



The Community Vision of a Transportation System

Introduction

To maintain the quality of life for which Fuquay-Varina is recognized and to respect our rich heritage, all the while supporting the planned growth of this community, the Town has prepared this plan for future transportation needs. As you read ahead, consider the fact that every transportation plan involves an inherent tension: it must map the future with strokes that are bold and broad—and it must target investment opportunities with financial realism. An effective plan requires both a broad vision and a disciplined investment strategy. Our goal is to chart the future boldly, while committing resources wisely.

Transportation does not exist in a vacuum. In fact, transportation has no purpose other than to serve other ends because transportation is not an end in itself. Transportation is focused on providing the basis for neighborhoods and communities that function well, serve their people, respect their heritage, and offer new and enlarged opportunity. Because of this important focus, this chapter begins by delving into past planning efforts by the citizens, officials, and leaders of Fuquay-Varina. The chapter starts by examining locally-adopted plans before moving to regional plans and then closes with a presentation of the vision of Fuquay-Varina citizens who volunteered their time in 2005 to serve on the Citizens Advisory Committee for the *Fuquay-Varina Transportation Plan*.

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Comprehensive Land Use Plan

Before examining the 2005 vision, however, it is important to review the efforts of another citizen task force in 2004. This previous task force worked together to create a plan that was formally adopted by the Town Board of Commissioners as the *Comprehensive Land Use Plan* for Fuquay-Varina and the area around it. That plan identified several key issues in the vision for the community, including the following:

1. Town growth will continue
2. Town growth will be managed
3. Town character will be sustained
4. New development at the planning area fringe will be examined closely before the Town makes any commitment to extend public services



5. Natural resources will be protected
6. Provide transportation that works with land use
 - a. We all need to get where we're going, when we need to be there
 - b. People want choices about how they can best deal with traffic
 - c. Convenience and access are the main considerations in mobility
 - d. Inefficient road design, increases in population and car ownership are some factors causing traffic congestion
 - e. It appears that congestion is likely to get worse before it gets better

Source: Draft Land Use Plan, September 14, 2004

This *Land Use Plan* is important to consider in developing the transportation plan because of the integral relationship between land use and transportation. Because these two key community components are so important to each other, planning for each is sometimes discussed in terms of the proverbial chicken and egg question — “Which comes first?”

Investment in specific transportation corridors and travel modes has a direct effect on where developers and consumers (e.g., home buyers, or business expansions and relocations) decide to locate. For example, the completion of a bypass around a downtown may shift development interests toward the new bypass, potentially at the expense of downtown revitalization which no longer has pass-by traffic to lure development.

Taking into consideration the vision of the *Comprehensive Land Use Plan* as well as transportation needs based on that vision, the *Fuquay-Varina Transportation Plan* identifies both general and specific transportation system improvement recommendations and strategies to help accommodate anticipated growth in travel demand. At the same time, these recommendations are not limited strictly to land use issues. They are intended to support a diversified transportation system that considers not only the automobile, but also the bicyclist, the pedestrian, and the transit patron. This plan examines how the proposed greenway and sidewalk plan as well as various highway corridor plans can be incorporated into the overall transportation network.

However, a plan that does not consider the practical implementation is faulted from the start. With this in mind, the transportation plan includes discussion on strategies, methods, and sources of funding for implementation.



This transportation plan addresses the urban service area (USA) which includes currently unincorporated areas of Wake County. The USA represents the area that can be expected to be served (in the future) by services from the Town. This also is an area in which Fuquay-Varina can reasonably expect to be able to effect change in the future. The study area is shown in Figure 2.1.

Comprehensive Growth Management Plan Policy Guidelines

Prior to development of the *Comprehensive Land Use Plan* was a 22-month process to develop Fuquay-Varina's policy guidelines for a growth management plan. A Board-appointed task force of Fuquay-Varina citizens, extraterritorial jurisdictional residents, professionals, business and industrial leaders, educators, and residents within the surrounding municipal planning area forwarded their consensus-based draft of a Comprehensive Growth Management Plan Policy Guidelines to the Board of Commissioners who adopted it in 1996. The Plan includes the following Vision Statement:

