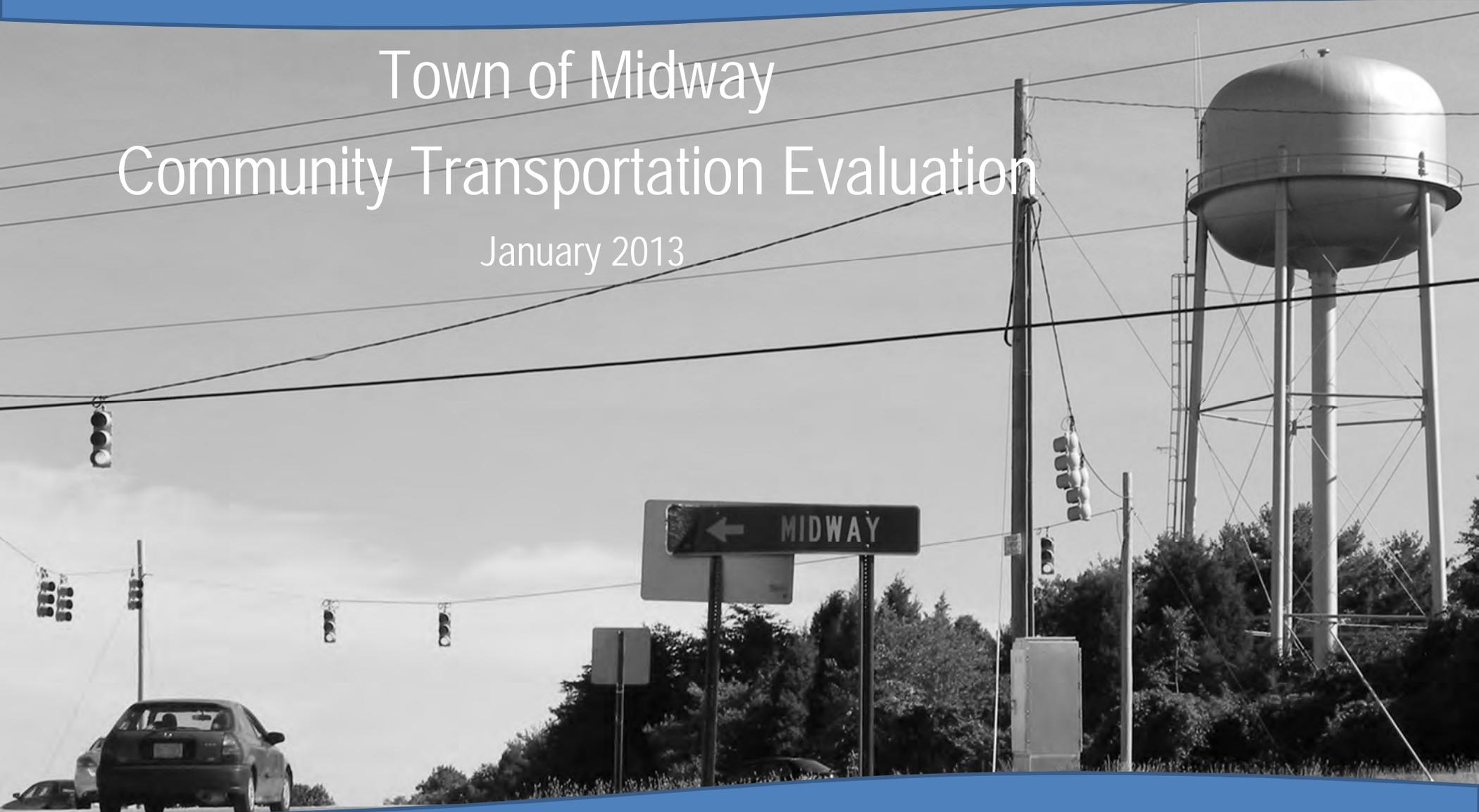


# Town of Midway Community Transportation Evaluation

January 2013





## Acknowledgments

We would like to thank the residents, elected officials, agency leaders, Benchmark Planning and regional planning partners who have made the Midway Community Transportation Evaluation a success. Their time, input, and energy are greatly appreciated.

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## Table of Contents

1. Introduction and Planning Process
2. Community Characteristics
3. Recommendation Framework
4. Call to Action





## Chapter 1 | Purpose, Philosophy, and Vision

Protecting the mobility of 4,400 residents in a Town that is situated along Old US 52 and adjacent to an emerging Interstate is difficult. With the understanding that this community is located just south of a major North Carolina city and is beginning to feel the pressures of a neighboring community, is a transportation plan? res a plan based on proven and tested engineering principles.

The Midway blends the needs of motorists, bicyclists, pedestrians, and emergency service providers into a plan for residents and visitors respecting the history and amenities that give the Town its charm and unique personality.

### Purpose and Need

incorporated g community within the Piedmont Triad region. While still very young, incorporates in 2006, the Town has always in many ways been there. From the initial crossroads of Hickory Tree Road and NC 66 in the 1930's to the construction of the US 52 bypass in the 1970's Midway has always had a sense of community. It is no wonder that people call Midway home. The Town has a history of providing an ideal quality of life for its residents. But with popularity and proximity comes frustration. Traffic congestion, safety, pedestrian and bicycle issues are daily concerns.

The purpose of the Midway CTE is to identify problems, separate fact from perception, and develop coordinated transportation solutions that protect what makes Midway great. Several adopted plans have started to tackle these concerns: Winston-Salem MPO Comprehensive Transportation Plan (2012); WSMPO Sidewalk and Pedestrian Facilities Plan (2007); US 52 Corridor Plan (2009). The findings, results and recommendations of these plans have been vetted and incorporated into the Midway CTE where appropriate. The planning process for the ETP delves deeper into the issues identified during the community outreach and stakeholder interviews. The underlying need for the plan is based on these outcomes and expressed in the vision described later in this introductory chapter.

Safety for bicyclists, pedestrians, and motorists throughout Town is a core component of the plan. Bicyclists, pedestrians, and vehicles routinely share the same space. The ultimate design for the Town's strategic corridors and intersections must incorporate the principles of complete streets and blend the needs of non-motorized users with the mobility of the roadway.

I'd probably reduce the emphasis on bike/ped





## Plan Philosophy

As multimodal issues are evaluated, local decision-makers can't lose focus that in most cases they are trying to protect what they have today. In other words, the geography of Midway and limited funding mean new crosstown connections will be challenging. It also means major infrastructure recommendations must be reinforced through analysis and supported by the community. The philosophy of the *Midway CTE* is to protect and enhance what exists today by making strategic decisions that provide transportation choice. The underlying progression is Planning → Design → Construction.

As with any transportation plan, implementation is the key to success. Developing a strategic plan rooted in engineering principles lays the groundwork for future infrastructure needs that can be evaluated against competing priorities and programmed for funding. The Winston-Salem MPO Comprehensive Transportation Plan and the US 52 Corridor Plan created the foundation for change. The *Midway CTE* takes the next step by offering high priority, implementable solutions that improve safety, minimize additional traffic congestion, and enhance aesthetics.

The plan philosophy has been translated into a process structured to evaluate alternatives with a planning, design, and construction perspective. While some plans may sit on the shelf because they are unrealistic, the *Midway CTE* is conceived to go beyond planning by including engineering and design, expressed in conceptual drawings for key focus areas such as Hickory Tree Road at Hartman Road, Old US 52 and Gumtree Road. The design perspective ensures the constructability of recommendations.

and

include Town of Midway Land Use Plan



## Vision and Guiding Statements

Given the unique geography of the study area and the need to balance competing interests, it was important to clearly communicate the intent of the plan among participants and policy makers throughout the process—not just when the final report was delivered. The Planning Board, Community and Stakeholders helped establish the following vision to direct the process of developing the Midway CTE and simplify the intent of the plan.

*The Vision of the Midway CTE is to develop an integrated community-based transportation plan that provides choice, establishes identity, and promotes safety for residents, business owners, and visitors.*

The guiding statements represent five interrelated value statements from the major priorities of the CTE. The statements add depth to the vision by building upon its key concepts. The following guiding statements stand among the most significant content generated during the early phases of the project.

**Integrated** | Blend previous planning efforts with new analysis and purposeful community involvement to create realistic and implementable solutions.

**Community-based** | Establish an understanding of the Town’s needs and achieve informed consent through active and transparent outreach.

**Choice** | Connect homes, parks, businesses, and other key destinations with facilities designed for bicyclists, pedestrians, and motorists.

**Identity** | Foster a sense of place tied to livability and active lifestyles with a focus on enhancing gateways, critical intersections, and key corridors.

**Safety** | Promote safe travel and enhance the sense of comfort for using and interacting with different travel modes.

remove parks

reorder to motorists, pedestrians and bicyclists

change active lifestyles to community character



## Community Outreach

Each of the guiding statements touch on aspects of community outreach. This reflects the notion that transportation planning at its best is collaborative and infused with the energy of local citizenry. Outreach for the *Midway CTE* was based on the premise that a public platform that gathers, processes, and applies a diversity of opinions from residents, business owners, and civic groups is more likely to yield a feasible plan championed by the community. Outreach for the *CTE* occurred through a variety of small- and large-group meetings and held fast to two principles:

1. The community understands the transportation network and are affected—directly and daily—by the decisions made in their behalf.
2. The community can share in the collective vision for a project even as they hold differing opinions on how this vision should be fulfilled.

With respect to these two principles, the planning process for the *CTE* was designed to create an open dialogue about the needs residents and business owners. Along the way, several overarching issues emerged:

- We need to address vehicular traffic and access management throughout Town.
- We need to make Midway safer for bicyclists and pedestrians.
- We need to improve the gateway to our community.

These themes—and others—surfaced during the various channels of public outreach detailed on the following pages.

### Stakeholder Interviews

The Planning Board helped identify stakeholders that could offer specialized attention to specific issues relevant to the *CTE*. These stakeholders included numerous representatives from the Town, including the Town manager, Mayor, and Board of Commissioners. Representatives from Davidson County, local business owners, private land development professionals, NCDOT, WSMPO, and citizen advocates also participated.

