

# CARY COMPREHENSIVE



# PEDESTRIAN PLAN

Prepared  
for:  Town of Cary

With  
Funding  
from:  North Carolina Department  
of Transportation

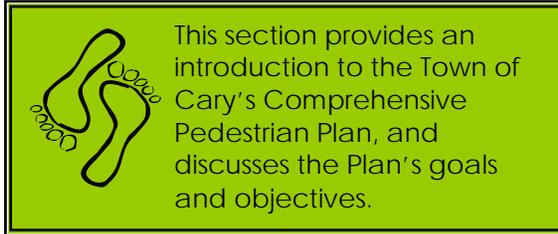
 Division of  
Bicycle &  
Pedestrian  
Transportation  Division of Bicycle  
& Pedestrian Transportation







## Section 1. Introduction and Goals



### 1.1. Introduction

As we enter into the 21<sup>st</sup> Century, the need to reduce our dependency on the automobile has become increasingly apparent. With rising fuel prices, decreasing revenues available for major roadway construction, and increasing air pollution, it has become imperative that a successful, thriving, and growing town such as Cary must develop and maintain a well-connected pedestrian network in order to preserve its quality of life. With such a network, the Town of Cary can make it easier for residents to choose walking to a destination over driving. The benefits of a walking community are many: reduced traffic congestion and air pollution; improved public health as a result of more active lifestyles; and a better sense of community and economic character. Perhaps more importantly, a strong pedestrian network is particularly necessary for those Cary citizens who have less access to a car. Trends in the Cary population show a rise in the numbers of children and senior citizens, as well as recent Hispanic immigrants – all populations that are underserved by the private automobile. By increasing the pedestrian-friendliness of Cary's transportation network, the Town will serve all members of its population, while at the same time benefiting from reduced air pollution, less traffic congestion, and improved health.

The Cary Pedestrian Plan is intended as a guide to the future of pedestrian facilities in Cary. Prior to this Plan, many of Cary's plans and design guidelines have made pedestrian-related recommendations and policy statements. The purpose of this Plan is to meld all of the recommendations of the various plans into a single overarching document. As a result, the Cary Pedestrian Plan will serve as the main source for pedestrian-related future plans and design guidelines. In addition, this document will serve as the Pedestrian Element in the Cary Comprehensive Transportation Plan.

The Cary Pedestrian Plan was made possible by a grant from the North Carolina Department of Transportation (NCDOT) and matching funds from the Town of Cary. Begun in January 2006, the Cary Pedestrian Plan process was a fourteen-month effort completed in February 2007, and ultimately integrated into the Comprehensive Transportation Plan in the Fall of 2008. Throughout, the process was directed by a Stakeholder Committee comprised of Cary citizens, Town Staff, and other representatives who met frequently to provide input on major decisions in the Plan and to generally guide the planning process. The Cary Pedestrian Plan process also included an extensive

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public outreach and involvement effort, which is discussed further in Section 2. Final Plan documents were prepared by the Louis Berger Group with direction from the Town of Cary Planning Department and other Town of Cary staff. Although the Plan's initial preparation process was completed in February 2007, the document should be considered a living document which will undergo revisions as necessary. In this sense, the planning process begun with this Plan will continue to be an on-going effort.

The Town of Cary Pedestrian Plan is organized such that the first chapters describe the current conditions and needs of the Town, with the following chapters building upon these needs to recommend projects, programs, policies, and design guidelines to make the Town more pedestrian-friendly.

#### 1.2. Goals and Objectives

It is important to have Goals and Objectives at the start of the Pedestrian Planning process in order to clarify the aims of the project and to guide the decisions made throughout the process. Goals are those general ideals towards which the Plan's efforts are aimed; an objective is a measurable outcome created to help achieve a goal. The following paragraphs discuss the goals and objectives for the Cary Pedestrian Plan as identified by the Stakeholder Committee and members of Town staff.

**Goal 1. Connectivity and Accessibility.** Provide a well-connected, American Disabilities Act-compliant pedestrian network for the Town of Cary that will provide convenient and pleasant access to all major destinations, for work and play.

**Objective 1.1:** Reduce pedestrian trip time. One approach to making pedestrian travel more convenient is to reduce the time it takes for a person to walk from one place to another.

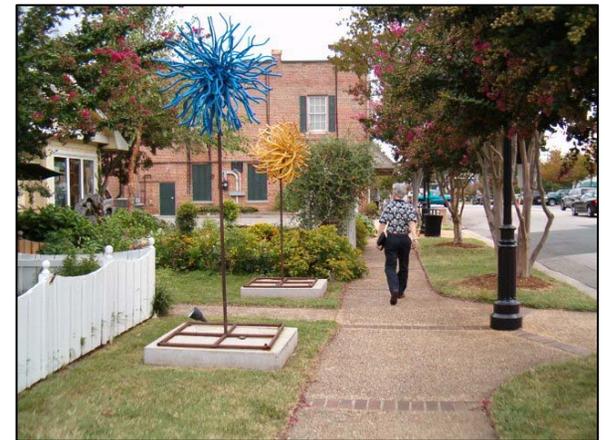
**Objective 1.2:** Create access to all major destinations.

**Objective 1.3:** Provide connections to other transportation facilities (such as greenways) and modes of travel like transit and bicycling.

**Objective 1.4:** Ensure pedestrian considerations are included in all new public and private developments, as well as all transportation projects.

**Goal 2: Health and Safety.** Develop pedestrian facilities throughout Cary that promote a healthy lifestyle and allow all residents and visitors to safely walk to destinations.

**Objective 2.1:** Create safe access to schools.



**Figure 1-1.** An example of Cary's Pedestrian amenities in downtown Cary.



Figure 1-2. Pedestrian amenities in Downtown.

- Objective 2.2:** Create safe and comfortable access to major destinations.
- Objective 2.3:** Create safe street crossings at intersections
- Objective 2.4:** Create safe mid-block crossings as needed for pedestrian access to greenways, parks, schools, and other major destinations.
- Objective 2.5:** Establish standards and guidelines that require all transportation facilities in Cary to include safe pedestrian facilities that meet ADA requirements.
- Objective 2.6:** Provide education to raise awareness about pedestrian-related issues including safety and the benefits of a pedestrian lifestyle on health.

**Goal 3: Appearance and Attractiveness.** Encourage a pedestrian system with amenities and programs that enhance the quality of life in Cary by making it more visually, socially, and culturally attractive.

- Objective 3.1:** Create a sense of community and foster social interaction.
- Objective 3.2:** Coordinate recommendations of Public Art Master Plan with recommendations of this Plan.

**Goal 4: Stewardship.** Create an approach to pedestrian facilities within Cary that is guided by a sense of environmental and financial stewardship.

- Objective 4.1:** Continue to prioritize projects in a clear, concise method that reflects the values and needs of Cary’s residents and provides adequate flexibility in future facility planning.
- Objective 4.2:** Create pedestrian facilities that are sensitive to special environmental conditions, such as the need to reduce impervious surfaces within stream buffers and water supply watersheds so as not to impact water quality.

**1.3. Benefits of Pedestrian-Friendliness**

Any discussion of how pedestrian-friendly a community is should begin with a discussion of the benefits of walking more frequently.

- ◆ *Health.* One estimate suggests that 60 percent of Americans lead sedentary lifestyles, and that 40 percent of Americans are clinically obese. Walking plays an important role in addressing obesity and fitness levels. The Center for Disease Control (CDC) confirmed this statement in 1999 when it called the replacement of walk trips with automobile trips a contributor to the number one-killer in America: heart disease. As schools have trimmed down the amount of physical exercise that students receive in

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favor of more class time, being a good role model for walking and physical fitness has emerged as an important parental responsibility.<sup>1</sup>

- ◆ *Transportation.* Although it would take a very large number of walking trips to make a noticeable decrease in vehicular congestion, walk trips can substitute for about 40 percent of the short (under two miles) trips people make every day. Alternative ways of getting around are much more important for people that are too young, too old, physically unable, or lacking access to a private car to make a trip by automobile.
- ◆ *Air and Water Quality.* Walking does not contribute to airborne pollution as does traveling by automobile; even a short walk keeps several pounds of pollutants out of the air. Stormwater runoff from streets carry away residue left behind by cars such as oil, grease, and coolants. Reducing reliance on automobiles, especially for short trips when most automobile engines are operating at their poorest efficiency, is an important way to reduce the level of contamination in stormwater runoff.
- ◆ *Economics.* Providing pleasant places to walk (see Figure 1-2) helps the business communities near these spaces, and reduces automobile costs, which comprise a significant source of out-of-pocket expense for the average Cary family.<sup>2</sup>

"Drive only when necessary. Driving less reduces the amount of pollution your automobile generates. Automobiles emit tremendous amounts of airborne pollutants, which increase acid rain; they also deposit toxic metals and petroleum byproducts into the environment."

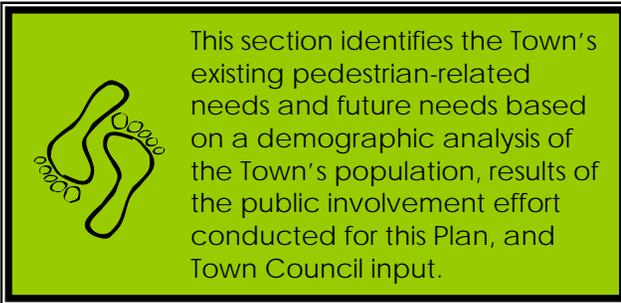
- U.S. Environmental Protection Agency

### Resources

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<sup>1</sup> Emily Smith, "America's kids are more inactive than ever: Walking can make a healthy difference." Partnership for a Walkable America, University of North Carolina Highway Safety Research Center. September, 2006.

<sup>2</sup> Walkinginfo.org. September, 2006. ([www.walkinginfo.org/pp/benefits/index.htm](http://www.walkinginfo.org/pp/benefits/index.htm)).



## Section 2. Existing Needs

### 2.1. Introduction

Cary's origins date back to its initial settlement in 1750, then known as Bradford Ordinary. The development of the railroad through the center of Town was a significant influence not lost on Allison Francis Page, who purchased 300 acres of land and established a post office, general store, and sawmill in the early 1860's. Page was then an admirer of Samuel Cary, an Ohioan Prohibition leader, and named his new village after him. In 1868, Page constructed, then sold to J.R. Walker in 1884, what became known as the Page-Walker Hotel for railroad travelers wishing to spend the evening in Town.<sup>1</sup> Many of the roads that connect Cary today began as farm roads, but Cary has become known for its system of trails and bicycle-friendliness as well, the latter when the League of American Bicyclists (its own history dating to 1880 when it was known as the League of American Wheelmen) designated Cary as one of its bronze-level recipients of its award for bicycle-friendly communities in America.<sup>2</sup>

This section covers existing pedestrian needs in the Town of Cary. In particular, it provides a brief demographic analysis and discusses results of the plan's public involvement effort. A demographic analysis and overview of public involvement efforts is important in order to identify any existing and future pedestrian needs in the Town. Coupled with the analysis of existing physical conditions in Section 3, this information provides direction for the pedestrian recommendations later in the plan.

### 2.2. Demographics

#### 2.2.1. General Town Analysis

Age, race, and income indicators help identify a population's general characteristics, propensity to use the pedestrian system, and potential attitude towards pedestrian facilities. Car ownership and commuting patterns indicate the overall current demand for pedestrian facilities. In addition to walk-to-work numbers, transit and bicycle commuting numbers can also reflect pedestrian facility usage because of the dependency of these two modes on the pedestrian network. Most transit trips begin and end with a walk to a transit stop, and thus depend on a well-connected pedestrian network to augment its service. Often, bicycle-friendly communities with high levels of bicycle commuting also have characteristics that are pedestrian-friendly.

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Appendix 1 contains a demographic analysis of the Town's population using data collected from the US Census Bureau. The analysis shows that the town is a growing community, with a higher percentage of children under 18 than the national average. In general, Cary's population is typically suburban, exemplified by affluent young families with children and cars. However, two percent of Cary households have no vehicle available, and over a quarter have access to only one vehicle. At the same time, Cary's growing Hispanic population (up from 699 in 1990 to 4,029 in 2000) brings with it a cultural diversity to the Town that includes more pedestrians on its sidewalks, indicating improved pedestrian facilities are needed.

Given the demographic make-up of the Town, several conclusions can be drawn about future needs both for pedestrians and transportation in general. Specifically, the Town's growth rate suggests that new pedestrian facilities and improved older facilities will be needed in the near future. First, the Town will need to plan for development that has adequate pedestrian facilities. Already, the Town enforces several regulations and requirements relating to sidewalks, crosswalks, and pedestrian signals for new developments and road improvements; these should be reinforced and strengthened. Another step in planning for future development with adequate facilities is to identify locations that are intended as future pedestrian areas and facilities, as shall be done in this plan. Second, the Town will need to upgrade its existing facilities to address increased demand. Lastly, as the number of pedestrians increase, the Town will need to develop education programs that encourage pedestrians and motorists to interact safely.

Cary's age demographics also suggest additional potential pedestrian needs. Cary's younger population will demand more pedestrian facilities such as greenways for recreation and exercise, safer routes to schools (especially elementary schools), and more connections to locations like parks and libraries. Meanwhile, as Cary's middle-age population matures into senior citizens, the Town will need to provide safer non-vehicular access to shopping and other commercial areas.

While the population's work travel commutes and vehicle ownership rates suggest that the Town is primarily dependent on automobiles, an increase in population will mean a potential increase in traffic. The Town will need to be prepared to provide alternatives to future congestion, including more sidewalks, better bicycle routes, and better bus service. At the same time, it should be noted that currently over 30 percent of Cary's workforce takes between 20 – 29 minutes on their daily work commute, suggesting that many of these commuters' workplaces are outside of Cary's Town limits. This also



**Image 2-1.** A runner crosses the intersection at Walnut and Maynard. As the number of pedestrians increases in the Town, the Town will need to develop education programs that encourage pedestrians and motorists to interact safely.



**Image 2-2.** As part of the Plan's public involvement effort, a booth was set up at Cary's 2006 Earth Day at Spring Daze and Pedestrian Plan surveys were distributed to participants.

indicates the need for increased regional cooperation and coordination to provide better services across municipal borders.

### 2.3. Survey Results

The Cary Pedestrian Plan Survey was conducted from April 9, 2006 to July 31, 2006, both online and through a paper version of the survey. The paper version of the survey was distributed at a variety of public events and locations such as the Cary Earth Day event at Bond Park, Town Hall, Town Council, and the Cary Pedestrian Plan's Stakeholder Committee Group meetings. The survey was designed to gather input from citizens of the Town of Cary about their pedestrian habits and preferences, and the condition and needs of the pedestrian system in the town. The survey received a total of 524 responses. A detailed analysis of the survey results is provided in Appendix 2.

The analysis of the survey responses found that respondents generally feel safe walking in their neighborhoods, but are uncomfortable crossing streets, especially streets with high speed and volumes of traffic. Most respondents enjoy walking for recreation and/or exercise in parks and to other recreation facilities, and would like to be able to walk to more of these locations, as well as places like a shopping center, post office, library, or cultural event. Overall, weather and level of fitness have little impact on respondents' reasons for walking.

In general, respondents approve of Cary's progress with sidewalk and greenways that make up the Town's pedestrian network, but they would like to see things improved. Some of the major issues include:

- ◆ Lack of pedestrian system connectivity. A top reason respondents did not walk to a location was because it did not have continuous sidewalk or a greenway to that location.
- ◆ Need for better pedestrian access to locations such as other neighborhoods, parks, shopping centers, post offices, or cultural events. Many respondents indicated they would like to walk to these destinations. With better pedestrian access to these locations, respondents hopefully would be able to walk to them more readily than they can now.
- ◆ Establish better road crossings. Many of the comments from the survey responses indicated a need for better pedestrian crossings at mid-block locations and at intersections of major roads with smaller roads for access to schools, parks, greenways, shopping, neighborhoods, and work.

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Some recommendations for addressing these issues include:

- ◆ target identified focus areas for improving the concentrated needs of many people quickly;
- ◆ construct more sidewalks and greenways; and,
- ◆ provide crossings at selected mid-block locations.

The results of the survey also have implications for project prioritization. Based on survey responses, priority should be given to projects that include crossing treatments and intersection improvements for pedestrians; improve connectivity of the pedestrian system; and create better accessibility for pedestrians.

Several focus areas emerged from the analysis of the survey results; these were:

- ◆ Evans/Maynard Area
- ◆ Symphony Lake/Hemlock Bluffs Area
- ◆ Walnut Street Corridor Area
- ◆ North Cary Park
- ◆ East Chapel Hill Area
- ◆ Davis Drive and Green Hope Area

These focus areas are locations that received comments from many survey respondents indicating pedestrian access issues. In general, focus areas have one or several major destinations, such as a school, park, greenway, or shopping center. These locations include a variety of needed improvements on a variety of roads. Maps and a discussion of the needs, issues, and recommended projects for each of the focus areas are listed in Appendix 3, beginning on page 3-14. The list of recommended projects in this Plan (contained in Appendix 5) were developed from an analysis of the improvements needed in the focus areas in addition to staff and stakeholder input, public comments, focus group discussions, and study corridor analysis (discussed in the following section).

#### 2.4. Study Corridors

In addition to the focus areas, study corridors were also developed based in part on survey results, along with town staff and stakeholder input. The locations for the study corridors were:

- ◆ E. Chatham Street: Chatham Street/E. Durham Road split to I-40, 1.4 miles
- ◆ Kildaire Farm Road: SE Maynard Road to Cary Parkway, 0.9 miles
- ◆ Kildaire Farm Road: Queensferry Road to Glen Echo Lane, 1.8 miles

- ◆ Old Apex Road: Chatham Street/Old Apex Road split to Laura Duncan Road, 3.1 miles
- ◆ Penny Road: Killingsworth to Winding Ridge, 3.0 miles
- ◆ Reedy Creek Road: NE Maynard Road to Harrison Avenue, 1.2 miles

These six corridors were selected for an in-depth analysis of the opportunities and constraints because of their need for pedestrian facility improvements and the potential for increased pedestrians along those corridors with those improvements. For each corridor, a field review was conducted which included both an in-vehicle and walking assessment. Results of the corridor studies are contained in Appendix 4. Projects generated from this analysis were also included in the complete list of projects considered for recommendation in this Plan (contained in Appendix 5).

## 2.5. Focus Group Results

In addition to the survey, a series of focus group meetings were conducted during the planning process. These focus groups targeted populations in Cary that may not have participated in the survey but that may also have a strong need for pedestrian facilities. In particular, these focus groups included members of Cary's Hispanic population and senior citizens. The following is a discussion of the results of these focus groups.

### 2.5.1. Hispanic/Latino Focus Group

On Monday May 22, 2006, representatives with the Cary Pedestrian Plan met with the Briarcliff Hispanic and Latino Parent's group during one of their monthly meetings at Briarcliff Elementary to discuss the needs of the Hispanic and Latino community in Cary. The Briarcliff Elementary Hispanic and Latino Parents' Group is a group of parents with children in the following schools: Briarcliff Elementary, Weatherstone Elementary, Northwoods Elementary, and Farmington Woods Elementary. The group meets to discuss their children's needs at the school and to learn more about different school activities. In addition, it is a venue for parents to receive information about various services available to them, such as after-school care and summer camps. The group is led by Rachel Manriquez, Ready-to-Learn Nurse for Western Wake County Schools.

Approximately fifty parents and children attended the May 22, 2006 session. Through the assistance of a translator, parents were asked to discuss how they felt about walking in Cary and to point out locations that they thought needed pedestrian improvements. In general, the group talked about two areas of particular need in Cary: first, the area around Briarcliff Elementary School that encompasses the residential neighborhoods and commercial areas bounded by Southwest Cary Parkway, Southwest Maynard Road, Kildaire Farm Road, and Old Apex Rd; and second, the residential and commercial area



**Image 2-3.** The Hispanic Focus Group meeting was held at Briarcliff Elementary School, where the Briarcliff Hispanic and Latino Parents group holds their monthly meetings.

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south of the intersection of East Chatham Street and Maynard Road. **Error! Reference source not found.** shows these focus areas and locations of needed intersection improvements.

The group's members identified the following issues and needs:

- ◆ On both main roads and local roads, people drive too fast and are inconsiderate of pedestrians. More crosswalks, especially mid-block, for crossing the street from residential neighborhoods to reach commercial areas and schools are needed.
- ◆ Parents must walk their children, often with strollers, to various destinations. There is a need for additional, wider sidewalks for parents with children to access schools, libraries, doctors, grocery stores, and neighborhoods.
- ◆ Parents were unaware of Cary's CTran bus system, but many of them were TTA bus riders. All bus stops need bigger signs, and in Spanish. Bus stops also need seats and coverings.
- ◆ Parents feel there is a personal safety issue in their neighborhoods. They would appreciate lights and a greater police presence.

The group also identified the following specific locations for needed improvements:

- ◆ midblock crossings across Kildaire Farm Road to the Kroger Shopping Center
- ◆ signed and signalized crossings across Maynard Road at Pond and Wicklow
- ◆ sidewalk access from Pond and Wicklow to the shopping centers at the intersection of Maynard Road and Kildaire Farm Road
- ◆ crosswalks, sidewalks, and more pedestrian signs from the apartments on Cheswick Place to Briarcliff Elementary
- ◆ traffic calming needed in the neighborhood around Briarcliff Elementary
- ◆ midblock crossings across Maynard Road from Tate Street and Maple Avenue to shopping centers and Sloan Drive

Mid-block crossings across Kildaire Farm Road to the Kroger Shopping Center may be unnecessary if pedestrian crossing improvements are made at the intersections of Kildaire Farm and Kilmayne, Commonwealth, Wren, and High Meadow. Any traffic calming efforts by the Town in the neighborhood around Briarcliff Elementary will be limited by private roads and private property constraints.

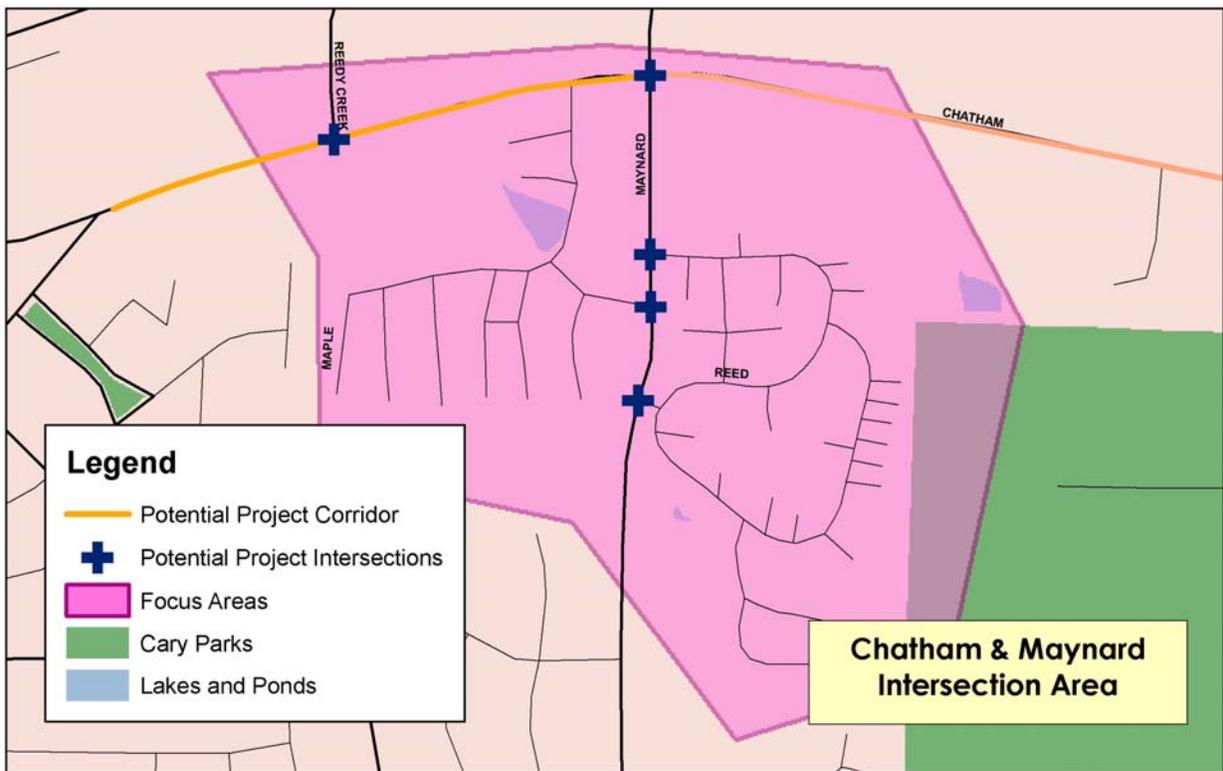
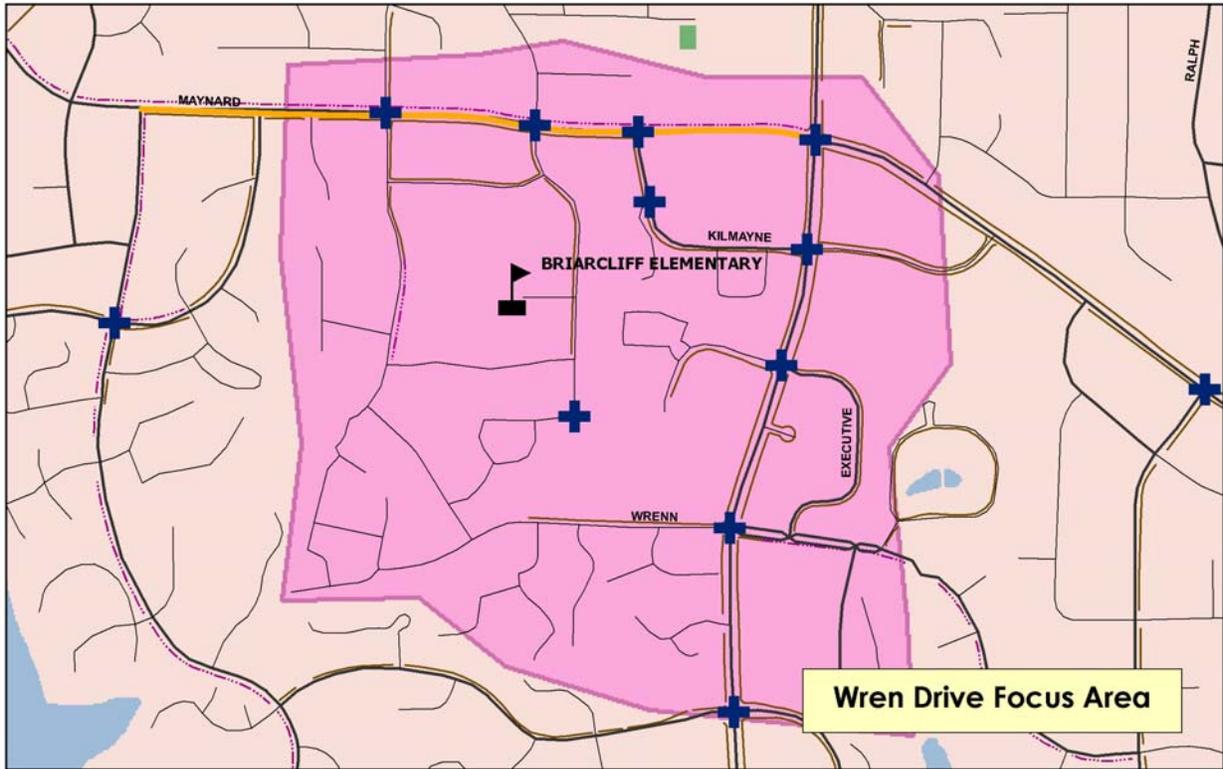


Figure 2-1. Focus areas and potential projects developed from comments received during the Hispanic Focus Group meeting.

