips. Because NC 62 has an interchange with I-85, many trips, both local and regional, find their way to NC 62.

The role of a connector street in a balanced transportation system is to connect the network of arterials. As such, these streets provide relatively less mobility but higher overall accessibility compared to higher level streets. The lower design speeds and multimodal amenities make these streets attractive for bicyclists and pedestrians.

A network of well-connected streets will allow motorists options for accessing NC 62 and moving between the regional arterials in the project area. **Figure 4** shows the current and proposed collector street connections surrounding NC 62. Two types of connector roads are envisioned for the study area. The dashed red lines indicate the primary connector streets while the dashed purple indicates the secondary connector streets. Primary connector streets are first priority streets that need to be constructed first and work in concert with the overall access management strategy for NC 62. The purple connector streets are secondary in nature and build upon the connectivity provided with the primary connector streets.

The dashed red and purple lines (representing potential connector street alignments) build on this network and provide recommendations for the area's future as it continues to develop. As development continues in this area, it is important to provide viable connections and alternatives. The proposed alignments shown in **Figure 4** are not precise and more detailed planning will be required prior to construction. The purpose of the mapped connector streets is to show critical connection points throughout the study area. Most connector streets are intended to be constructed incrementally as new development occurs. For this reason, the exact alignment is flexible. Most important is the provision of connectivity in the vicinity.

policy considerations

The design of a connector street network must respect present and future conditions, the public's vision for the future, and how the network can best balance the natural environment, connectivity, access, mobility, and safety.

STREET SPACING AND ACCESS

Local officials also must consider street spacing guidelines to promote the efficient development of an expanding transportation system. Ultimately, these street spacing guidelines could be used as "rules of thumb" during the development review process. Different spacing standards are necessary for different development types and intensities. Understanding this principle, URG developed a theoretical model largely influenced by land use intensity ranges that shows the desired collector street spacing for different intensities.

Benefits of Connectivity

- Reduced travel on major thoroughfares
- Reduced travel times without travel speed increase
- Increased route choice for all modes
- Improved access opportunities for emergency response vehicles

Well-connected system of streets

Limited connectivity resulting in heavy reliance on arterial system

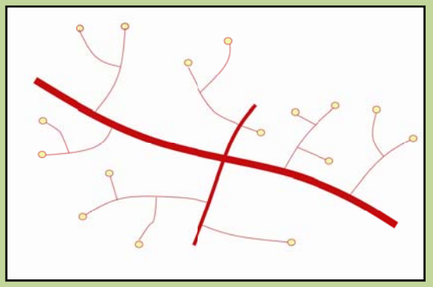


Table 5 – Collector Street Spacing Standards

Land Use/Type of Collector Street	Intensity (dwelling units per acre)	Access Function	Approximate Street Spacing
Very Low Intensity Residential	Less than 2	High	3,000 to 6,000 ft
Low Intensity Residential	2 to 4	High	1,500 to 3,000 ft
Medium and High Intensity Residential	More than 4	High	750 to 1,500 ft
Activity Center	Mixed-use	Medium	750 to 1,500 ft

In addition to these recommendations, individual driveway access to collector streets should be limited to local streets when possible.

DESIGN ELEMENTS

As most communities' largest collection of public space, streets need to reflect the values of the community and reinforce a unique "sense of place" to be enjoyed by citizens — whether in urban, suburban, or rural contexts. This is especially true for a collector street system that serves as the backbone for local mobility, property access, and non-vehicular transportation modes.

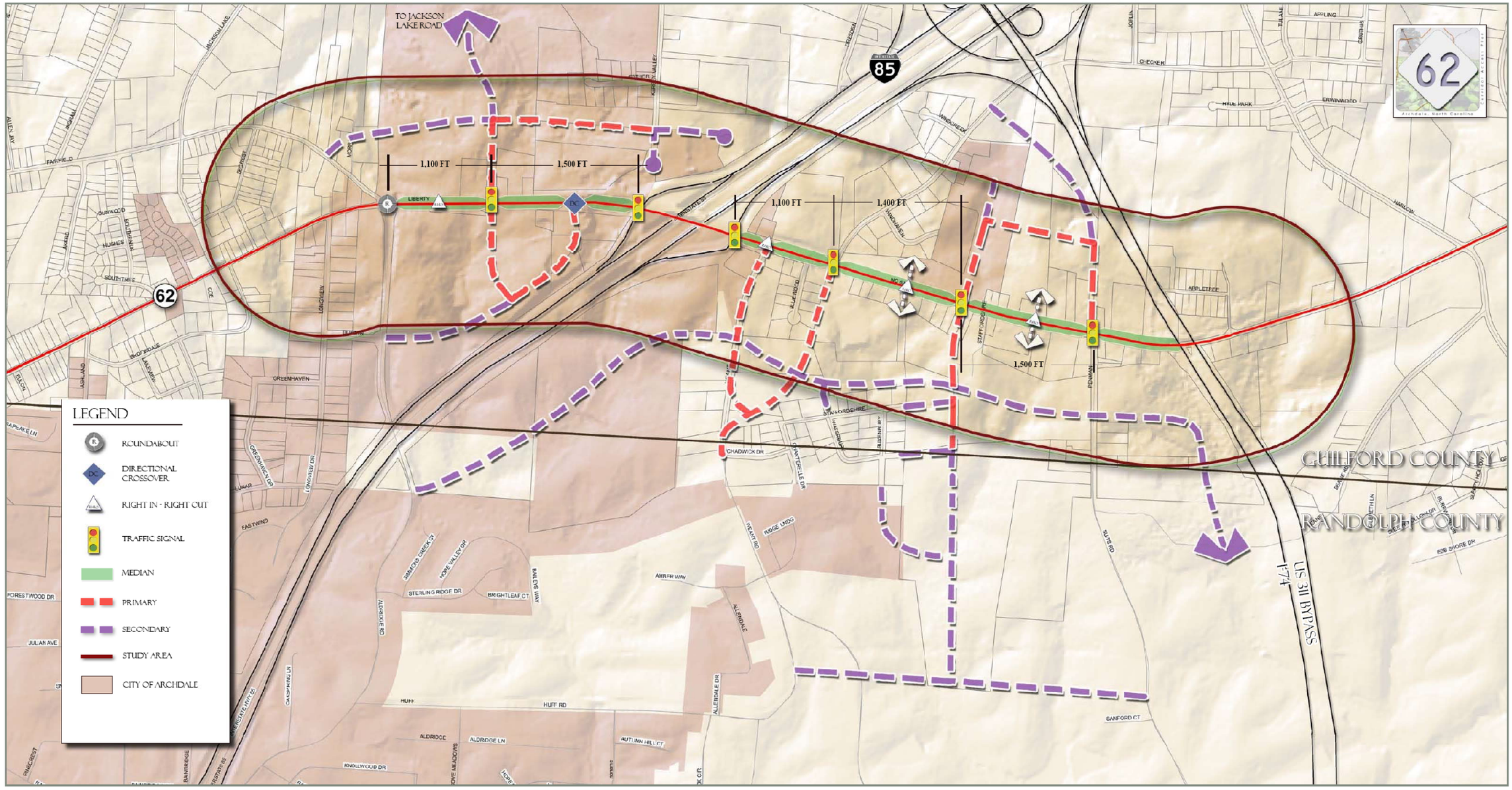
Recently, municipalities across the country have started implementing "complete streets" as one way to transform their transportation corridors from vehicle-dominated roadways into community-oriented streets that safely and efficiently accommodate all modes of travel — not just motor vehicles. The complete street movement does not advocate for one-size-fits-all approach — a complete street in an urban area may look quite different from a complete street in a more rural area. However, both facilities are designed to balance mobility, safety, and aesthetics for everyone using the travel corridor. Furthermore, design considerations supportive of complete streets include elements in both the traditional travel corridor (i.e., the public realm) as well as adjacent land uses (i.e., the private realm) for reinforcing the desired "sense of place."

GENERAL POLICY RECOMMENDATIONS

The following general policy recommendations are offered for consideration in an effort to increase the number of collector streets to better facilitate travel between local streets and arterials:

- Use the future collector street network as a tool to review proposed development projects and plans as future collector streets are located
- Amend the collector street network to include new streets as they are identified during the development review process
- Work with the development and real estate community to increase public awareness of future collector street connections through enhanced signage – i.e., "Future Street Extension"
- Provide temporary turnaround accommodations for collector street stub-outs to allow access by maintenance and emergency vehicles if length exceeds 150'; right-of-way needed for these turnarounds would revert back to property owners once the connection is made
- Require new developments to reserve right-of-way for, and in some cases construct, future collector streets
- Consider adopting policies and dedicating funding to help construct traffic calming measures on existing collector streets that become connected to new collector streets
- Require all new developments to provide connections or stub-out streets in each of the four cardinal directions (where applicable)

Figure 4: Connector Streets



future traffic

With the completion of the US 311/I-74 corridor, traffic volumes will change for the NC 62 corridor. Project traffic engineers reviewed the 2035 Piedmont Triad Regional Travel Demand Model and developed a traffic forecast (see Appendix) for the study area based on historic AADT traffic counts, historic turning movement counts, and model projections for 2035. The forecast accounted for traffic diversions caused by the opening of new corridors and other factors not included in the model. The forecasted volumes for 2035 (Table 5) show moderate volumes with significant growth in traffic around the I-85 interchange with NC 62.