Conversations with stakeholders on June 26, 2012 provided insight into a variety of issues spanning the different modes of transportation and the economic, cultural, and historical context of previous plans and ongoing conversations. Feedback gathered through these conversations helped validate background information collected through other public outreach efforts. Most

### Public Meetings

make Midway's primary roads safer for all forms of transportation

Purpose: Introduce the project team, discuss the process and deliverables, stakeholder interviews and public outreach.

- Meeting #2  
September 25, 2012

Purpose: Review existing conditions, establish the vision and guiding statements, and alternatives.

- Meeting #3  
November 29, 2012.

Purpose: Refine alternatives and public outreach.

Town Council

primary gateway



importantly, the conversations helped the project team prepare a list of initial recommendations.

Some of the comments included:

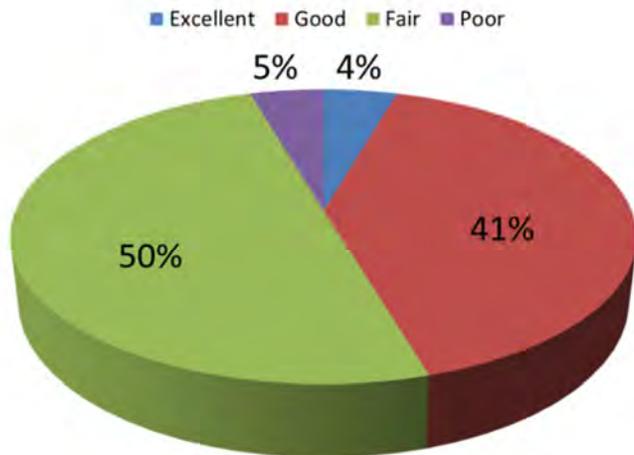
- A traffic signal is needed at Gumtree Road and Old US 52
- David Smith and Hartman Road are unsafe intersections and need to be addresses.
- Speeds are too high on Hickory Tree Road
- A traffic signal is needed at Hickory Tree Road and US 52 NB
- The community needs stronger monumentation and gateway features
- Bicycle and pedestrian facilities are needed throughout Midway



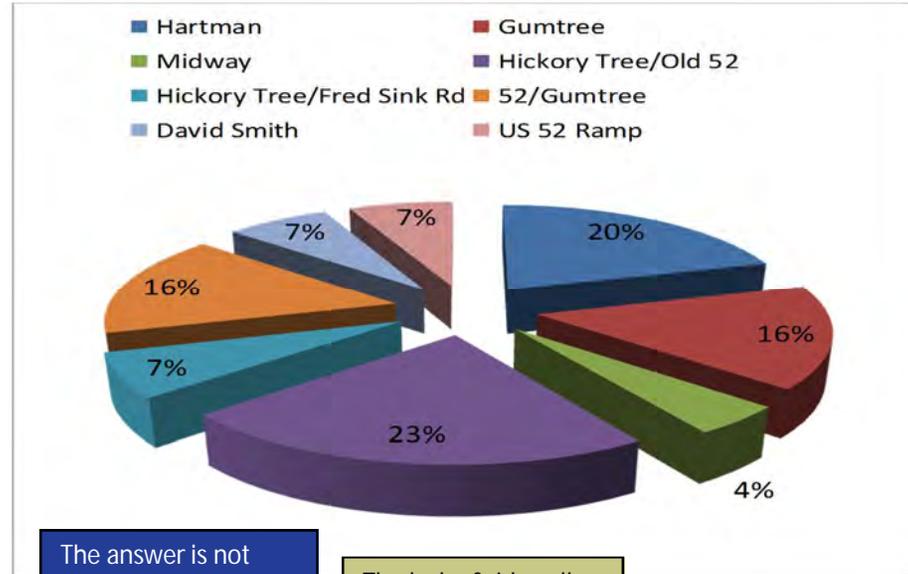
Questionnaire

To better understand the Town’s transportation needs, a questionnaire was developed that built upon outreach conducted for previous planning efforts in the Town. The questionnaire, made available in hard copy on June 26, 2012, included general demographic questions and a series of questions on a variety of transportation topics to gauge the community’s perception of the multimodal transportation network. Some questions challenged respondents to choose among competing transportation priorities by allocating funds for improvements. The receipt of more than 50 responses proved helpful in assessing the transportation system and compiling multimodal recommendations. A selection of the questions and comments are presented here. Full results are available in the appendix.

Overall, how would you rate the Transportation Network in Midway?



What are the top intersections needing improvement in Midway?



The answer is not necessarily new roadways, but the improvement of the roads we currently have.

The lack of sidewalks and unsafe pedestrian crossing are of the utmost concern to me.

For the most part I think the transportation system is good. One suggestion would be to have a uniform speed limit through Midway. Speeds are too high along Old US 52 and Hickory Tree Road.

Solve the intersection of Gumtree Road and Old US 52; limited visibility and high traffic volumes.



How would you rate the following transportation issues on Midway?



can you change the colors to better differentiate between excellent/poor?

Is it possible to get a sidewalk on Old US 52? I am tired of walking on the side of the road.

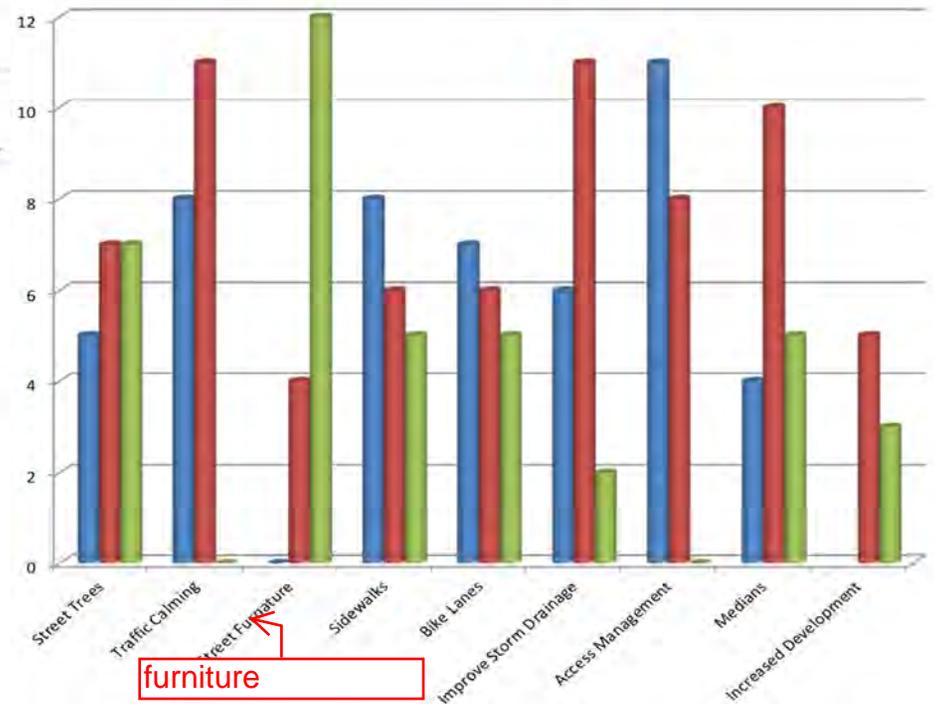
Midway is a great place to live and raise a family. Lets continue to make it better.

Making a left onto US 52 northbound from Hickory Tree Road is a dangerous chore. Drivers on Hickory Tree Road are driving too fast to safely make this turn. We need a light to make this safer.

We need more retail and restaurant choices in Midway.

We need to celebrate the wonderful place that is Midway. We need better signage and features that are uniquely Midway.

Very Important  
Somewhat Important  
Not Important



furniture



### Interactive Workshops

Citizens have unique experiences traveling to, from, and within the Town. They understand the system's strengths and weaknesses and are directly affected by transportation decisions each day. To tap into this knowledge, the CTE included three workshops: 1) an interactive workshop to identify issues, vet existing conditions, and brainstorm solutions, 2) an open house to view preliminary recommendations and 3) to finalize the **Department** alternatives.

The first public workshop, held June 26, 2012 at Midway Volunteer Fire Station, was designed as an interactive session which would yield an understanding of what works well today, and a list of issues and concerns. The workshop began with a summary of why we are preparing this study followed by one-on-one conversations with citizens about the issues and concerns they see daily in Midway. Major topics discussed at the workshop included bicycle and pedestrian facilities, traffic safety, intersection improvements, and gateway treatments.

make bike/ped last

The second meeting was held on September 25, 2012 at the same location. The meeting was designed as an interactive session that allowed residents to view the proposed alternatives. The meeting began with a presentation highlighting the results of the questionnaire and was followed by a detailed discussion of the alternatives. The meeting

concluded with an interactive discussion of the alternatives with public.

can you line this up better with its paragraph?