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#### 2.5.2. Seniors Focus Group

On Monday, June 5, 2006, representatives from the Cary Pedestrian Plan held a meeting at the Cary Senior Center for Cary residents aged 65 and above to discuss their pedestrian needs. Eleven people attended. Participants were asked to share with the group the locations and destinations that they frequently walked to, and what they felt would improve the walking conditions in Cary.

In general, participants walked in their neighborhood and on bad weather days in the Cary Towne Center Mall. Neighborhoods were popular places to walk out of convenience and also because the streets have very little traffic. The Mall was a popular place to walk because it is air conditioned and does not have any hills. Some participants also liked to walk to the stores near their neighborhoods. Common destinations included the hair dresser, the grocery store, and the pharmacist. Other participants also walked on the greenways; however, most participants were concerned for their safety on greenways when they were not walking with another person. Safety concerns included both fear of criminal activity and fear of tripping or falling and not having a someone nearby to assist them.

Some of the concerns participants expressed about walking included a fear of dogs, fear of tripping on uneven surfaces, and a fear for personal safety. Many participants were also afraid to cross certain streets in their neighborhoods for fear of speeding cars and too much traffic. Participants indicated they would be more inclined to walk if there were more sidewalks that connected to more destinations, and if the sidewalks had better, more even surfaces. Participants would feel less concerned about their personal safety if they were walking with others, if there was better lighting for walking at night, and if there were fewer secluded areas and large bushes. Concerns about speeding cars could be reduced through traffic calming measures and better enforcement.

The following is a list of locations where the group participants recommended improvements should be made. These focus areas are also highlighted in Figure 2-3

- ◆ W. Chatham from Park to Old Apex. A sidewalk is needed to connect neighborhoods and residences on W. Chatham to downtown. There is currently some sidewalk, but the sections of W. Chatham without sidewalk are too dangerous to walk.
- ◆ High Meadow from Two Creeks to Cary Parkway. There is currently a sidewalk on one side but high speed traffic makes it hard to cross the street to get to the sidewalk for those residents who are not on the sidewalk side of the street. It was requested that a



**Figure 2-2.** View of the gardens behind the Cary Senior Center, where the Seniors Focus Group was held.

series of signals be placed along this street to warn drivers of pedestrians crossing from connecting cul-de-sacs.

- ◆ Two Creeks from Lake Pine to Cary Parkway. Currently, there is no sidewalk on this street and the traffic levels have been increasing such that it is dangerous to walk in the road at certain times of the day.

Issues of particular importance to the participants in the Seniors Focus Group included:

- ◆ the need for continuous sidewalk to connect neighborhoods to destinations
- ◆ signals, and especially audible signals, at crosswalks and mid-block crossings
- ◆ more pedestrian crossings (ie, mid-block) for access to existing sidewalk from a side of the road without it, or access to a destination
- ◆ repairing sidewalks with cracks and heaving from tree roots or grass in order to reduce the potential for tripping
- ◆ better (brighter) lighting in neighborhoods for walking at night
- ◆ dog waste in neighborhoods

Group participants also indicated that the following intersections are also very difficult to cross due to speeding cars and too much traffic. They requested that audible signals and other improvements be placed at these intersections.

- ◆ Lake Pine and Plantation
- ◆ Maynard and High House
- ◆ High House and Abbeydale

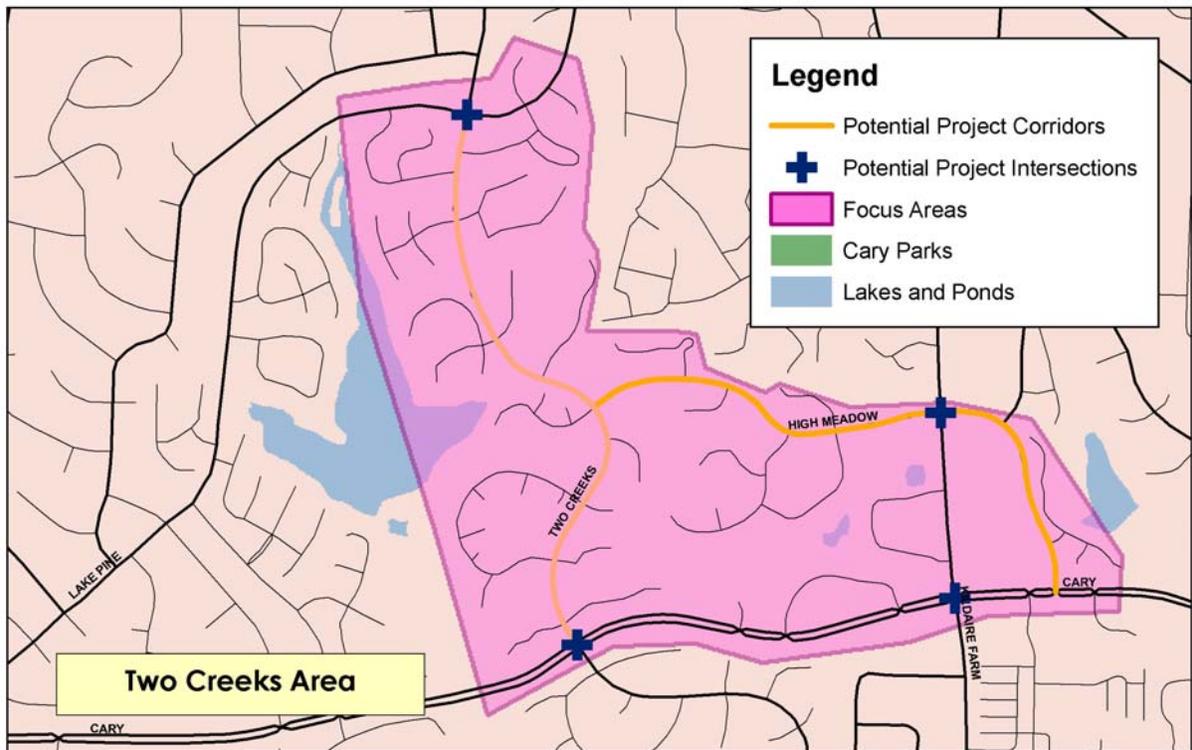
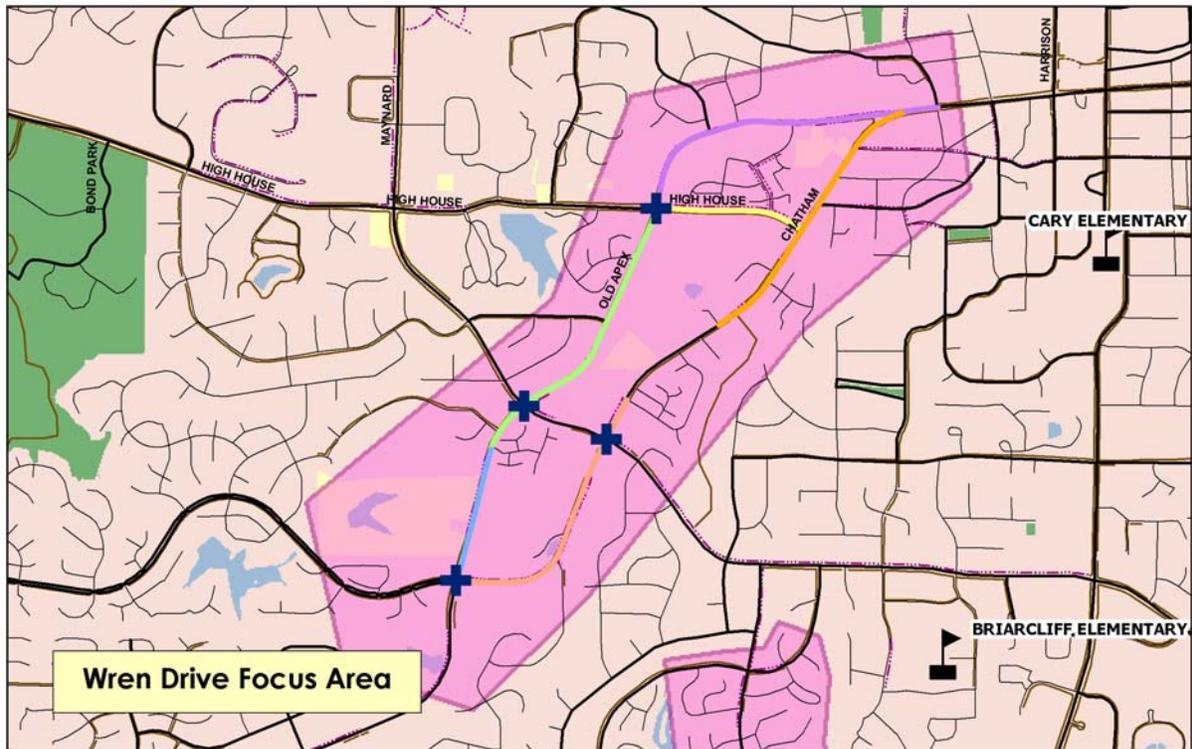


Figure 2-3. Focus areas and potential projects that developed out of comments received during the Seniors Focus Group meeting.

### 2.5.3. Transit Focus Group

The Transit Focus Group was held on Thursday October 19, 2006, from 6 – 7:30 PM in the Herbert C. Young Center, Room B. There were fifteen attendees, including representatives from C-Tran and the Cary Pedestrian Plan, consultants for the Pedestrian Plan. General results of the meeting found that most people rode the bus to major destinations such as Cary Towne Center and Crossroads, as well as to doctor's appointments and the grocery store. Many attendees used both the on-call and fixed route service. Several attendees also made transfers to Regional Transit. A popular stop was the Wake Medical stop at Kildaire Farm Road.



**Figure 2-4.** A passenger boards one of Cary's C-Tran buses. One of the focus group meetings targeted transit and transit rider needs.

Participants recommended the following improvements:

- ◆ benches with shade at major destinations including the Food Court at Cary Towne Center
- ◆ sidewalk along James Jackson from Cary Parkway to Maynard
- ◆ sidewalk along Maynard from Weatherstone to High House
- ◆ fix construction issue at Maynard and High House (this will be/has been addressed)
- ◆ provide sidewalk at Maynard and High House (this may be missing due to utilities obstruction)
- ◆ benches at shared TTA stop just south of Maynard and Harrison and one across the street
- ◆ Sidewalk along Buck Jones between Nottingham and Town Limits for safer transfer between C-Tran to CAT buses
- ◆ Relocate stop at Crossroads 20 out of middle of parking lot and near a location with sidewalk
- ◆ Place Maynard Loop 2 stop closer to Maynard Loop 1 stop at Reedy Creek/Maynard

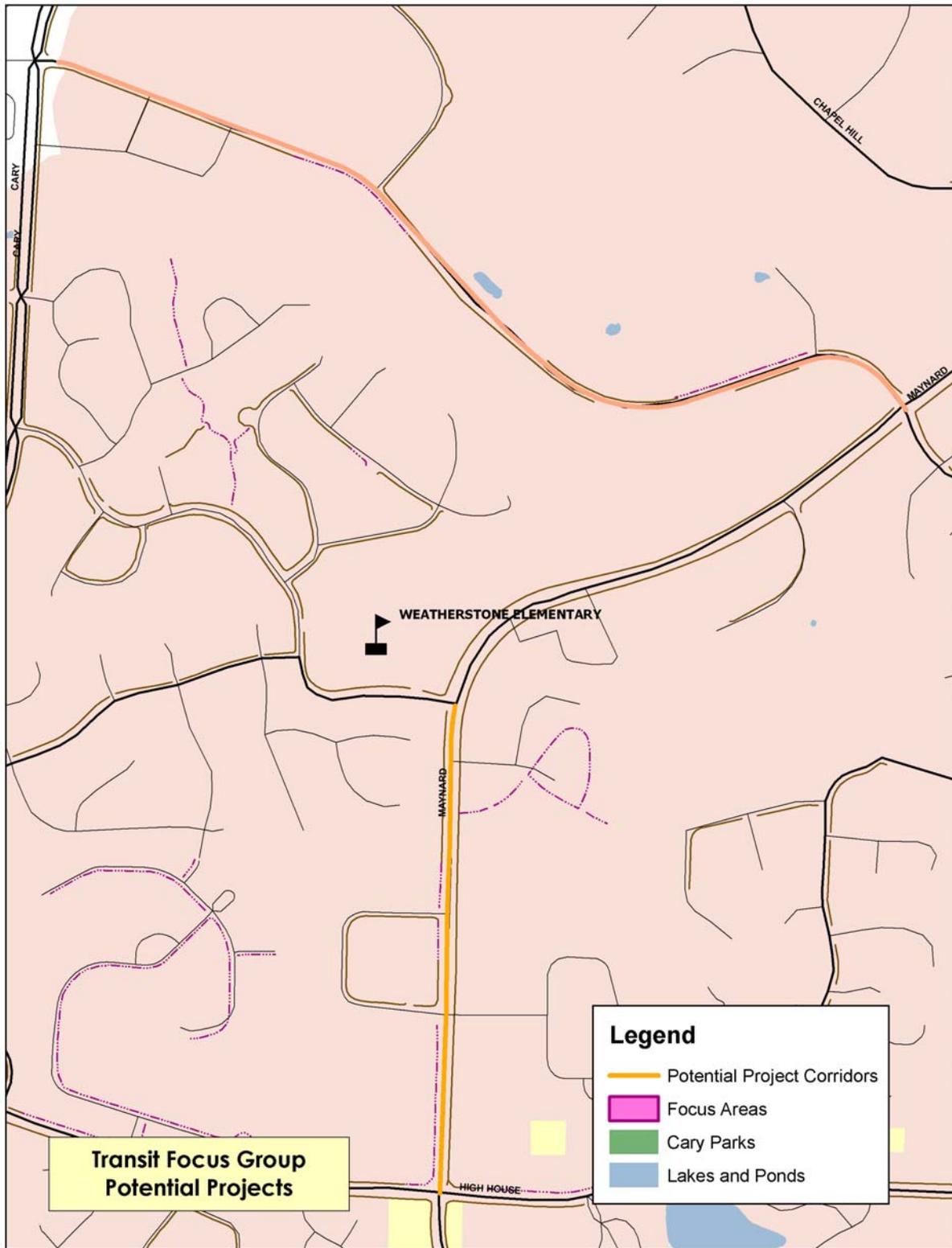


Figure 2-5. Some of the potential projects that developed out of comments received during the transit focus group meeting.

## 2.6. Town Council Survey

A survey was distributed at the Town of Cary Council Work Session on Thursday July 13, 2006 to identify future needs to be addressed in the Town of Cary's Comprehensive Transportation Plan Update. As part of this survey, there was a series of questions relating to pedestrian travel and the pedestrian system in Cary. Council Members were asked to rank the importance of sidewalk in various locations, assess the Town's development standards in providing adequate sidewalk facilities, and describe their vision of Cary's pedestrian future.

Results of the survey indicated the following items:

- ◆ Council Members feel that the most important locations that should be accessible by pedestrian facilities are other sidewalks, greenways, and schools. Second in ranking were shopping centers; and least important were employment centers, transit stops, and high density residential communities.
- ◆ Council Members approve of Cary's development standards for providing a safe and efficient pedestrian-friendly environment in residential and office developments, but feel that the Town's standards are providing inadequate pedestrian facilities to shopping centers. Council members have mixed feelings about the Town's standards relating to pedestrian access to public facilities.
- ◆ In the future, Council Members feel that Cary's pedestrian system should be a seamless greenway/sidewalk system, and that there should be sidewalks on at least one side of all roads. Less important to Council Members for the future of the pedestrian system are the presence of pedestrian-actuated signals and crosswalks at all signalized intersections and Town-initiated public education programs to promote walking as a transportation mode.
- ◆ Given a set budget amount to be spent on a variety of transportation improvements, out of those pertaining to walking, Council Members would put the most money towards pedestrian safety improvements and greenways and the least money towards fixed route transit, on-demand transit/paratransit, and streetscaping or aesthetics.

Based on the survey responses, it can be seen that Council members place top priority on enhancing the connectivity of Cary's pedestrian system, which is in keeping with the Cary Pedestrian Plan's goals of "connectivity and accessibility". Future improvements should focus on providing pedestrian accessibility at schools and shopping centers, and linking existing sidewalks and greenways to each other. In comparison to the results of

the general Cary Pedestrian Plan survey, there appears to be a difference in priority between Council Members and the general public. One of the major requests of the general Cary Pedestrian Plan survey was to provide better pedestrian crossing access at major roads and intersections, but the results of the Town Council survey indicate that Council Members place less of an emphasis on crossing improvements than on other improvements such as sidewalk construction. Council Members also place less of an emphasis on pedestrian access to transit facilities. The recommendations in this Plan seek to reconcile Town Council's demand for more sidewalk with the needs identified in the Pedestrian Plan survey for better pedestrian crossings. In addition, although neither the survey respondents nor Town Council Members placed the highest importance on pedestrian access to transit facilities, this should remain an important issue due to the link between transit ridership and a pedestrian-friendly environment.

## **2.7. Summary**

This section has reviewed the initial input from a public opinion survey, focus groups, and a second, independent survey of the Cary Town Council regarding pedestrian planning issues and priorities. The Goals established in this Plan should align with the needs of the Town as expressed through the public input process in order to insure that Plan's recommendations will address these needs. In the following discussion, each goal of the Plan is discussed in terms of the needs expressed through the public involvement process.

*Goal 1. Connectivity and Accessibility.* For both citizens and elected officials, providing greater connectivity is a central issue, although the Town Council focused less on pedestrian crossing treatments than did the citizenry. Connections between neighborhoods and destinations (e.g., shopping, employment, schools) were considered important to both survey groups. Citizens were able to readily identify a number of very specific projects that could be constructed or otherwise implemented to improve their pedestrian experience. Access to hair salons, movies, and parks were also cited as important destinations to various groups.

*Goal 2. Health and Safety.* The citizens of Cary indicated that there were few "internal" barriers to making pedestrian trips; that is, where it is safe and convenient to do so, Cary residents will consider walking to their destinations. The Town Council survey did not focus as much on the health and safety aspects of walking, but the results did indicate a willingness to spend scarce financial resources on pedestrian safety improvements and greenway facilities. Seniors expressed greater concerns over tripping hazards and other

aspects of personal safety than did other survey groups. In many cases (although the Town Council survey did not necessarily reveal this issue in a specific question), speeding and traffic volumes are indicated as significant barriers in many parts of Town.

*Goal 3. Appearance and Attractiveness.* Bus stop amenities and shelters were cited by some respondents as areas where appearance should be a focus; this was especially emphasized by the Hispanic and Transit Focus Groups. Improvements to a bus stop's appearance through small landscaping changes and street furniture additions can create more attractive places for people to interact, in keeping with this Goal's aim of a pedestrian system with amenities and programs that make the Town more visually, socially, and culturally attractive. Cary has engaged in a number of corridor studies for roadways; it should also focus on transitways in the same manner, while also emphasizing the importance of creating small-scale pedestrian venues.

*Goal 4. Stewardship.* The objectives of this Goal are to improve environmental quality and prioritize projects in a cost-effective manner. Although the purposes of the surveys and outreach efforts were not specifically oriented towards the concepts presented by this Goal, the results of the surveys indicate very clearly where people want to place an emphasis on allocating resources: connecting specific destinations as described; improving safety conditions; and creating places where pedestrians are encouraged.

## Resources

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<sup>1</sup> Town of Cary ([www.townofcary.org/depts/pio/aboutcary.html#history](http://www.townofcary.org/depts/pio/aboutcary.html#history))

<sup>2</sup> League of American Bicyclists, Bicycle Friendly Community.  
([www.bicyclefriendlycommunity.org/Images/bfc\\_pdf\\_pages/cary.pdf](http://www.bicyclefriendlycommunity.org/Images/bfc_pdf_pages/cary.pdf))





The following section discusses the physical infrastructure in the Town of Cary that influences pedestrians and the use of pedestrian facilities, including:

- ◆ Cary's road network
- ◆ Existing and proposed sidewalks
- ◆ Existing and proposed greenways
- ◆ Transit
- ◆ Parks
- ◆ Schools
- ◆ Shopping Centers
- ◆ Libraries

The Section also discusses locations with frequent pedestrian-car crashes.

### Section 3. Existing Physical Conditions

#### 3.1. Introduction

The following section discusses the physical infrastructure in the Town of Cary that influences pedestrians and the use of pedestrian facilities. Pedestrian facilities, such as sidewalks and crosswalks, often depend on where roads are located, and various destinations to which those roads lead. Pedestrians not only use sidewalks and greenways, but they also can be transit riders and bicyclists. Many pedestrians are children who walk to school, or seniors who are out for their morning walk to the grocery store.

The following section is a discussion of each major facility type involved in pedestrian facilities. These are:

- ◆ Roads
- ◆ Sidewalks
- ◆ Greenways
- ◆ Transit
- ◆ Parks
- ◆ Schools
- ◆ Shopping Centers
- ◆ Post Offices
- ◆ Libraries

In addition to these facilities, land use and development characteristics can also have an impact on pedestrian needs. Cary is home to varying types of land development, which can be categorized into three different areas of town: Northwest Cary, Central Cary, and South Cary. Each area has slightly different characteristics of the built environment, which bring with them slightly different pedestrian needs. In Central Cary, which includes downtown where development is relatively denser, pedestrian needs generally focus on maintaining and enhancing existing pedestrian facilities and providing safe, comfortable pedestrian access to transit stops. Northwest and South Cary development is characterized by new residential and commercial development that is primarily low to medium density. With the on-going construction in these areas, their pedestrian needs focus on identifying roads and locations for future pedestrian facilities to ensure pedestrian connections as development occurs, require greenways to be built as prioritized by the Parks, Recreation, and Cultural Resources Department, and ensuring development occurs on a pedestrian, walkable scale. Recommendations for future actions should be placed in the context of the surrounding development, and also the nearby existing facilities.

#### 3.2. Roads

Roads are integral to a Pedestrian Plan for the obvious reason that they often dictate where sidewalks are located. It is also important to consider roads in the pedestrian plan in order to understand the volumes of traffic at various intersections that pedestrians must cross.

Figure 3-1 is a map of the Town of Cary showing major roads and interstates. The Town has approximately 535 miles of roads. Cary's road network has a unique layout, designed so that Cary Parkway and Maynard Road form concentric loops around the town's core and major roads such as Kildaire Farm Road, Harrison Avenue, Walnut Street, High House Road, Chatham, and Old Apex serve as radials. Cary roads are classified into the following categories: minor street, collector, minor thoroughfare, major thoroughfare, interchange, and freeway.



**Image 3-1.** Chatham Street is one of Cary's major connecting routes. As seen in this image, it has some sidewalk and pedestrian facilities, but they could be improved.