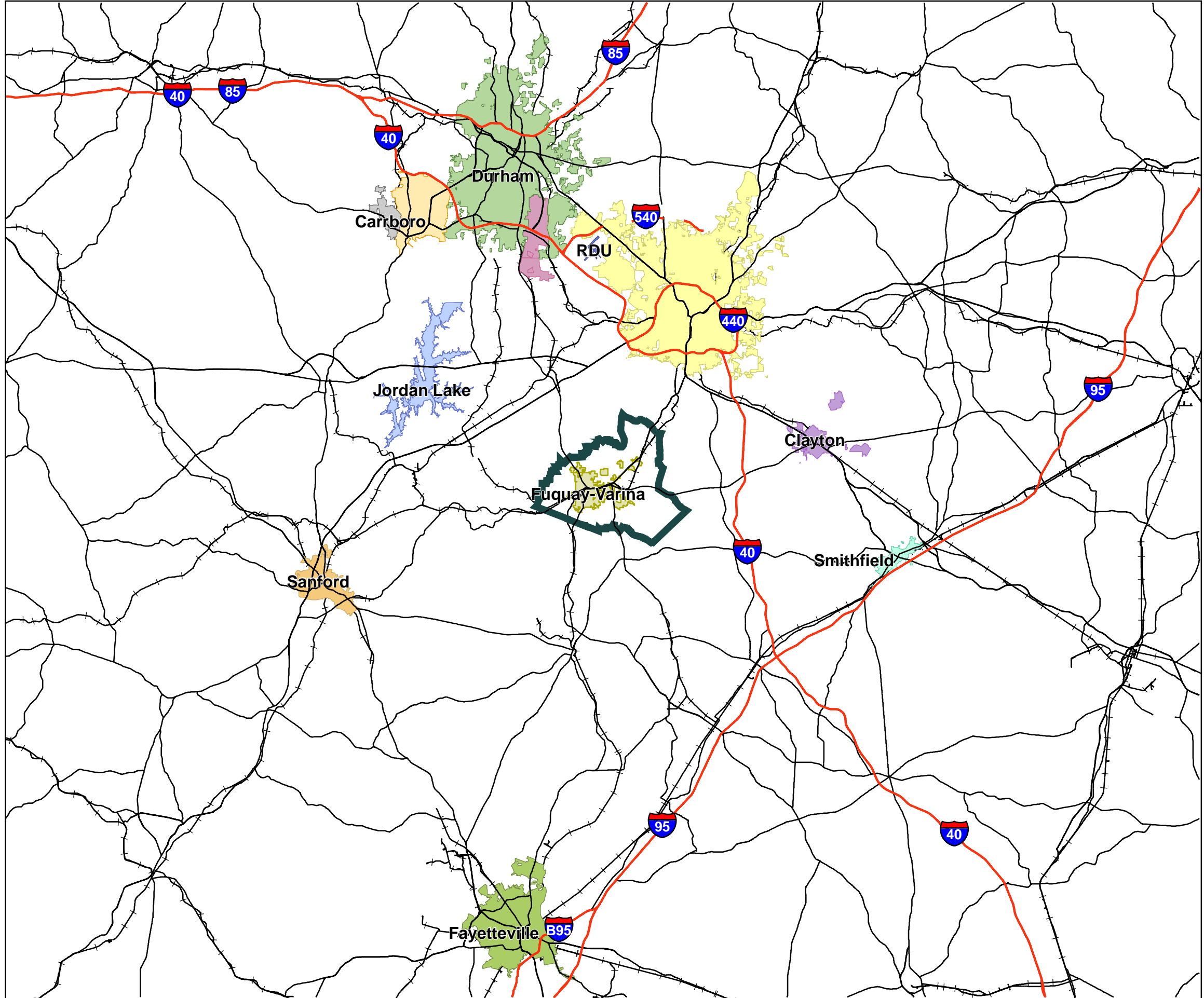
The Comprehensive Growth Management Plan Policy Guidelines Vision

The community of Fuquay-Varina shall embrace a plan that is based on community support and involvement where the village character is a social and economic mainstay; traditional values for all citizens reflects a safe, mental and physical harmony between the environment and a growing community; the past is a bridge to the future that forges timeless settings promoting character and livability; and the community supports a plan that embraces change over time as an opportunity to reinforce the "sense of community, quality of life, and pride."