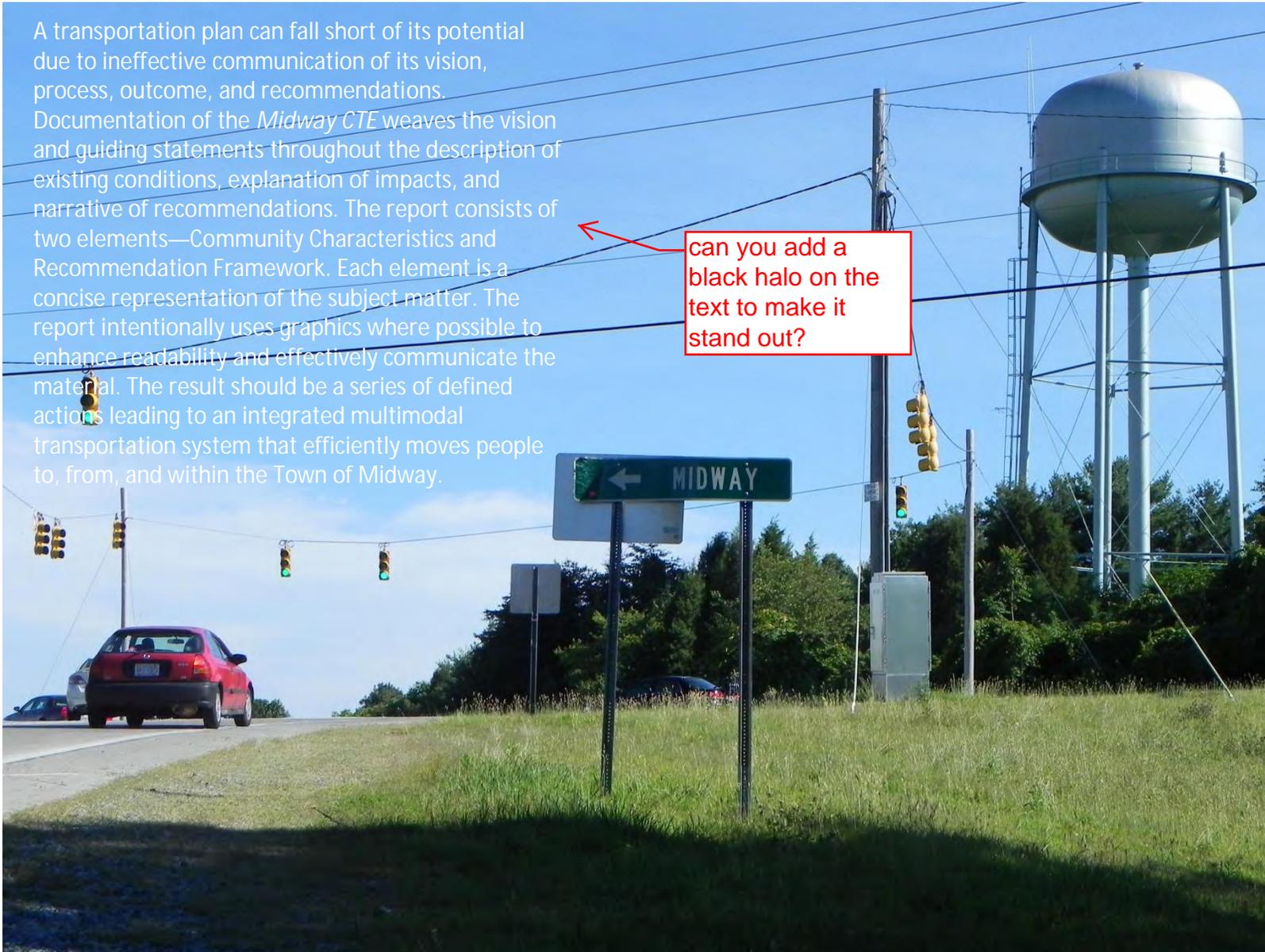
The third meeting, held on November 29<sup>th</sup> 2012, was the least formal of all of the public meetings. The purpose of the meeting was to allow the community time to view and discuss the recommended alternatives with the project team.



## Plan Overview

A transportation plan can fall short of its potential due to ineffective communication of its vision, process, outcome, and recommendations. Documentation of the *Midway CTE* weaves the vision and guiding statements throughout the description of existing conditions, explanation of impacts, and narrative of recommendations. The report consists of two elements—Community Characteristics and Recommendation Framework. Each element is a concise representation of the subject matter. The report intentionally uses graphics where possible to enhance readability and effectively communicate the material. The result should be a series of defined actions leading to an integrated multimodal transportation system that efficiently moves people to, from, and within the Town of Midway.

can you add a black halo on the text to make it stand out?





## Chapter 2 | Community Characteristics

Transportation—for pleasure and livelihood—has been important throughout the area that became Midway.

Originally, the community which now forms the center of modern Midway was founded as Eller when the Eller train depot was constructed, labeled as such after members of the Eller family which resided nearby. Until incorporation in 2006, many maps still marked the area as Eller, despite disuse of the name over time by the public, local media, and local establishments. Eller was founded by George Washington Eller. The Eller family still owns land in Midway.

In 2004 to protect local identity and prevent annexation by Winston-Salem, efforts began to make Midway at town. On June 29, 2006 after two years of work, the North Carolina General Assembly ratified the Town's charter.

The characteristics of the community that residents enjoy today has taken shape since the first road was constructed. These characteristics and the transportation network that continues to shape them are summarized in this chapter. The community characteristics provide the framework for the recommendations presented in Chapter 3.

### Related Planning Efforts

Local, regional, and state agencies have initiated numerous studies—many with extensive stakeholder and community outreach—to document ongoing concerns and identify solutions for travel to and within Midway. The following plans highlight prior efforts that helped define the *CTE*.

- Winston-Salem MPO Comprehensive Transportation Plan (2012)
- WSMPO Sidewalk and Pedestrian Facilities Plan (2007)
- US 52 Corridor Plan (2009)
- Collector Street Plan (2007)
- 2035 Transportation Plan (2009)

Town of Midway  
Land Use Plan  
(2011)



In many ways, the *CTE* is vetting recommendations from previous plans and blending them into a coordinated, community-based transportation plan.

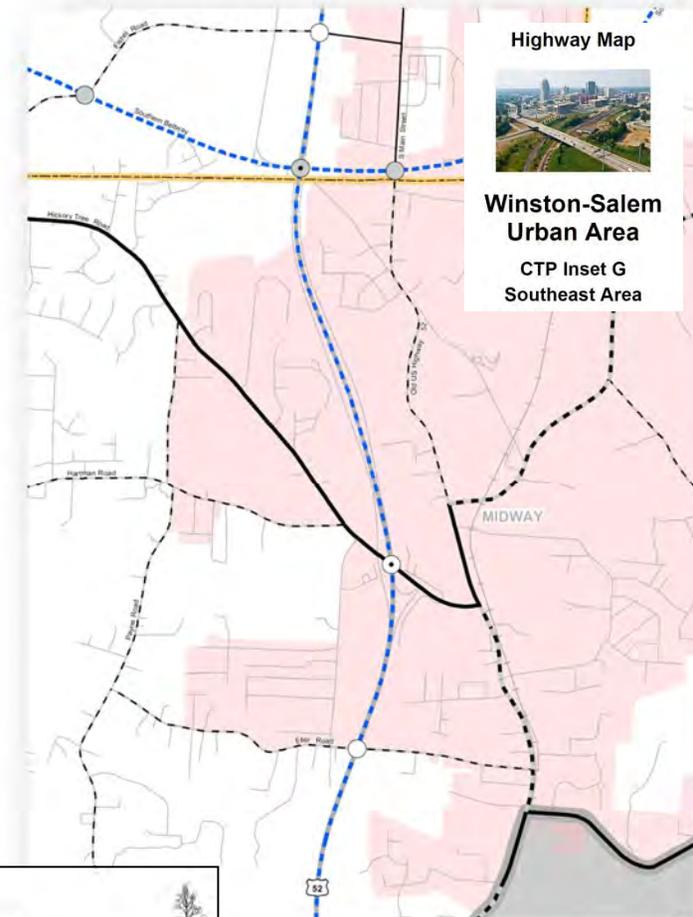




Winston Salem Urban Area Comprehensive Transportation Plan

The Winston Salem Urban Area 2012 Comprehensive Transportation Plan (adopted in May 17, 2012) outlines strategies for the Winston-Salem Urban Area through 2035. The plan seeks a safe, efficient, appropriate, responsible, integrated, and multimodal transportation system.

Projects in the study area include Old US 52, Hickory Tree Road, US 52, Gumtree Road, David Smith and Hartman Road.

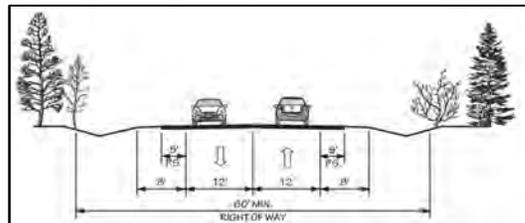
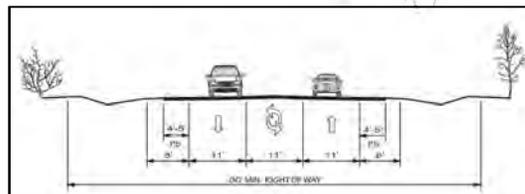


**Hickory Tree Road, Local ID No. WSMP-0125-H**

The purpose of this project is to relieve congestion, and assist with growth/land use by widening Hickory Tree Road (SR 1508) to a multi-lane facility (three or more lanes) from US 52 to NC 150. Hickory Tree Road (SR 1508) has a 2007 Average Daily Traffic count of 8,500 vehicles per day.

Hickory Tree Road connects NC 150 with US 52, both of which have direct access into Forsyth County and Winston-Salem for the residents of northern Davidson County. This close proximity to major thoroughfares has made Hickory Tree Road a highly desirable residential location. This area has seen tremendous residential growth in the past decade. Commercial centers are located at either end of Hickory Tree Road and serve the surrounding area and much of northern Davidson County. Hickory Tree Road has become the major thoroughfare link for both residential developments and commercial services and is experiencing increased traffic volumes and turning movement accidents.