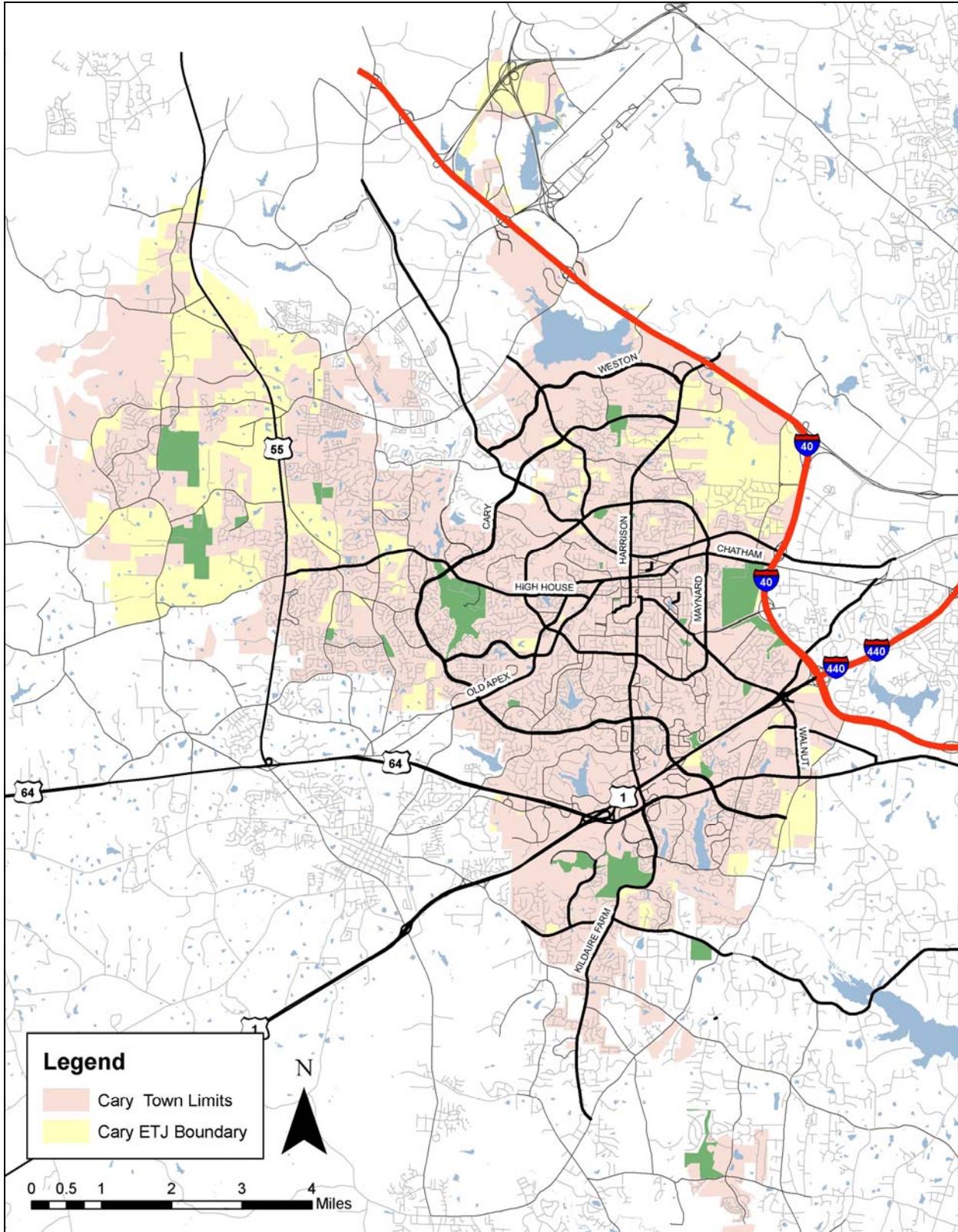


Figure 3-1. Map of major roads in Cary as of 2008.

## Cary Pedestrian Plan

### Section 3: Existing Physical Conditions

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#### 3.3. Sidewalks

Sidewalks are the primary domain of pedestrians and a refuge from cars and cyclists in Cary. The presence of a sidewalk is also often the most influential factor in increasing pedestrian use. If there is not a sidewalk to a destination, people are not likely to walk to it. Width of sidewalks also affects pedestrian use.

Figure 3-2 shows the location of all existing and proposed sidewalks in Cary relative to the street network. Proposed sidewalks include sidewalks that will be constructed as part of a new development, a roadway project, or as an independent project by the Town to improve pedestrian access to a destination. Cary has 242.8 miles of existing sidewalk. In an ideal situation, one would expect the ratio of miles of sidewalk to miles of road to be about two miles of sidewalk for every one mile of road. This would mean that there is a sidewalk on each side of the road. However, sidewalks are often interrupted by driveways or parking lots, and some roads, such as interstates, are closed to pedestrian access. A more reasonable expectation for a maximum sidewalk-to-roadway ratio is around 1.75 miles of sidewalk to one mile of road. Currently, Cary's ratio of sidewalk to road is about .45 miles of sidewalk to one mile of road. Cary has 84.3 miles of proposed sidewalk. With the proposed sidewalk network complete, Cary would have a ratio of .611 miles of sidewalk to one mile of road.

Most of Cary's sidewalks are in good condition because they have been built by recent development, and therefore need little maintenance. However, some sidewalks in older neighborhoods and downtown may be showing signs of wear and tear. Crumbling, dislodged, cracked, or "pushed up" sidewalks are sometimes an eyesore and may be hazardous.



**Image 3-2.** This sidewalk along Kildaire Farm Road is a typical example of sidewalk conditions in Cary. Note that the shrubbery has been courteously trimmed so as not to obstruct travel.

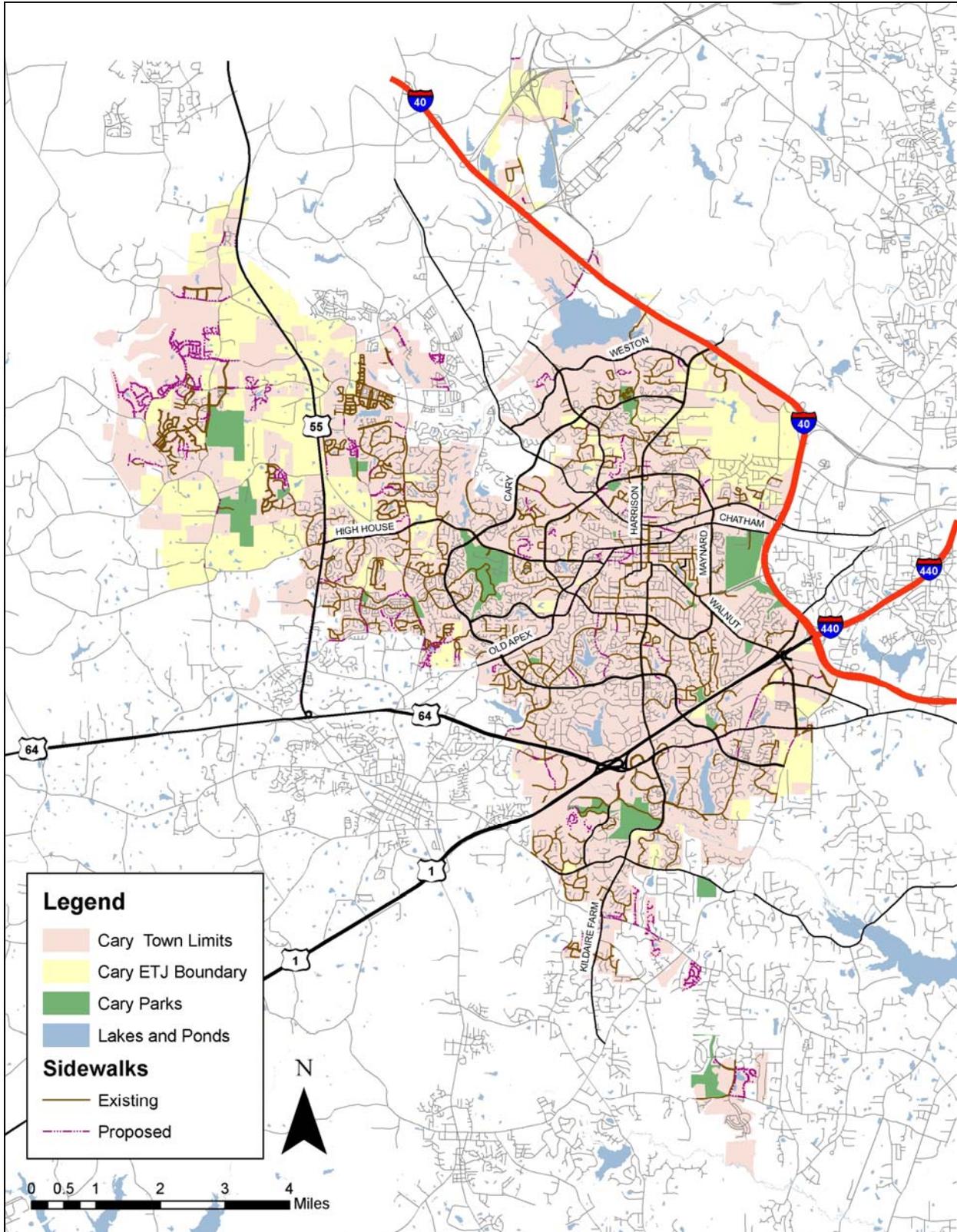


Figure 3-2. Map of sidewalk in Cary as of January 2007.

## Cary Pedestrian Plan

### Section 3: Existing Physical Conditions

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#### 3.4. Greenways

Greenways serve as another car-free travel venue for pedestrians. Although greenways had their origins in recreation and are often thought of primarily for recreational use, they can also serve as excellent alternative travelways to reach destinations such as workplaces and shopping centers. In spite of the often meandering nature of greenways, users are increasingly commuters to work avoiding the noise and exhaust on major roadways. For this reason, it is important to consider greenways when preparing a pedestrian plan. It is also important to consider greenways and their relation to other facilities, such as sidewalks, parks, and schools.

The Town of Cary has completed a Parks, Recreation, and Cultural Resources Facilities Master Plan which shows the locations of all existing and proposed greenways (see Figure 3-3). Currently, Cary has 26 miles of existing greenways, and over 160 miles of proposed greenways. Major greenways include Black Creek Greenway, White Oak Greenway, Batchelor Branch Greenway, Hinshaw Greenway, Speight Branch and Camp Branch Greenway.



**Image 3-3.** The Northwoods Trail, next to Northwoods Elementary School, is an example of a typical greenway facility in Cary.

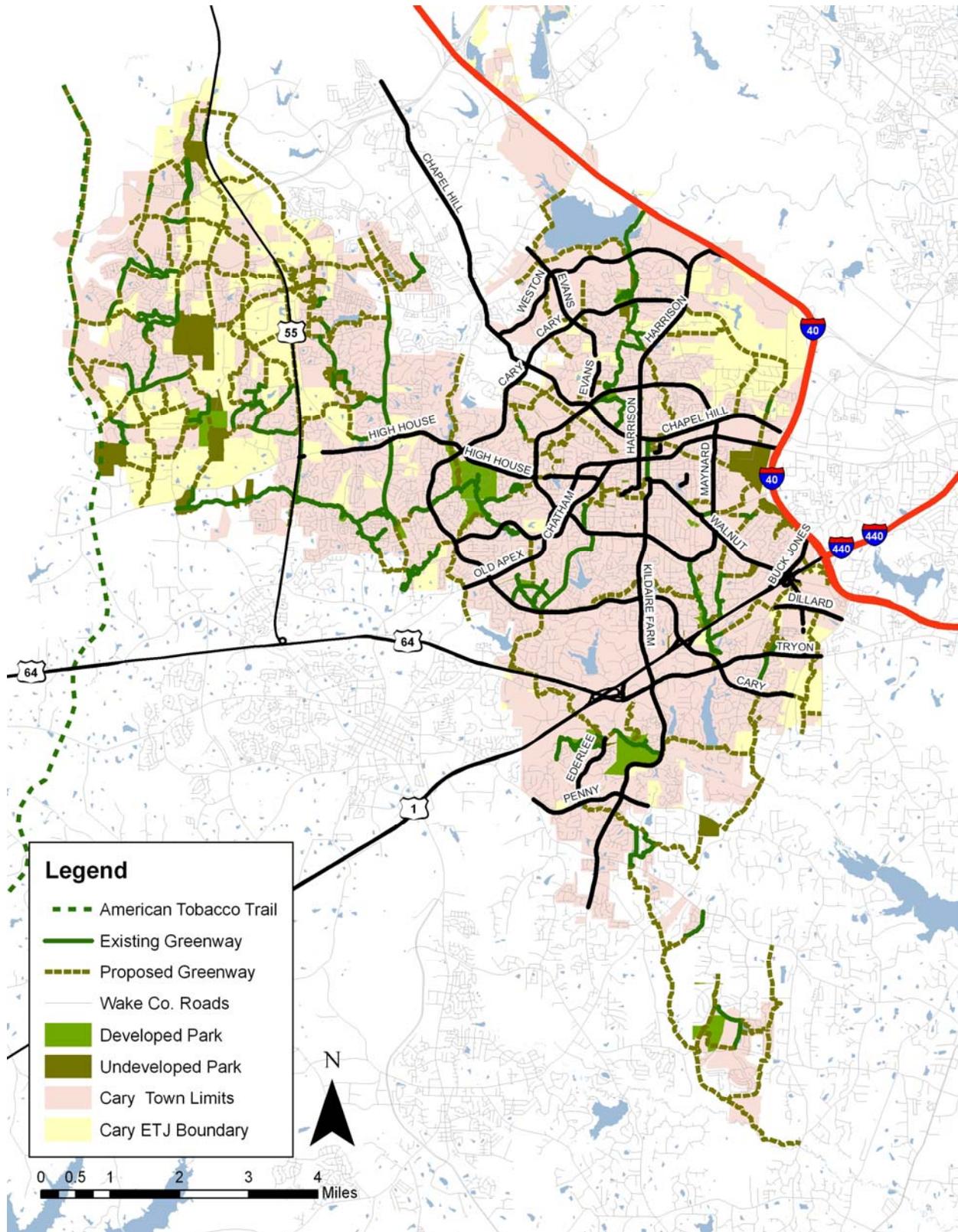


Figure 3-3. Map of greenways in Cary as of 2008.

## Cary Pedestrian Plan

### Section 3: Existing Physical Conditions

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#### 3.5. Transit

A transit system and pedestrian facilities are intricately linked in creating a successful pedestrian-friendly Town. All transit trips begin and end with a pedestrian trip, and frequently transit users will walk much further than drivers to reach their destinations. In Cary, the transit system consists of both C-Tran and TTA service. Figure 3-5 shows a map of the 2006 C-Tran bus routes and stops.

Most of Cary's bus system has stops that are located on sidewalks. However, there are some areas where there is a bus stop but no sidewalk. Bus stops in areas without sidewalk can become a safety issue resulting in transit riders having to walk to their destinations either in the swale area beside the road or in the street. Locations in which there are bus stops without sidewalk are as follows:

- ◆ East side of Harrison from Grande Heights to Adams
- ◆ North and South Side of Maynard: Old Apex to Kildaire Farm
- ◆ West side of Kildaire Farm: Queensferry to Keisler Road
- ◆ North side of Chatham Street: Durham to Maynard
- ◆ North side of High House: Chatham Street to Old Apex Road
- ◆ East side of Kildaire Farm Road: Maynard Road to Pleasants Avenue
- ◆ Sections of the bus route along Nottingham Drive, Donaldson Drive, and in Crossroads along Meeting Street



**Figure 3-4.** A C-Tran bus waits for passengers at a downtown bus stop. It is important that pedestrian facilities near transit stops are accessible and convenient.

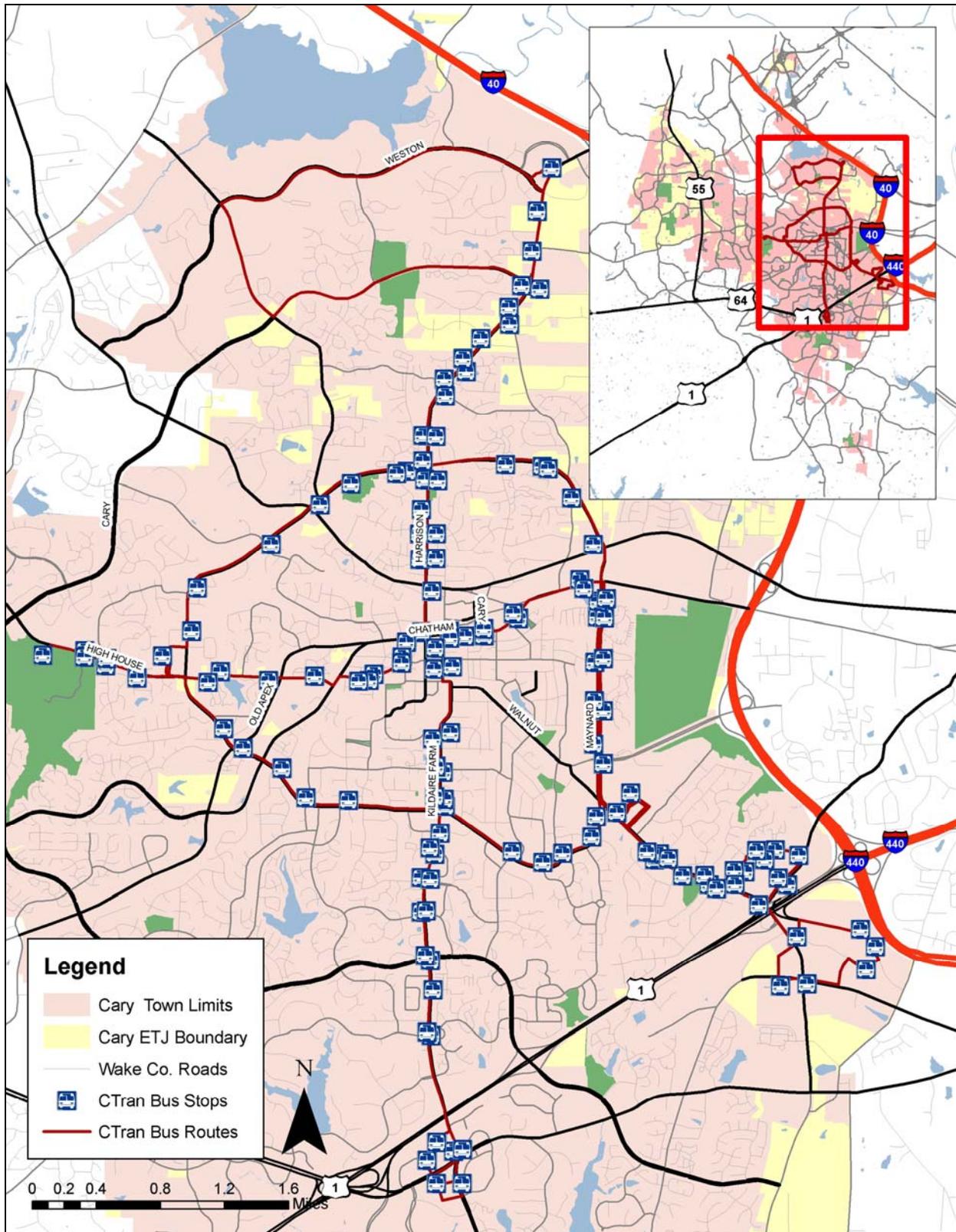


Figure 3-5. C-Tran bus stops and routes in Cary as of 2008.

## Cary Pedestrian Plan

### Section 3: Existing Physical Conditions

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#### 3.6. Destinations: Parks, Schools, and Shopping Centers

##### 3.6.1. Parks

Cary is home to over 1,550 acres of combined parks, greenways, and cultural arts facilities overseen by the Cary Parks, Recreation, and Cultural Resources Department. Currently there are 20 parks including four mini-parks, 11 neighborhood parks, two community parks, and three metro parks. There are currently six special use facilities and these include the Cary Dog Park at Godbold Park, Cary Tennis Park, Hemlock Bluffs Nature Preserve, SAS Soccer Park, SK8 Cary at Godbold Park, and the Koka Booth Amphitheatre. The USA Baseball Facility will be the Town's seventh and newest special use facility.

In addition to the existing parks, the Town has acquired additional parkland for future parks. These include the Schaffer Park, Hawes Park, Weldon Ridge Park, Amberly Park, Raftery Park, Twins Lake Park, and the Morris Branch Park.

The following are Cary's existing community centers:

- ◆ Cary Senior Center
- ◆ Bond Park Community Center
- ◆ Stevens Nature Center
- ◆ Herbert C. Young Community Center
- ◆ Middle Creek Community Center
- ◆ Jordan Hall Arts Center
- ◆ Page-Walker Arts and History Center

A current list of all facilities, including community centers, may be found at the Parks, Recreation, and Cultural Resources Department.

Figure 3-7 shows the location of the parks within Cary.



**Figure 3-6.** A shelter at Cary's Bond Park. Parks are important destinations for pedestrians.

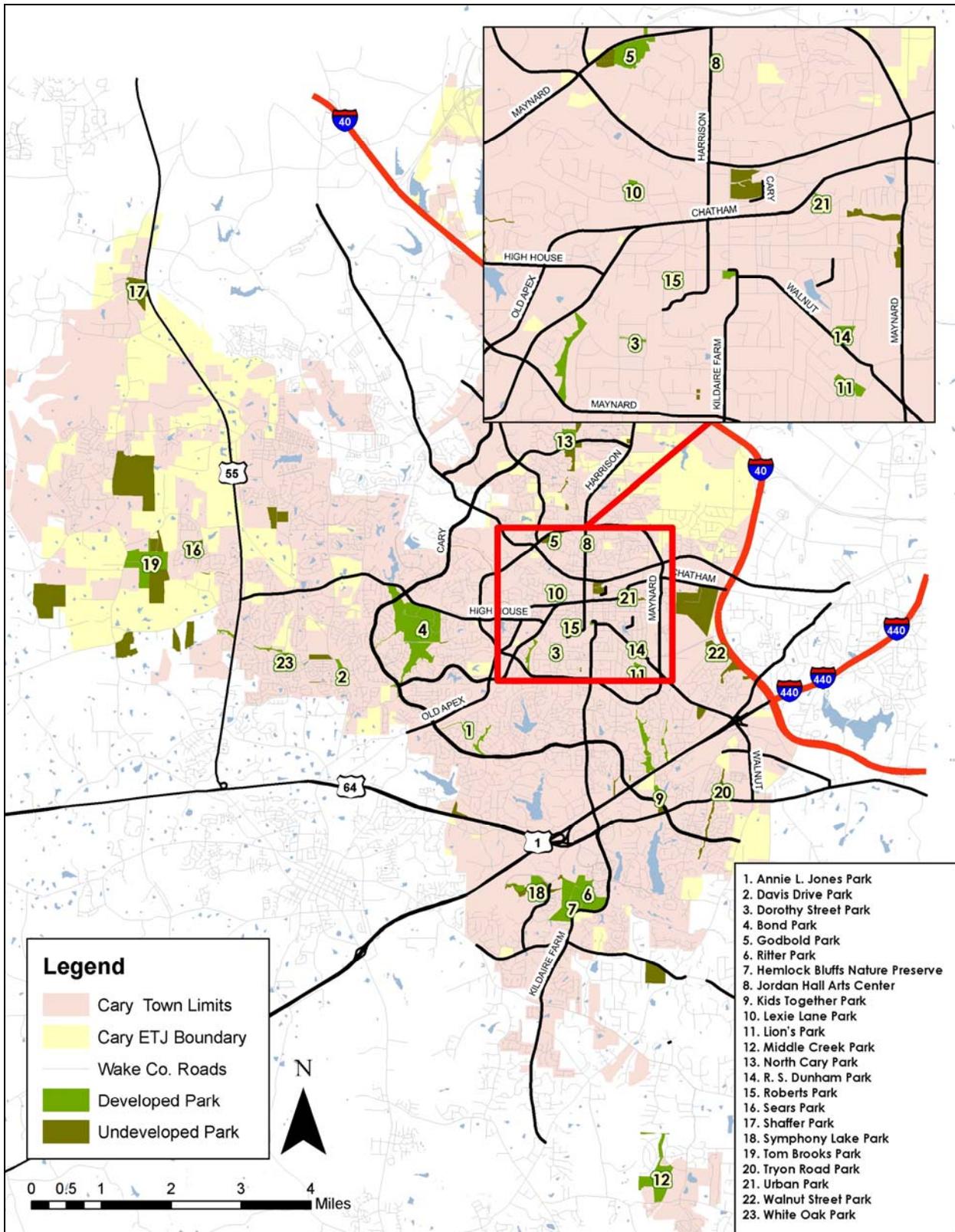


Figure 3-7. Map of park locations in Cary as of 2008.

## Cary Pedestrian Plan

### Section 3: Existing Physical Conditions

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#### 3.6.2. Schools

It is important to consider schools in the pedestrian plan because schools are a major generator of pedestrians. In addition, schools need safer pedestrian facilities to accommodate the high numbers of children that will be walking nearby.

Cary is served by the Wake County Public Schools system. There are twenty-four Wake County Public Schools: sixteen elementary schools, five middle schools, and three high schools, within or near the Town limits. Figure 3-8 shows each of the school locations.