The plan goes on to define several terms contained in the Vision Statement, the definitions of which have been influential in the development of this *Transportation Plan*. Following are some of the key excerpts:

Village Character – Using more than two pages of text to define originally, this term includes "close knit" mixing of residential and commercial development to promote places that are safe and friendly to pedestrians to increase interaction between neighbors and reduce vehicle trips. It is preserving land with special natural features to draw people and businesses to the area. Village character includes tree-lined streets, sidewalks, parks,

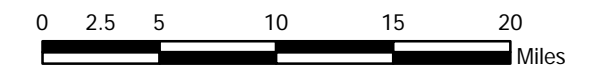
FIGURE 2.1
Study Area and Surrounding Region



- | | | | |
|--|---------------|--|--------------|
| | Study Area | | Fayetteville |
| | Fuquay-Varina | | Sanford |
| | Raleigh | | Smithfield |
| | Durham | | Clayton |
| | Chapel Hill | | RDU |
| | Carrboro | | RTP |



**Fuquay-Varina
Community
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common green areas, narrower streets, fewer cul-de-sacs, and pleasing architecture.

Livability – In the context of the growth management plan, this is a multi-dimensional community with a local job market, full services to the citizens including public facilities, commercial and recreational diversity, and comprehensive recreation and open space development.

Sense of Community – This is the common interest of the citizens and understanding of what the community offers and wanting to keep the heritage of the Town an integral part of its growth.

Quality of life – Defined as the Town’s role for setting the minimum standards that directs a common character, quality, and feeling that generates pride in the community. This is done by developing economic stability, recreational quality and variety, adequate and affordable housing, and well-planned neighborhoods and services.

Other interesting definitions contained in the *Fuquay-Varina Growth Management Plan – Policy Guidelines* include the following:

Concurrency – A process used by the Town to manage development with a series of conditions of approval designed so that development is completed concurrently with the infrastructure needed to support the development; in its purest form, concurrency extends beyond the development site to include neighboring areas affected by the newcomers.

Historic Preservation – Specifically for Fuquay-Varina, this is more than preserving historic buildings; it is preserving all aspects of the community history and displaying the history.

Multimodal Transportation – The development and operation of integrated transportation systems including vehicle, bus, light rail, pedestrian and bicycle systems; in anticipation of future regional rail service, Fuquay-Varina considered land use and density close to potential future rail stations as a way to take maximum advantage of such a large transportation investment.

Park and Ride – The intent of the Plan is to provide areas where parking lots (public and private) are provided to park vehicles and access other transportation services like buses, car pools and eventually light rail.

Urban Sprawl – A cycle that repeats itself as roads are widened farther and farther from the center of town which creates the ability to drive longer distances from home to work prompting construction of homes on suburban-sized lots (30,000 to 40,000



square feet) out in rural areas prompting the need to widen roads; good planning and restrictions on the extent of this type of development in rural areas is identified as the solution, rather than denying all such development.

Town Goals, Objectives and Strategies

The *Comprehensive Growth Management Plan Policy Guidelines* were influential in not only providing definitions for the vision of the community as identified above, but also for naming specific goals for the community. The Board of Commissioners adopted the *Comprehensive Growth Management Plan Policy Guidelines* with the following goals, objectives, and strategies relating to transportation. (For the sake of brevity, a full listing of goals and strategies has not been reprinted here, but can be reviewed by obtaining a copy of the *Growth Management Plan Policy Guidelines* from the Town Planning Department.)

GOAL: Establish and maintain a functional municipal infrastructure that is designed to influence the location of development, provide efficient use of utilities and transportation, and encourage economic development.

OBJECTIVES:

1. Promote efficient use of land that has existing utilities available and extend utilities into areas that are best suited for public utilities at a reasonable cost to the Town.
2. Coordinate timing between development and the expansion of the Town's infrastructure.
3. Develop and enhance the transportation system of the Town by promoting good design, environmental sensitivity, and accessibility for all citizens.

STRATEGIES:

1. Continue to develop annual requests for thoroughfare improvements through NCDOT (and CAMPO) in as detailed and informative means as possible.
2. Develop a checks and balances system to evaluate the impact on the Town to expand the infrastructure and the effects on the existing system. This should include ways to evaluate individual projects to determine if the infrastructure is capable of supporting the project.
3. Encourage mixed-use development utilizing public utilities. Mixed-use development with public utilities could promote open space conservation, balance of high and low



density development, and lessen the impact on the transportation system.

GOAL: Direct the development and expansion of the infrastructure to influence the location and expansion of non-residential development.