Street	Proposed Typical Section
Old US 52	3-Lane
Gumtree Road	2-lane
Hickory Tree Road	3-lane
Hartman Road	2-Lane

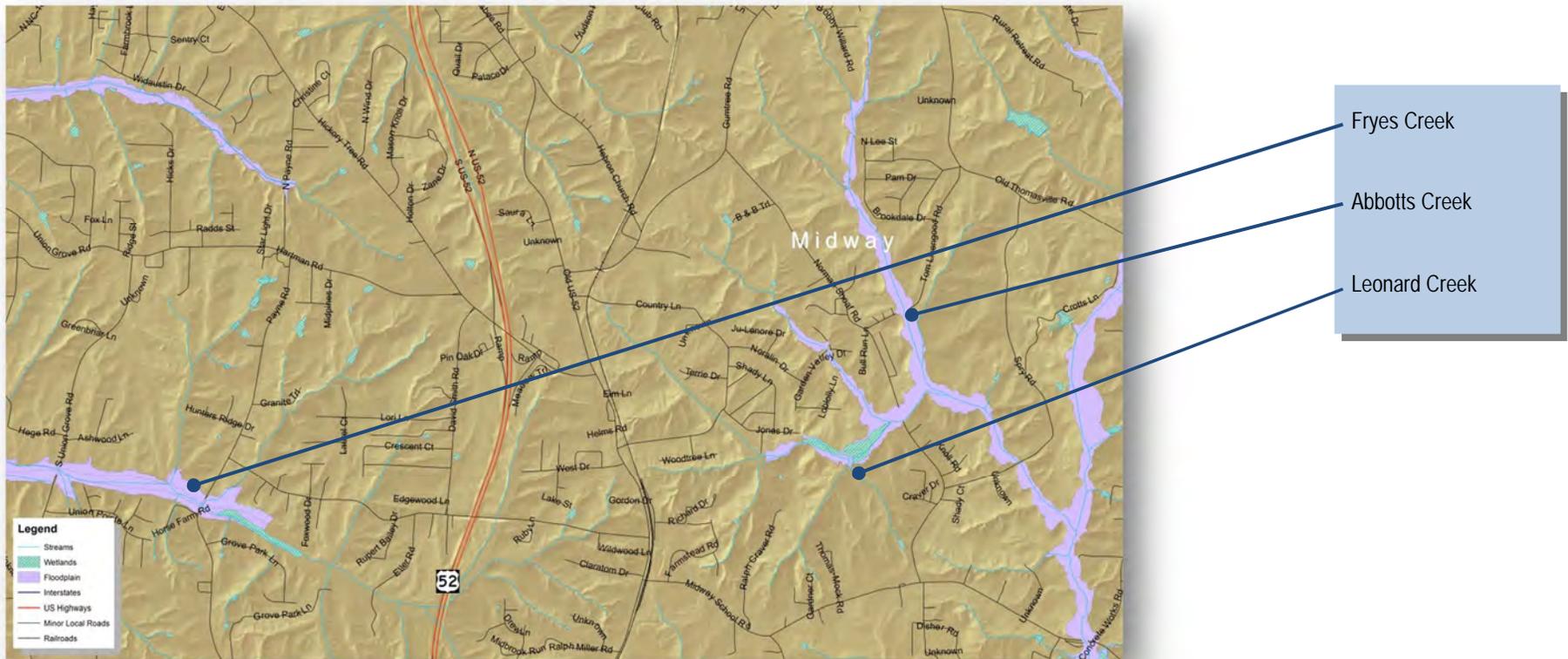




## Natural Resources

The Town and community of Midway have long stressed the importance of protecting and enhancing the natural systems that give identity to its quality of life. This is logical given the rural setting of Midway.

The Town has an abundance of natural resources and predominantly lies along a ridge line. Rolling hills with large open fields dominate the landscape. West of Old US 52 within the study area, tributaries flow into Fries Creek. East of the Old US 52, tributaries flow into either Leonard Creek or into Abbots Creek / Lake Tom-a-Lex.





## Transportation Characteristics

The natural resources of the community are an important component, that gives life to the Town of Midway. In many ways, the transportation network serves as the backbone for the Town. Understanding the roadway, bicycle, and pedestrian facilities currently serving Midway is critical to the development of the CTE. Chapter 3 offers additional detail for locations where recommended solutions are necessary.

### Roadway Profiles

The main roadways in Midway are Old US 52, US 52, Hickory Tree Road, David Smith, Gumtree and Hartman Road

#### US 52

4-lane divided | 65 mph | 28,000 vpd

#### Old US 52

2-lane undivided | 45-35 mph | 7,100 vpd

#### Hickory Tree Road

2-lane undivided | 50 mph | 13,000 vpd

#### Gumtree Road

2-lane undivided | 45 mph | 4,500 vpd

#### Hartman Road

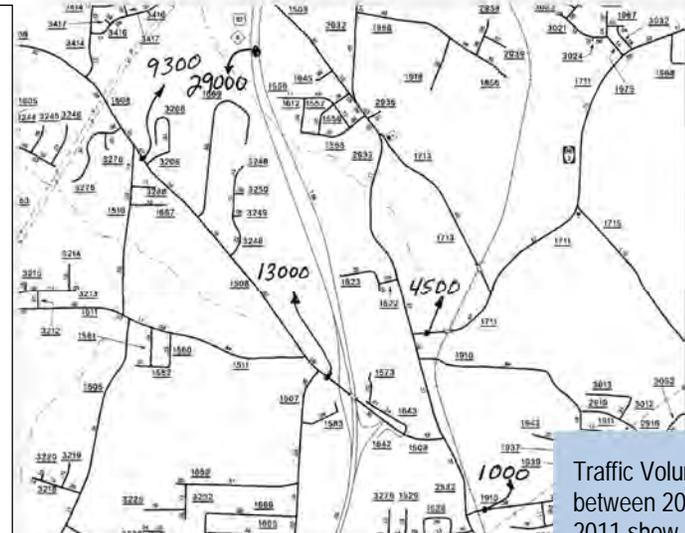
2-lane undivided | 45 mph | 3,600 vpd

#### David Smith

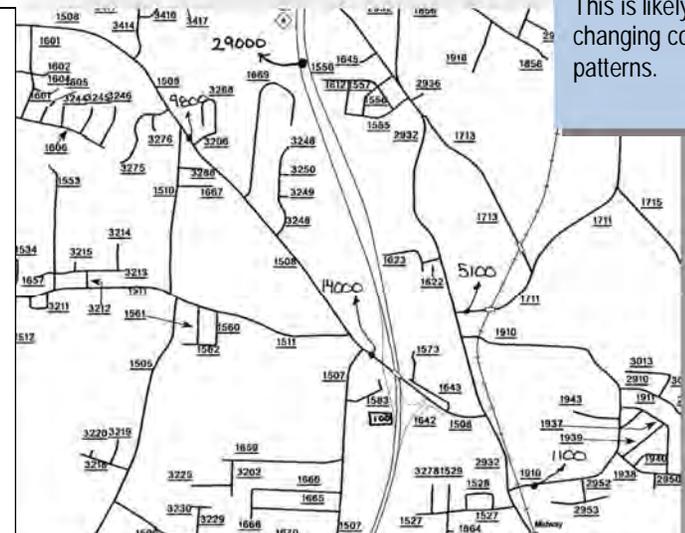
2-lane undivided | 45 mph | - vpd

is there a count?

2011 NCDOT Traffic Volumes



2009 NCDOT Traffic Volumes



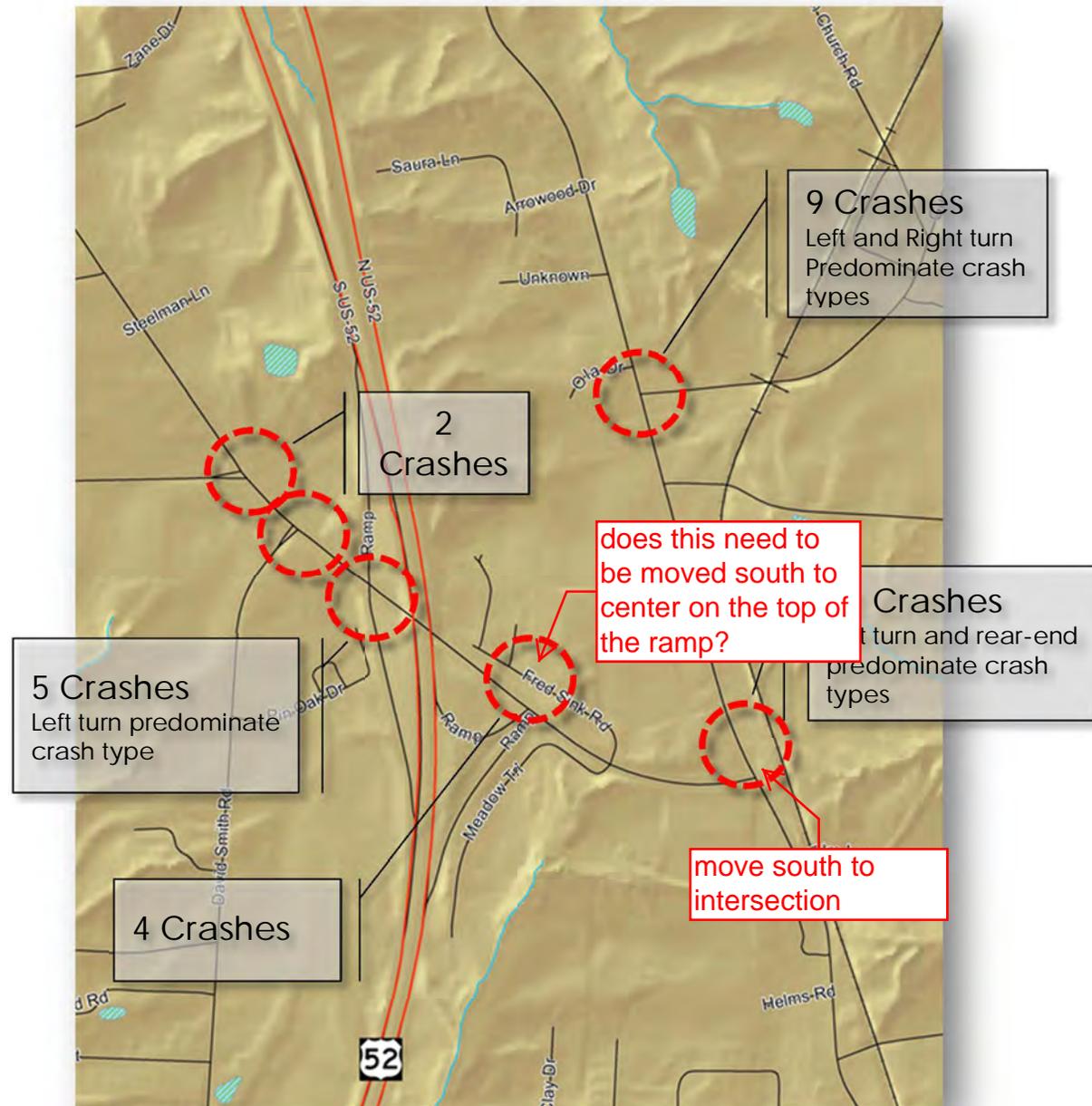
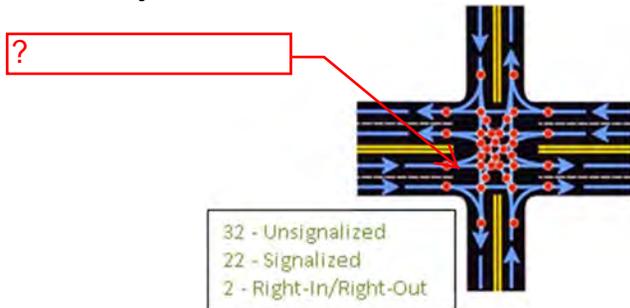
Traffic Volumes between 2009 and 2011 show a slight decrease in volume. This is likely due to changing commuting patterns.