The following is a list of schools that need improvements for pedestrian access. Recommended projects are discussed in Section 6.

#### *Elementary Schools:*

- ◆ Adams Elementary
- ◆ Briarcliff Elementary
- ◆ Cary Elementary
- ◆ Green Hope Elementary
- ◆ Kingswood Elementary
- ◆ Middle Creek Elementary
- ◆ Morrisville Elementary
- ◆ Northwoods Elementary
- ◆ Oak Grove Elementary
- ◆ Penny Road Elementary

#### *Middle Schools:*

- ◆ Reedy Creek Schools
- ◆ West Cary Middle School

#### *High Schools:*

- ◆ Cary High School
- ◆ Green Hope High School
- ◆ Middle Creek High School



**Image 3-4.** Weatherstone Elementary is one of the schools in Cary with well-developed pedestrian access.

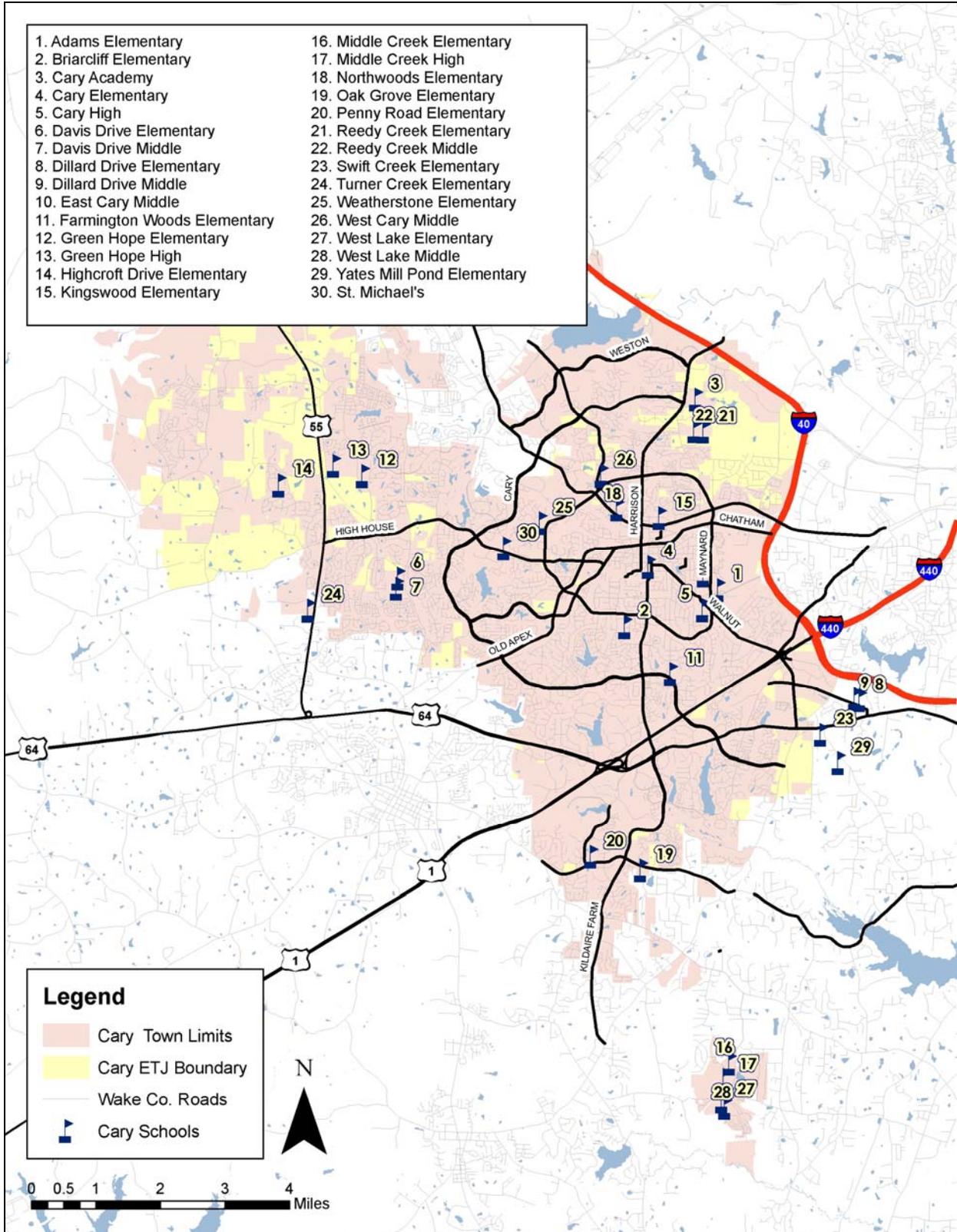


Figure 3-8. Map of school locations in Cary as of 2008.

## Cary Pedestrian Plan

### Section 3: Existing Physical Conditions

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#### 3.6.3. Shopping Centers, Libraries, and Post Offices

Shopping centers, libraries, and post offices are common destinations to which people frequently walk. Projects which make the pedestrian environment safer and more pleasant at these facilities should be identified. Improvements to pedestrian access will often encourage more people to walk to these destinations. A strong, comfortable pedestrian environment around commercial centers, such as shopping centers, can often boost sales by encouraging passers-by and more window shoppers, who are likely to make purchases. In the Cary, popular commercial destinations are often described as activity centers. The following provides definitions as discussed in the Town of Cary's 2003 Land Use Plan of the varying types of activity centers in Cary:

**Neighborhood Activity Center (NAC)** should provide the commercial and institutional uses necessary to support the common day-to-day demands of the surrounding neighborhood for goods, services, and facilities. NAC's will likely contain approximately 250,000 square feet of non-residential floorspace.

**Community Activity Center (CAC)** includes the typical mix of commercial, office, and institutional uses offered by a neighborhood activity center. Additionally, it includes commercial and institutional uses that provide goods, services, and facilities which are demanded less frequently than a daily basis by the surrounding community. CAC's will likely contain approximately 500,000 square feet of non-residential floorspace.

**Regional Activity Center (RAC)** provides the non-residential elements intended to provide goods, services, and facilities which are demanded less frequently than on a daily basis by the surrounding region, or which are possible only with the critical mass of population provided by an entire region. RAC's will likely contain approximately 1.5 million square feet of non-residential floorspace.

Figure 3-9 shows community, neighborhood, and regional activity centers as well as shopping centers, libraries, and post offices in Cary.

Many of the focus areas in Appendix 3 provide recommended projects centered around Cary's various activity centers. Some examples include:

- ◆ Evans/Maynard Focus Area
- ◆ Walnut Street Corridor Focus Area
- ◆ East Chapel Hill Focus Area

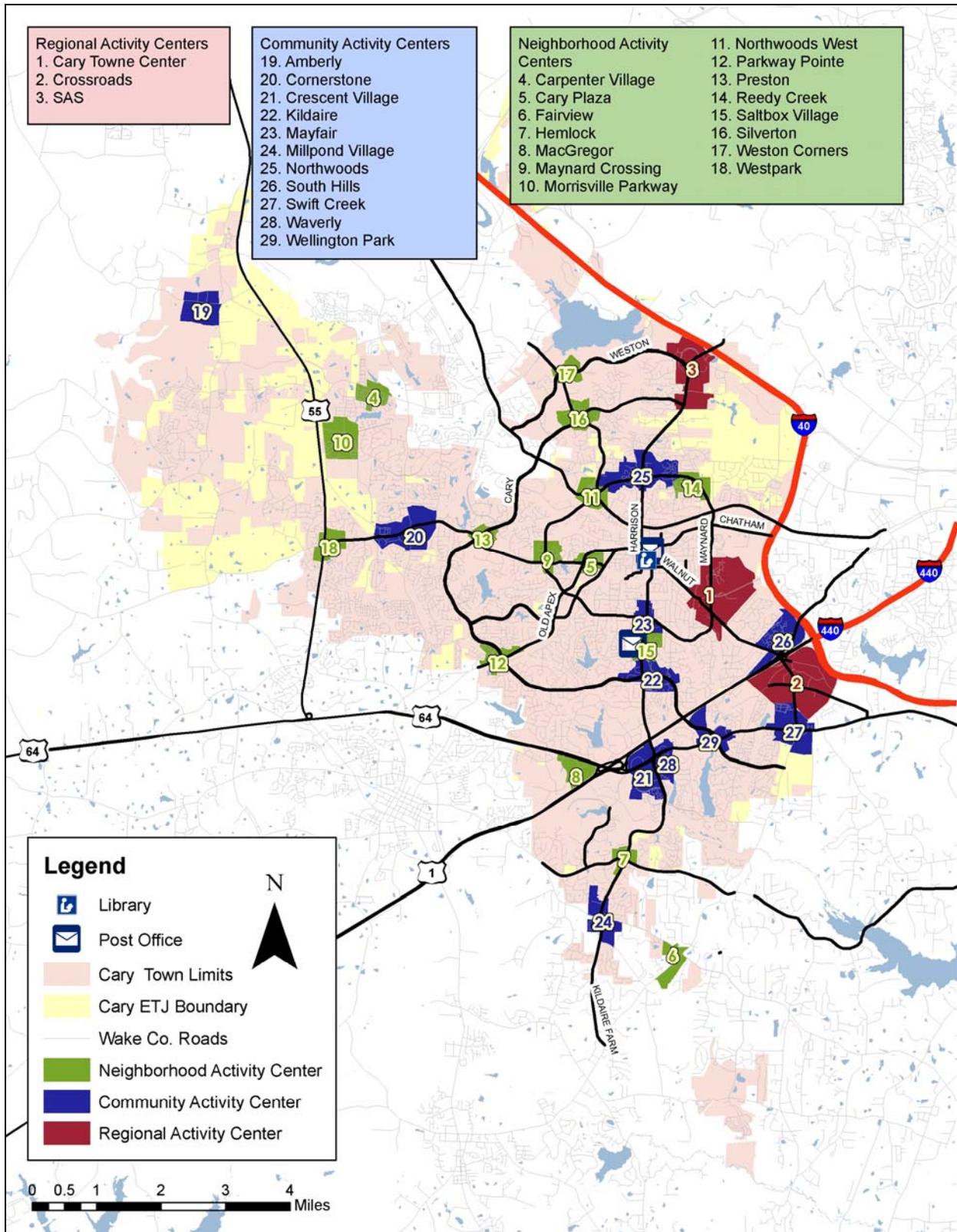


Figure 3-9. Activity centers, post offices, and libraries in Cary as of 2008.

## Cary Pedestrian Plan

### Section 3: Existing Physical Conditions

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#### 3.7. Crash Analysis

Table 3-1 shows pedestrian crash data for the Town of Cary for the years 2002-2004 and the first six months of 2005. During this time, there were a total of 61 pedestrian crashes, less than 10 percent of which were disabling (Type A Injury), but nearly 50 percent involved evident injuries (Type B Injury). Less than 10 percent resulted in property damage alone. There were no fatal injuries that involved pedestrians during this period. Figure 3-10 shows a map of all pedestrian crashes between 2002 and mid-2005.

**Table 3-1.** Crash by type for the Town of Cary 2002-mid 2005.

| Injury Type               | 2002 | 2003 | 2004 | 2005 | Total |
|---------------------------|------|------|------|------|-------|
| Fatality                  | 0    | 0    | 0    | 0    | 0     |
| Type A Injury (Disabling) | 2    | 1    | 2    | 0    | 5     |
| Type B Injury (Evident)   | 3    | 11   | 13   | 3    | 30    |
| Type C Injury (Possible)  | 6    | 5    | 8    | 2    | 21    |
| Property Damages Only     | 1    | 3    | 1    | 0    | 5     |
| Total                     | 12   | 20   | 24   | 5    | 61    |

Table 3-2 compares the Town of Cary with other similar sized municipalities in North Carolina: Fayetteville, High Point, Wilmington, Asheville, Jacksonville, and Gastonia for the years 2002-2004. During this time, Cary had no pedestrian-related fatalities. Cary also had a much lower rate of total crashes per 100,000 people than the comparative areas.

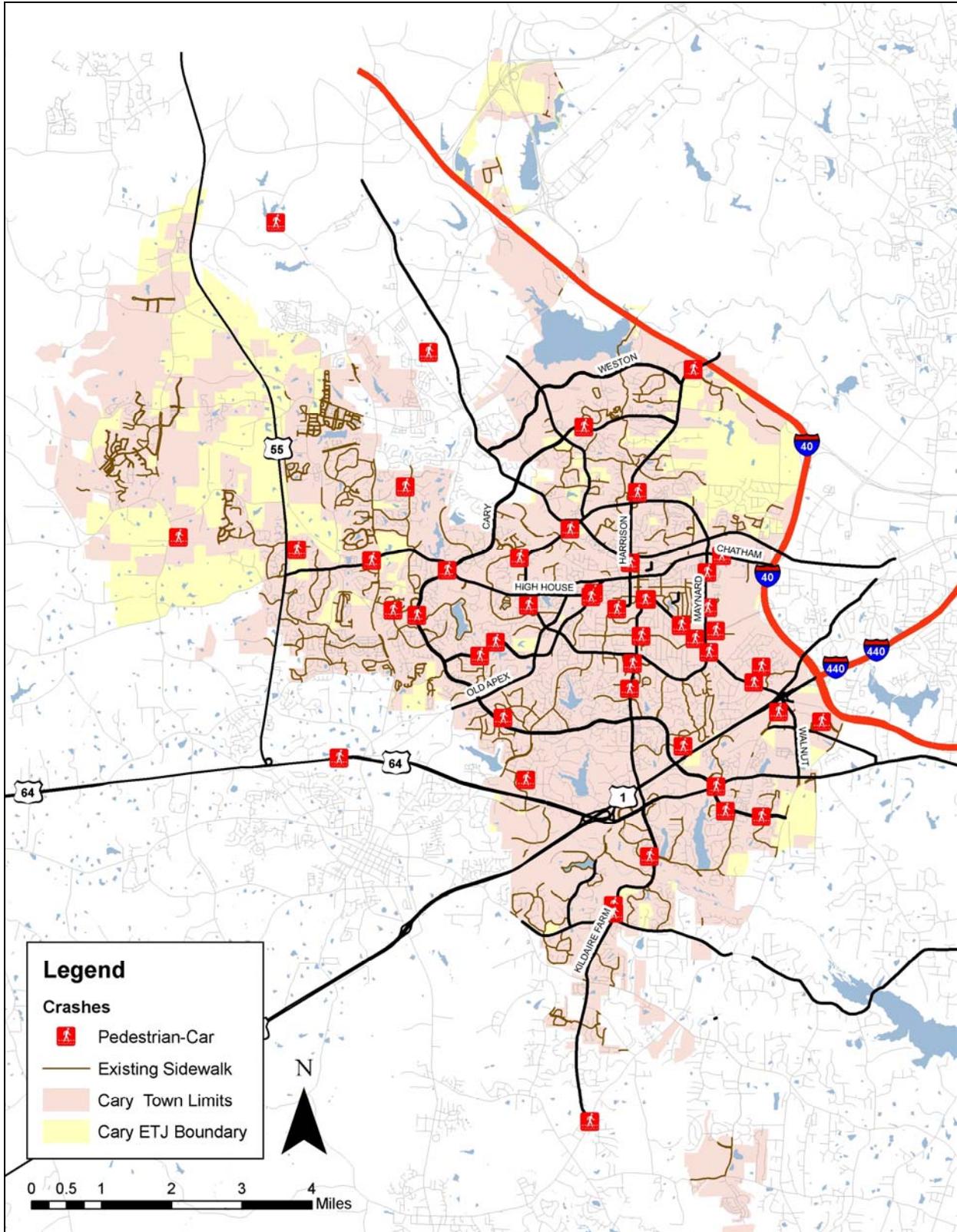


Figure 3-10. Map of pedestrian-vehicle crashes in Cary, January 2002 to June 2005.

## Cary Pedestrian Plan

### Section 3: Existing Physical Conditions

**Table 3-2.** Comparison of Cary crashes to other North Carolina cities, 2002-2004.

| Area         | 2000 Census Population | Fatalities | Total Crashes | Fatalities per 100,000 people | Total Crashes Per 100,000, People |
|--------------|------------------------|------------|---------------|-------------------------------|-----------------------------------|
| Cary         | 94,536                 | 0          | 61            | 0.00                          | 88.86                             |
| Fayetteville | 121,015                | 10         | 230           | 8.26                          | 190.06                            |
| High Point   | 85,839                 | 3          | 110           | 3.49                          | 128.15                            |
| Wilmington   | 75,838                 | 8          | 196           | 10.55                         | 258.45                            |
| Asheville    | 68,889                 | 3          | 147           | 4.35                          | 213.39                            |
| Jacksonville | 66,715                 | 3          | 86            | 4.50                          | 128.91                            |
| Gastonia     | 66,355                 | 7          | 136           | 10.55                         | 204.96                            |

A brief analysis of the crash data finds that, in general, most crashes are occurring in places where people walk – either to shopping, to schools, to greenways or at greenway crossings, near parks, and within neighborhoods. Many of the accidents occurred in locations which have a sidewalk or are near sidewalk. Some of the general areas that had crashes included:

- ◆ Near Cary Town Center and Adams Elementary along Cary Towne Boulevard
- ◆ Kildaire Farm Road between Maynard and High Meadow
- ◆ Kildaire Farm Road near Hemlock Bluffs
- ◆ Cary Parkway near North Cary Park
- ◆ Within Crossroads Plaza on Caitboo and Piney Plains
- ◆ Maynard between Chatham and Cary Towne Boulevard

There are several recommended corridor and intersection projects in Section 6 and Appendix 5 which address these locations; these are:

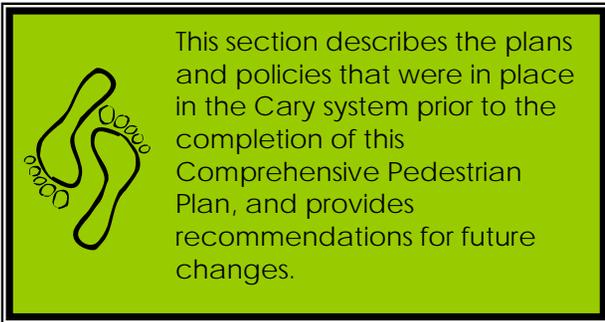
| Corridor Location | From                       | To         |
|-------------------|----------------------------|------------|
| Cary              | Norwell                    | Evans      |
| Crossroads        | Caitboo                    | Caitboo    |
| Caitboo           | Crossroads                 | Crossroads |
| Kildaire Farm     | Swift Creek Trail Entrance | Penny      |
| Cary Towne Center | Maynard                    | I-40       |

Intersections:

|               |   |               |
|---------------|---|---------------|
| Kilmayne      | & | Kildaire Farm |
| Commonwealth  | & | Kildaire Farm |
| Commonwealth  | & | Kildaire Farm |
| Wren          | & | Kildaire Farm |
| Kildaire Farm | & | High Meadow   |
| Tate or Maple | & | Maynard       |

Overall, it is recommended that in order to reduce crashes, the Town target locations where people are walking, create a more connected sidewalk network, and provide more frequent locations for pedestrians to cross major streets.





## Section 4. Existing Plans and Policies

### 4.1. Introduction

In order to thoroughly address Cary's needs, it is necessary to understand how the physical elements of the pedestrian system – sidewalks, greenways, roadway crossings – are planned and designed using guiding policies and plans. This section describes the current plans, policies, and programs in place to build and design pedestrian facilities and makes recommendations for their improvement. A prioritization of the recommendations is also provided.

### 4.2. Existing Plans Analysis

The following paragraphs provide analysis and recommendations for improvements to other previous plans and documents prepared for the Town which have contained pedestrian related elements. Recommendations are made for the following documents:

- ◆ January 2001 Comprehensive Transportation Plan – Pedestrian Element
- ◆ August 2001 Town Center Area Plan
- ◆ August 2001 Design Guidelines Manual
- ◆ September 2002 Northwest Area Plan
- ◆ December 2003 Parks, Recreation, and Cultural Resources Facilities Plan
- ◆ August 2004 Southwest Area Plan
- ◆ Land Development Ordinance (LDO)

Appendix 6 provides a synopsis of each of these documents. In general, all of Cary's Plans contain language to support pedestrian activity in the Town. They recognize the value of a comprehensive pedestrian circulation system and address both the needs of walkers who are headed to a particular destination as well as creating destinations along pedestrian pathways. They also consider linkages within the system and the needs of the commuting pedestrian. The policy statements are clear in their intent. In addition, the plans collectively recognize the role of pedestrian facilities in establishing and supporting the desired land use patterns for Cary. Goals they have in common include:

- ◆ Planning for a multi-modal transportation system which includes automobile, pedestrian, bicyclist, handicapped, and transit
- ◆ Considering and taking advantage of opportunities to improve pedestrian facilities and access in concert with or at the same time as thoroughfare improvements

## Cary Pedestrian Plan

### Section 4: Existing Plans and Policies

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- ◆ Providing alternative transportation linkages among existing greenways, on-road bikeways, and sidewalks to key destinations within the Town
- ◆ Using greenways adjoining many roads in the area
- ◆ Developing a variety of trail types that reflect the current diversity of trail users
- ◆ Development should be pedestrian friendly with the ability to walk to transit connections
- ◆ Development should focus on mixed-use, higher density developments, and traditional neighborhood development (TND), all of which are enhanced by a well developed pedestrian access system

The following are recommendations for general modifications to existing and any future Plans, as well as specific changes to each Plan.

#### Recommendations:

##### Comprehensive Transportation Plan – Pedestrian Element

- ◆ *Include trails in the system. This focuses on sidewalk to the exclusion of the greenways and trail system.*

##### Town Center Plan

- ◆ *Update to have sidewalk requirements for both sides of the street per adopted Streetscape Plan.*
- ◆ *Identify needed connections to Cary's greenway system.*

##### Cary Design Guidelines Manual

- ◆ *Revise to clarify design guidance for sidewalk, greenways, and multi-use paths. Currently, the Manual's guidance for sidewalks seems to conflict with the recommendation for sidewalks on only one side of secondary streets contained in the Town Center Plan and LDO.*

##### Cary Parks, Recreation, and Cultural Resources Facilities Plan

- ◆ *Since this plan is the most comprehensive among the plans reviewed in addressing the multiple purposes of walking and pedestrian facilities, it would be beneficial for the master plan to reference the area plans.*
- ◆ *Update plan to include guidance to be followed by Town Staff and the Greenways Committee for determining when developers should build greenways.*

#### Southwest Cary Area Plan

- ◆ *Address walking in rural areas to improve safety. This plan is centered on a rural area of Cary and as such focuses on greenways for pedestrian access. It does not recognize that walking on the roadway edges for recreation or exercise is a common activity in rural areas. The plan recommends four-foot shoulders along rural roadways, but this is expressly to accommodate bicyclist needs. One way to address this is to require sidewalk for pedestrians, in addition to four foot shoulders.*

#### Land Development Ordinance

- ◆ *Include opportunities to claim a reduction in trip generation for trips diverted to alternate modes of transportation, including walking.*
- ◆ *Update to refer to new Parks and Greenways plan rather than old one.*
- ◆ *Provide incentives to developers to provide exemplary pedestrian circulation systems.*
- ◆ *Town staff should review parking requirements in downtown (and at other activity centers) and consider creating more leniency in the requirements or reducing them.*
- ◆ *Strengthen Pedestrian Connectivity and Greenway Requirements. In the following Section 4.3 Policies, several options are discussed to improve and strengthen connectivity and greenway requirements, which would require modifications to the Land Development Ordinance and other Plans.*

### 4.3. Policies

#### 4.3.1. Sidewalk Request Program and Policies

Cary's sidewalk request program is a detailed approach to prioritizing and constructing new sidewalk as requested by town citizens and staff independent of roadway construction, roadway improvement, or development projects. The following is a brief description of the sidewalk request program and how new sidewalk projects are constructed.

#### Sidewalk Request Process

New sidewalk in existing developed areas can be requested from two sources:

- ◆ In residential areas, via a petition process sponsored by a Cary citizen, or
- ◆ A request from Town Staff.

## Cary Pedestrian Plan

### Section 4: Existing Plans and Policies

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Requests for sidewalks in residential neighborhoods must be accompanied by a petition signed by at least 70 percent of the homeowners in the area of influence. The Planning Department provides a map and addresses for the area of influence. Once the petition process is complete, sidewalk is placed on the sidewalk request list by Town Planning Department staff and ranked relative to the other requested sidewalk projects. Requested sidewalk projects must meet the following criteria:

- ◆ Streets along which sidewalk is to be installed shall be paved and have curb and gutter along both sides. Streets without curb and gutter will be considered with a lower priority.
- ◆ There shall be at least six (6) feet of right-of-way between the back of curb and the adjoining property line.
- ◆ The sidewalk shall be installed in accordance with the Town of Cary Standard Specifications and Details.

#### Sidewalk Prioritization

Once on the sidewalk project request list, sidewalk projects are ranked based on the following factors:

##### Highest Priority (greatest weight)

- Current Pedestrian Use
- School Proximity

##### Next Priority

- Average Daily Traffic (ADT)
- Public Park/Recreation Facility Proximity
- Development Activity Center Proximity
- Greenway Proximity

##### Next Priority

- Existing Sidewalk Proximity/Connectivity
- Other Factors (Right-of-Way, Curb & Gutter, Utilities, Topo, etc.)