OBJECTIVE:

1. Promote cost-effective services for new development to attract industrial and retail commercial to the area.

STRATEGIES

1. Coordinate the location of potential non-residential sites with the existing and proposed transportation plan as well as rail services.
2. Main corridors should be protected from continuous strip development through limited access and clustered development of commercial sites.

GOAL: Provide transportation and utility patterns that provide efficient use of land and compatibility between land uses.

OBJECTIVES:

1. To expand the utility system into planned areas of development in a cost-efficient manner and with coordination of services.
2. Develop dialog with other local governments for the planning of utilities and transportation impacting the Town and coordinate urban boundaries that will best serve the Town for utility services and transportation needs.

STRATEGIES:

1. Identify present and future main thoroughfares and strategic intersections for planned traffic flow and management.
2. Update and maintain the Town's thoroughfare plan including standards for distance between intersections, adding a collector street plan, and adjusting street sections to accommodate bicycle lanes.
3. Develop standards for buffers and open space along specified thoroughfare corridors and limit the area of development fronting along certain major thoroughfares (e.g., US 401, NC 55, and NC 42).



4. Develop policies to encourage increased density near major thoroughfares to help decrease the burden of traffic volume on roads not intended to carry high volume traffic.

GOAL: Encourage alternative modes of transportation including pedestrian corridors, bus and light rail.

OBJECTIVE:

1. Provide greater opportunities and alternatives for pedestrian use and access to community services and the work environment.

STRATEGIES:

1. Develop standards and locations for park and ride facilities that will tie to future mass transit systems.
2. Develop plans and strategies for bus routes to Raleigh and RTP as a short range need.
3. Develop mixed-use planning guidelines that utilize alternative modes of transportation including pedestrian-friendly access as part of the transportation concept.
4. Integrate pedestrian movement within the community with transportation corridors (sidewalks) greenways and service areas.
5. Encourage private development to provide transportation management systems and reserve corridors for a future transit system to the Town.
6. Promote and develop means to establish a local bus transportation service for the Town and pursue regional links.

Regional Planning Factors

Similar to the circumstances surrounding transportation, the community of Fuquay-Varina does not exist in a vacuum. Because Fuquay-Varina is located in a metropolitan area that extends well beyond the influence of the Town, it is imperative to examine regional transportation planning issues.

Local investments could be leveraged to attract regional, state, and federal transportation monies. In order to maximize these monies invested in transportation facilities and services for Fuquay-Varina, the local community should consider how to establish consistency with federal transportation planning requirements. The following seven planning factors were promulgated by the



U.S. Department of Transportation and are requirements that must be reflected in the plan for Fuquay-Varina. These include:

- § Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency
- § Increase the safety and security of the transportation system for motorized and non-motorized users
- § Increase the accessibility and mobility options available to people and for freight
- § Protect and enhance the environment, promote energy conservation, and improve quality of life
- § Enhance integration and connectivity of the transportation system (across and between modes) for people and freight
- § Promote efficient system management and operation
- § Emphasize the preservation of the existing transportation system.

The *Transportation Plan's* recommendations have been influenced by these factors, which represent a multimodal plan that seeks to promote system preservation; sensitivity to the natural, social, and built environments; and the use and integration of alternate modes. In short, they are mutually consistent with the vision described previously in the excerpts of locally-adopted plans. The following represents examples of how the Plan is responsive to the seven planning factors.

Supporting Economic Vitality

The Plan includes projects to reinforce the viability of commerce in the Town Center. The Plan envisions mass transportation services to and eventually throughout the community, including space for a passenger rail station someday. It illustrates several miles of new high-speed roadway, including completion of Judd Parkway and construction of the Eastern and Western Parkways. Combined, these new parkway facilities will improve land access and support community mobility, thereby increasing targeted opportunities for economic development. The Plan also recognizes the positive impact of transportation improvements on quality of life, specifically as a valuable recruitment characteristic for a trained workforce and related economic development initiatives.

Safety

Both traffic and pedestrian safety recommendations are identified in the *Transportation Plan*. The Plan also includes an evaluation of causal factors and recommendations for improvements to the 10 most frequent crash locations. The Plan enhances safety



through a refined set of design standards for new roadways and clearly establishes a pedestrian realm.