Crash Analysis

Safety for all modes of transportation is an important piece of the CTE. Safety concerns are heightened because the various modes share the same space on many of the Town's roads. Examining the crash history typically can predict locations where improvements in traffic safety will be beneficial. NCDOT maintains a database of reported crashes statewide. The crash data summarizes reported crashes in Midway from May 1, 2009 through April 30, 2012.

- 50 crashes occurred in Midway along Hickory Tree Road and Old US 52.
- Most vehicular crashes occurred on Old 52 between Gumtree Road and Hickory Tree Road
- The most prevalent crash type was "Left-turn."
- Most crashes occurred during the day with only four occurring in the evening.
- No fatal crashes were reported; however, more than half of all of the crashes resulted in injuries.





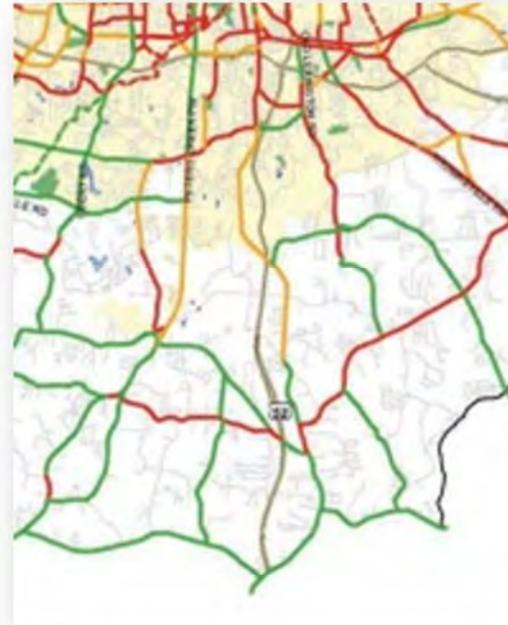
### Bicycle & Pedestrian Facilities

The benefits of cycling and walking are well understood in today's culture. Taking trips by bike or on foot improves the environment, promotes good health, saves money, eases the burden on roadways, and enhances the livability.

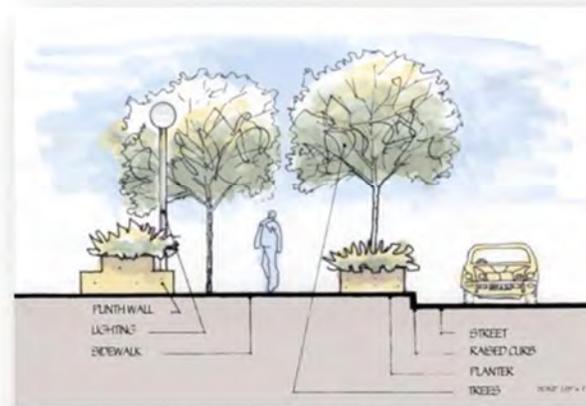
While the benefits of pedestrian and bicycle facilities are understood, there is a significant lack of facilities throughout the study area. Considering the humble roots for which Midway was created from this is not surprising. Growing out of a crossroads to a growing town, provisions for future bicycle and pedestrian amenities needs to be a priority of the Town.

The Winston-Salem MPO in 2007 developed a Sidewalk and Pedestrian Facilities Plan for the urbanized area within the MPO. While that plan did not specifically call for recommendations in the Midway town limits it did encourage the study of future pedestrian improvements.

In addition to the Sidewalk and Pedestrian Facilities Plan, the WSMPO also developed a Bicycle Plan in 2005 for the urbanized area. The plan called for bicycle accommodations to occur along Old US 52 via paved shoulders. Bicycle accommodations along Hartman Road, Hickory Tree Road and Gumtree Road are also planned to be via the paved shoulder.



Legend	
<b>Phasing</b>	
Red line	Short-Term, On-Road
Dashed red line	Short-Term, Greenway
Orange line	Medium-Term, On-Road
Dashed orange line	Medium-Term, Greenway
Green line	Long-Term, On-Road
Dashed green line	Long-Term, Greenway
Thick black line	Major Roads
Thin black line	Streets
Black outline	Study Area
Blue area	Water Bodies
Green area	Parks
Yellow area	Towns



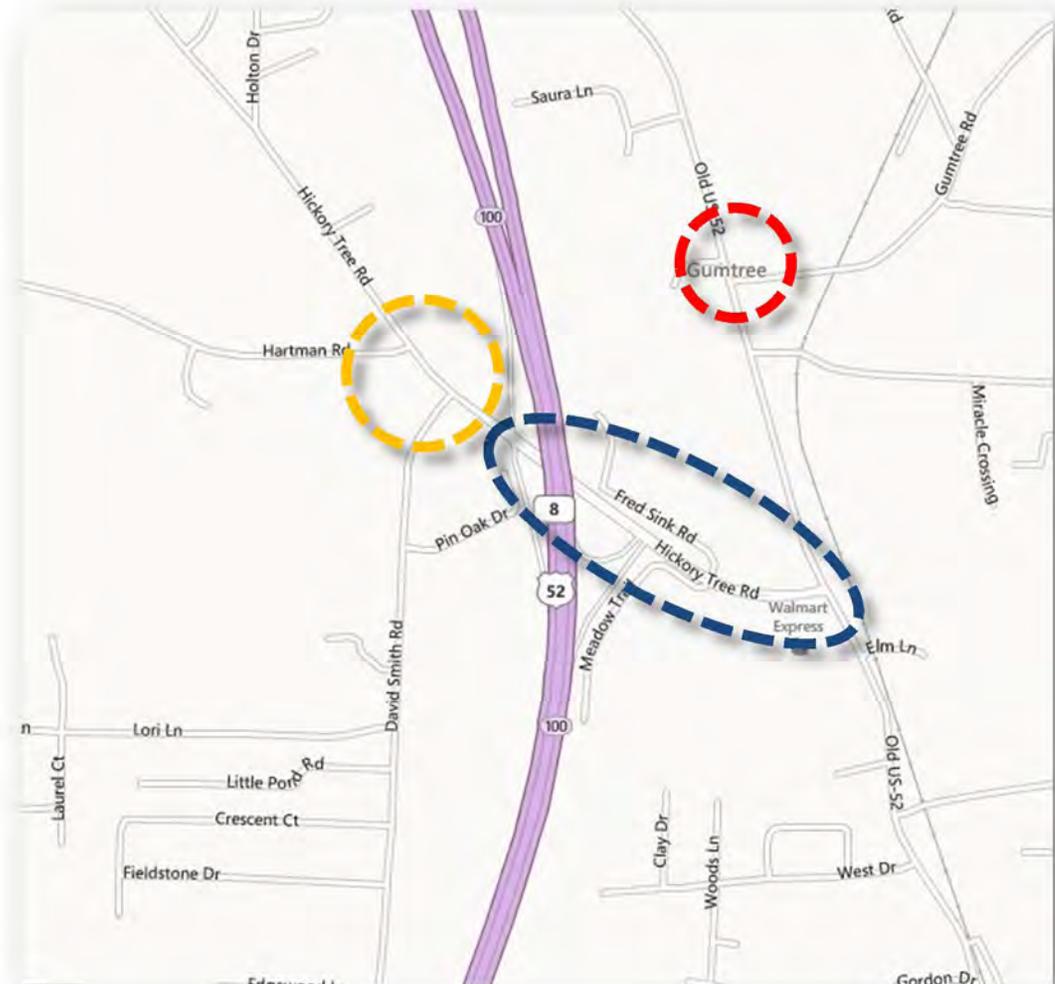


## Intersection Analysis

The detailed analysis of existing conditions focused on the Town's strategic corridors and key intersections. Three focus areas were identified in consultation the Town. The critical intersections include:

- **Old US 52**—Includes the intersection of Gumtree Road
- **Hickory Tree East**— Includes the intersections of Old US 52 and US 52 Ramps.
- **Hickory Tree West**— Includes the intersections of David Smith and Hartman Road

At these locations, the project team analyzed traffic counts, turning movements, pedestrian crossings, safety concerns, intersection geometry, access management, connectivity, aesthetics, and the safety and comfort of bicycling and walking. The traffic assessment at these intersections included the capacity analysis detailed on the pages that follow. The recommendations in Chapter 3 include ways to reduce congestion, decrease driver confusion, improve safety, promote economic development and enhance aesthetics.





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

← remove break

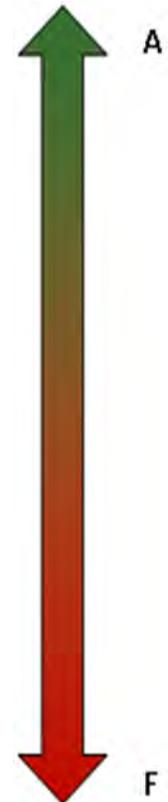
segment or intersection. LOS is a qualitative measure that describes operational conditions and motorist perceptions within a traffic stream. The Highway Capacity Manual defines six levels-of-service (LOS A through F) with A representing the shortest average delays and F representing the longest average 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.