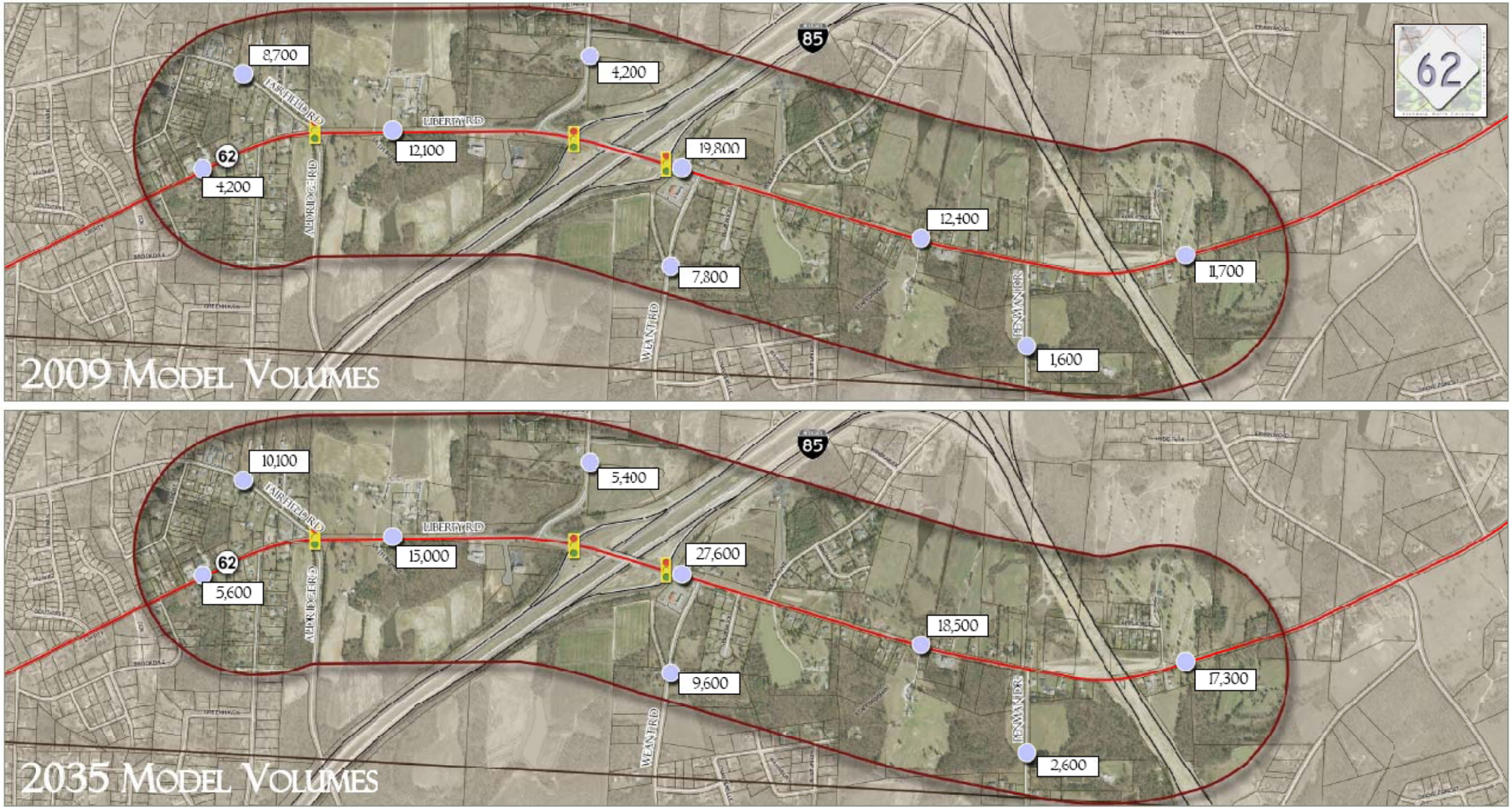
Table 5. Traffic Growth, 2009-2035

NC 62 Segment	2009	2035	
	AADT	AADT	% Increase
Longview to Aldridge	4,200	**5,600**	33%
Aldridge to Kersey Valley	12,100	**15,000**	24%
Kersey Valley To Weant	19,800	27,600	39%
Weant to Penman	12,400	**18,500**	49%
Weant Road	7,800	**9,600**	23%
Fairfield Road	8,700	**10,100**	16%

The existing intersection levels-of-service are reported in the *Transportation* section of **Chapter 2**. As displayed in **Table 5**, the projected increases in traffic by 2035 along the NC 62 corridor will cause considerable congestion if no widening or intersection improvements are made. Motorists at the unsignalized intersections in the analysis network will experience long delays as they attempt to enter heavy traffic on NC 62 during the morning and evening rush hours.

Based on these volumes, it is evident that the current cross-section will not adequately handle additional traffic demand, nor is there a parallel facility to accommodate the increase in traffic therefore, widening the corridor will need to be considered. The focus of the corridor will need to be improving segment operations by expanding the cross-sections to include medians and left-turn lanes. These types of improvements can help increase corridor capacity by nearly 25% over undivided roadway segments. The important compromise is to make these types of improvements while minimizing impacts to homes, businesses, and institutions fronting the corridor.

Figure 5: Traffic Volume Comparison



corridor improvements

NC 62 is a two-lane undivided major thoroughfare with a 24 foot roadway section. Near the interchange with I-85, the roadway section grows in width to add auxiliary turn lanes. It should be noted that the existing bridge over I-85 was constructed with sufficient width to accommodate a five-lane section.

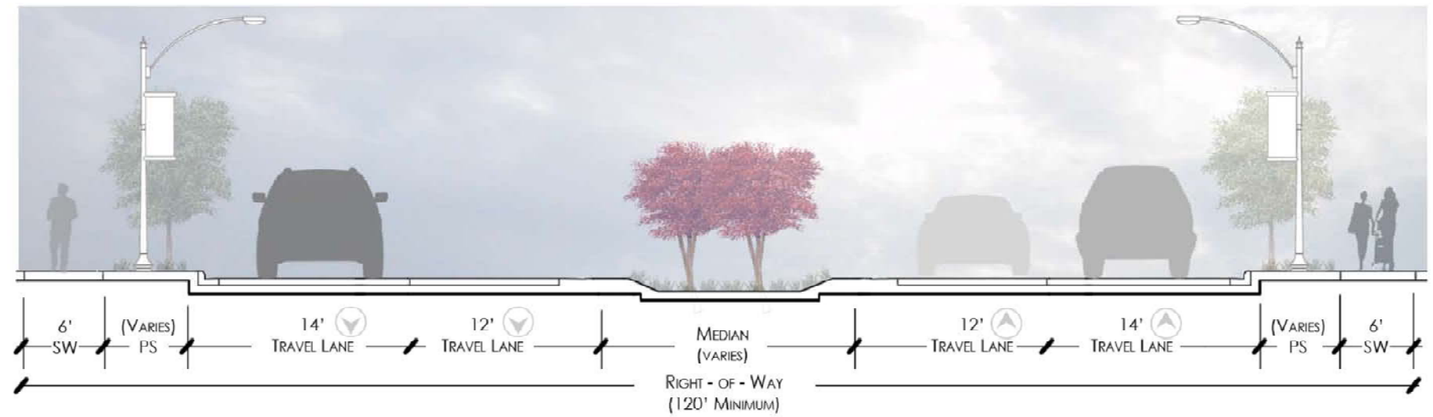
In considering the options for this corridor, the project team and TAC identified the following priority goals for the corridor:

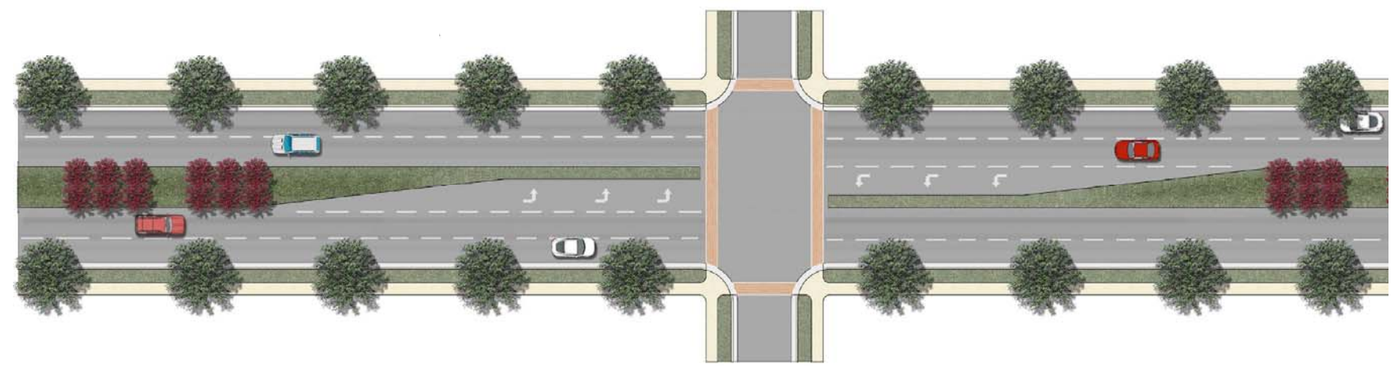
- Accommodate the capacity for future projected traffic;
- Provide access management techniques to improve traffic safety;
- Minimize impacts to properties fronting the corridor; and
- Identify solutions to improve the Aldridge/Fairfield intersection

A four-lane median divided section was selected as the preferred typical section for the NC 62 corridor. The medians will provide the following benef

- **Safety:** Traffic operations will become safer with a plantable median and consistent left-turn lanes at key intersections.
- **Pedestrian/Bicycle:** Facilities for non-motorized transportation will include improved pedestrian crossings at signalized intersections and side streets, 14-foot wide outside lanes for shared use by cyclists, and 6-foot sidewalks on both sides of the street.
- **Utilities:** The current design considers consolidating and relocating all above-ground utilities.
- **Aesthetics:** Enhancements will include small street trees, shrubbery, and landscaping in the median and along the sidewalks where appropriate to further enhance the corridor as a primary gateway to the City.

The proposed four-lane section would be implemented between Aldridge Road and Penman Road. To the east and west of these intersections, NC 62 would remain a two-lane road.



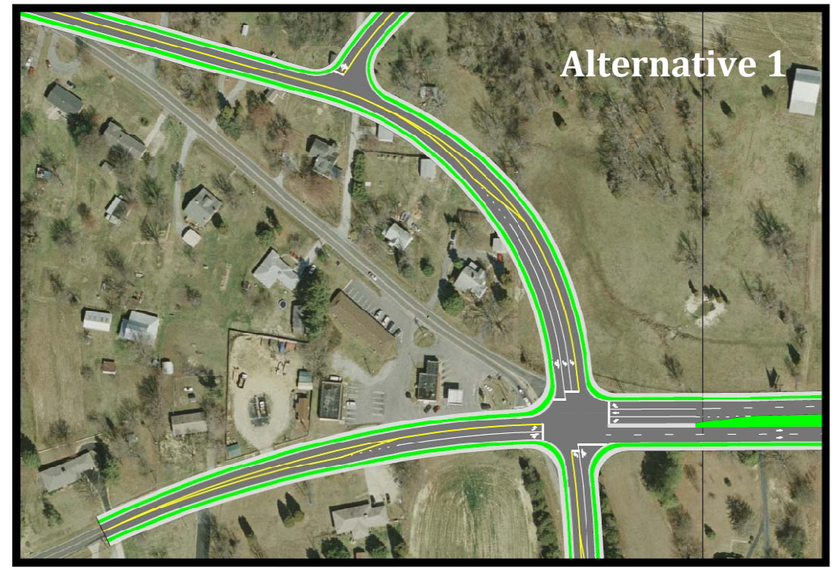


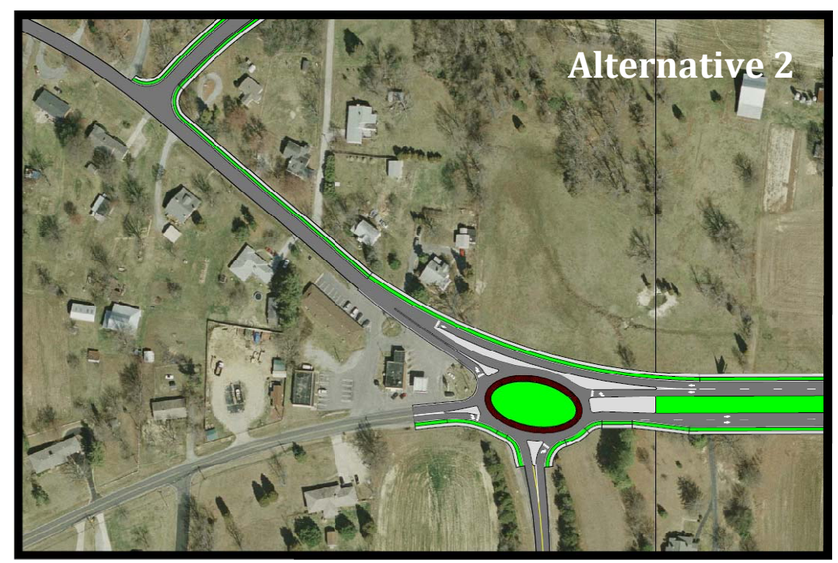
With the widening of the NC 62 between Aldridge Road and Penman Road, the intersecting roadways will also require improvements because of traffic control and access changes (signalization, directional cross-over, etc).

ALDRIDGE ROAD/FAIRFIELD ROAD AT NC 62

The field observations for this intersection showed that there was extensive queuing on the Fairfield Road approach throughout the day. The project team looked closely at why the intersection was experiencing the consistent queues. In review of the traffic volumes, both 2009 and 2035, it was determined that the heaviest movements for this intersection are on the southbound and westbound approaches. The volumes coupled with the traffic control, in addition to the southbound approach skew, create the observed queues. Understanding this, the project team investigated innovative intersection options to determine how best to alleviate this condition.

Two alternatives were developed for the intersection; the first, a traditional intersection configuration with improved intersection geometry along with auxiliary turn lanes and the second, which incorporates and oval in lieu of a circle forming a roundabout. Both intersection configurations accomplish the task of improving operations and improving safety. However, they both have drawbacks to their design and implementation. The first requires a significant purchase of property beyond what exists with the current right-of-way. The needed geometric improvements require a realignment of the southbound approach to remove the skew of this approach. This is in addition to the right-of-way required for the additional auxiliary turn lanes. Because the second is a variation on a round-a-bout it is a non-traditional traffic control for this area that will require driver education. While untraditional, the oval has superior safety characteristics given the reduction of conflict points when compared to the traditional signalized intersection. In addition, the oval provides for a generous gateway treatment to be incorporated in the intersection design. Both options accommodate the projected future year traffic volumes.





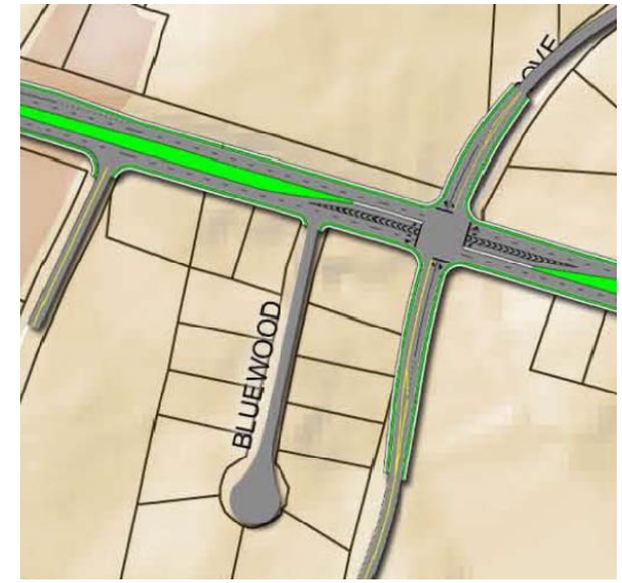
KERSEY VALLEY ROAD AT NC 62

The close proximity of this intersection to the interchange with I-85 creates operational and safety concerns for the intersection. Because Kersey Valley Road is one of the few north-south roads that crosses the US 311/I-74 corridor to the north and it remains an attractive place for future development, it is recommended that the approach to NC 62 be realigned to the west creating an appropriate location of possible signalization and removing the conflict with the I-85 ramp terminals.

The realignment of Kersey Valley Road also helps define development opportunities for the created parcels of property along the new street network. The realignment can be accomplished in an abrupt way through a series of new street connections or through a true realignment at the road to a point west of its current terminus at NC 62.