Accessibility and Mobility

The significant expansion of the roadway system identified in the Plan, specifically as it relates to the collector street system, provides improved trip-making choices for motorized and non-motorized forms of transportation. The expansion is characterized by improved connectivity throughout the community. Chapters 3 and 4 further discuss the enhanced accessibility via improved designs. In addition, the incremental expansion of the local public transportation system will improve transportation choices and further local efforts to improve accessibility to the transportation system.

Environment, Energy Conservation, and Quality of Life

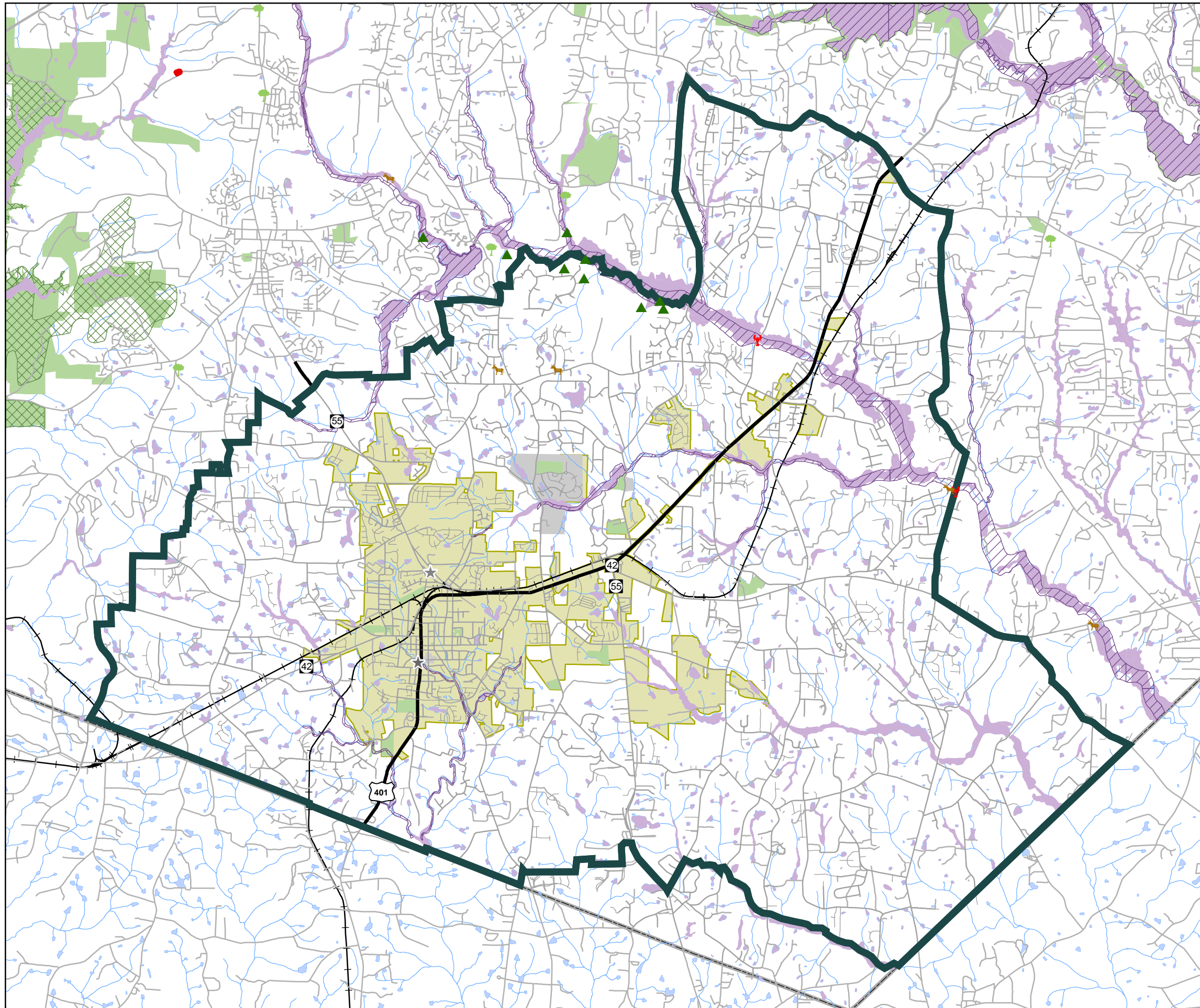
As the community of Fuquay-Varina continues to urbanize, impacts to the surrounding environment have become heightened. As the environmental impacts increase, it becomes imperative to manage and minimize their effects. Both the desires of the residents and the policies of the government influence the need for a livable environment. Whether the area is urban or rural, the residents expect to receive clean water, while federal and state regulations require that the land remain unpolluted and the air breathable.