LOS control delay thresholds published in the Highway Capacity Manual for signalized and unsignalized intersections, as well as the unsignalized operational descriptions assumed herein V/C ratios can be correlated to roadway Levels of Service (LOS), which place roadway segments into six letter grade levels of the quality of service to a typical traveler on the facility. An "A" describes the highest level (least congestion) and level "F" describes the lowest level (most congestion). Levels of service can be grouped into the following categories.

- LOS A or B – Well below capacity– Roadways operating at optimal efficiency with no congestion during peak travel periods. This level of service usually occurs on rural or local streets.
- LOS C – Approaching capacity–The roadway becomes more congested. A roadway approaching capacity may operate effectively during non-peak hours, but may be congested during morning and evening peak travel periods.
- LOS D – At Capacity– Roadways operating at capacity are somewhat congested during non-peak periods, with congestion building during peak periods. A change in capacity due to incidents impacts the travel flow on corridors





operating within this range. LOS D is the MPO target service level.

- LOS E – *Slightly Over Capacity* –experience heavy congestion during peak periods and moderate congestion during non-peak periods. Changes in capacity can have major impacts on corridors and may create gridlock conditions.
- LOS F – *Well Over Capacity* – Roadways in this category represent the most congested corridors in the study area. These roadways are congested during non-peak hours and most likely operate in stop-and-go gridlock conditions during the morning and evening peak travel periods.

Table 1 right outlines the study area intersections peak hour operational performance. Within the study area, all of the intersections operate at an acceptable LOS or better during the AM and PM peak hours. It is important to note that while all of the intersections within the study area operate at LOS D or better, peak hour congestion is still present at the intersections.

Intersection	Intersection Control	Peak Hour	V/C	Delay	LOS
Gumtree Road at Old US 52		AM	0.55	19.4	C
		PM	0.66	27.4	D
Old US 52 at Hickory Tree Road		AM	0.50	9.5	A
		PM	0.65	10.7	B
Hickory tree Road at US 52 NB Ramps		AM	0.52	22.8	C
		PM	0.64	25.7	D
Hickory Tree Road at US 52 SB ramps		AM	0.44	6.2	A
		PM	0.67	12.7	B
Hickory Tree Road at David Smith Road		AM	0.41	21.8	C
		PM	0.35	22.9	C
Hickory Tree Road at Hartman Road		AM	0.55	19.1	C
		PM	0.28	15.0	B

can you highlight the D's



## Policy Considerations

The design of a collector 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

2-2?

Local officials also must consider street spacing guidelines to promote the efficient development of an expanding transportation system (see Table 4-4). 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, Kimley-Horn developed a theoretical model largely influenced by land use intensity ranges that shows the desired collector street spacing for different intensities.

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

Table 2-2 Collector Street Spacing

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
Median and High Intensity Residential	More than 4	High	750 to 1,500 ft
Activity Center	Mixed-Use	Medium	750 to 1,500 ft

Collector Street Spacing



Very Low Intensity Land Use

Street Spacing: 1,500' to 3,000'



Low Intensity Land Use

Street Spacing: 1,500' to 3,000'

check this set of graphics



High Intensity Land Use

Street Spacing: 750' to 1,500'



## 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 a 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"
- Require new developments to reserve right-of-way for, and in some cases construct, future collector streets
- Require all new developments to provide connections or stub-out streets in each of the four cardinal directions (where applicable)



### Land Use/Transportation Connection

In order to link transportation and development character, a planning tool was created to serve as a local representation of the complete streets-context sensitive solutions philosophy. The tool needed to be customized to the study area. The result was a Street Design Priority Matrix. The matrix communicates the elements of each type of street and includes:

#### Travel Realm

- Number and width of travel lanes
- Traffic operations
- Design for large vehicles
- Access management
- Multi-modal intersection design

#### Pedestrian Realm

- Wide sidewalks with amenities
- Standard sidewalks with verge
- Multi-use paths
- Urban design features

Additional considerations include the need for connectivity and on-street parking and bicycle accommodations. The resulting priority matrix communicates the priorities for each street element as it relates to the place types of the community (i.e. Rural Living, Suburban Neighborhood, Suburban Commercial Center, etc) and should indicate those high priority items that should NOT be compromised during the design process. The matrix reinforces the relationship between transportation and land use by adding design and context to each corridor within a place type.

Table 2-3, Street Typology Matrix, describes the elements of street typology for the streets illustrated on the following pages as well as local

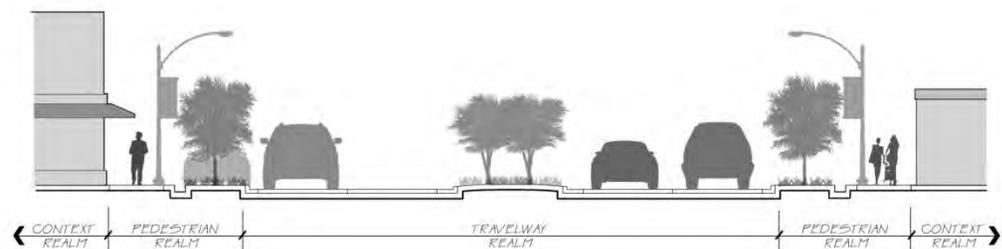




Table 2-3 Street Typology Matrix

TRAVEL REALM		Major Thoroughfare	Minor Thoroughfare	Collectors	Locals
Number and width of travel lanes		High Priority	High Priority	Medium Priority	Low Priority
Traffic operations		High Priority	High Priority	Medium Priority	Low Priority
Design for large vehicles		High Priority	Medium Priority	Medium Priority	Low Priority
Access management		High Priority	Medium Priority	Low Priority	N/A
Multimodal intersection design		Influenced by designated Place Type			
PEDESTRIAN REALM					
Wide sidewalks with amenities		Medium Priority	Medium Priority	High Priority	High Priority
Standard sidewalks with verge		Medium Priority	High Priority	High Priority	High Priority
Multi-use paths		High Priority	Medium Priority	Medium Priority	Low Priority
Urban design features		Influenced by designated Place Type			
OTHER ELEMENTS					
Interconnected street system		High Priority	High Priority	High Priority	High Priority
On-Street parking		N/A		Limited	Informal
On-street bicycle accommodations		Influenced by system strategy and bicycle origin and destinations			
Gateway treatments		Influence by designated Place Type			

High Priority 

Medium Priority 

Low Priority 

N/A 



## Transportation Alternatives

The recommendations for the Community Transportation Evaluation are the result of Town involvement, public input, analysis and comprehensive planning and traffic engineering.

Specifically, this chapter communicates a plan to improve the safety and mobility of the existing streets and addresses the design of important roadways intersections. Specific recommendations have been made including: roadway cross-sections, bicycle and pedestrian enhancements, intersection designs, and recommended speed limits.

### More Than Brainstorming

move bike/ped to end

The Community played an integral part of the planning process. Their local knowledge offered a collective insight that if overlooked would have minimized the success of the study. Using this insight, the consultant team developed alternatives that addressed the issues the community raised.

The following pages offer an overview of each alternative.



label





## Gumtree Road at Old US 52

Key Issues: The public identified the following key issues:

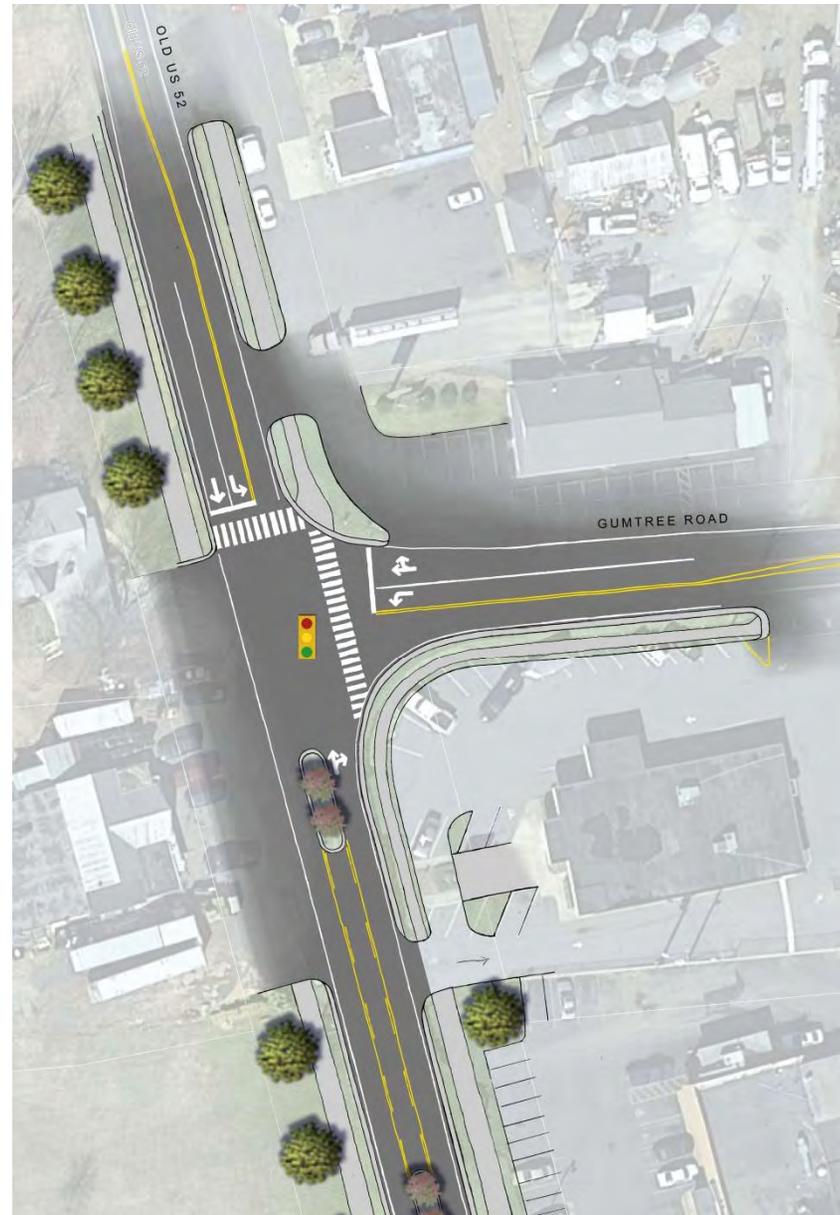
- a. Numerous driveway cuts
- b. Peak hour delays
- c. Heavy turning movements
- d. Perception of speeding

at the northern edge of Midway's core commercial area

Description: Gumtree Road at Old US 52 is an unsignalized intersection in the heart of Midway's downtown. The intersection facilitates heavy peak hour commuter traffic to and from US 52. As development continues to occur in this area, signalization of the intersection is recommended upon meeting applicable Manual of Uniform Traffic Control Device (MUTCD) warrants.