##### Lowest Priority

- Mass Transit Stop Proximity
- Consecutive Years on Priority List

#### Sidewalk Project Approval and Construction

Each year, sidewalk projects are re-prioritized to include new and remaining unfunded project requests. Top-ranked sidewalk requests are eligible for funding through the Town's Capital Improvements Budget. Town Staff recommends the top-ranked projects to Town

Council to approve for funding of design and construction. Once Town Council approves staff recommendations, the projects will move forward to Engineering Staff to be scheduled for design and construction. Usually, five to seven projects are selected annually. If a project is too large to be constructed easily in one lump sum, it will often be broken into phases to be completed over several years so that other projects may also be funded each year.

#### Sidewalk Project Funding Sources

The Town of Cary maintains an annual budget as part of its Capital Improvements Budget for construction of approved sidewalk projects. Cost estimates for each project are based on a fixed cost of \$50 per linear foot for sidewalk. This fixed cost was recently raised from \$35 per linear foot in order to compensate for extra expenses incurred during construction and right-of-way acquisition. An additional fee of \$25 per linear foot should be included for locations without curb and gutter.

Once Town Council approves staff recommendations for the annual list of funded sidewalk projects, engineering staff then assign a project manager to oversee the project through design and into construction. Historically, the Town has reserved about \$500,000 in the annual budget for sidewalk construction. In 2007, the Town allotted \$1 million for sidewalk construction.

#### *4.3.2. Sidewalk Maintenance Policy*

Currently, the Town has not established a formal sidewalk maintenance policy. Sidewalk maintenance requests may be made to Town Staff, who will then schedule the necessary repairs. The urgency of the repair is based upon the level of degradation of the sidewalk, pending projects in the vicinity, and magnitude of cost of the repair.

***Recommendation: It is recommended that a formal sidewalk maintenance policy and program be established in the near future. This may prevent future potential issues as the Town's sidewalks age and maintenance requests increase.***

#### *4.3.3. Traffic Calming Program and Policy*

Cary's Policy Statement 124, adopted by Town Council on January 13, 2005, established the Town's Traffic Calming criteria and guidelines. According to this policy, traffic calming measures are only applicable in residential neighborhoods. Traffic calming requests must be reviewed by the Town's engineering staff, police and fire department, and undergo a petition process (outlined in Policy 124). It is important to consider traffic

## Cary Pedestrian Plan

### Section 4: Existing Plans and Policies

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calming efforts in a pedestrian plan because these often go hand-in-hand with improvements to make a location more pedestrian-friendly. By slowing traffic, a streetscape becomes a more comfortable and safer location for pedestrians. In addition, many traffic calming measures often include improvements to pedestrian facilities such as adding sidewalk, reducing curb radii to allow for shorter crossing distances, and providing bulb outs. Curb radii, bulb outs, medians, and pedestrian islands are all discussed in **Section 5.3 Design Guidelines and Standards: Special Considerations** of this Plan.

**Recommendation:** *It is implied in Policy 124 that traffic calming consists entirely of speed humps or speed tables. It is recommended that the Town consider expanding its traffic calming approaches to include bulb-outs, reductions in curb-radii, medians, and pedestrian islands. This should allow for more flexibility in traffic calming approaches while also improving conditions for pedestrians.*

#### 4.3.4. Connectivity Policies

During the course of the Pedestrian Plan preparation process, a need was identified for stronger pedestrian-related requirements for new developments, both residential and non-residential. In new developments adjacent to existing development, stronger requirements are needed for both on and off-road pedestrian connections between cul-de-sacs and adjacent land uses such as schools, shopping centers, libraries and greenways. In isolated new developments, there should be requirements for both sidewalk and greenway stub-outs to connect to future nearby development.

Currently, Cary's Land Development Ordinance (LDO) is the over-arching document to direct development in the Town. The LDO is augmented by the *Cary Design Guidelines Manual* (Manual), which identifies recommended development practices. The Town's *Parks, Recreation and Cultural Resources Facilities Plan* also provides guidance for greenways, multi-use paths, and greenway/sidewalk crossings.

The following recommendations provide a variety of options for improving Cary's policies for pedestrian connectivity in future development.

#### 1. Modify Language in the LDO and *Design Guidelines Manual*.

*Changes to the LDO.* The following modifications to the text of the LDO in red, bold text place emphasis on including pedestrian connections along with vehicular connections in Cary's Connectivity Ordinance and also reinforce existing pedestrian requirements.

## §7.10.3.B. Street Arrangement.

1. The proposed public or private street system shall be designed to provide vehicular **and pedestrian** interconnections to all similar or compatible adjacent uses (existing and future) when such interconnections would facilitate internal and external travel... If the common property boundary in any direction is less than 1,250 linear feet, the subject property will be required to provide an interconnection if it is determined by the Planning Director that the interconnection in that direction can best be accomplished through the subject property... The intent of this standard is to improve access/egress for Town neighborhoods, provide faster response time for emergency vehicles, and improve the **vehicular and pedestrian** connections between neighborhoods.

2. Any development of more than 100 residential units or additions to existing development such that the total number of units exceeds 100 shall be required to provide vehicular **and pedestrian** access to at least two public streets unless such provision is deemed impractical...

3. Where new development is adjacent to vacant land likely to be divided in the future, all streets, bicycle paths, **sidewalks or pedestrian pathways** and access ways in the development's proposed street system shall continue through to the boundary lines of the area under the same ownership as the subdivision, as determined by the Planning Director or the Town Engineer, to provide for the orderly subdivision of such adjacent land or the transportation and access needs of the community. In addition, all redevelopment and street improvement projects shall take advantage of opportunities for retrofitting existing streets to provide increased vehicular and pedestrian connectivity, **such as sidewalks, chatwalks, crosswalks, and pedestrian signals.**

4. In general, permanent cul-de-sacs and dead-end streets are discouraged in the design of street systems, and should only be used when topography, the presence of natural features, and/or vehicular safety factors make a vehicular connection impractical. Where cul-de-sacs or dead-end streets are unavoidable, site and/or subdivision plans shall incorporate provisions for future vehicular **and pedestrian** connections to adjacent, undeveloped properties, and to existing adjacent development where existing connections are poor. **A chatwalk should be constructed where a vehicular connection is impossible.**

## §7.10.3.C. Cross Access.

All non-residential development shall be designed to allow for **both vehicular and pedestrian** cross-access to adjacent properties to encourage shared parking and shared access points on public or private streets. A minimum distance of 100 feet shall be required between a cross-access way and an intersection or driveway entrance. When **vehicular** cross-access is deemed impractical by the Planning Director on the basis of

## Cary Pedestrian Plan

### Section 4: Existing Plans and Policies

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topography, the presence of natural features, or vehicular safety factors, this requirement may be waived provided that appropriate bicycle and pedestrian connections are provided between adjacent developments or land uses. A cross access easement must be recorded prior to issuance of a Certificate of Occupancy for the development.

#### § 7.10.4 Standards for Pedestrian Facilities

A.6. Where residential **and non-residential** developments have cul-de-sacs or dead-end streets, such streets shall be connected to the closest local or collector street or to cul-de-sacs in adjoining **residential subdivisions, commercial development, or similar compatible land uses including schools, parks, recreation facilities, libraries, and greenways**, via a sidewalk or multi-use path, except where deemed impractical by the Planning Director.

*Changes to Design Guidelines Manual.* Although the Manual addresses pedestrian needs in all three of its sections (Design Principles, Development Types, and Guidelines Toolkit), the Manual in general needs a greater emphasis on providing specific pedestrian connections, such as chatwalks and greenways. Without adding new requirements for the Manual, the following textual modification is recommended:

Page 10. Connect Uses, Characteristics of Connectivity:

**5. Streets stubs, sidewalks, and pedestrian pathways to adjacent developable sites are provided in existing developments for future connections between new projects and uses.**

2. Add new language to the LDO and *Design Guidelines Manual*.

These recommendations are stricter than the existing requirements, and are listed in sequence from least to most dramatic changes.

a. **Include requirements for pedestrian connections that minimize the pedestrian travel time and distance between specific, explicitly defined land uses.**

Pedestrian connections should be defined as sidewalks adjacent to roads, greenways, and chatwalks. Compatible land uses should be defined as: commercial and commercial; residential and residential; office and commercial; residential and commercial; and, residential and office. In addition, to these land uses, pedestrian connections should also be required to schools, greenways, libraries, parks, recreation facilities, and other public locations.

b. **Add language to restrict fences or barricades (landscape or structural) between compatible land uses.** Where chatwalks are constructed, they should not be blockaded by fences or other barriers, such as steep slopes that do not

comply with ADA requirements. The pedestrian connection between land uses, such as from residential to commercial, should be a pleasant experience. Where feasible, the pedestrian connection should avoid garbage units, blank walls, poorly lit locations, or other deterrents to pedestrian travel.

c. **Create requirements for reservation of greenway space.** Both the LDO and the Design Guidelines Manual call for the reservation of land if proposed or existing greenways are located on the site, however, text could be added to require developers to reserve land not identified on the Parks, Recreation, and Cultural Resources Facilities Plan to ensure adequate greenway connectivity. This would mean that the developer must think in terms of the greater pedestrian system by identifying locations for potential greenway extensions or linkages to existing or proposed greenways.

d. **Create a Pedestrian Connectivity Index.** This recommendation is specific to the LDO, which currently contains a general Connectivity Index that primarily focuses on vehicle access. It is recommended that the LDO be amended to include a Pedestrian Connectivity Index, which would measure the level of pedestrian connectivity both within a site and from the site to the rest of the pedestrian system. The Pedestrian Connectivity Index would consider sidewalks, greenways, and chatwalks as links, and nodes would be roadway intersections where there is sidewalk, mid-block crossings, and pedestrian intersections independent of a roadway.

e. **Create an Off-site Pedestrian Improvements requirement.** As a part of developing a property, landowners and developers are typically required to make on-site and off-site improvements to public infrastructure to offset potential impacts directly caused or contributed to by the development. While on-site pedestrian improvements and design standards are the most common requirement during the site plan review process, off-site pedestrian improvements – additions to sidewalk, off-street trails, greenways, and crosswalks – are already required in certain situations in many cities in North Carolina and the U.S. These requirements are comparable to similar off-site vehicular improvements and dedications, such as traffic signal modifications, roadway capacity improvements, mitigation for wetland impacts, and intersection improvements. Modifications to the LDO could be made to allow for these off-site pedestrian improvements under certain conditions. (For more information, please see attached “White Paper: Off-Site Pedestrian Improvements.” Prepared by the Louis Berger Group, Inc. for the City of Durham, 2006.)

f. **Add language to require developers to construct “multi-use trails” through a development when it is shown on the Parks, Recreation, and Cultural Resources**

## Cary Pedestrian Plan

### Section 4: Existing Plans and Policies

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**Facilities Plan.** A multi-use trail is a wide sidewalk (8'-10') to allow for shared use of the facility usually due to increased demand, proximity to a greenway, and high traffic volumes on the adjacent road. Currently, developers receive credit from the Park Payment-in-lieu fee for constructing the 5' of additional sidewalk. Changing this requirement would no longer provide the credit for construction of the additional 5' nor for any easement required for the additional space of the multi-use trail when it is shown on the Parks, Recreation and Cultural Resources Facilities Master Plan.

g. **Add language to require developers to provide public connection(s) to public "multi-use trails" and "greenways".** The locations of these connections would be determined at time of site plan submittal. These connections would be 6' to 8' in width depending on amount of use.

h. **Add language to indicate that developers should not be compensated for greenway constructions or easements.** Greenways, like roads, are public facilities necessary for the functioning of a healthy community. Currently, developers build roads internal to their development without compensation from the Town because it is necessary for these roads to be in place for access to both the development and the existing transportation system. Similar to roads, greenways also perform this function and should be a standard requirement not reimbursable by the Town.

#### 3. Procedural changes.

The following recommendation includes changes to the site plan review process.

- A. **Require Pedestrian Circulation Study as part of site plan review process.** As a part of the existing "traffic study" requirements, Town planners could request developers include a pedestrian circulation study. This study would provide information on internal-to-the-site pedestrian travel, connections to the pedestrian system externally from the site, and consideration of future pedestrian links as adjacent development occurs.

#### 4.3.5. *Greenway Policies*

- ◆ Currently, every new development within the Town of Cary is reviewed by the Parks, Recreation and Cultural Resources Advisory Board and their sub-committee, the Greenway Advisory Committee. Through staff assistance, each development is assessed in comparison to the *Parks, Recreation, and Cultural Resources Facilities Plan* to identify if it is near an existing or proposed greenway or park. Approval from both boards is usually based on staff

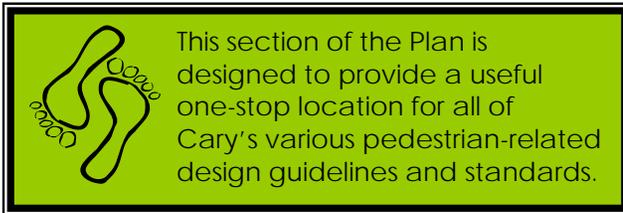
recommendations. According to the Cary Land Development Ordinance (LDO), non-residential developments are required to provide a 30ft-wide easement for a greenway for those locations recommended in the most recently approved Parks, Recreation, and Cultural Resources Department plan. Residential developments that include subdivided property are required to provide 1/35 of an acre (1,240 square feet) of parkland for every dwelling unit. In addition, if a proposed Town of Cary greenway crosses the residential development, a credit will be given towards the dedication of a 30ft-wide easement. The Town will determine whether to accept the land dedication or a payment-in-lieu.

The payment in lieu fee is used only for the acquisition or development of parks, greenways, open space sites, and related facilities. The amount of the payment in lieu fee is based on the value of the land at the time of rezoning as determined by an independent appraisal. Developers receive credit against the payment-in-lieu fee if they are required to construct a park or greenway facility. The choice of constructing a park or greenway facility is made by the Town. Additional information on greenway requirements is contained in LDO Chapter 8.1.

The following are some additional recommendations.

- ◆ Strengthen language in the LDO to require developers to build greenways as part of pedestrian connectivity requirements, rather than use payment in lieu fees.
- ◆ Create requirements that developers must identify connections to existing greenways near their development and build them, just as they would identify and construct connections with existing roads. These adjacent connections should be identified clearly on mapping submitted for site, subdivision, and zoning reviews.
- ◆ The Parks, Recreation, and Cultural Resources Advisory Board and Greenways Committee shall continue to prioritize greenway segments to be constructed and notify developers if they are to construct their section or provide an easement and a payment-in-lieu.
- ◆ Language should be added to clarify the acceptable locations for greenway easements. If a stream only has zone 1 and zone 2 stream buffers, then the greenway easement is required to be outside of zone 2. If the stream has zone 3, then the greenway easements are allowed on the outer edge of zone 3 stream buffers.





## Section 5. Best Practices

### 5.1. Introduction

This section is intended as a general reference for sidewalk and pedestrian facilities design as well as a guide for various “Best Practices” that apply to special pedestrian situations. Already, the Town has strong policies, guidance, and design standards regarding pedestrian facilities. The first half of this section will review Cary’s various design-related standards and policies. The second half of this section addresses special situations for pedestrians, such as parking lots and construction zones. In general, the guidance provided in this section is based upon Cary’s Land Development Ordinance (LDO), *Parks, Recreation and Cultural Resources Master Plan*, and *Design Guidelines Manual*. Any modifications to these documents should supersede information contained within this Pedestrian Plan.

Much of Cary’s standards are based on design guidance for pedestrian facilities published by NCDOT (draft, 1997), the American Association of State Highway and Transportation Officials (AASHTO, 2004), and the Federal Highway Administration (FHWA, 2002). Ancillary organizations, such as the Institute of Transportation Engineers (ITE), contribute significantly to the state-of-the-practice as well by publishing design standards and manuals on traffic calming, street designs, and traffic signal operations. The recommended guidance herein borrows heavily from these sources and others, and users are encouraged to refer to them for additional information.

### 5.2. Design Guidelines

Overarching documents in Cary for design and construction of sidewalk and pedestrian facilities are:

- ◆ Land Development Ordinance (LDO),
- ◆ *Parks, Recreation, and Cultural Resources Facilities Plan*, and
- ◆ *Design Guidelines Manual*.

In addition, the Town has developed several policy statements that also affect the design of pedestrian facilities. These are:

- ◆ *Policy Statement 128: Pedestrian Crosswalks*,
- ◆ *Traffic and Pedestrian Safety Adjacent to Schools (PD 07- 016)*, and
- ◆ *Policy Statement 135: Sidewalk Requests*.

## Cary Pedestrian Plan

### Section 5: Best Practices

The following paragraphs provide a brief overview of the general requirements for pedestrian facility design and construction in Cary. These requirements are subject to change with revisions to the aforementioned over-arching documents and policies.

#### 5.2.1. Sidewalk Construction

There are several circumstances when sidewalk is required to be constructed in Cary, including both public and private development projects. The following paragraphs describe the sidewalk construction requirements for each circumstance.

##### As part of a development

According to the *Land Development Ordinance* Section 7.10.4, in both new residential and non-residential development, sidewalk shall be constructed on both sides of the following facilities:

- Arterials;
- Collector streets;
- Non-residential cul-de-sacs; and
- Along the frontage of all new development or redevelopment.

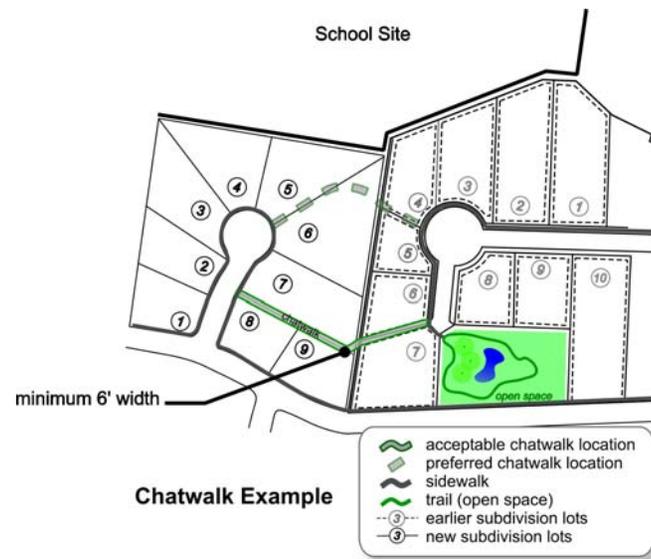
Sidewalk is required on at least one side of local streets. Loop streets and/or residential cul-de-sacs are not required to have sidewalks, unless the street is located within 1.5 miles of a school, or 0.5 miles of a greenway, park, or shopping area, in which case a sidewalk shall be required on one side of the street only.

In addition, according to the Town's Connectivity Ordinance, pedestrian facilities should be constructed where residential developments have cul-de-sacs or dead-end streets to connect to the nearest local or collector street or cul-de-sac in adjoining subdivisions (see diagram on this page).

##### As part of a road construction project

According to Cary's Engineering Standard Specifications, Section 0300, sidewalk shall be installed at the time of construction for each new roadway or improvement to existing roadway based on the roadway classification, as follows:

- **thoroughfares, all collector streets, and non-residential cul-de-sacs:** sidewalk on both sides;
- **residential and non-residential local streets:** sidewalk on one side; and
- **loop and residential cul-de-sac streets:** no sidewalk unless either street is within one-half mile linear traverse of a greenway, park, shopping area, or the street is within



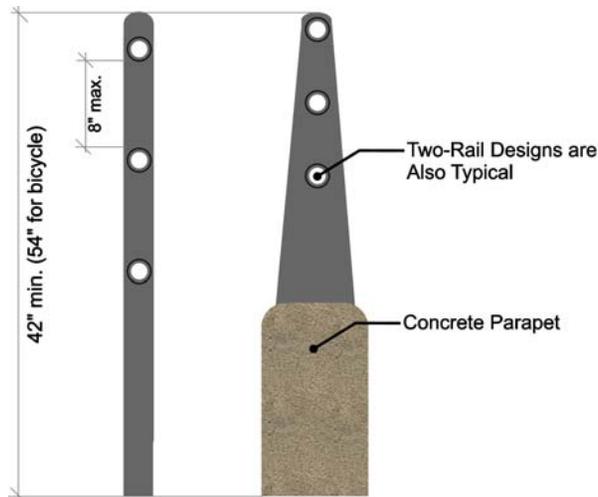
1.5 mile linear traverse of a school, in which case sidewalk on one side will be required.

These requirements apply to roadway projects completed by both the Town of Cary and also the North Carolina Department of Transportation. During roadway improvements, pedestrian facilities shall be provided to maintain pedestrian access, per *American Disabilities Act Accessibility Guidelines for Buildings and Facilities*<sup>1</sup>.

**As part of a sidewalk request project**

As described in Section 4, sidewalk can also be constructed as part of the Town of Cary's Sidewalk Request Program. Sidewalk in this program shall adhere to the same standards and guidelines as applies for sidewalk construction on roadway improvement projects. Current policy states that sidewalk shall not be constructed on roads without curb and gutter; however, it is recommended that the Town reconsider restrictions on accepting requests for sidewalk on roads without curb-and-gutter. In some cases, sidewalk may be critically needed on a road, but the road may not be programmed for an upgrade to curb-and-gutter any time in the near future.

**Recommendation: Town should reconsider restrictions on accepting requests for sidewalk on roads without curb-and-gutter.**



Typical Handrail Specifications On Bridge (Where Sidewalks Exist)

**With Bridge Construction**

Pedestrian facilities shall be provided on all bridges in accordance with NCDOT *Bridge Design Guidance*. Lack of pedestrian facilities on bridges can be a major barrier to pedestrian system connectivity. For bridges with curb and gutter approaches, the North Carolina Department of Transportation maintains a policy of sidewalk construction on both sides of a bridge that is less than 200 ft. in length; sidewalk is required on only one side for structures greater than 200 ft. in length. NCDOT places a number of caveats on this policy: if the sidewalk is deemed unsafe, impractical to program, not in accordance with AASHTO standards, or is difficult to design then the sidewalk may not be constructed. For bridges with shoulder approaches and where a pedestrian need is identified, a 7 ft. 6 in. offset for future sidewalks can be provided in urban areas or a cost-sharing approach for funding sidewalks can be explored by the locality. There is no funding cap on the NCDOT installation of sidewalks on a bridge.<sup>2</sup> Pedestrian- and cyclist-safe railing designs are required for structures with sidewalks and bicycle lanes and should be considered in every instance where pedestrians and cyclists are allowed on the street.

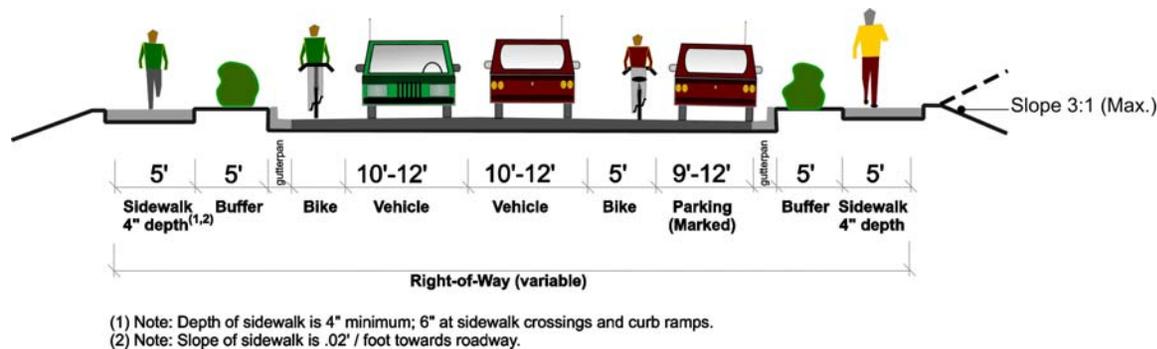
## Cary Pedestrian Plan

### Section 5: Best Practices

#### 5.2.2. Sidewalk Design

Most of Cary's sidewalk and trails design standards can be found online through Cary's Engineering Standard Specifications Section 0300. In general, sidewalk design in Cary follows these requirements:

- ◆ Sidewalk is constructed only on roadway with curb-and-gutter.
- ◆ Sidewalk shall be a minimum of five feet from back of curb.
- ◆ Sidewalk shall be a minimum of five feet wide and a minimum of four inches thick. Sidewalk shall be six inches thick at locations where a driveway crosses a sidewalk, at street intersections (along the length of radius curb returns), and in the handicap ramps.
- ◆ Sidewalks shall have a uniform slope toward the roadway of 0.02 inches per foot.



#### Sidewalk Material

In general, standard sidewalks should be concrete, which is more durable than asphalt. A more flexible material, such as rubberized paving, can be considered in situations in which there is the potential for tree roots to crack and lift the concrete. Using these types of materials can reduce the risk of a tripping hazard, and also lower maintenance costs. More permeable materials, such as porous pavers, can also be considered for all pedestrian-ways, and in particular for greenways near streams, in order to reduce run-off from storm events.

**Recommendation:** Consider using more permeable materials, such as porous pavers, for all pedestrian-ways, and in particular for greenways near streams, in order to reduce run-off from storm events.



**Image 5-1.** Examples of various types of sidewalk material used in Cary. The top image is a combination brick and gravel decorative paver used in downtown. The bottom image is the more typical concrete sidewalk used elsewhere in Cary. Other materials besides concrete, such as rubber and asphalt, can be used to reduce the likelihood of cracking.