The Plan contained herein is responsive to both natural and built environments. Roadway alignments have been carefully selected to minimize impact to sensitive areas as well as neighborhoods. In some cases, the removal of previous thoroughfare proposals has been recommended to protect the integrity of the environment. The Plan also promotes energy conservation by improving system performance, including signal system enhancements, access management, and system-wide connectivity. These enhancements will help reduce congestion and travel delays and promote alternate travel modes. In total, the transportation system described in the Plan enhances quality of life through improved choice, enhanced connectivity, and the creation of walkable environments. Figure 2.2 illustrates the environmental features found within the study area.

Enhanced Integration

The *Fuquay-Varina Transportation Plan* goes beyond planning for thoroughfares by including a specific collector street plan. The construction of collector streets enhances the overall system connectivity for vehicle travel, cycling, walking, transit, school

FIGURE 2.2
Environmental
Features



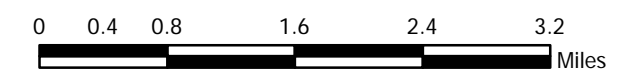
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|--|-----------------------|--|--------------------------|
| | Study Area | | Flood Zones |
| | Town of Fuquay-Varina | | Gamelands |
| | County Boundary | | Superfund Site |
| | Historic District | | Hazardous Waste Facility |
| | Historic Places | | Vascular Plant |
| | Bodies of Water | | Vertebrate Animal |
| | Parks and Open Space | | Invertebrate Animal |
| | Wetlands | | Natural Community |
| | Streams | | |



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buses, mail delivery, refuse collection, and other important uses. The integration of modes is best exemplified by the provision for sidewalks along all new roadways and the addition of wide outside shoulders or dedicated bike lanes. No longer are roads viewed as conduits merely for automobiles; rather they are transforming into “complete streets” intended for use by multiple modes of travel.

Systems Management and Operations

Transportation plans often overlook the use of management strategies as a means to improve safety and efficiency. *Chapter 8*

— *Congestion Management* describes policy and corridor specific recommendations. Improvements to access management and the use of technology (e.g., coordinated signal system) will prove beneficial tools for the management of the existing system and improved integration as the system is expanded.

System Preservation

The preservation of the existing transportation system is largely accounted for through the maintenance plans described in CAMPO’s Transportation Plan for Wake County. However, through changes in development patterns, access management, and improved signal coordination, key corridors can be enhanced incrementally, thereby maintaining their relevance to the overall transportation system for years to come.

Advancing Transportation Projects

Sometimes national policies impact local and regional issues. In one such instance, the United States Department of Transportation has delegated responsibility to each state DOT for allocating “return-to-source” levies collected at the gas pump as well as other various user fees such as truck weight fees or vehicle registration fees. The North Carolina Board of Transportation decides how to allocate scarce public monies across the myriad of jurisdictions statewide and, in the interest of equal opportunity among urban and rural districts; it spreads funds evenly across 14 zones according to the “equity formula” that divides by population.

To make up for spending what some considered to be more than a fair share in the recent past, NCDOT has released a draft expenditure plan (dated August 2005) listing Wake and Durham Counties near the bottom statewide in terms of planned transportation expenditures per capita from 2006 through 2012. The population basis is year 2003 population estimates. The planned expenditure in Wake and Durham Counties is \$1,833 per person per year, which can be compared with a statewide average



of \$2,105 and a maximum of \$4,186 (in Edenton, Ahoskie, and other parts of northeastern North Carolina). Existing congestion is not factored into the equity formula.