WEANT ROAD AT NC 62

As with Kersey Valley Road, Weant Road in its current configuration is located too close to the interchange with I-85 (approx 400 feet). NCDOT recommends 1,320 feet (0.25 miles) between signalized intersections. Spacing of traffic signals at this distance allows for proper coordination of traffic signals which provides for improved capacity and reduced delayed. . With the northbound I-85 ramp being signalized and Weant Road just 400 feet east of this intersection the spacing is too close for signalization. Further complicating this intersection is the high volumes of traffic currently using Weant Road and this section of NC 62. 2035 projections anticipate 27,600 vehicles per day on NC 62 in the vicinity of Want Road. To accommodate the demand for access to I-85 from Weant Road, a realignment of the roadway is proposed. A realignment creating a four-leg intersection of Modlin Grove Road creates an opportunity for possible signalization thereby providing the degree of access desired without negatively impacting the operations at the interchange with I-85.



Past development applications have explored the realignment of Weant Road utilizing Bluewood Court. While this does move the intersection away from the I-85 interchange it creates an offset intersection configuration with Modlin Grove Road which creates operational and safety concerns. Furthermore, it does not move it far enough to be out of the area of influence for the interchange.

To the east of the realigned Weant Road is Wood's Pond. Between the back of the properties fronting Bluewood Court and the pond is approximately 100 feet of traversable land. This distance, while tight, is ample to handle a two lane roadway with auxiliary turn lanes at NC 62 as depicted. However, further study on the feasibility of this connection is recommended to ascertain all impacts and constructability of the roadway.

Access management

As NC 62 continues to attract commercial and residential development protecting the through capacity becomes essential for the efficiency of the transportation system and continued economic growth. Access management balances the needs of motorists using a roadway with the needs of adjacent property owners dependent upon access to the roadway. In an environment with limited funds for transportation projects and competing agendas, ***access management*** is not just good policy but crucial to the health of the entire transportation network.

The Federal Highway Administration (FHWA) defines access management as the process that provides access to land development while simultaneously preserving the flow of traffic on the surrounding system in terms of safety, capacity, and speed. According to the Access Management Manual, access management results from a cooperative effort between state and local agencies and private land owners to systematically control the location, spacing, design, and operation of driveways, median openings, interchanges, and street connections to a roadway. Access management requires cooperation between government agencies and private land owners.

The following sections provide access management policy measures and guidelines that should be integrated into the design review process for pending and future development along the study corridors.

Poor access management contributes to congestion

SYMPTOMS AND BENEFITS OF ACCESS MANAGEMENT

Poor access management directly affects the livability and economic vitality of commercial corridors, ultimately discouraging potential customers from entering the area. A corridor with poor access management lengthens commute times, creates unsafe conditions, lowers fuel efficiency, and increases vehicle emissions. Signs of a corridor with poor access management include:

- Increased crashes between motorists, pedestrians, and cyclists
- Worsening efficiency of the roadway
- Congestion outpacing growth in traffic
- Spillover cut-through traffic on adjacent residential streets
- Limited sustainability of commercial development

Without access management, the function and character of major roadway corridors can deteriorate rapidly and adjacent properties can suffer from declining property values and high turnover. Access management has wide-ranging benefits to a variety of users.

ACCESS MANAGEMENT STRATEGY TOOLKIT

Access management is not a one-size-fits-all solution to corridor congestion. Successful strategies differ throughout a region and even along the same road. The *Access Management Strategy Toolkit* (which is consistent with the *NCDOT Policy on Street and Driveway Acccess to North Carolina Highways*) provides a general overview of the various strategies available to mitigate congestion and its effects. A comprehensive access management program includes evaluation methods and supports the efficient and safe use of the corridors for all transportation
modes. The purpose of the toolkit is to provide local engineering and planning officials with access management strategies as well as an overview of their application, use, and, in some cases, unit costs.

Access management results from a cooperative effort between state and local agencies and private land owners to systematically control the "location, spacing, design, and operation of driveways, median openings, interchanges, and street connections to a roadway.

Implementation Strategy:

The policies and guidelines found in the Access Management toolkit should be integrated into the design review process for pending and future development

SITE ACCESS TREATMENTS

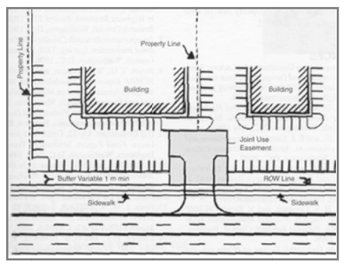
Improvements that reduce the total number of vehicle conflicts should be a key consideration during the approval of redeveloped sites along corridors identified for access management programs. Site Access Treatments include the following:

- *Improved On-Site Traffic Circulation*
- *Number of Driveways*
- *Driveway Placement/Relocation*
- *Cross Access*

Improved On-Site Traffic Circulation

One way to reduce traffic congestion is to promote on-site traffic circulation. Pushing back the throat of an entrance, as shown in the figures to the right, helps avoid spillback onto the arterial. This action improves both the safety and efficiency of the intersecting driveway. A minimum separation of 100 feet from the right-of-way line should be provided to prevent internal site operations from affecting an adjacent public street, ultimately causing spillback problems. Approximate construction cost varies and usually is the responsibility of private development.

Driveway Throat



Number of Driveways

Only the minimum number of connections necessary to provide reasonable access should be permitted. For those situations where outparcels are under separate ownership, easements for shared access can be used to reduce the number of necessary connections. Reducing the number of access points also decreases the number of conflict points, making the arterial safer and more efficient. Approximate construction cost varies and usually is the responsibility of private development.

Multiple Driveways on NC 62

Driveway Placement/Relocation

Driveways located close to intersections create and contribute to operational and safety issues. These issues include intersection and driveway blockages, increased points of conflict, frequent/unexpected stops in the through travel lanes, and driver confusion as to where vehicles are turning. Driveways close to intersections should be relocated or closed, as appropriate. As a best planning practice, no driveway should be allowed within 100 feet of the nearest intersection.

As a best planning practice, no driveway should be allowed within 100 feet of the nearest intersection.

Cross Access

Cross access is a service drive or secondary roadway that provides vehicular access between two or more continuous properties. Such access prevents the driver from having to enter the public street system to travel between adjacent uses. Cross access can be a function of good internal traffic circulation at large developments with substantial frontage along a major roadway. Similarly, backdoor access occurs when a parcel has access to a parallel street behind buildings and away from the main line. When combined with a median treatment, cross access and backdoor access ensure that all parcels have access to a median opening or traffic signal for left-turn movements.

MEDIAN TREATMENTS

Segments of a corridor with sufficient cross access, backdoor access, and on-site circulation may be candidates for median treatments. A median-divided roadway improves traffic flow, reduces congestion, and increases traffic safety — all important goals of access management. While medians restrict some left-turn movements, overall traffic delays are reduced by removing conflicting vehicles from the mainline. Landscaping and gateway features incorporated into median treatments improve the aesthetics of the corridor, in turn encouraging investment in the area. Median Treatments include the following:

- Non-Traversable Median
- Median U-Turn Treatment
- Directional Cross (Left-Over Crossing)
- Left-Turn Storage Bays
- Offset Left-Turn Treatment

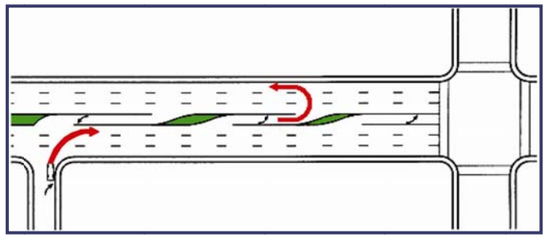
Offset left turn lane

Non-Traversable Median

These features are raised or depressed barriers that physically separate opposing traffic flows. Inclusion in a new cross-section or retrofit of an existing cross-section should be considered for multi-lane roadways with high pedestrian volumes or collision rates as well as in locations where aesthetics are a priority. A non-traversable median requires sufficient cross and backdoor access. As these treatments are considered, sufficient spacing and locations for U- and left-turn bays must be identified.

The advantages of non-traversable medians include increased safety and capacity by separating opposing vehicle flows, providing space for pedestrians to find refuge, and restricting turning movements to locations with appropriate turn lanes. Disadvantages include increased emergency vehicle response time (indirect routes to some destinations), inconvenience, increased travel distance for some movements, and potential opposition from the general public and affected property owners. To overcome some of these disadvantages, sufficient spacing and location of U- and left-turn bays must be identified. Approximate construction cost varies.