**Figure 5-1.** A proposed multi-use trail along Regency Parkway from Symphony Lake Greenway to Swift Creek Trail.

### Multi-Use Trails

Multi-use trails are described in detail in the *Cary Parks, Recreation, and Cultural Resources Facilities Plan* as a Type 7 Trail Facility. Multi-use trails are similar to sidewalks in that they are on-street and paved, however, they are designed to accommodate both cyclists and pedestrians and must therefore be a minimum of 10 feet wide. There is a minimum 12-foot set-back for multi-use trails from the edge of the roadway pavement<sup>3</sup>. They often serve to connect one greenway to another. For example, a multi-use trail is recommended to connect the Symphony Lake Trail to Swift Creek Trail along Regency Parkway (see Figure 5-1). Because multi-use paths are shared by both pedestrians and cyclists, a dashed, wide, yellow center line should be used to separate opposite directions of travel for cyclists. Sometimes, multi-use trails will also have a solid white stripe to designate separate travel lanes for pedestrians and cyclists. In this case, regulatory signs should also be used to clarify the appropriate users for each designated travel lane.<sup>4</sup>

**Recommendations:** (1) Provide multi-use trail to connect the Symphony Lake Trail to Swift Creek Trail along Regency Parkway. (2) For multi-use trails with separated travel lanes for pedestrians and cyclists, signs should also be used to clarify the appropriate users for each designated travel lane.



**Image 5-2.** The pedestrian crossing at the Kildaire Farm and Maynard Road intersection. Note the marked crosswalk and pedestrian-activated signals. These are standard features which should be installed with each new signal.

### Greenways

Standard greenway design is discussed in *Cary's Parks, Recreation, and Cultural Resources Facilities Plan*. This document should be referenced for all greenway design standards. The following is a listing of the types of trails outlined in the *Parks, Recreation, and Cultural Resources Facilities Plan*.

- Type 1: Greenway Corridor
- Type 2: Unpaved Footpath
- Type 3: Equestrian or Mountain Bike Trail
- Type 4: Secondary Greenway, 8' Paved Trail
- Type 5: Primary Greenway, 10' Paved Trail
- Type 6: Soft Surface Greenway
- Type 7: Multi-Use On-Road Trail, 10' Paved Trail
- Type 8: Sidewalk Connectors

## Cary Pedestrian Plan

### Section 5: Best Practices

#### 5.2.3. Pedestrian Crossings

The North Carolina State Statute, as of January 2007, holds that “pedestrians have the right-of-way at marked and unmarked crosswalks in residential and business areas except where there is a traffic or pedestrian signal [§20-155(c) and §20-173(a)]”<sup>5</sup>. In addition, “where traffic control signals are not in place or in operation the driver of a vehicle shall yield the right-of-way, slowing down or stopping if need be to so yield, to a pedestrian crossing the roadway within any marked crosswalk or within any unmarked crosswalk at or near an intersection [§20-173(a)]”<sup>6</sup>.

According to Cary’s Engineering Standard Specifications, Section 0300, all locations which are designated for pedestrian traffic crossings shall be designated as a crosswalk with pavement markings and signage. The type and placement of signage and markings shall be consistent with the requirements as identified in *Manual of Uniform Traffic Control Devices. Cary’s Policy 128: Pedestrian Crosswalks*, states that where new sidewalks are proposed, Staff shall consider marked crosswalks as a part of the design criteria.

#### At Signalized Intersections

At signalized intersections, Policy 128 states that the addition of pedestrian activated push-buttons and walk/don’t walk signals shall be considered. Informally, the Town has a policy to install pedestrian signal heads and crosswalks with the installation of any new signalized intersection. Based on the North Carolina General State Statutes, it is recommended that this become a formal policy, along with the installation of marked crosswalks and audible signals, in order to reinforce a pedestrian’s legal right to passage and to assist the visually impaired. In addition, pedestrian signals should be provided even in locations without sidewalk on one or both sides of an intersection. In the past, common practice has sometimes been to ignore pedestrian movement across some legs or across some intersections entirely. By providing pedestrian signals, the Town will accommodate pedestrians while providing a safer crossing. It is also recommended that the Town create a database of intersections with signals and pedestrian treatments for reference when discussing a safety issue and for understanding and tracking the availability of pedestrian connections.



**Image 5-3. Top image:** An example pedestrian-activated signalized mid-block crossing. **Bottom image:** A guide for pedestrians to understand the meaning of the push-button signals.

**Recommendations:** (1) Formalize Town policy to install pedestrian signal heads, crosswalks, and audible signals with the installation of any new signalized intersection. (2) Provide pedestrian signals even in locations without sidewalk on one or both sides of an intersection. (3) Create a database of intersections with signals and pedestrian treatments for reference.

#### **Protected Right-on-Red and Free-Flowing Turn Lanes**

There are two signalized intersection design scenarios that are often difficult for pedestrians: protected right-on-red and free-flowing turn lanes. Protected right-on-red conditions are often provided at signalized intersections to improve intersection capacity. This type of design allows a vehicle to make a protected right-on-red with a green arrow while vehicles in the cross-street are making left turns. This situation can create confusing and dangerous conditions for pedestrians by eliminating a protected crossing phase. As a result, it is important that additional signal phases exist which specifically provide protected crossings for pedestrians at an intersection with protected right-on-red for motorists.

Similarly, free-flowing turn lanes are often provided for right turns at intersections to improve capacity. These turn lanes separate right-turning traffic from through-traffic and create a condition comparable to a freeway on-ramp in which the right-turn does not require signalization. Sometimes, these free-flowing turn lanes do not require vehicles to slow down or stop to make a turn. Once again, this can create a dangerous condition for pedestrians attempting to cross the free-flowing turn lane. In order to improve pedestrian safety, free-flowing turn lanes should only be used in very rare instances in which pedestrians are not expected. If they must be used, engineers should give extra consideration to appropriate treatments which will warn both motorists and pedestrians of potential conflicts.

**Recommendations:** (1) At an intersection with protected right-on-red for automobiles, there should be signal phases which specifically provide protected crossings for pedestrians. (2) Free-flowing turn lanes should only be used in very rare instances in which pedestrians are not expected. If they must be used, engineers should give extra consideration to appropriate treatments which will warn both motorists and pedestrians of potential conflicts.

### At Mid-Block and Greenway Crossings

*Policy 128: Pedestrian Crosswalks* places strict requirements on mid-block crossings and intersections without control of Right-of-Way. Marked pedestrian crosswalks shall not be placed across streets at mid-block locations or intersections without control of right-of way with the following characteristics:

- Where the street is a multi-lane (four or more lanes) street without raised medians and the Average Daily Traffic (ADT) volumes exceed 9,000 or the posted speed limit is 30 MPH or greater.
- Where the street is a multi-lane (4 or more lane) street with raised medians and the ADT volumes exceed 12,000 and the posted speed limit is 40 MPH or greater.
- Where the street provides three travel lanes and the ADT volumes exceed 9,000 or the posted speed limit is 40 MPH or greater.
- Where the street is residential in nature, providing two travel lanes, and the ADT volumes are less than 400 or greater than 12,000.

Especially noteworthy is that raised medians must be four feet or greater in width and six feet or greater in length to provide an adequate pedestrian refuge.

Greenway crossings frequently occur at mid-block locations. Greenway crossing design is discussed in Cary's *Parks, Recreation, and Cultural Resources Facilities Master Plan*, and also in the Town's Policy Statement 128. Policy Statement 128 states:

*"Where new greenway trails are being planned, Parks and Recreation staff shall implement grade-separated crossings in the designs. If grade separations are determined to be unfeasible, then engineering staff shall work with Parks and Recreation staff to ensure that the trail will cross the street at a signalized intersection or location that maximizes sight distance for pedestrians and motorists. Traffic/Pedestrian signals, raised medians, advance warning signs, and other enhanced pedestrian safety devices should be considered to supplement marked crosswalks where needed."*

*Where greenway trails are existing engineering staff shall work with Parks and Recreation staff to consider marked crosswalks and/or other enhanced safety devices on a case by case basis and subject to the thresholds stated in part 'B' above [guidelines for mid-block pedestrian crossings]"*

The following is a listing of the trail crossings identified in the *Parks, Recreation, and Cultural Resources Facilities Plan*:

- Trail Crossing Type 1: 2-lane road, 25 mph speed



**Image 5-4.** The greenway underpass at Kildaire Farm and High Meadow. An underpass is one form of pedestrian crossing.

- Trail Crossing Type 2: 2-lane road, 35 mph speed
- Trail Crossing Type 3: 3-lane road, 35 mph or less
- Trail Crossing Type 4: 4-lane road, 45 mph or less
- Trail Crossing Type 5: 5-lane road, 45 mph or less
- Trail Crossing Type 6: 2-lane road, Over 35 mph
- Trail Crossing Type 7: 3-lane road, over 35 mph
- Underpass
- Overpass

It is recommended that the Town amend Policy 128 to reference the Parks, Recreation, and Cultural Resources Facility Master Plan for greenway crossings. The Town should also continue to explore ways to refine grade-separated crossing criteria as discussed in the Plan. At the same time, the Town should coordinate with NCDOT to agree upon a mutually acceptable mid-block crossing policy for greenways. At the writing of this Plan, there was no formal greenway crossing policy identified in the following documents:

- ◆ *Manual on Uniform Traffic Control Devices for Streets and Highways*, 2003 edition
- ◆ *NC Department of Transportation Bicycle Planning and Design Workshop Manual*
- ◆ *North Carolina Bicycle Facilities Planning and Design Guidelines*
- ◆ NCDOT Division of Bicycle and Pedestrian Transportation website:  
<http://www.ncdot.org/transit/bicycle/default.html>

**Recommendations:** (1) Amend Policy 128 to reference the Parks, Recreation, and Cultural Resources Facility Master Plan for greenway crossings. (2) Continue to explore ways to refine grade-separated crossing criteria as discussed in the Plan. (3) Coordinate with NCDOT to agree upon a mutually acceptable mid-block crossing policy for greenways.

### Crossing Treatments

There are a variety of crossing treatments that Cary can consider using for pedestrian facilities. The following is a listing of some of the treatments that can be used (Figure 5-2).

- Striped crosswalk
- Zebra crosswalk
- Raised platform
- Bulb-outs
- Embedded lights
- Embedded signs
- Ped-signals and crosswalks
- Ped-signals with audible signal
- Ped-signals with count-down
- Median with z-crossing
- HAWK Signal

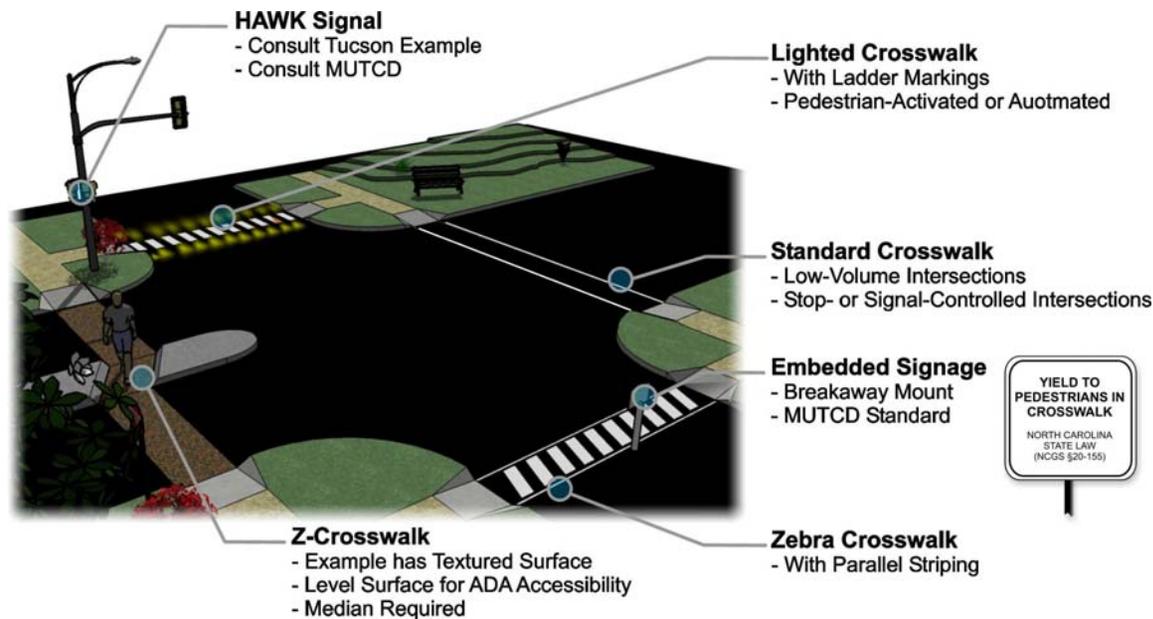


Figure 5-2. A diagram of various crossing treatments Cary can consider to improve pedestrian accessibility and safety crossing the street.

#### *ADA Requirements*

In 1990, Congress passed the Americans with Disabilities Act (ADA), a civil rights law which prohibits discrimination against people with disabilities in all aspects of life. The purpose of this legislation is to ensure equal participation and opportunity for all in mainstream society. ADA contains five titles, which cover requirements for employment, state and local government services, public accommodations and commercial facilities, telecommunications, and miscellaneous requirements. As done throughout the US, the Town of Cary's transportation facilities, including sidewalks and pedestrian facilities, must comply with the guidelines set forth in the ADA Accessibility Guidelines (ADAAG) in order to meet the standards of the American Disabilities Act. For a complete guide to ADA requirements, see the National Access Board's website: [www.access-board.gov](http://www.access-board.gov). It is recommended that the Town should consider revising its engineering standards and specifications to explicitly state that all facilities must comply with the requirements outlined in the American Disabilities Act Accessibility Guidelines for Buildings and Facilities.



**Image 5-5.** Sidewalk in Downtown Cary, wide enough to support the occasional outdoor cafe.

The most frequent ADA consideration in pedestrian systems is the sidewalk curb ramp that connects perpendicular streets and driveways to the sidewalk. The Town of Cary has adopted very specific standards for the design and placement of sidewalk curb ramps under a variety of geometric conditions. The designer is encouraged to carefully consider these standards, especially detail drawings 03000.14 (three sheets) located at: [www.townofcary.org/depts/dsdept/engineering/std drawings.htm](http://www.townofcary.org/depts/dsdept/engineering/std drawings.htm).

**Recommendation:** Consider revising Town's Engineering Standard Specifications to explicitly state that all facilities must comply with the requirements outlined in the American Disabilities Act Accessibility Guidelines for Buildings and Facilities.

### 5.3. Special Considerations

#### 5.3.1. Downtown Cary

The guiding document for pedestrian facility design in Downtown Cary is the *Town of Cary Town Center Area Plan*. This Plan states that "sidewalks should be wide enough to support a high volume of pedestrian traffic, and perhaps the occasional sidewalk café in certain blocks." To this end, it is recommended that sidewalk in the Downtown Area be set at a minimum of 10 feet wide to accommodate higher pedestrian volumes. Sidewalks should also maintain the same look and feel throughout the downtown area – this is often achieved by creating a uniform sidewalk pattern, using colored pavers and materials that produce varied textures, such as brick. Image 5-5 shows an example of the current sidewalk pattern used in Downtown. Similarly, the *Town Center Plan* also advises that street crossings should have unique characteristics, stating that "pedestrian crossings should use distinctive designs and materials to help establish the pedestrian-oriented nature of the heart of the downtown". Pedestrian facilities in Downtown should also have plenty of street amenities, such as street trees, signage, trash cans, benches, and signature street lamps in order to make the pedestrian experience as pleasant as possible. In addition, as described in the *Town Center Plan* buildings should be oriented towards the street to provide an interesting and inviting walking environment. These features will encourage pedestrians and walking in downtown, creating a popular destination for people to shop, walk, and meet.

The *Downtown Cary Streetscape Master Plan* was completed in 2006. The goal of the *Streetscape Master Plan* was to make downtown a more pedestrian-friendly place. The



**Image 5-6.** A school zone sign on Harrison Ave. in Cary. School zones should be established around all schools in Cary to create a safe walking environment for students.

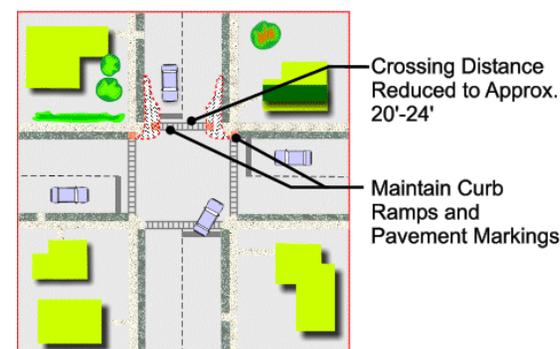
actual design of the *Streetscape Master Plan* is currently in process, and construction should begin in 2008.

**Recommendations:** (1) *In downtown, provide plenty of pedestrian facilities and street amenities, such as street trees, signage, trash cans, benches, and signature street lamps in order to make the pedestrian experience as pleasant as possible.* (2) *As described in the Town Center Plan, orient buildings towards the street to provide an interesting and inviting walking environment.*

### 5.3.2. Schools and School Zones

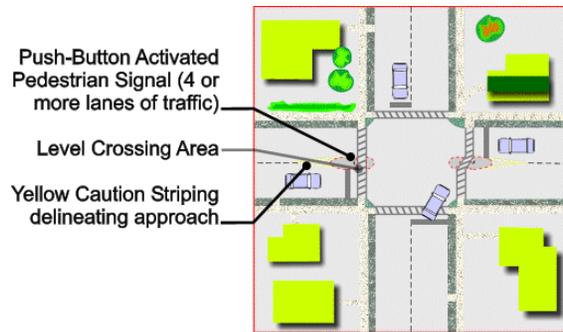
Schools are a highly sensitive area for pedestrians – they can generate pedestrians of all ages, with varying levels of pedestrian safety skills and understanding. It is important that a school be a “safe zone” equipped with the best safety features available - both for walking around the school and for walking to and from the school. In addition to ensuring safety, it is also important that a school encourage physical activity and teach children safe pedestrian behaviors.

In order to create a safe zone, Cary has recently adopted a policy on speed limits on roads with access to schools should be reduced by 10 mph within a quarter mile of the school. This reduction in speed should be announced by large school zone signs that also indicate the presence of a school nearby. Additional school zone signage will be placed on all access routes to schools within the quarter-mile zone. The Town should consider developing an ordinance that requires sidewalk along all roads within a quarter -mile of a school and that all signalized intersections within a quarter-mile of the school should have functioning pedestrian signals with crosswalks and push-buttons. If the school is accessed from a mid-block location, then a signalized mid-block crossing should be provided for safe pedestrian access. The Town planning and engineering staff will need to work with the Wake County School System and the Town of Cary Police Department in order to implement and enforce these improvements.



**Image 5-7.** Example bulb-out placement to reduce curb radii and shorten travel distance for pedestrians crossing an intersection.

**Recommendations:** (1) Create a policy that requires “safe zones” around schools in which speeds are reduced by 10 mph within a quarter mile of the school and signs are posted warning of school and student presence. (2) Consider developing an ordinance that requires sidewalk along all roads within a quarter-mile of a school and that all signalized intersections within a quarter-mile of the school should have functioning pedestrian signals with crosswalks and push-buttons. If the school is accessed from a mid-block location, then a signalized mid-block crossing should be provided for safe pedestrian access.



**Image 5-8.** An example of good median and refuge island design.

### 5.3.3. Curb Extensions (Bulb-Outs) and Curb Radii

The primary purpose of bulb-outs is to shorten the distance that pedestrians must travel to cross a street. In addition, they may encourage motorists to drive slower by narrowing the travel lane and reducing vehicular speeds during turning movements at intersections. Motorists will travel more slowly around corners with smaller curb radii even without the use of curb extensions. Landscaping and other aesthetic treatments such as special paving textures should be carefully designed to avoid hazards to drivers and visually-impaired citizens while minimizing maintenance costs. Image 5-7 shows an example image bulb-out placement to reduce curb radii and make an intersection more pedestrian-friendly.

### 5.3.4. Medians and Refuge Islands

Image 5-8 indicates the design and markings associated with refuge islands. Note that pavement markings delineate the approach to the islands; that the islands are “split” to allow for a level platform for wheelchair use; and that in cases where there are wide roads and high traffic volumes, a push-button pedestrian signal may be mounted in the refuge area to allow a pedestrian to split their trip into two halves as they cross the street. Note that the crosswalk on the right side of the diagram is configured at a skewed angle as it crosses the median. This allows pedestrians to have a better angle of sight as they approach and cross each side of the street. In all cases, a minimum 10-foot travel lane is maintained. Sensitivity to large vehicles (buses, trucks and fire equipment) dictates some elements of the median design, curb style, and placement. Median-controlled roadways reduce the number of turning conflicts and are generally preferred for both pedestrians and cyclists over a two-way, left-turn lane (TWLTL) roadway.

### 5.3.5. Parking Lot Design

Everyone becomes a pedestrian once they park their car, but there are many examples of poor parking lot design. Poor parking lot design at the least will deter customers that may be walking or riding transit to a store, and at the most can create a dangerous safety hazard by increasing pedestrian-vehicle interaction. The most common design issue is that the primary carriageway for vehicles in the parking lot happens to coincide with where the greatest number of pedestrians cross: directly in front of the main entrance. Other issues include poor sight lines to spot pedestrians; bad transition areas from the public domain (e.g., streets) to the private parking area; and inconvenient pedestrian access between parking areas, shops, and adjacent communities. Image 5-9 indicates a preferred set of suggestions to overcome these common problems. The larger the parking lot, the more vehicles and pedestrians, and therefore the more important it is to carefully design treatments to minimize vehicle-pedestrian interaction. Some suggested treatments:

1. **Parking in the rear.** One way to attract pedestrians to a store and to reduce pedestrian-vehicle interaction is to minimize the amount of parking lot that a pedestrian must walk through to get to the store entrance. This can be done by placing parking in the rear which will reduce travel time for pedestrians approaching the store from the street-front and sidewalk. It will also minimize pedestrian-vehicle interaction by keeping pedestrian customers separate from vehicles by allowing the pedestrian customers to access the store directly from the sidewalk rather than through a parking lot. Parking lots in the rear also create a more attractive streetscape – something that also encourages pedestrian use.
2. **Create safe “landing areas”.** Provide continuous transitions from the street into a safe “landing” area in the parking lot; don’t just “dump” pedestrians into the throat of a driveway.
3. **Maintain good sight lines** at major turning points inside the parking area.
4. **Provide well-marked pedestrian access perpendicular to store fronts.** Whenever possible, provide perpendicular pedestrian access into the front of a high volume land use such as major retail uses. The final crossing to the store entrance(s) should be well-marked, preferably with a raised crosswalk and/or colored demarcations to provide good visual cues to the driver. Moving the main parking aisle away from the principal entrance is another option.
5. **Supply adequate, pedestrian-scale lighting.** Adequate lighting is often perceived as a personal security issue in many large parking areas, and should be provided while avoiding disabling glare (looking into a direct light source and being partially



Image 5-9. An example of pedestrian-friendly parking facility design.

blinded) or causing light pollution to adjoining properties. The following table (Table 5-1) is the recommended horizontal illumination requirements for high-, medium-, and low-level land uses, and should be considered a basic guide based on a majority of lighting policies reviewed. In order to make customers and pedestrians feel more comfortable, lighting should also be provided at a pedestrian scale. This means lowering the height of some light poles and providing lighting at key locations, such as the entrances and exits to stores, and not just in the parking lots.

6. **Provide awnings.** Especially for some “big box” stores, it is important that the transition for customers from inside the store to the outside be gradual and protected as much as possible from conflicts with vehicles. By providing awnings, a store protects its customers from the rain while allowing for a more comfortable pedestrian environment for customers to window shop and wait for rides or a bus to arrive. This can make a store seem much more comfortable while encouraging customers to remain within the protected awning area and out of conflict with vehicles in the travelway.

**Table 5-1.** Recommended horizontal illumination requirements for land uses.

| Intensity of Pedestrian-Oriented Land Use  | Average Luminosity (foot-candles) | Minimum Luminosity (foot-candles) |
|--|-----------------------------------|-----------------------------------|
| <b>High</b><br><i>Civic Centers, Regional Shopping, Fast Food</i>                        | 3.6                               | 0.9                               |
| <b>Medium</b><br><i>Community Shopping, Office Parks, Hospitals, Apartment Complexes</i> | 2.4                               | 0.6                               |
| <b>Low</b><br><i>Neighborhood Shopping, Churches, Industrial Employee Parking</i>        | 0.8                               | 0.2                               |

**Recommendation:** *Implement parking lot design requirements in the LDO or Design Guidelines Manual as recommended in this section.*

5.3.6. *Construction Zones: Providing Adequate Temporary Pedestrian Access*

The construction or expansion of roadways, utilities, or private development sometimes requires that sidewalks or trails be temporarily closed to allow for the movement of construction vehicles on and around the site. When pedestrian facilities are closed temporarily, the entity responsible for the construction is also responsible for providing



**Image 5-10.** Poor pedestrian access at a construction zone in Cary.

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adequate access through or around the site as well as signage that provides advance warning to pedestrians and motorists of the closure. Both the MUTCD (Manual on Uniform Traffic Control Devices)<sup>7</sup>, NCDOT Planning and Designing Local Pedestrian Facilities<sup>8</sup>, and the ADA (Americans with Disabilities Act)<sup>9</sup> stipulate that safe passage should be maintained throughout a temporary closure unless it occurs during an extreme situation such as a natural or man-made emergency. During private construction within Town limits, it is the responsibility of the Town of Cary to ensure compliance with these rules by regular (recommended: daily in high pedestrian areas) monitoring and by the posting of a call-in telephone number to be placed on-site to report potential problems or non-compliance.