A critical step in advancing transportation projects from the local community to the State Board of Transportation is the competitive project review process conducted by the Capital Area Metropolitan Planning Organization (CAMPO) representing all 13 units of municipal and county government in Wake County and portions of adjacent counties, including Harnett, Johnston, Franklin, and Granville. While it is true that politics plays an important role in advancing projects, the majority of projects receiving state and federal funding in North Carolina share three key aspects:

- § Technical analysis demonstrates that the traveling public will benefit
- § The project is supported by the community
- § The project is supported by community leaders

The technical analysis conducted by CAMPO rests on the several factors:

- § Transportation System User Benefits — Volume of traffic forecasted in 20 years, accident-reduction potential, incorporation of access management principles (to affect safety).
- § Community factors — Effectiveness of public involvement efforts, low-income population groups, minority population groups, historic properties and districts.
- § Environmental factors — Air quality, stream quality, wetlands, and critical habitat

The Town of Fuquay-Varina submitted several projects to CAMPO in May 2004 for consideration in the project review process. The resulting list of priority projects submitted by CAMPO to NCDOT for consideration by the State Board of Transportation includes only 2 projects located within or immediately adjacent to the Town of Fuquay-Varina:

- § Western Wake Expressway (future Interstate 540) from Morrisville to Holly Springs (ranked 4th)
- § NC 55 widening from State Route 1152 to Holly Springs Bypass (ranked 16th)

The Town of Fuquay-Varina submitted the following projects — listed in order of priority — to CAMPO in May 2004 for consideration in the project review process:

Multimodal Corridor Projects (roadway with bicycle lanes and sidewalks on both sides):

- § Complete northeastern segment of Judd Parkway
- § Complete western segment of Judd Parkway
- § Build Eastern Parkway
- § Build Western Parkway

Bicycle-Only Project:

- § Bicycle lanes on both sides of NC 55 between Wake Chapel Road and Dickens Road

Sidewalk-Only Projects

- § Along both sides of US 401 North between Ennis Street and Norwood Street
- § Along the west side of US 401 South between Spring Street and South Park Recreational Park

Community Involvement

So far, this chapter has reviewed the efforts that have been made to give Fuquay-Varina a sound grounding in planning for the future. The land use and growth management plans, along with the FHWA's planning factors and CAMPO's review process, all give a significant foundation for the development of another plan to tie it all together: the *Fuquay-Varina Transportation Plan*.

This plan is for the citizens of Fuquay-Varina; today's residents as well as future newcomers. Because the decisions to issue permits, use public funds, and begin construction will affect them in the future, it only makes sense to actively engage citizens in the development of "their" plan. That way, future support for moving forward is increased. Professional planners, engineers, and landscape architects helped frame the debate and draft this report, but the plan contains the essence of what was learned from citizens.

One way for citizens to participate was through a public open house, which attracted 15 citizens to Town Hall the evenings of June 2nd and 7th, 2005. In addition to the open house, a Citizens Advisory Committee (CAC) was formed and engaged early in the process to fully develop the vision of the citizens for this plan. It was important to make sure the community was adequately represented, so citizens from a broad range of backgrounds were invited to participate in the CAC.



*CAC Meeting in Fuquay-Varina
Summer 2005*

Before any background information was given to the CAC, the first task for members was to generate a list of transportation issues, projects, and services needed in Fuquay-Varina. They were presented with the question "If you were King or Queen of Fuquay-Varina for a day ... what would you do to improve transportation?" Responses are grouped with similar comments from other CAC members; the most frequent are cited below:

- § Synchronize traffic signals to reduce delay at 2 critical locations (*5 out of 11 responses*):
 - North Main Street from Judd Parkway to NC 55/NC 42
 - North Ennis Street from Broad to Main Street
- § Construct alternate routes to avoid congested roads and intersections (*5 responses, of which 4 used the term "bypass"*)
- § Use public funds, rather than waiting for developers, to construct the remainder of Judd Parkway to complete the loop (*4 responses*)
- § Build new sidewalks and trails with a priority on closing gaps in disconnected sections of sidewalk (*3 responses*)



- § Reduce delays on Sunset Lake Road from North Main Street to Holly Springs (3 responses)

Other projects that received one or two responses are listed below:

- § Bus service to RTP and Raleigh
- § Bikeways
- § Neighborhood traffic calming measures
- § Roundabouts
- § Access Management Plan (driveways and medians)
- § Construct left- and right-turn lanes on major roads
- § Widen Broad Street to 4 lanes at WalMart
- § Broad Street access improvements
- § Traffic plan for Coley Farms Road
- § Install large street name signs on wires above traffic signals
- § Build Interstate 540/Western Wake Expressway
- § Intersection safety measures

Specific intersection improvements were cited to improve safety and reduce congestion, including:

- § Judd Parkway and Broad Street free-flowing right turn lanes into WalMart
- § Safety and capacity improvements on Judd Parkway at US 401
- § Left-turn arrow on Academy at US 401
- § Safety improvements at Bridge Street and Lincoln Heights
- § Safety improvements on N Main Street at Judd Parkway as well as at Sunset Lake/Purfoy
- § Widen Sunset lake Road and Hilltop-Needmore Road to add left-turn lanes
- § Widen Sunset Lake Road and Bass Lake Road to add turn lanes
- § Left-turn arrow from Purfoy (north) onto US 401
- § Traffic signal at Old Honeycutt Road and Judd Parkway
- § Traffic signal at Old Honeycutt Road and Purfoy Road



These specific answers, along with the results of a questionnaire completed by citizens at the open house and CAC members (presented in the Technical Report Appendix A), helped guide the development of this *Fuquay-Varina Transportation Plan*.

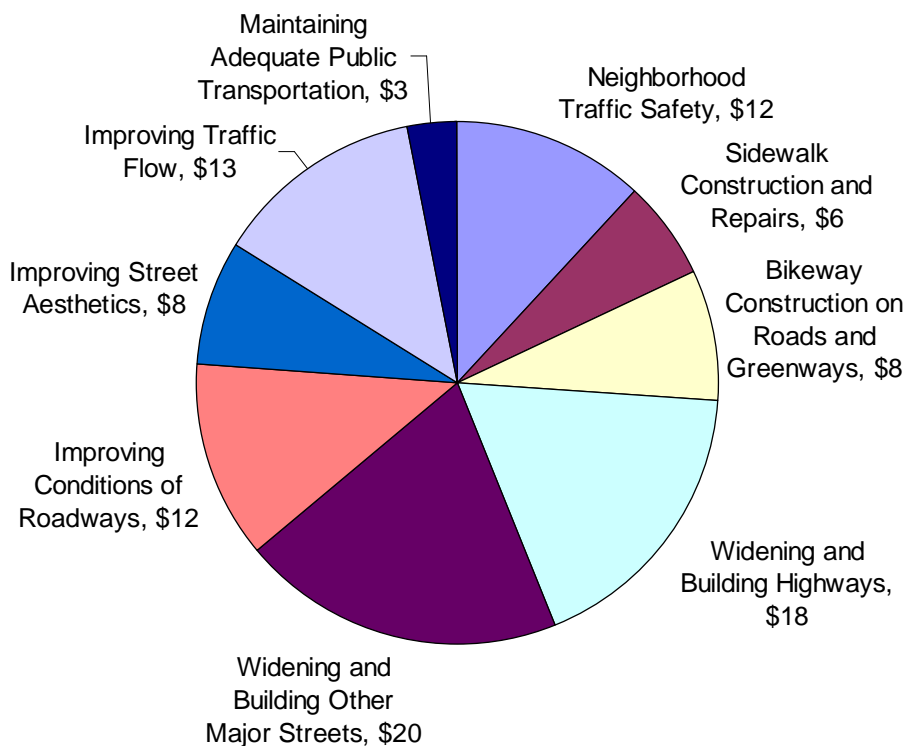


Figure 2.3 — Transportation Questionnaire

Question: If you had \$100 to spend on transportation improvements, how would you spend it?

The chart below summarizes the survey results. Note that while nearly 2/3 of funds would be allocated for traditional roadway improvements, 17% of the respondents' funds would be allocated to sidewalk, bikeway, and transit improvements. Another 8% would be spent to improve street aesthetics while 12% would be used to improve neighborhood traffic safety.

For complete public questionnaire results see the Technical Report Appendix.



In addition to receiving candid responses from surveys, the willing CAC members were asked to consider an intersection or a corridor in the study area that they found to be a concern because of safety and/or congestion. These committee members were given a disposable camera and were asked to inventory the problems and develop a vision of what they would like to see in the future. These vision statements were then collected and used in developing the Community Transportation Plan. Copies of the vision statements can be found in the Technical Report Appendix A.

Putting it All Together — The Plan's Vision

Combining the thoughtful efforts put forth on previous plans with the clear understanding of citizens regarding what can be done to improve their community; it is evident that the vision of a multimodal, efficient, and interconnected transportation system in Fuquay-Varina can become a reality.

This plan is intended to serve as a tool and guide for the future success in the implementation of Fuquay-Varina's transportation system. The vision for that system is grounded in significant work by volunteers and professionals, all working toward the goal of giving Fuquay-Varina the transportation system that will work for its citizens in the context of their community.