In addition to signalization, critical left-turn lanes on Gumtree Road and Old US 52 are recommended. Pedestrian improvements including high-visibility crosswalks, wheel chair ramps, and sidewalks are also recommended.

i think we need to add a bold faced point detailing what the proposed improvement is i.e. Signalize Intersection



Concept design of the intersection concept for the Gumtree and Old US 52 intersection.



## Hartman and David Smith Roads

Key Issues: The public identified the following key issues:

- a. Proximity ← to US 52 ramp
- b. Peak hour delays
- c. Heavy turning movements
- d. Perception of speeding

Description: Located on the west side of US 52, David Smith and Hartman Roads are two local collector roadways providing access to numerous residential homes and neighborhoods. Located approximately 500 feet west of the signalized intersection for the southbound US 52 ramps and with a spacing of 450 feet between the two intersections, proximity is a major concern for these two intersections. At such close spacing between intersections and to US 52, the ability to control movements and access at these intersections is critical.

Through cooperation with the Town an evaluation of alternative intersection treatments was conducted for these intersections. Specifically, two alternative designs were evaluated: a signalized intersection and a series of roundabouts. While both alternatives achieve the desired outcome of controlling movements and improving peak hour traffic flow, careful consideration by plan participants including the Town as well as public input resulted in support

for the roundabout option. The benefits of the roundabout option include:

- Reduces the number of vehicular conflict points
- Channelizes the pedestrian and bike movements ← move to last point and say "future" ped/bike movements
- Offers enhanced distribution of ex traffic (lessens the reliance on Ca beach access)
- Creates an enhanced opportunity for a signature gateway and sense of arrival to the island.

Town





*Concept Design of the Signalized intersection Concept for Hartman and David Smith Road.*

maybe say why this isn't the preferred alternative - i.e. closing off David Smith to left turns, added delays etc.



*Concept Design of the roundabout intersection concept for Hartman and David Smith Road.*

↑  
state why this is preferred



dominant

## Hickory Tree Road at Old US 52

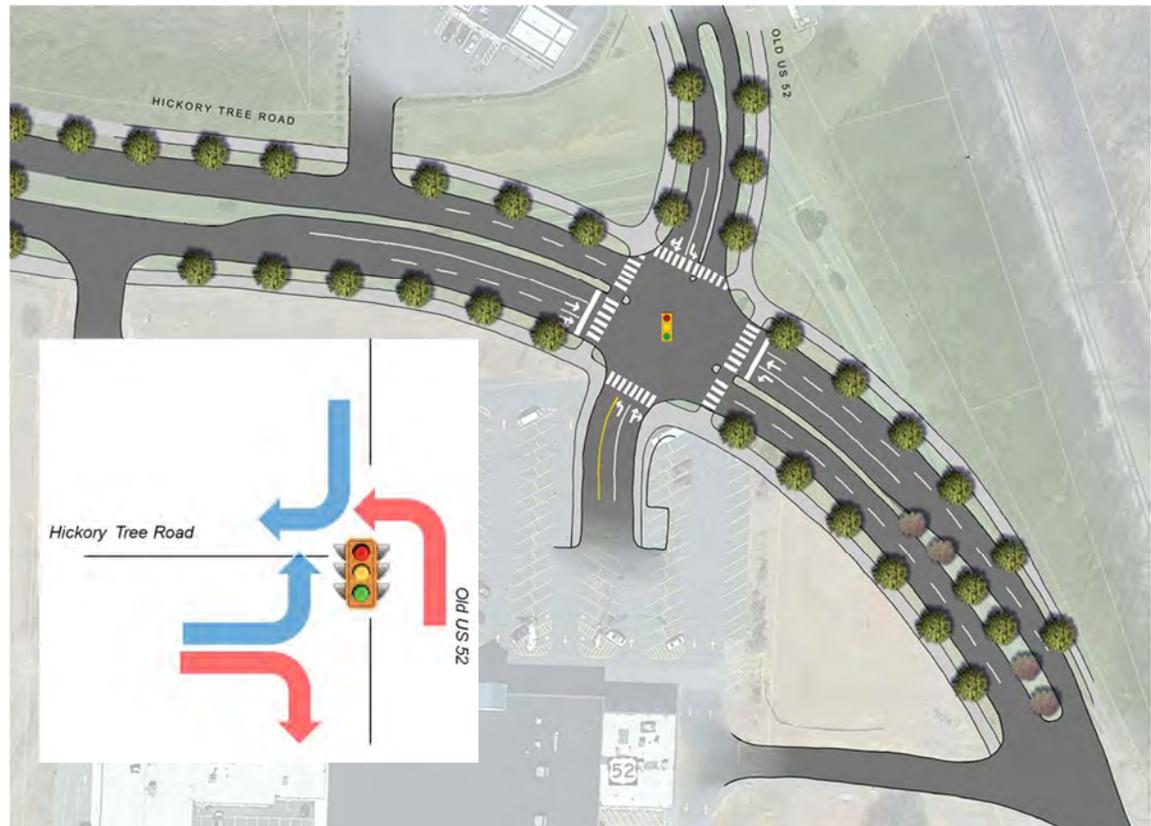
Key Issues: The public identified the following key issues:

- a. High crash location
- b. Peak hour delays
- c. Heavy turning movements
- d. Perception of speeding

### Description:

Located in the heart of the commercial district, Hickory Tree Road at Old US 52 is a critical intersection in the overall transportation network for the Town of Midway. Serving as the decision point for north/south and east/west movements, this intersection processes heavy peak hour volumes that are weighted favorably to the south. With the proximity of the CSX railroad to the intersection, Hickory Tree Road will likely not continue east in the foreseeable future. With these factors in mind and alternative intersection treatment was developed to accommodate the peak hour movements of the intersection.

The reconfiguration of the intersection to align with the **dominate** movements allow for better signal operations and minimizes delay. Overall intersections improvements including crosswalks, landscaping, sidewalks and monumentation complete the intersection.





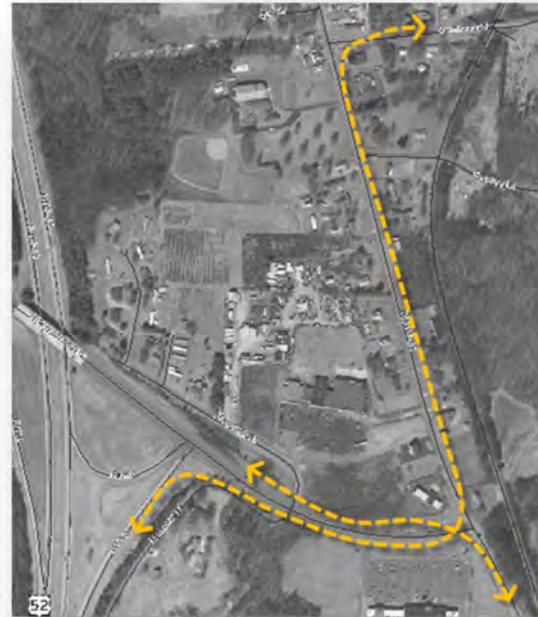
## Network Connections

Key Issues: The public identified the following key issues:

- a. Improved mobility through Midway
- b. Better east/west connectivity
- c. Remove the 'jog' with Hickory Tree Road
- d. Create a sense of place

Description:

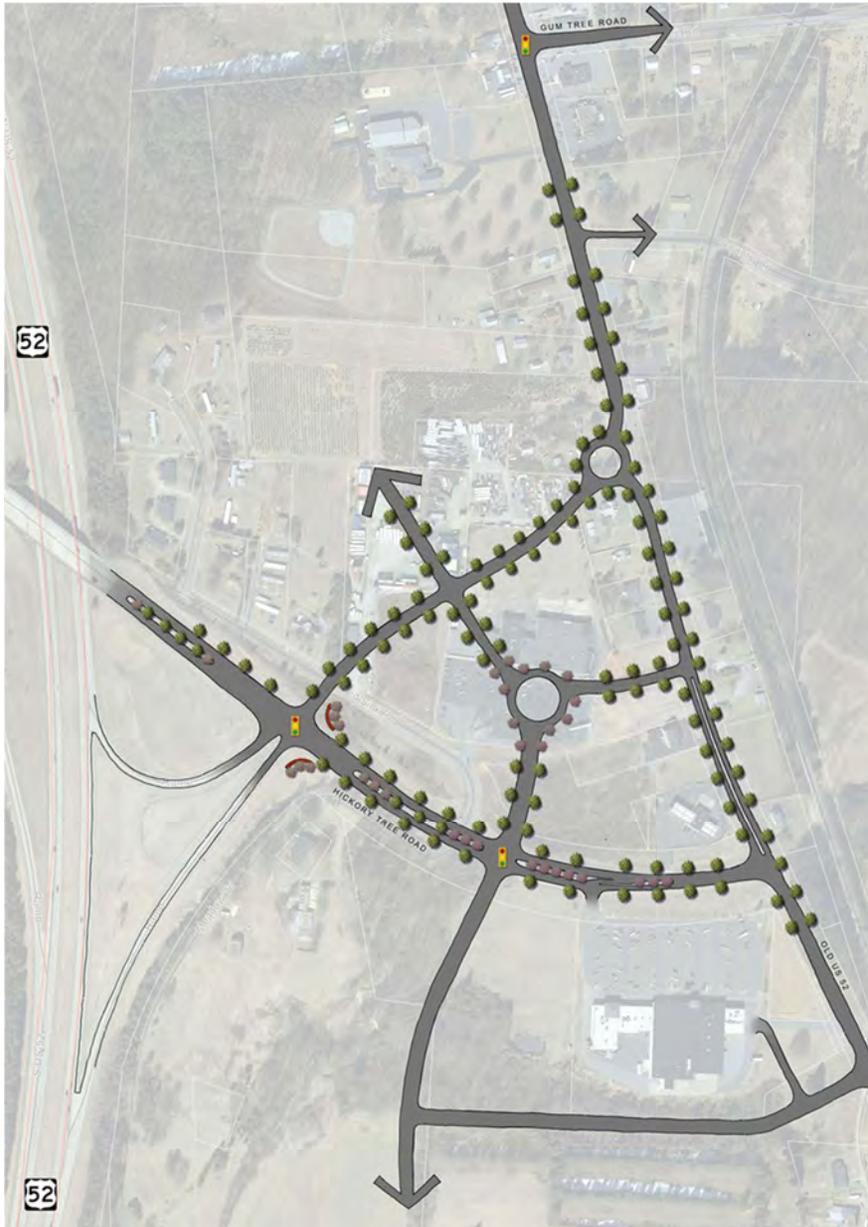
The presence and proximity of the CSX rail line to Old US 52 through the Town, creates a barrier for east-west mobility. The lack of connections crossing the rail line and spacing of these connections limits drivers to two viable choices: Gumtree Road and Midway School Road. To alleviate the offset intersection between Gumtree Road and Hickory Tree Road, a series of network connections were developed. These network connections do more than improve connectivity, they also provide an opportunity for redevelopment and the potential creation of a new town center. The images on the subsequent pages explore potential network and intersection configurations.



*Right:  
The proximity of the rail line prohibits east-west mobility.*

*Bottom:  
CSX rail line through Midway*





CONSIDERATIONS:

- Accommodates network movements
- Improves access to US 52
- Potential redevelopment of existing commercial district
- Minimizes number of movements from Gumtree Road to US 52 and Hickory Tree Road
- Creates a new gateway into historical downtown area of Midway

the core commercial area of Midway



CONSIDERATIONS:

- Improves access to US 52
- Potential redevelopment of existing commercial district
- Minimizes number of movements from Gumtree Road to US 52 and Hickory Tree Road
- Creates a new gateway into historical downtown area of Midway
- More circuitous connection between and Gumtree Road

the core commercial area of Midway



## Hickory Tree Road

Key Issues: The public identified the following key issues:

- a. Overly wide section ← excess right-of-way width
- b. Lack of amenities

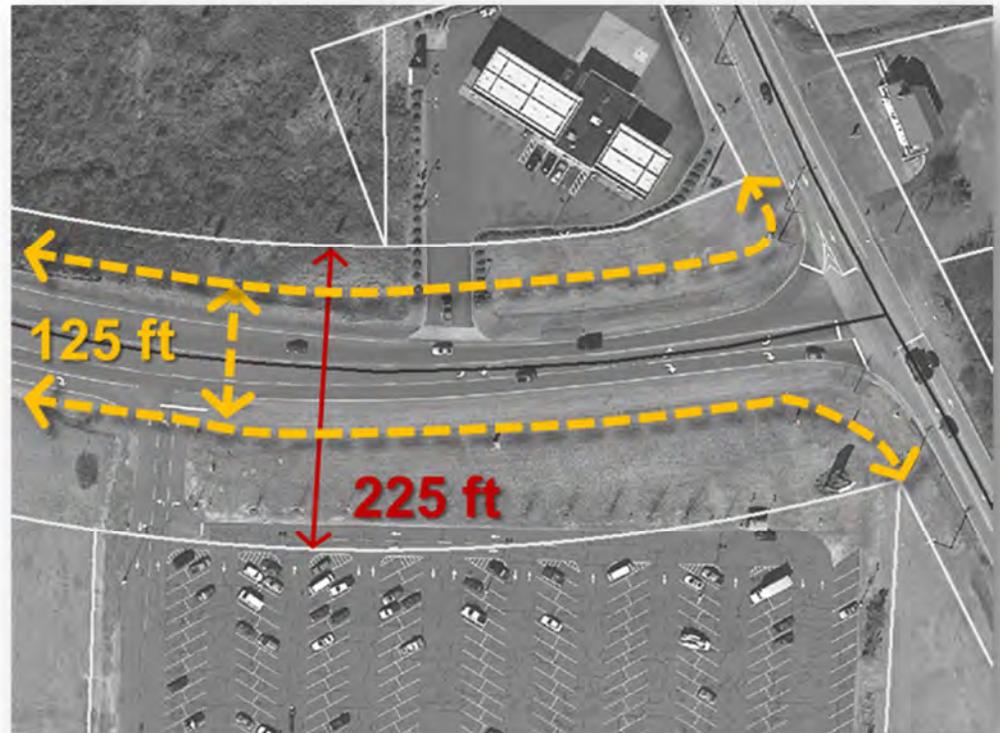
Description:

Serving as the gateway into the Town of Midway from US 52, Hickory Tree Road must function in many capacities. It is one of the major workhorse streets in Town, it is a gateway for the community, it must facilitate the exchange of traffic between interregional/state traffic and local traffic and it provides local land access.

When considering all these things it is not hard to image the need for a multi-lane, multi-capable street. During the planning of the US 52 bypass in the 1960's/70's forethought was given to the ultimate need for Hickory Tree Road. In many places, this ultimate need or typical section is in place. In other locations the majority of the need is present.

As development has occurred since the original widening of Hickory Tree Road, the need to widen has not occurred. When planning the facility is was a wise decision to plan and acquire a 225 foot right-of-way. However, as discussed earlier, the proximity of the CSX rail line prohibits the likely need to widen this road in the future.

Therefore, the feasibility of reducing the right-of-way to a more manageable section along Hickory Tree Road should be considered. This reduction in right-of-way would allow for the potential redevelopment and reinvestment in properties along the corridor. Sufficient width would need to be maintained to accommodate any auxiliary turn lanes or streetscape improvements such as medians, sidewalks, or bike lanes.





### Posted Speed Limits and Enhanced Safety Measures

Many participants suggested that speeding on Old US 52 and Hickory Tree Road was a problem.

Currently, the speed limit on Old US 52 varies from 50 mph to 45 mph through the heart of Midway. The numerous driveways and intersections through this section create the potential for high crash locations which is only amplified by the high speed limits. The section along Hickory Tree Road is similar with the

the current posted speeds through the core of the Town

number of available travel lanes in these conditions, that the posted speed limit on Old US 52 be reduced from 45 mph to 35 mph. This will provide an appropriate posted limit for the corridor. At this time a speed reduction along Hickory Tree Road is not recommended.



Please add in a sub-section after this to recommend cross sections for Old 52 and Hickory Tree Road



## Call to Action

### Next Steps

Given the critical role these study area streets play in the overall transportation system for the Town of Midway, there is a sense of urgency to expedite implementation of this plan. This project complements the overall sustainable planning initiatives being promoted throughout the region and represents an investment in community that will help promote the economic vitality of the region.

Identifying the most appropriate outcome represents a major milestone in the process; however, several work tasks remain. These include:

- Securing a Control of Access break
- Securing a committed funding source for transportation improvements
- Final construction design plans
- Right-of-way dedication and acquisition
- Construction

Access break probably needs to be talked about in more detail in previous section

### Additional Action Items

In addition to the intersection projects, there are a number of additional task that require follow-through by participants (local regional, and state) in order to fully realize the vision established during the planning process including:

- a) Study Endorsement: The results of the Community Transportation Evaluation should be carefully considered and endorsed by the Town of Midway, WSMPO, NCDOT and Davidson County. This endorsement will memorize the agreements established during the planning process and reduce the risk of having to revisit some of the issues contemplated during the study. Endorsement should happen both as individual entities as well as collectively. A Memorandum of Understanding that is endorsed by these collective parties will guarantee a consistent partnership remains in place until implementation is complete.
- b) Control of Access Break: Work with the NCDOT to obtain a control of access break across from the exiting US 52 NB ramps to allow for the construction of a new public street. This is the first critical piece in developing a new, integrated roadway network.
- c) Update LRTP: The Winston-Salem Urban Area LRTP should be amended to reflect the recommendations of this study.





- d) Establish Design Themes: The design of any new infrastructure should be done with the recognition of area context. Given the organic evolution of Midway there isn't a cohesive design theme. However, new infrastructure has an opportunity to establish a recognized identity for the area. The Town should develop an approach to design including signing so that a sense of arrival is clearly established when passing through and accessing the study area. Recommendations include: coordinated wayfinding and signing, materials and lighting details and landscaping.
  
- e) Endorsement of the Concepts: Endorsement of the preferred intersection configurations contained herein by the WSMPO, NCDOT, and Davidson County will ensure a consistent implementation of the plan. It will likewise allow the town to continue with some certainty that future planning efforts will consider the work contained herein.
  
- f) Financing Partnership: The expense associated with implementation suggests that an exclusive local funding source is not likely. In addition, the traditional process for funding via the North Carolina Transportation Improvements Program may not yield a desired project schedule. If the parties involved are interested in improving their

chance of reduced implementation duration creativity, initiative, and partnerships may prove beneficial. Considerations that may increase the likelihood of funding include: adoption of a the Memorandum of Understanding, dedication of right-of-way by affected property owners (rather than NCDOT right-of-way acquisition, and the use of local dollars supplemented with funds from grants and programs external to existing NCDOT funding should help elevate the exposure of the project and increase the likelihood of securing full funding and implementation in a timely manner.



*"Connecting people and places through quality choices"*