The following must be considered by the Town, State, or private/public construction agents whenever a sidewalk or trail will be closed temporarily:

- ◆ *Accessibility for Mobility Impaired Citizens.* At least one accessible route should be provided to transportation or transit facilities; accessible parking areas/spaces; public streets/sidewalks; and public parking areas to an accessible entrance of the building. This route(s) will comply with all other accessibility provisions contained in the ADA regardless of whether they are temporary or permanent. A barrier shall be placed across the full width of the sidewalk or trail to be detectable by a visually impaired person using a cane. An audible information device may be needed in cases where there are especially high traffic volumes challenging a visually impaired person making a street crossing.
- ◆ *Temporary Obstructions.* Parked construction equipment, erosion control fencing, storage of materials/construction debris, and other potential obstructions should be kept away from roadside pedestrian access and pedestrian or multi-use trails so as to keep a permanent passageway open for pedestrians crossing the site. Signs and other devices should not protrude more than 4" into the pedestrian passageway and 7' or less above a sidewalk (8' min. preferred).
- ◆ *Advance Warning and Signage.* Advance warning may consist of a single sign to a flashing strobe, depending on the nature of the construction or context (such as vehicular volumes) of the work area. Advance signage should be placed so that pedestrians have an opportunity to read the sign and make a safe crossing at a street intersection to the opposite side of the roadway. Smaller, mid-block closures will require fewer treatments, but will still retain the "Sidewalk Closed Ahead Cross Street" advance warning at an appropriate and safe crossing point in advance of the closure, at a minimum.

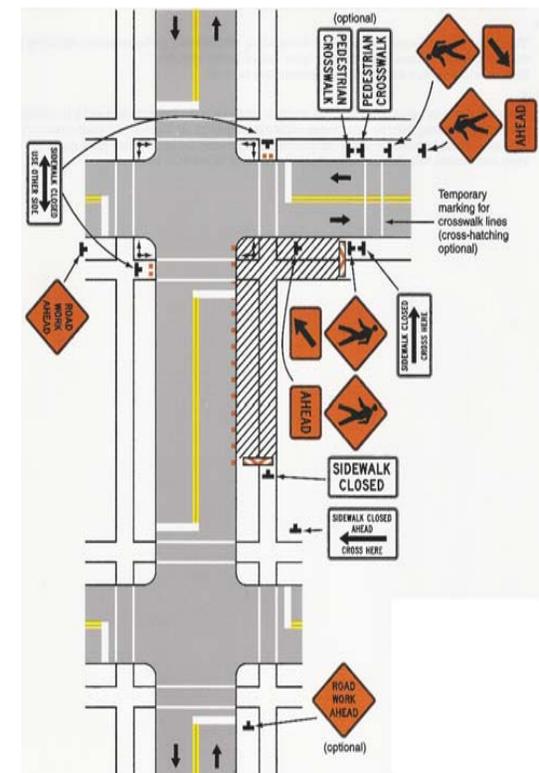


Image 5-11. Adapted from Sample Signage Plan for Temporary Pedestrian Closure (MUTCD, Figure 6H - 29).

- ◆ *Route Design.* Temporary traffic barriers like jersey barriers (although not intermittent short sections of jersey barriers) and breakaway bollards should be considered as tools to help delineate a buffer from moving vehicles in areas with high pedestrian traffic volumes and/or to help ensure worker safety. Routes should be smooth and level and maintain the 60" standard width where possible; if not possible, then passing zones measuring a minimum of 60" x 60" will be provided every 200 linear feet. Rumble strips and other warning devices may be considered with professional engineering judgment, but care must be taken to consider noise and traffic diversion onto other streets before applying such devices.

#### 5.4. Recommendations

Table 5-2 shows the priority recommendations for changes to Cary's policies, standards, and design guidelines to help implement best practices for pedestrians. The table also shows the reason for the recommendation's priority and any challenges to its implementation.

**Table 5-2. Priority recommendations for changes to Cary's policies, standards, and design guidelines to help implement best practices for pedestrians.**

| Best Practices Recommendations   |
|--|
| ◆ Reconsider restrictions on accepting requests for sidewalk on roads without curb-and-gutter.   |
| ◆ Consider using more permeable materials for all pedestrian in order to reduce run-off from storm events.   |
| ◆ Provide multi-use trail to connect the Symphony Lake Trail to Swift Creek Trail along Regency Parkway  |
| ◆ On multi-use trails with separated travel lanes for pedestrians and cyclists, provide signs to clarify the appropriate users for each designated travel lane |
| ◆ Formalize existing Town practice of installing pedestrian signal heads and crosswalks with the installation of any new signalized intersection.              |
| ◆ Provide pedestrian signals even in locations without sidewalk on one or both sides of an intersection.   |
| ◆ Create a database of intersections with signals and pedestrian treatments for reference.   |
| ◆ At intersections with protected right-on-red for automobiles, provide signal phases which specifically create protected crossings for pedestrians.           |
| ◆ Restrict use of free-flowing turn lanes. When used, provide appropriate treatments to  |

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|--|
| warn both motorists and pedestrians of potential conflicts.  |
| ◆ Amend Policy 128 to reference the Parks, Recreation, and Cultural Resources Facility Master Plan for greenway crossings.   |
| ◆ Continue to explore ways to refine grade-separated crossing criteria as discussed in this Plan.  |
| ◆ Develop with NCDOT a mutually acceptable mid-block crossing policy for greenways.  |
| ◆ Revise Town’s Engineering Standard Specifications to explicitly state that all facilities must comply with the requirements outlined in the American Disabilities Act Accessibility Guidelines for Buildings and Facilities. |
| ◆ In downtown, provide plenty of pedestrian facilities and street amenities, such as street trees, signage, trash cans, benches, and signature street lamps.   |

**Table 5-2 cont’d.**

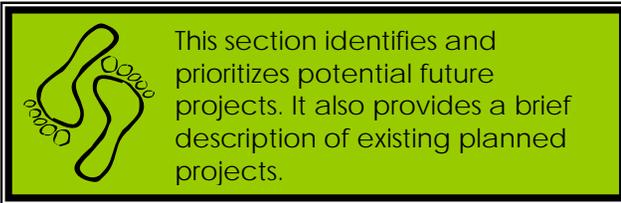
| Best Practices Recommendations   |
|--|
| ◆ As described in the Town Center Plan, orient buildings towards the street to provide an interesting and inviting walking environment.  |
| ◆ Create a policy that requires “safe zones” around schools in which speeds are reduced by 10 mph within a quarter mile of the school and signs are posted warning of school and student presence.   |
| ◆ Consider developing an ordinance that requires sidewalk along all roads within a quarter-mile of a school and that all signalized intersections within a quarter-mile of the school should have functioning pedestrian signals with crosswalks and push-buttons. If the school is accessed from a mid-block location, then a signalized mid-block crossing should be provided for safe pedestrian access |
| ◆ Implement parking lot design requirements in the LDO or Design Guidelines Manual as recommended in this section.   |

## Resources

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- <sup>1</sup> *ADA Accessibility Guidelines for Buildings and Facilities*. Available at <http://www.access-board.gov/adaag/html/adaag.htm>. Accessed October 30, 2006.
- <sup>2</sup> North Carolina Department of Transportation, "Pedestrian Policy Guidelines." October 1, 2000. ([www.ncdot.org/transit/bicycle/laws/ped\\_guide.pdf](http://www.ncdot.org/transit/bicycle/laws/ped_guide.pdf))
- <sup>3</sup> Cary Parks, Recreation and Cultural Resources Facilities Master Plan. Town of Cary. Page 119. December 2003.
- <sup>4</sup> *North Carolina Bicycle Facilities Planning and Design Guidelines*. North Carolina Department of Transportation. January 1994: Chapter 7, page 51.
- <sup>5</sup> "A Guide to North Carolina Bicycle and Pedestrian Laws: Guidebook on general statutes, ordinances, and resources." North Carolina Department of Transportation Division of Bicycle and Pedestrian Transportation. September 2004. pgs: 16 – 17.
- <sup>6</sup> A Guide to North Carolina Bicycle and Pedestrian Laws: Guidebook on general statutes, ordinances, and resources." North Carolina Department of Transportation Division of Bicycle and Pedestrian Transportation. September 2004. pg: 20.
- <sup>7</sup> *Manual on Uniform Traffic Control Devices for Streets and Highways*, 2003 Edition. Federal Highway Administration, 2003. Especially Sections 6B-1, 6D, 7, and Figures 6H-28, 6H-29, 7A-1, and 7B-4.
- <sup>8</sup> *Planning and Designing Local Pedestrian Facilities*, North Carolina Department of Transportation Office of Bicycle and Pedestrian Transportation. February, 1997, Chapter 10.
- <sup>9</sup> Americans with Disabilities Act, US Code 28 CFR Part 36: ADA Standards for Accessible Design. Page 496 ([www.usdoj.gov/crt/ada/adastd94.pdf](http://www.usdoj.gov/crt/ada/adastd94.pdf)).





## Section 6. Future Projects

### 6.1. Introduction

This section identifies potential future projects and focus areas, as well as provides a prioritization of these projects. Projects are developed based upon input from Town staff, the stakeholder committee, and most importantly, the results in Section 2: Existing Needs from public input through focus groups and surveys. Projects are also based upon existing proposed projects and upcoming projects.

### 6.2. Existing Proposed Projects

Pedestrian facilities can include sidewalks, greenways, and intersection improvements, as well as streetscaping projects and traffic calming efforts. Pedestrian facilities can be constructed as part of a roadway project or similar type work, or independently. Town staff keeps a listing of these various projects and their proposed timeframe. The following paragraphs outline existing upcoming pedestrian-related projects, their estimated costs, and proposed timeframe for design and construction.

#### 6.2.1. Roadway Projects

Projects currently in progress in Cary are as follows. Sidewalk will be included for each of these projects:

#### Street Improvements

- ◆ Carpenter Fire Station Road Widening
- ◆ Cary Park Transportation Improvements
- ◆ Cary Parkway Extension: North Harrison to Trinity
- ◆ Chapel Hill Road Widening – Trinity Road to NE Maynard
- ◆ Crossroads Area Traffic Improvements
- ◆ Davis Drive Widening
- ◆ Davis Drive Widening – Northern Section
- ◆ Evans Road Widening
- ◆ Green Level to Durham Road Widening
- ◆ High House Road Widening
- ◆ Jenks Carpenter Road Improvements
- ◆ Kildaire Farm Road Widening
- ◆ Louis Stephens Drive Extensions
- ◆ Morrisville Parkway Extension
- ◆ NC 54/Chapel Hill Road Widening
- ◆ NC 55 Widening
- ◆ Old Apex Rd and Southwest Cary Parkway Intersection Improvements
- ◆ O’Kelly Chapel Road Widening
- ◆ Southwest Maynard Road Widening
- ◆ Trinity Road Widening and Extension
- ◆ Tryon Road Widening
- ◆ US 1/64 Widening
- ◆ Walnut Street Corridor and Land Use Plan
- ◆ Walnut Street Widening

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#### New Traffic Signals

- ◆ Regency Parkway at Ederlee Drive – Complete March 2006
- ◆ NC 55 at McCrimmon Parkway – Complete May 2006
- ◆ Walnut Street at Macedonia Road/Tryon Village – Complete July 2006
- ◆ Tryon Road at Colonial Baptist Church/Tryon Village – Complete July 2006
- ◆ Walnut Street at Centrum/Crossroads Ford – Complete November 2006
- ◆ SW Cary Parkway at Towne Center Village Drive/Huntsmoor Lane – Complete December 2006

#### Upgraded Traffic Signals

- ◆ Academy Street at Chatham Street – April 2006
- ◆ Cary Parkway at Old Apex Road – May 2006
- ◆ Harrison Avenue at Harrison Square – August 2006
- ◆ SW Maynard Road at Old Apex Road – August 2006

The following table (Table 6-1) is funded transportation projects as listed in Cary's Capital Listing for FY 2006 – 2007, as of September 2006. A full and complete listing of projects can be found online at:

<http://townofcary.org/depts/budget/fy2007/budgetfy07summary.htm>.



**Figure 6-1.** Current roadway construction projects in Cary will include new sidewalk.

**Table 6-1.** Funded transportation capacity projects as listed in Cary's FY 2009 – 2019 Capital Improvements Plan.

| Project  | Project Total (\$) | Estimated Completion Date (FY) |
|--|--------------------|--------------------------------|
| Adequate Public Facility Off-Site Mitigation   | 5,500,000          | jPost-2019                     |
| Alston Avenue Widening   | 14,000,000         | 2015                           |
| Carpenter Fire Station Rd Wide (NC55 to Green Level to Durham Rd) - Developer Agreement  | 15,822,000         | 2015                           |
| Carpenter Fire Station Road Extension and Railroad Bridge                                | 17,000,000         | 2012                           |
| Cary Parkway Ext (N Harrison to Trinity Rd)  | 12,100,000         | 2018                           |
| Cary Parkway Lane Additions  | 23,000,000         | 2019                           |
| Cary Parkway/High House Intersection   | 1,500,000          | 2010                           |
| Green Hope School Road Widening  | 12,000,000         | 2018                           |
| Green Level to Durham Improvements at Hawes Tract  | 4,600,000          | 2017                           |
| Green Level to Durham Road (McCrimmon Pkwy) Developer                                    | 12,000,000         | 2012                           |
| Green Level West Road Widening   | 12,500,000         | 2013                           |
| Holly Springs Road Widening (Tryon Rd to Cary Pkwy)                                      | 8,025,000          | 2014                           |
| Intersection Realignment Jenks-Carpenter/High House                                      | 8,550,000          | 2010                           |
| Louis Stephens Drive   | 1,866,500          | 2008                           |
| Morrisville Pkwy Extension - Phase III Carpenter Upchurch Rd to Green Level to Durham Rd | 15,200,000         | 2011                           |
| N. Harrison Avenue Interchange Improvements  | 3,000,000          | 2013                           |
| O'Kelly Chapel Road Widening (NC 55 - Green Level to Durham) - Developer Agreement       | 3,900,000          | 2012                           |
| Reedy Creek Road Widening (NE Maynard Road to N Harrison Ave.)                           | 16,000,000         | 2014                           |
| S. Harrison Avenue Extension   | 3,800,000          | 2013                           |
| TCAP - Chapel Hill Road Widening - NE Maynard to NW Maynard                              | 28,450,000         | 2016                           |
| TCAP - Walker Street Extension   | 15,375,000         | 2010                           |
| US 64/Edinburgh Intersection Improvements  | 500,000            | 2009                           |
| Waldo Road Dual Left Turn Lanes  | 310,000            | 2011                           |
| Walnut/Maynard Intersection Improvement  | 100,000            | 2011                           |
| Adequate Public Facility Off-Site Mitigation   | 5,500,000          | Ongoing                        |
| Alston Avenue Widening   | 14,000,000         | 2015                           |
| Carpenter Fire Station Rd Wide (NC55 to Green Level to Durham Rd) - Developer Agreement  | 15,822,000         | 2015                           |
| Carpenter Fire Station Road Extension and Railroad Bridge                                | 17,000,000         | 2012                           |
| Cary Parkway Ext (N Harrison to Trinity Rd)  | 12,100,000         | 2018                           |
| Cary Parkway Lane Additions  | 23,000,000         | 2019                           |

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6.2.2. *Sidewalk*

Currently funded sidewalk projects as part of the sidewalk request program are as follows:

**Table 6-2.** Currently funded sidewalk request projects (September 2006).

| Location                     | From  | To                      | Status               |
|------------------------------|---|-------------------------|----------------------|
| Belhaven Road                | Kingswood Drive                               | Gregory Drive           | Under Survey/Design  |
| Ecklin Lane                  | Morrisville Parkway                           | Walcott Way             | Under Survey/Design  |
| Glasgow Road                 | Kildaire Farm Road                            | Annandale Drive         | Under Survey/Design  |
| Loch Highlands Path Rehab    | Kildaire Farm Road                            | Penny Road              | Easement Acquisition |
| Lochmere Drive (Ph II)       | Lilly Atkins                                  | Sylvan Grove Drive      | Redesign             |
| Lochmere Drive (Ph IV)       | Sylvan Grove Drive                            | Kildaire Farm Road      | Redesign             |
| NW Maynard Road              | Maynard Crossing Court                        | High House Road         | Redesign             |
| Old Apex Road                | Falcone Parkway                               | Apex/Chatham Road Split | Under Design         |
| Queensferry Road             | Kildaire Farm Road                            | Annandale Drive         | Under Survey/Design  |
| SW Cary Parkway              | Center Point Drive                            | Old Apex Road           | Under Construction   |
| SW Cary Parkway              | W. Chatham Street                             | Baron's Glen            | Under Survey/Design  |
| NW Maynard Road              | Havensite Court                               | Carrousel Lane          | Under Survey/Design  |
| Old Apex Road                | High House Road                               | Murphy Drive            | Under Survey/Design  |
| NE Maynard Road              | Harrison Point                                | East of Gregory         | Under Survey/Design  |
| SW Cary Parkway              | Tarbert Drive                                 | Existing Sidewalk       | Under Survey/Design  |
| Ederlee Drive                | Peregrine Place                               | Regency Forest          | Under Survey/Design  |
| SW Cary Parkway              | Laura Duncan Road                             | W. Chatham Street       | Under Survey/Design  |
| Kildaire Farm Rd/Ten Ten Rd. | SW Corner of Kildaire Farm Road & Ten Ten Rd. |                         | Under Survey/Design  |
| West Lake Rd.                | Optimist Farm Rd.                             | Existing Sidewalk       | Under Survey/Design  |
| NW Cary Parkway              | Thorpe Dr.                                    | Silveridge Ct.          | Under Survey/Design  |

**Table 6-2 (Continued).**

| Location                   | From                    | To                      | Status               |
|----------------------------|-------------------------|-------------------------|----------------------|
| James Jackson Ave.         | Town Operations Center  | NW Cary Parkway         | Under Survey/Design  |
| Waldo Rood Blvd.           | Davis Dr.               | W. of Towne Village Dr. | Under Survey/Design  |
| Rock Pointe Ln.            | Beechtree Dr.           | Montibello Dr.          | Preliminary Planning |
| Nottingham Dr.             | Walnut St.              | Donaldson Dr.           | Under Survey/Design  |
| Duncan Hill Ct.            | Forest Pkwy.            | Wellington Ridge Loop   | Under Survey/Design  |
| SW Cary Parkway            | Kilarney Ridge Loop     | Tarbert Dr.             | Under Survey/Design  |
| Howard Grove Dr.           | Existing Sidewalk South | Morris Branch Ct.       | Under Survey/Design  |
| Nowell Blvd.               | N. Cary Park            | Weston Oaks Ct.         | Under Survey/Design  |
| Turner Creek Rd.           | Harmony Subdivision     | Existing Sidewalk       | Under Survey/Design  |
| Pamlico Dr.                | S. W. Maynard Rd.       | Normandy St.            | Under Survey/Design  |
| Queensferry Rd. (Phase II) | Annandale Dr.           | Dunedin Ct.             | Under Survey/Design  |
| Glasgow Rd. (Phase II)     | Annandale Dr.           | St. Andrews Ln.         | Under Survey/Design  |

**Cary Pedestrian Plan**  
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6.2.3. *Greenways*

The Cary Parks, Recreation, and Cultural Resources Master Plan is responsible for assigning priority to greenway and trail projects in the Town of Cary. Table 6-3 lists the priority projects presented in the 2003 Parks, Recreation, and Cultural Resources Master Plan (and at the time of this printing). The most recent Parks, Recreation, and Cultural Resources Master Plan should be referenced for the most up-to-date listing of greenway priorities. The Parks, Recreation, and Cultural Resources Department can also be contacted for a list of current funded greenway construction and design projects. Table 6-4 shows the most recent greenway construction and design projects underway in Cary as of January 2007.

**Table 6-3.** Greenway priority projects in Cary's Parks, Recreation, & Cultural Resources Master Plan (2003).

| Trail Name   | Length (miles) | Location/Description  |
|--|----------------|---|
| Black Creek  | 3.5            | Continue to extend to Bond Park. Provide any and all linkages to adjoining neighborhoods.   |
| Higgins  | 1.86           | Extends from Maynard to Danforth. Proposed section would extend to downtown Cary.   |
| High House Multi-Use Trail                                 | .96            | Extends from proposed linkage with Higgins Trail at Chatham Street, along High Street to Black Creek Extension at intersection of High House and Maynard Streets. |
| Annie Jones Sidewalk Connector/Oxford Hunt Trail Extension | 1.4            | Series of potential trails connecting Scottish Hills Area to Bond Park.   |
| Kildaire Farm Trail  | 2.8            | Extends from McDonalds Park (Seabrook) to Annie Jones Park. Includes off-road greenway trails and sidewalk connectors.  |
| Lake Pine Drive Connector Sidewalk                         | .7             | Existing sidewalk which extends from Cary Parkway north to Maynard. Will require signage and pavement treatment.  |
| White Oak Creek  | 5.5            | Extends from Bond Park to the American Tobacco Trail.   |
| Batchelor Branch Trail                                     | 1.6            | Extends from Tom Brooks south to White Oak Creek.   |
| Raftery Trail  | 1.5            | Extends from Raftery Property east to link with Tom Brooks Park.  |
| Centrum Connector Trail                                    | 1.65           | Extends north from proposed Neighborhood Park at Tryon Road to link with Kids Together Park.  |
| Speight Branch Trail                                       | 1.5            | Extends from current trail project at Cary Parkway south to where Speight Branch links with Swift Creek.  |
| Swift Creek Connector Trail                                | .38            | Short connecting trail linking the Amphitheatre at Regency and Symphony Lake with Swift Creek Greenway.   |
| Dutchman's Branch Trail                                    | 2.28           | Extends eastward from Kildaire Farm Road to link with proposed park on Bartley Parcel.  |

Table 6-4. January 2007 budgeted or in construction greenway projects.

| Trail Name                          | Location  |           | Status       | Est. Completion Date | Length (Miles) |
|-------------------------------------|---|-----------|--------------|----------------------|----------------|
| Airport Blvd Multi-use Trail        | Airport Blvd Thru Twins Lake                      | Developer | Construction | 2008                 | 0.21           |
| Bachelor Branch Trail, Ph I         | Green Level West Rd south to White Oak Creek      | Cary      | Construction | Jun-07               | 0.30           |
| Bachelor Branch Greenway, Ph II     | Green Hope School Grnwy. to Tom Brooks Park       | Cary      | Planned      | 2008                 | 0.65           |
| Black Creek Greenway                | Chapel Hill Road to Bond Park                     | Cary      | Planned      | 2007                 | 2.15           |
| Carpenter Greenway                  | From Morrisville Parkway north to Bloom Lane      | Developer | Planned      | TBD                  | 0.36           |
| Carramore Multi-Use                 | Davis Drive to Louis Stevens                      | Developer | Construction | 2007                 | 0.57           |
| Carramore Greenway                  | Extends around pond to Upchurch Meadows           | Developer | Planned      | TBD                  | 0.57           |
| Churchill Estates Greenway          | Links Camp Branch to Crowder Park                 | Developer | Construction | 2007                 | 0.60           |
| Copperleaf Multi-Use Trail          | North side of collector                           | Developer | Planned      | TBD                  | 0.56           |
| Downing Village Greenway            | Connects w/ Twin Lakes Park                       | Developer | Construction | 2007                 | 0.21           |
| Green Level to Durham Multi-Use Trl | Cary Park Town Center                             | Developer | Planned      | 2008                 | 0.25           |
| Glenkirk Greenway                   | Weatherstone-Glenkirk Connector                   | Cary      | Construction | 2007                 | 0.39           |
| Hatcher Grove Greenway              | Louis Stevens Rd and Morrisville Parkway          | Developer | Planned      | TBD                  | 0.20           |
| Hawes Greenway, Ph I                | Tom Brooks - USA Baseball                         | Cary      | Construction | Jun-07               | 0.30           |
| Hawes Greenway, Ph II               | Greystone (Gable) segment                         | Developer | Designed     | 2008                 | 0.48           |
| Highcroft Village Greenway          | From Green Hope School Rd to Glenmore             | Developer | Construction | TBD                  | 0.40           |
| Indian Creek Greenway               | Town Hall Drive (Morrisville)                     | Developer | Construction | 2008                 | 0.31           |
| Kildaire Farm Road Multi-Use Trail  | Lochmere Drive to Penney Road                     | Cary      | Designed     | TBD                  | 1.29           |
| Louis Stevens Multi-Use             | Carramore collector north to Tennis Center        | Developer | Construction | TBD                  | 0.33           |
| Middle Creek Park Greenway          | Greenway thru Middle Creek Park                   | Cary      | Designed     | 2008                 | 0.53           |
| Morris Branch Greenway              | Surrounds Amberly Lake                            | Developer | Designed     | 2009                 | 1.24           |
| Morrisville Parkway Multi-Use Trail | North side of Morrisville Parkway (east of NC 55) | Developer | Planned      | TBD                  | 0.16           |
| Morrisville Pkwy Multi-Use Trail    | From Greystone west to Weldon Ridge               | Developer | Planned      | TBD                  | 0.91           |
| Nancy Branch Trail                  | West side Green Level to Durham Road              | Developer | Planned      | TBD                  | 0.32           |
| NC 55 Multi-Use Trail               | West side of NC 55 @ Village at the Park          | Developer | Designed     | TBD                  | 0.50           |
| Raftery Greenway                    | Trail north of Copperleaf Development             | Developer | Planned      | TBD                  | 0.33           |
| Sowter Drive Multi-Use Trail        | Parallels Sowter Dr in Legacy Dev. (Carpenter)    | Developer | Planned      | TBD                  | 0.33           |
| Swift Creek Trail, Ph II            | Lilly Atkins to Kildaire Farm Rd (Lochmere Drive) | Cary      | Planned      | TBD                  | 1.60           |
| Symphony Lake Greenway, Ph II       | From Lake Symphony to Regency Parkway             | Developer | Designed     | 2008                 | 0.50           |
| Tryon Village Greenway              | Links Walnut St to Tryon Road Park                | Developer | Construction | 2007                 | 0.56           |
| US 1/64 Ped Overpass & Greenway     | Extension of Hinshaw Greenway to Kids Together    | Cary      | Construction | Jun-07               | 0.60           |
| Walnut Creek Greenway               | Ivy Lane to Buck Jones                            | Cary      | Planned      | TBD                  | 1.23           |
| Walnut Creek Greenway               | Extension to Convention Drive                     | Developer | Construction | Jun-07               | 0.20           |
| Weldon Ridge Multi-Use Trail        | West side of Weldon Ridge Blvd                    | Developer | Planned      | TBD                  | 0.27           |
| Westlake Multi-Use Trail            | Parallels east side of Westlake Rd                | Developer | Design       | 2008                 | 0.35           |
| White Oak Creek Grnwy., Ph III, IV  | Bond Park to Green Level Church Road              | Cary      | Construction | 2007                 | 2.52           |
| White Oak Creek Greenway, Ph V      | Apex Jurisd - Green Level Church to ATT           | Apex/Cary | Design       | TBD                  | 2.00           |
| Yates Store Rd Multi-Use Trail      | Amberly Lake south to New Hope Church Road        | Developer | Design       | TBD                  | 2.62           |

## Cary Pedestrian Plan

### Section 6: Future Projects

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Figure 6-2 shows the locations of the Town's various projects that have been identified in the preceding paragraphs as current projects, planned projects in the Town's Fiscal Year 2007 - 2016 Capital Improvements Plan, funded sidewalks in the sidewalk construction program, and priority greenways in the Parks, Recreation, and Cultural Resources Plan. The remainder of this section focuses on the proposed priority projects developed from the analysis and public input process for this Pedestrian Plan. These priority projects build upon the Town's existing proposed, planned, and in construction projects to create a relatively more inter-connected pedestrian network.