Median U-Turn Treatment

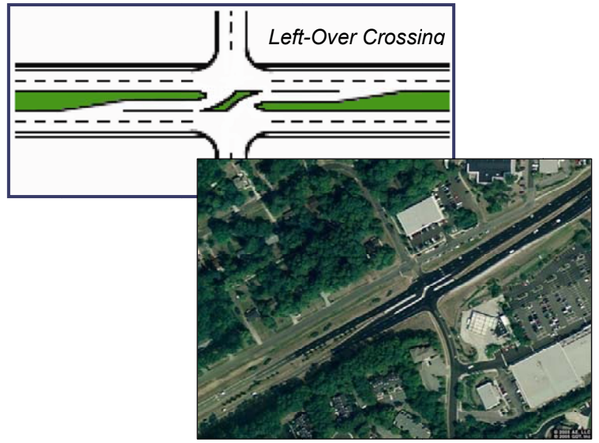


Median U-Turn Movement

These treatments involve prohibiting or preventing minor street or driveway left turns between signalized intersections. Instead, these turns are made by first making a right turn and then making a U-turn at a nearby median opening or intersection. These treatments can increase safety and efficiency of roadway corridors with high volumes of through traffic, but should not be used where there is not sufficient space available for the provision of U-turn movements. The location of U-turn bays must consider weaving distance, but also not contribute to excessive travel distance.

Advantages of median U-turn treatments include reduced delay for major intersection movements, potential for better two-way traffic progression (major and minor streets), fewer stops for through traffic, and fewer points of conflict for pedestrians and vehicles at intersections. Disadvantages include increased delay for some turning movements, increased travel distance, increased travel time for minor street left turns, and increased driver confusion. Approximate construction cost is $50,000 to $60,000 per median opening.

Directional Crossover (Left-Over Crossing)

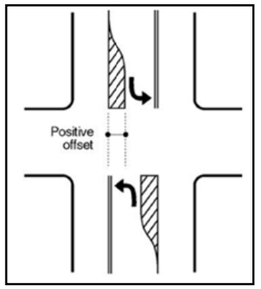


When a median exists on a corridor, special attention must be given to locations where left turns are necessary. A left-over is a type of directional crossover that prohibits drivers on the cross road (side street) from proceeding straight through the intersection with the main road, but allows vehicles on the mainline to turn left onto the cross road. Such designs are appropriate in areas with high traffic volumes on the major road and lower volumes of through traffic on the cross road, particularly where traffic needs to make left turns from the main line onto the minor street. A properly implemented left-over crossing reduces delay for through-traffic and diverts some left-turn maneuvers from intersections. By reducing the number of conflict points for vehicles along the corridor, these treatments improve safety.

Left-Turn Storage Bays

Where necessary, exclusive left-turn lanes/bays should be constructed to provide adequate storage space exclusive of through traffic for turning vehicles. The provision of these bays reduces vehicle delay related to waiting for vehicles to turn and also may decrease the frequency of collisions attributable to lane blockages. In some cases, turn lanes/bays can be constructed within an existing median. Where additional right-of-way is required, construction may be more costly.

Offset Left-Turn Treatment



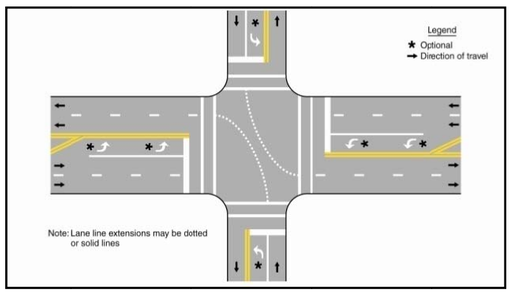
Exclusive left-turn lanes at intersections generally are configured to the right of one another, which causes opposing left-turning vehicles to block one another's forward visibility. An offset left-turn treatment shifts the left-turn lanes to the left, adjacent to the innermost lane of oncoming through traffic. In cases where permissive left-turn phasing is used, this treatment can improve efficiency by reducing crossing and exposure time and distance for left-turning vehicles. In addition, the positive offset improves sight distance and may improve gap recognition. In locations with sufficient median width, this treatment can be easily retrofitted. Where insufficient right-of-way width exists, the construction of this treatment can be difficult and costly. As a result, approximate construction costs vary.

INTERSECTION AND MINOR STREET TREATMENTS

The operation of signalized intersections can be improved by reducing driver confusion, establishing proper curb radii, and ensuring adequate laneage of minor street approaches. Intersection and Minor Street Treatments include the following:

- Skip Marks (Dotted Line Markings)
- Intersection and Driveway Curb Radii
- Minor Street Approach Improvements

Skip Marks (Dotted Line Markings)



These pavement markings can reduce driver confusion and increase safety by guiding drivers through complex intersections. Intersections that benefit from these lane markings include offset, skewed, or multi-legged intersections. Skip marks are also useful at intersections with multiple turn lanes. The dotted line markings extend the line markings of approaching roadways through the intersection. The markings should be designed to avoid confusing drivers in adjacent or opposing lanes.

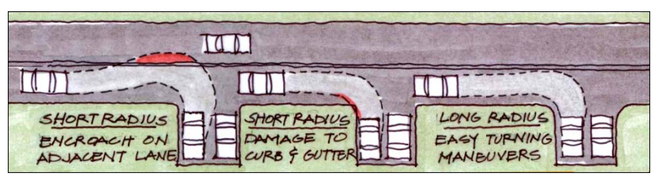
Intersection and Driveway Curb Radii

Locations with inadequate curb radii may cause turning vehicles to use opposing travel lanes to complete their turning movement. Inadequate curb radii may cause vehicles to "mount the curb" as they turn a corner and cause damage to the curb and gutter, sidewalk, and any fixed objects located on the corner. This maneuver also can endanger pedestrians standing on the corner. Curb radii should be adequately sized for area context and likely vehicular usage.

Damage due to insufficient curb radius

Minor Street Approach Improvements

At signalized intersections, minor street vehicular volumes and associated delays may require that a disproportionate amount of green time be allocated to the minor street, contributing to higher-than-desired main street delay. With laneage improvements to the minor street approaches, such as an additional left-turn lane or right-turn lane, signal timing often can be re-allocated and optimized.



INTELLIGENT TRANSPORTATION SYSTEM

Intelligent Transportation Systems (ITS) have many potential benefits when implemented in concert with an overall transportation management strategy. ITS solutions use communications and computer technology to manage traffic flow in an effort to reduce crashes, mitigate environmental impacts such as fuel consumption and emissions, and reduce congestion from normal and unexpected delays. Successful systems include a variety of solutions that provide surveillance capabilities, remote control of signal systems components, seamless sharing of traveler information with the public, and even allow emergency vehicles to have priority to proceed safely through signalized intersections.

Signalization

The volume of traffic attracted to some side streets or site driveways is more than can be accommodated acceptably under an unsignalized condition. Delays for minor street movements as well as left-turn movements on the main street may create or contribute to undue delays on the major roadway and numerous safety issues. The installation of a traffic signal at appropriate locations can mitigate these types of issues without adversely affecting the operation of the major roadway provided they are spaced appropriately.

Progressive-Controlled Signal System

A progressive-controlled signal system coordinates the traffic signals along a corridor to allow vehicles to move through multiple signals without stopping. Traffic signals are spaced appropriately and synchronized so when a vehicle is released from one intersection the signal at the next intersection will be green by the time the vehicle reaches it.

Likewise, adaptive signal control involves continuously collecting automated intersection traffic volumes and using the volumes to alter signal timing and phasing to best accommodate actual—real-time—traffic volumes. Adaptive signal control can increase isolated intersection capacity as well as improve overall corridor mobility by up to 20% during off-peak periods and 10% during peak periods.

recommended access plan

Based on the principles outlined in the *Access Management Strategy Toolkit*, a preferred access plan was developed for the NC 62 corridor between Longview Drive and Penman Road. The preferred access plan provides the framework for improvements to access and mobility along the corridor, providing locations for signalized intersections, left-over treatments, non-traversable medians, and potential grade separations. **Figure 6** shows the preferred access plan for the corridor.

Spacing standards for signalized intersections and median openings were developed based on the *AASHTO Policy on Geometric Design of Streets and Highways* and the *NCDOT Policy on Street and Driveway Access*. **Table 6** below provides the spacing standards used for the development of the preferred access plan. The spacing standards differ between urban and rural context zones, given the characteristics of travel and the roadway.

This plan recommends that the City of Archdale, NCDOT, and HPMPO adopt these maps as official guiding documents for use in the development review process. The spacing standards below, as well as the access management policies in the previous sections, should be incorporated into local development ordinances to guide future projects adjacent to NC 62.

There are three types of intersection treatments recommended for the NC 62 corridor, including Full Movement Signalized intersection, Median Crossover intersection, and alternative intersection treatments such as roundabouts.

Table 6 - Minimum Median Opening, Driveway, and Signal Spacing

Context	Signal/Full Median Opening Spacing	Directional Median Opening Spacing	Adjacent Driveway Spacing	Opposite Street Driveway Spacing
Urban	1,500 feet	700 – 1,000 feet	300 feet	300 feet
Suburban-Rural	1,500 feet	1,200 feet	500 feet	500 feet

Notes:

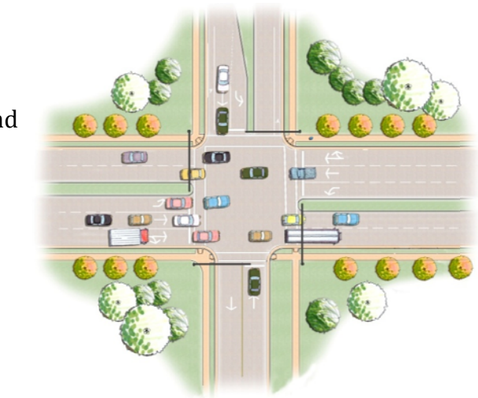
1. No median opening shall be placed where it would interfere with the storage length requirements of an existing intersection.

2. A directional median opening represents a median that prohibits specific turning movements (e.g. directional cross over, channelized restrictions, etc.), usually through the use of channelization.

Full Movement Signalized Intersection

Full movement signalized intersections are proposed at those locations with the heaviest traffic volumes. In total there are 7 proposed full movement intersections along NC 62 between Fairfield Road and the US 311 Bypass crossing. Four new signals are proposed for the corridor.

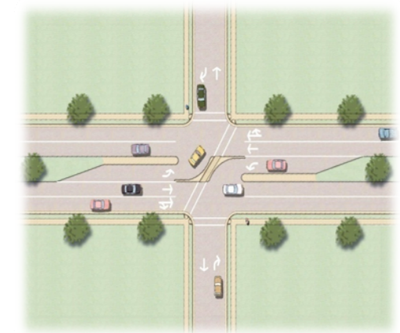
Full movement intersections should incorporate multimodal transportation features, such as crosswalks, pedestrian push-button signal activation, pedestrian countdown lighting, sidewalks, and pedestrian refuge in the non-traversable median. The picture to the right depicts a typical full movement intersection configuration



Typical full-movement intersection.

Median Crossover Intersection

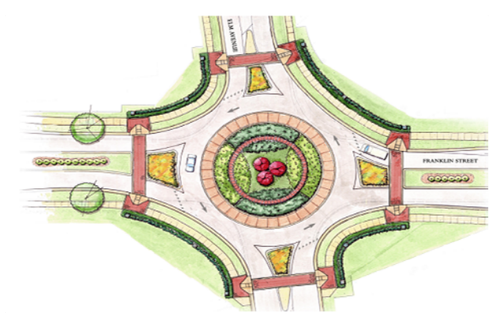
Median crossover intersections are proposed at those locations where the minor leg movement is not heavy enough to warrant full median openings. At these locations, vehicles turning left from the minor movement will make a right turn onto NC62 and perform a U-turn movement at the next upstream intersection. Left turn movements from the main line use a traditional left-turn storage bay. This type of intersection is sometimes referred to as a "left-over."



Typical median cross-over (left-over).

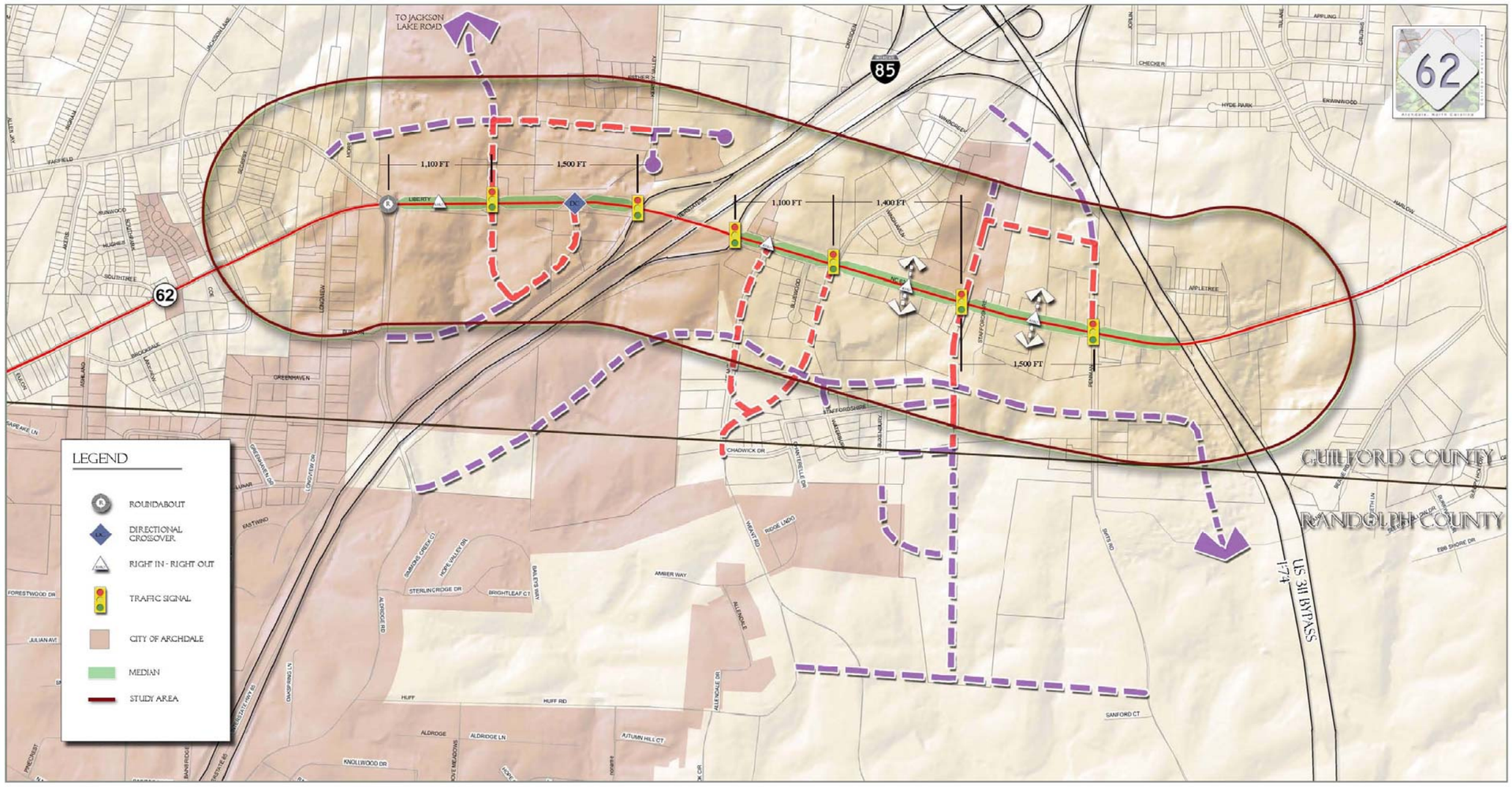
Roundabout Intersection

A roundabout intersection is proposed as one possible alternative at the intersection of Fairfield Road/Aldridge Road where the intersection volumes and intersection skew are favorable for this type of intersection treatment. The installation of a roundabout provides the desired mobility and capacity needs while minimizing the required right-of-way needed.



Typical roundabout.

Figure 6 Recommended Access Plan



RECOMMENDED ACCESS PLAN

HIGHWAY 62 CORRIDOR ACCESS MANAGEMENT PLAN

0 500 1000

URBAN RESOURCE GROUP

4 | INVITING SUCCESS

Successful implementation of the ***NC 62 Corridor Access Plan*** will depend to a great extent on the ability for local, private, and governmental entities to work together in collaboration. This "Action Plan" provides a summary of the implementation strategy, including a list of specific projects, a phasing plan, planning level cost estimates, available funding sources, and agencies responsible for implementing the vision. However, the nature of the recommendations does not require that all improvements are completed in unison. This should allow the City, HPMPO, and NCDOT the flexibility to implement in several phases while employing multiple funding sources to complete the project.

Many citizens expressed frustration during the charrette process over the lack of funding sources and time for implementation of the proposed improvements. Unfortunately, the planning, design, and construction of publicly-funded transportation projects typically takes five to seven years. Local, state, and private partnerships offer strategic advantages to implementing improvements on a timely basis. The purpose of this implementation plan is to recognize these challenges and suggest strategies to address each challenge.

Some improvements will occur as a result of development and redevelopment opportunities. The majority of responsibility for implementing these recommendations will be a coordinated effort between NCDOT, the City of Archdale, and the High-Point Area Metropolitan Planning Organization (HPMPO).

action plan

It is not expected that all of the listed items would be completed over the next two to five years; however, the process should be initiated to best take advantage of the momentum gained with the development of this plan. The following recommendations apply to the overall vision for the corridor as expressed by the local citizenry, stakeholders, and elected officials. These recommendations can be initiated throughout the planning process and prior to any physical infrastructure improvements.

General Action Items	Time-frame	Responsible Party
Adopt the ***NC 62 Corridor Access Plan***	2010	City Council, HPMPO, NCDOT
Perform feasibility study for the Weant Road realignment.	2010	City Council, HPMPO
Apply the recommendations of this plan during the development review process. Use this plan as a tool to review proposed development projects as they locate and are implemented within the corridor.	Consistent upon adoption	City Planning Staff / NCDOT
Integrate the findings and recommendation of this plan into the HPMPO Long-Range Transportation Plan.	2010	City Planning Staff / HPMPO
Work collaboratively with NCDOT to secure funding and implement the vision and recommendations of the *NC 62 Corridor Access Plan.*	Ongoing	City Council/ HPMPO/NCDOT
Work with NCDOT (site plan development process) to construct access management improvements including intersection redesign, driveway consolidation, cross-access between properties, etc.	2010	City Planning/ Engineering Staff/ NCDOT
Require the implementation of the connector street plan incrementally as development occurs.	Consistent upon adoption	City Planning/ Development Community

construction phasing

The timeframe needed for implementation was a consideration for the corridor study. Factors that can affect the timeframe may include:

- Funding availability
- Permitting
- Development/Redevelopment Activities
- Right-of-way acquisition
- Public support or opposition

With this in mind, all of the improvements are not likely to be made at one time. However, it is imperative that NC 62 be improved to accommodate this anticipated increase in traffic. Currently, the NCDOT TIP does not include the recommended improvement of NC 62. In addition to the widening of NC 62, the connector street plan must also be coordinated and implemented to fully reap the benefits improving NC 62.

policy measures

The City/HPMPO should work with the NCDOT to ensure that the NC 62 corridor is enhanced as development applications are considered. As development pressures increase with the opening of the US 311/I-74 corridor along with additional growth in the area, the City and HPMPO should work cooperatively with the NCDOT by providing combined review and comment on proposed development applications. Additional policy-related recommendations include:

- Adopt a land development ordinance that requires developers to implement the "intent" of recommended improvements for the ***NC 62 Corridor Access Plan***, building in flexibility for access and design to fit their individual development schemes.

- Consider the creation of an access management overlay ordinance. The ordinance will provide a legal framework for the City to administer and enforce consistent access management standards along the corridor. The ordinance should contain rules and requirements for the "core" components of a comprehensive access management strategy, including minimum spacing standards for traffic signals, median openings, and driveways, and provisions for corner clearance. The ordinance also should require cross access between adjacent commercial properties, consolidation/elimination of excessive driveways, and retrofitting site access to the side and rear portions of the site.

funding opportunities

The construction of corridor-wide improvements can occur through adoption of local policies and programs and state programs, as well as through the receipt of private contributions. With this in mind, it will be important for the City of Archdale, HPMPO, and NCDOT to identify funding sources to implement the recommendations of this plan. While some projects and programs will be funded by the City or NCDOT, alternatives are available to provide financial support for implementing corridor recommendations. The following funding opportunities should be considered to implement the recommendations presented in this plan:

- Lobby NCDOT and members of the State Board of Transportation (BOT) to include partial funding of the design and implementation of recommended improvements in the next Transportation Improvement Program (TIP).
- Leverage NCDOT District funding allocations for "spot safety" improvement monies to implement safety improvements at key intersections along the NC 62 corridor.
- Solicit NCDOT Division Hazard Elimination, Governor's Highway Safety Program (GHSP), Small Construction and Contingency funds improvement monies to implement corridor access and safety improvements at key intersections along the NC 62 corridor.

LOCAL PROGRAMS

Local funds should be used for improvements identified by the plan as being necessary to improve the safety, mobility, and aesthetics of the NC 62 corridor. Usually these projects are most successful when additional funding can be secured to help lessen the burden to the City. Local funding sources tend to be flexible and in some communities can include general revenue expenditures, local bond programs, and proceeds from bond programs.

Powell Bill – Powell Bill funds are collected by the state in the form of a gasoline tax. The amount of these funds distributed to a municipality is based on the number of street miles to be maintained and the City's population. These monies can be used for maintenance-related improvements or sidewalk construction.

Transportation Bonds – Many NC cities have had a successful history of utilizing transportation bonds in the strategic implementation of local roadways, transit, and non-motorized travel throughout the region. Voters in communities both large and small regularly approve the use of bonds in order to improve their transportation system. Some improvements identified in this plan could be candidates for funding from a future transportation bond program.

If the NC 62 improvements are implemented as part of the city's Capital Improvement Program with special local funding, the following sources may also be applicable:

Adequate Public Facilities Ordinances (APFOs) – Also referred to as Concurrency Regulations, adequate public facilities ordinances allow local governments to deny or delay new developments if existing government services (water and sewer, roads, schools, fire, and police) cannot support it. APFOs place the burden on developers to ensure adequate services are in place for new developments they propose, fund such improvements, or postpone plans until such services are in place. State legislation allows municipalities to enact such regulations.

STATE & FEDERAL PROGRAMS

In comparison with local funds, state and federal funds are not as flexible in terms of their use. Projects funded by these programs usually focus on the needs required by vehicles, either in terms of capacity or safety — for example, widening projects. It can be difficult to secure these funds for alternative transportation projects (i.e., streetscape, safety, or bike/pedestrian).

On August 10, 2005, the President signed into law the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). With guaranteed funding for highways, safety, and public transportation totaling $244.1 billion, SAFETEA-LU represents the largest surface transportation investment in our nation's history. Provisions address specific safety issues, including pedestrian and bicycle safety.

Other than the programs listed previously, additional state and federal funding programs include:

NCDOT Transportation Improvement Program (TIP) – The state's Transportation Improvement Program (TIP) supports communities through an array of funding resources including Federal Aid Construction Funds and State Construction Funds. As part of the application process, strict criteria must be met before project selection. Criteria include providing right-of-way information, meeting a set of design standards, showing a need for a project, local support of the project, and the inclusion of the project in the community's planning processes.

NCDOT Hazard Elimination Program – These funds are a subset of the State Transportation Improvement Program (STIP) funding, constituting 10% of a state's funds. This program is intended to inventory and correct the safety concerns of all travel modes.

Tax Increment Financing (Self-Financing Bonds) - A new way to fund public involvement in private development projects became available in 2004 when North Carolina voters approved self-financing bonds, also known as tax increment financing (TIF). To qualify for self-financing bonds, a development must include private and public expenditures that will result in job creation and an expansion of a local government tax base. The development must create more than $150 million increment or increase in property value in a defined district. The location of the new development must be in a section of a community that is deteriorated, undeveloped, underdeveloped or in need of rehabilitation. Examples of eligible projects are new manufacturing plants, reuse of abandoned or vacant facilities, affordable housing, commercial developments in inner-city areas and redevelopment of areas damaged by environmental pollution or natural disasters.

Public participation is financed through bond issuances. The bonds are based on and paid back by the difference in the incremental value and the base value. Over the lifetime of the district, bonds can be issued at different times to fund a number of projects. In other words, the net gain in property tax values created by new investment in the district generates additional revenue without raising the property tax rate. The estimated increase in property values provides the basis for bonds to be issued. The sale of the bonds provides the cash for public improvements in the district such as road enhancements, water and sewer lines, sidewalks, curb and gutter, drainage systems, street lights or parks. The additional property tax revenue from the district then pays back the bonds. When the bond debt is retired, the property tax revenues return to the city.

Governor's Highway Safety Program (GHSP) – The Governor's Highway Safety Program is committed to enhancing the safety of North Carolina roadways. To achieve this, GHSP funding is provided through an annual program, upon approval of specific project requests, to undertake a variety of safety initiatives. Communities may apply for a GHSP grant to be used as seed money to start a program to enhance highway safety. Once a grant is awarded, funding is provided on a reimbursement basis and evidence of reductions in crashes, injuries, and fatalities is required.

Other funding options such as Grant Anticipation Revenue Vehicles (GARVEE bonds) and funding from the Transportation Infrastructure Finance and Innovation Act of 1998 (TIFIA) were reviewed but are not applicable to this project due to the project size and type.

PUBLIC/PRIVATE INITIATIVES

Developer Contributions – Through diligent planning and early project identification, regulations, policies, and procedures could be developed to protect the Murchison Road study area and require contributions (mainly landscaping, cross-access and connectivity improvements) from developers when property is subdivided, developed or redeveloped. To accomplish this goal, it will take a cooperative effort between local planning/ engineering staff, NCDOT planning staff, and the development community.

Impact Fees – Developer impact fees and system development charges are another funding option for communities looking for ways to pay for transportation infrastructure. They are used most commonly for water and wastewater system connections or police and fire protection services, but they have been used recently to fund school systems and pay for the impacts of increased traffic on existing roads. Impact fees place the costs of new development directly on developers and indirectly on those who buy property in the new developments. Impact fees free other taxpayers from the obligation to fund costly new public services that do not directly benefit them. Although other states in the country use impact fees, they have been controversial in North Carolina and only a handful of communities have approved the use of impact fees. The use of impact fees requires special authorization by the North Carolina General Assembly.

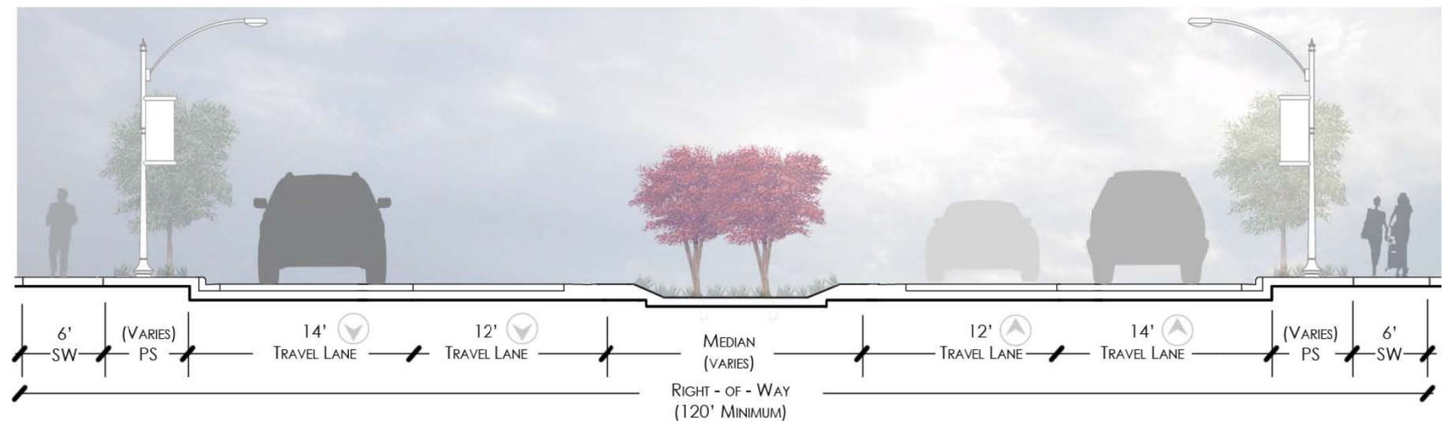
5 | CONCLUSIONS

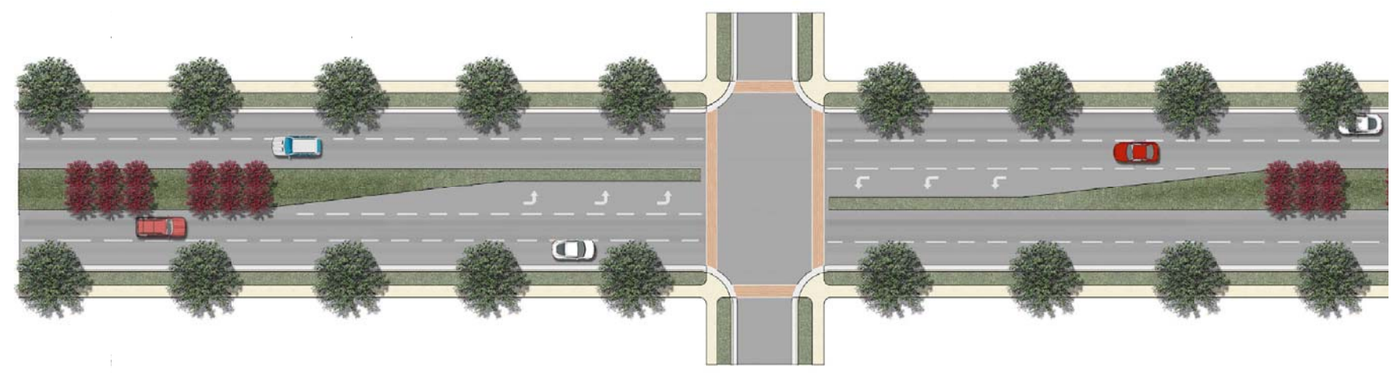
Improvements along the NC 62 corridor will require careful planning and the collaboration of multiple agencies and entities within the region to ensure the vision of the corridor is ascertained. The recommendations presented herein provide a brief synopsis of transportation guidelines and recommendations that address the issues facing NC 62 in the future.

NC 62 road improvements

Based on the traffic projections for the corridor in 2035, NC 62 will need to be improved to a four-lane median divided facility to accommodate the projected traffic volumes. A four-lane median divided section was selected as the preferred typical section for the NC 62 corridor. The medians not only provide aesthetic qualities to the corridor but safety and capacity. It also will provide the following additional benefits:

- **Safety:** Traffic operations will become safer with a plantable median and consistent left-turn lanes at key intersections.
- **Pedestrian/Bicycle:** Facilities for non-motorized transportation will include improved pedestrian crossings at signalized intersections and side streets, 14-foot wide outside lanes for shared use by cyclists, and 6-foot sidewalks on both sides of the street.
- **Utilities:** The current design considers consolidating and relocating all above-ground utilities underground.
- **Aesthetics:** Enhancements will include small street trees, shrubbery, and landscaping in the median and along the sidewalks where appropriate to further enhance the corridor as a primary gateway to the City.





systemwide improvements

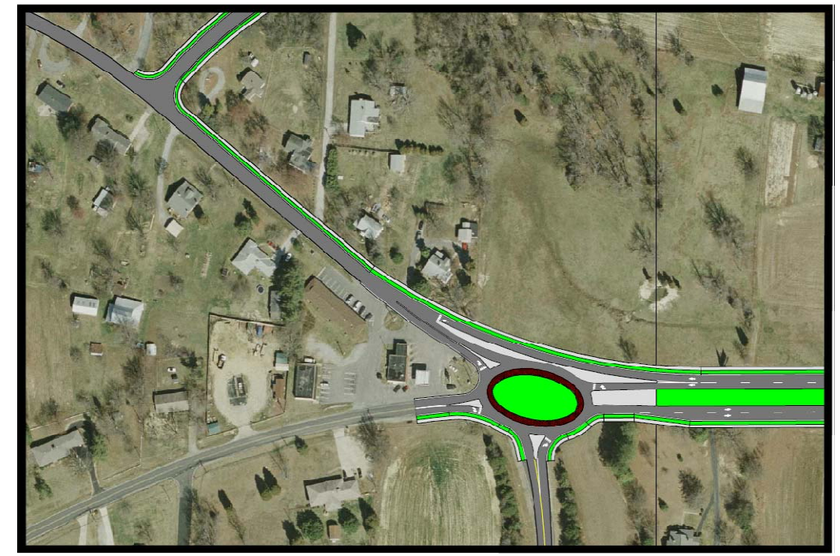
CONNECTIVITY

The lack of connectivity between NC 62 and other arterials in Archdale is problematic to its residents, motorists, and emergency response vehicles. An important goal is to ***create better interconnectivity within the neighborhoods and between adjacent commercial areas***, as well as to ***link them to the east-west arterials***. This will allow local trips better access to these corridors and reduce trips on NC 62.

It will also be crucial to ***alleviate choke points and plan for future corridors crossing NC 62*** when needed. New approaches and innovative intersection designs must be used when remedying congestion points in the system. Archdale, NCDOT, and HPMPO should consider the realignment of Weant Road and further investigate the possibility by conducting a feasibility study for the project.

funding & implementation

There are a variety of funding strategies to implement the recommended improvements for the NC 62 corridor. These funding strategies include state and local monies, which are often limited or committed well into the future. Grant funding from the state typically requires a local match, but these monies may be used to cover many of the capital and operating expenses identified in the recommendations for the corridor. Some of the improvements will be made in partnership with the private sector.

An incremental funding approach would be possible, but is not as attractive because the full benefit of the collective improvements would not be realized for quite some time. Alternative funding sources for expediting construction include special assessments and/or a locally-adopted sales tax or tax incentives.

One thing is certain, with the current municipal and state funding shortfall the most critical steps toward implementation will be carried by leaders identified within the community. In collaboration with state and local officials, their collective efforts will lead to a transformation of a neglected corridor into a safe, economically viable, and aesthetically-pleasing gateway into the heart of Archdale.