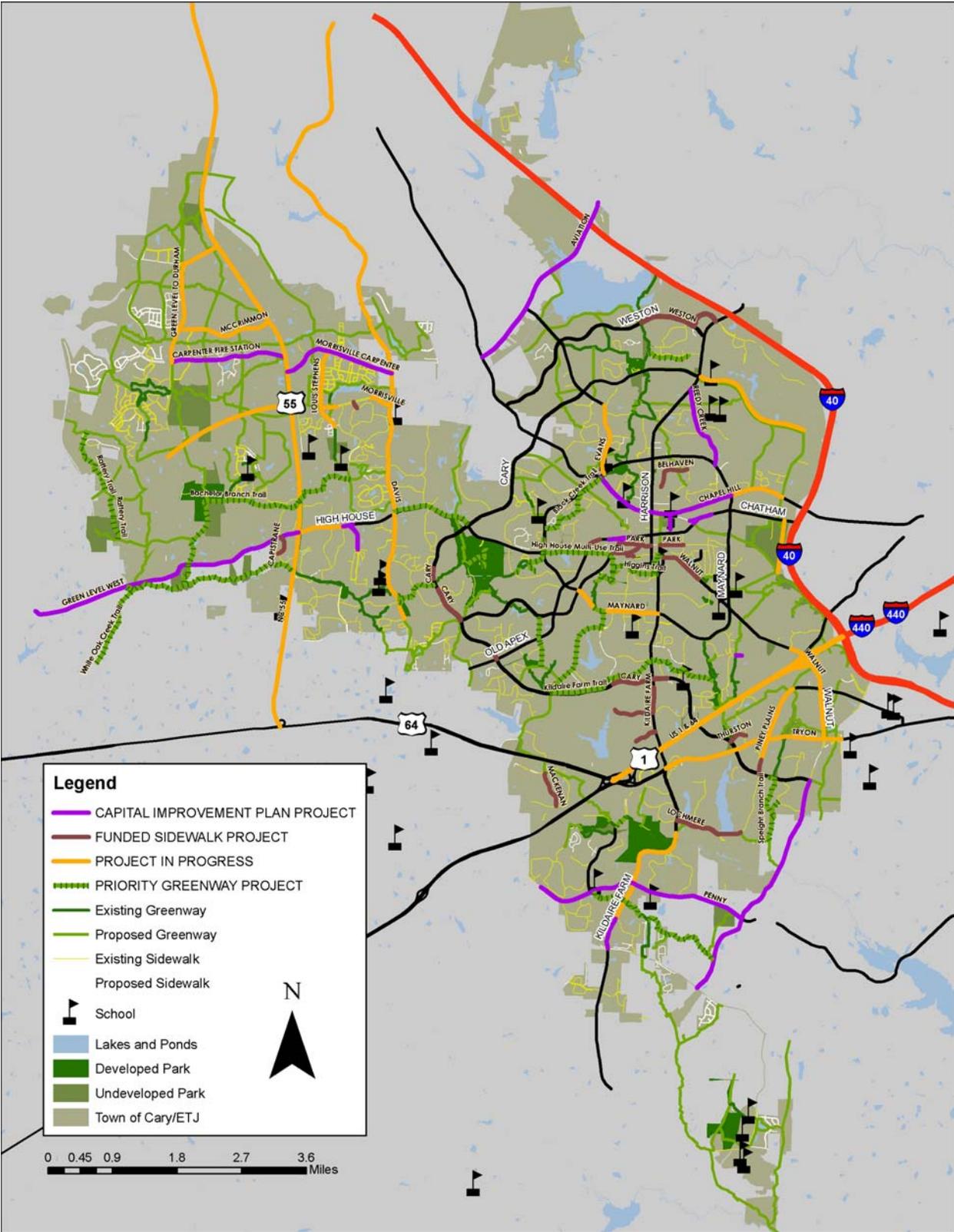


Figure 6-2. Map of Cary's existing planned, funded, or in construction projects as identified in the FY 2007 - 2016 Capital Improvements Plan, Sidewalk Construction Program, and Parks, Recreation, and Cultural Resources Plan.

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### 6.3. Project Recommendations

The following are proposed top priority projects that the Town should focus efforts on in order to improve pedestrian safety, connectivity, and accessibility in the Town. These projects were selected from a list of projects that were generated based on public input through surveys, focus groups, and stakeholder comments. A complete discussion of the project identification and development process is addressed more thoroughly in Appendix 3, and the results of the study corridor analysis are included in Appendix 4. Appendix 5 contains a complete list of all of the projects which were considered during the planning process.

The complete list of projects was prioritized using the Town's existing sidewalk request program prioritization methodology. This methodology is discussed on the Town's website at: [www.townofcary.org/depts/tcdept/policies/135.htm](http://www.townofcary.org/depts/tcdept/policies/135.htm). Using this methodology, top priority is given to projects within close proximity to schools, parks, shopping, greenways, and transit facilities. Priority is also given to those projects which serve as connections to existing sidewalk.

Table 6-5 and accompanying Figure 6-3 shows the top prioritized corridor projects in order from highest to lowest ranking and their source in the public input process. Table 6-6 and Figure 6-4 shows the top intersection projects in order from highest to lowest ranking. These intersections were identified based on their ability to improve pedestrian safety and connectivity within the Town. It is recommended that the Town address these corridors and intersections first. Once these are completed, the remaining projects contained in Appendix 5 should be reprioritized and a new set of top priorities should be selected.

The Plan's public involvement also generated some requests for changes to the transit system and transit facilities which will improve pedestrian conditions and safety. These include:

- ◆ Relocate the stop at Crossroads 20 out of the middle of the parking lot and near to a location with sidewalk
- ◆ Place Maynard Loop 2 stop closer to Maynard Loop 1 stop at Reedy Creek and Maynard.
- ◆ In general, provide more bus stop amenities such as benches, shelters, and sidewalk access.

**Cary Pedestrian Plan**  
Section 6: Future Projects

**Table 6-5.** Top priority corridor projects.

| Reference Number | Location         | From                          | To               | Recommended Treatment   | Cost Estimate (\$1,000's) |
|------------------|------------------|-------------------------------|------------------|---|---------------------------|
| 4                | Maynard          | Northwoods                    | Evans            | Provide sidewalk, both sides of Maynard and connections to Godbold Park.  | 137.28                    |
| 51               | Maynard          | Plantation                    | Kildaire Farm    | Provide sidewalk along north side of Maynard with connections to existing sidewalk and platforms for bus shelters.  | 200.64                    |
| 7                | Chapel Hill      | Maynard                       | Academy          | Construct continuous sidewalk along both sides of Chapel Hill with connections to Northwoods Elementary, Northwoods Trail, Maynard, and Academy. Location is part of proposed multi-use trail, should consider 10 ft. wide sidewalk minimum.  | 224.4                     |
| 89               | Griffis/Harrison | Cornwall                      | Dry              | Construct sidewalk on west side for connections to downtown and sidewalk for transit patrons waiting for the bus.   | 208.56                    |
| 66               | Harrison         | Grande Heights                | Adams            | Provide sidewalk along west side of Harrison for access to downtown, Jordan Hall Arts Center, and transit.  | 256.08                    |
| 5                | Maynard          | Evans                         | Chapel Hill      | Construct sidewalk west side of Maynard. Provide pedestrian access across Maynard at Evans and Chapel Hill.   | 18.48                     |
| 38               | Weston           | Reedy Creek Greenway Crossing | Harrison         | Construct sidewalk along Weston from Harrison to Reedy Creek Greenway with connection to the greenway from the road (grade-separated).  | 337.92                    |
| 15               | Chatham          | Dixon                         | Jason            | Construct sidewalk both sides of Chatham with connections to proposed Higgins Trail and provisions for transit stops.   | 174.24                    |
| 63               | Chatham          | Maynard                       | I-40             | Construct sidewalk along at least one side of Chatham (south side recommended) with connections to sidewalk in Raleigh. Requires coordination with City of Raleigh. Include connections to proposed Trinity Road multi-use trail and Walnut Creek Trail. Include crossing at SAS Park, Trinity, and Maynard.  | 242.88                    |
| 10               | Old Apex         | Dixon                         | High House       | Construct sidewalk both sides of Old Apex with connections to existing sidewalk along Chatham and High House.   | 198                       |
| 64               | Chatham          | Maynard                       | Durham           | Complete missing links in sidewalk on north side of Chatham. Consider providing 10 ft. sidewalk due to highly commercial nature of nearby land uses.  | 121.44                    |
| 13               | High House       | Old Apex                      | Chatham          | Construct sidewalk on north side of High House for access to downtown between Chatham and Old Apex.   | 89.76                     |
| 16               | Chatham          | Jason                         | Danforth         | Construct continuous sidewalk on the north side of Chatham with connections to existing sidewalk and Higgins Trail.   | 71.28                     |
| 1                | Evans            | Dynasty                       | Evans Estates Dr | Provide sidewalk on both sides of Evans with connections to existing sidewalk.  | 134.64                    |
| 48               | Penny            | Kingsford                     | Loch Highlands   | Construct continuous sidewalk to provide connections between existing sidewalk and to Oak Grove Elementary. Sidewalk will serve to provide pedestrian access from neighborhoods to school. A 10 ft offset from the road is recommended to improve safety given the age of the potential users. Include adequate pedestrian crossings at Kingsford, Crickentree, and Loch Highlands. | 594                       |
| 19               | Regency          | Swift Creek Trail Entrance    | Peregrine        | Provide 10 ft. multi-use trail on west side of Regency with connections to existing sidewalk, Swift Creek Greenway Connection, and Symphony Lake Trail. Ensure adequate pedestrian crossings from Trail to Greenway Connection.   | 132                       |

Table 6-5 cont'd.

| Reference Number | Location      | From        | To                | Recommended Treatment   | Cost Estimate (\$1,000's) |
|------------------|---------------|-------------|-------------------|---|---------------------------|
| 62               | Old Apex      | Chatham     | Laura Duncan      | Provide continuous sidewalk on at least one side of Old Apex for connections between neighborhoods/residential development to shopping and commercial development.  | 498.96                    |
| 88               | Donaldson     | Nottingham  | Walnut            | Provide sidewalk on east side of Donaldson for transit users and residents to access shopping, residential area safely.   | 66.00                     |
| 71               | Melody        | Harrison    | Reedy Creek       | Part of proposed Beechwold Connector Trail. Construct 10 ft. multi-use trail south side of Melody for connection from Harrison to Reedy Creek Schools. Include adequate pedestrian crossings at Harrison and Reedy Creek. Consider constructing sidewalk on north side of Melody.   | 60.72                     |
| 79               | Buck Jones    | Nottingham  | Town Limits       | Construct sidewalk on both sides of Buck Jones to Cary/Raleigh Limit. Requires coordination with City of Raleigh. Part of Buck Jones Multi-use Trail, consider providing 10 ft. wide multi-use trail. Part of regional transit system, consider including transit facilities such as shelters or platforms.   | 44.88                     |
| 25               | Walnut        | Donaldson   | Piney Plains      | Provide sidewalk along Walnut St. Bridge over US 1/64 with connections to existing sidewalk on east side of Walnut. Requires coordination with NCDOT. Consider providing sidewalk on west side of Walnut St.  | *                         |
| 46               | Kildaire Farm | Queensferry | Keisler           | Provide sidewalk on west side of Kildaire Farm for access from residential areas at north end of corridor to commercial area at south end of corridor while reducing crossings  | 287.76                    |
| 35               | Cary          | Hampton Lee | Norwell           | Construct sidewalk north side of Cary with connection to Black Creek Trail, North Cary Trail, existing sidewalk, and North Cary Park. Part of length is proposed Cary Parkway Multi-use Trail, consider constructing a 10 ft. multi-use trail. Provide adequate pedestrian crossings at intersection of Black Creek Trail and Cary Parkway.   | 89.76                     |
| 67               | Cary Towne    | Maynard     | I-40              | Part of proposed Cary Towne Boulevard Multi-use Trail. Construct 10 ft. multi-use trail along north side and sidewalk along south side of Cary Towne Center with adequate pedestrian crossings at Adams Elementary and Cary Towne Center Mall. Provide connections to proposed Walnut Creek Trail and Pirate's Cove Trail, existing sidewalk, and sidewalk across I-40 bridge to Raleigh. Will require coordination with NCDOT and City of Raleigh. | 213.84                    |
| 26               | Nottingham    | Buck Jones  | Nottingham Circle | Provide sidewalk for transit users on north side of Nottingham for transit users and residents to access shopping/residential area safely.  | 116.16                    |
| 28               | Crossroads    | Caitboo     | Caitboo           | Provide sidewalk for transit users and Crossroads patrons to improve safety and comfort when walking in the Crossroads Shopping Center area.  | 158.40                    |
| 44               | Reedy Creek   | Harrison    | Maynard           | Construct continuous sidewalk on both sides of Reedy Creek with connections to Reedy Creek Schools and proposed Reedy Creek Trail. Provide adequate crossings at Harrison, Dynasty, Wyatt's Pond, and Maynard.  | 316.8                     |
| 90               | Meeting       | Dillard     | Walnut            | Provide sidewalk for pedestrians to improve safety and comfort when walking from Crossroads area to other nearby shopping and residential development, transit access.  | 81.84                     |
| 17               | Chatham       | Danforth    | Old Apex          | Construct continuous sidewalk along both sides of Chatham with connections to existing sidewalk. Provide adequate pedestrian crossings at Old Apex and Maynard.   | 168.96                    |
| 12               | Old Apex      | Berentwood  | Chatham           | Construct sidewalk on north side of Old Apex to connect with existing sidewalk. Include adequate pedestrian crossings at Berentwood and Chatham.  | 81.84                     |

*\*This project is currently in discussion between the Town and NCDOT staff. It will most likely require a bridge replacement, which is beyond the scope of this Plan's cost estimates.*

**Cary Pedestrian Plan**  
 Section 6: Future Projects

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| Reference Number | Location | From          | To         | Recommended Treatment  | Cost Estimate (\$1,000's) |
|------------------|----------|---------------|------------|--|---------------------------|
| 65               | Ralph    | Walnut        | Maynard    | Construct sidewalk on at least one side of Ralph with connection to existing sidewalk at Maynard and Walnut. Include adequate pedestrian crossings at Cornwall, Maynard, and Walnut. | 232.32                    |
| 29               | Caitboo  | Crossroads    | Crossroads | Provide sidewalk for transit users and Crossroads patrons to improve safety and comfort when walking in the Crossroads Shopping Center area.   |                           |
| 61               | Cary     | Tryon         | Lochmere   | Construct sidewalk at least one side of Cary with connections to existing sidewalk at Lochmere and Tryon.  | 129.36                    |
| 47               | Penny    | Killingsworth | Kingsford  | Provide missing sidewalk link along northwest segment of Penny.  | 52.8                      |

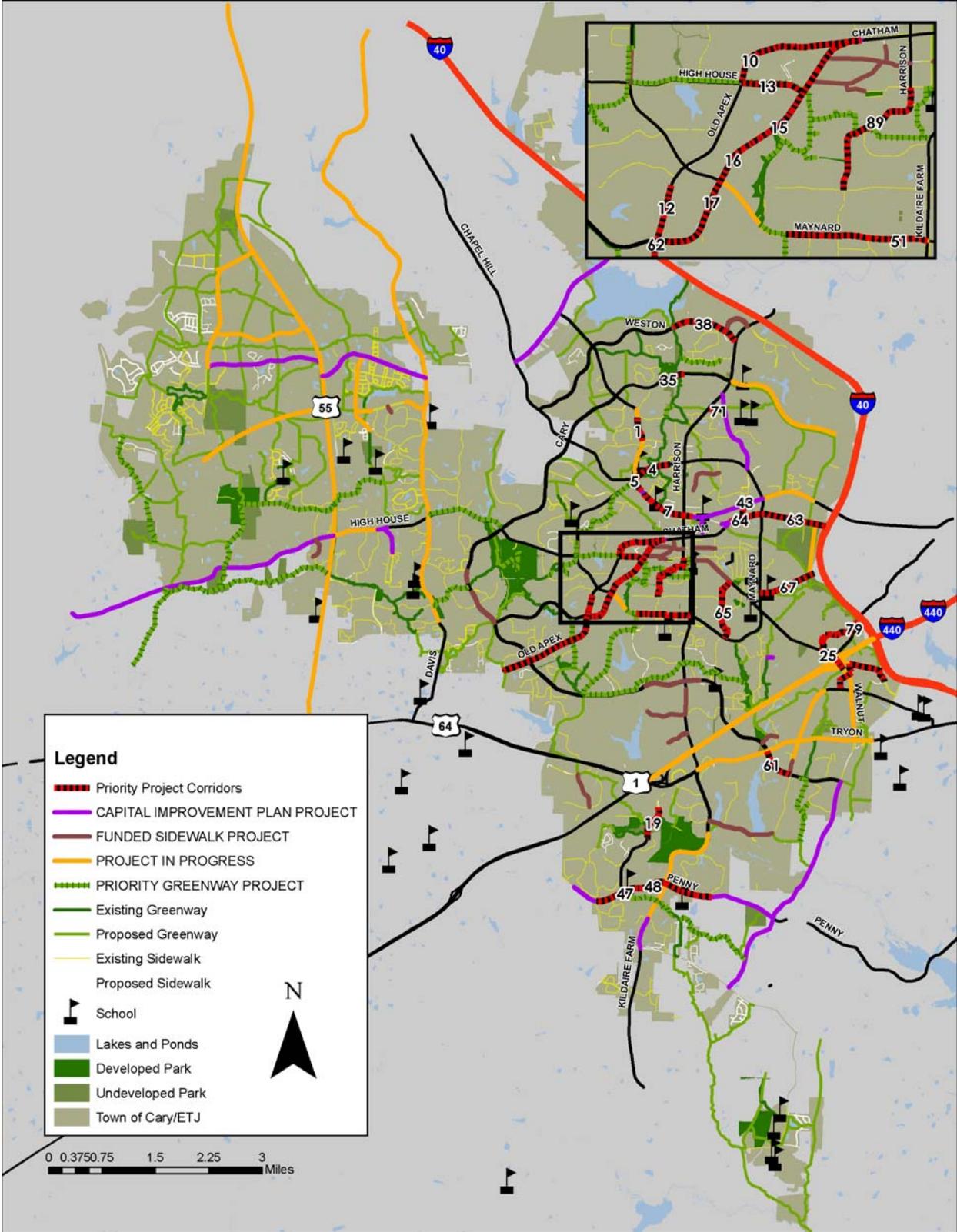


Figure 6-3. Map of the locations of the top priority corridor projects in reference to on-going and planned projects in the Town. The numbers associated with each project correspond with the reference numbers in Table 6-5.

Table 6-6. Top priority crossings improvement projects.

| Reference Number | Location   | Recommended Treatment  |
|------------------|--|--|
| 96               | Evans and Lake   | Provide signal with pedestrian heads or pedestrian-activated signal for safer access from residential development to school and nearby commercial development.   |
| 98               | Tate/Maple and Maynard   | Provide crossing for access to shopping center from residential area   |
| 4                | Maynard and Black Creek Trail  | Greenway/pedestrian crossing to Godbold Park   |
| 36, 37, 38       | Crossing of Maynard at Wicklow, Pond, and Kilmayne                               | Provide signalized pedestrian-activated crossing at one or more of these locations to improve connectivity and provide a safer passage between neighborhoods, commercial development along Kildaire Farm, and Briarcliff Elementary School. There is already a signal for motorists at the intersection of Pond and Maynard – the Town should consider providing pedestrian heads at this location at the minimum. |
| 52, 53, 54       | Green Hope Schools Entrances and Hwy 55/Carpenter Upchurch Rd.                   | Consider pedestrian improvements such as pedestrian-activated signals at one or more of these crossings to create safer access to schools. Improvements could also include re-evaluating school drop-off and pick-up procedures to limit student/vehicle interaction.  |
| 94               | Reedy Creek and Wyatt's Pond   | Greenway/pedestrian crossing to Reedy Creek schools for nearby neighborhoods and greenway  |
| 89               | Penny and Ederlee  | Greenway/pedestrian crossing to Penny Elementary School from nearby neighborhoods and proposed Dutchman's Branch Trail greenway  |
| 73               | Maynard and Hampton Valley   | Provide signal with pedestrian heads or pedestrian-activated signal for safer crossing of Maynard from neighborhood to neighborhood and also from neighborhood to commercial development.  |
| 64               | Cary Parkway and White Oak Creek Trail   | Greenway/pedestrian crossing for White Oak Creek Trail over Cary Parkway to proposed trail   |
| 34               | Maynard and High House   | Provide pedestrian heads at all four legs of intersection for safer crossings, as requested by Seniors Focus Group.  |
| 32               | Penny and Crickentree  | Install pedestrian crossing to Oak Grove Elementary School from nearby neighborhood for safer access.  |
| 51               | Louis Stephens and Upchurch Meadow   | Consider signal with pedestrian heads or pedestrian-activated signal to improve access within residential development and to nearby schools.   |
| 22               | Maynard and Reedy Creek  | Provide pedestrian heads and crosswalks at all four legs of this signalized intersection.  |
| 24, 84           | Kildaire Farm Rd. and Tryon Rd. and other nearby intersections                   | Pedestrian crossing accommodations for access from Wake Med Hospital to Waverly Place shopping dining establishments   |
| 81               | Chatham and S. Reedy Creek   | Consider providing signal with pedestrian heads or pedestrian-activated signal for better connectivity and easier access across Chatham for pedestrians from commercial and office development.  |
| 21               | Dynasty and Reedy Creek  | Provide pedestrian-activated signal or standard signal with pedestrian heads for safe crossing of Reedy Creek from neighborhood to neighborhood and to access Reedy Creek Schools area.  |
| 80, 82           | Chatham and SAS Soccer Park Entrance   | Provide safer pedestrian crossing over Chatham from SAS Soccer Park to Trinity and nearby development. Consider signals and pedestrian heads or pedestrian-activated signal.   |
| 56               | Cary Parkway and Chatham   | Greenway/pedestrian crossing over Cary Parkway for connection between Swift Creek Trail and Bishop's Gate Trail  |
| 42, 43, 44, 45   | Intersections of Kildaire Farm and Wren, Commonwealth, Kilmayne, and High Meadow | Consider installing pedestrian-activated signal at one or more of these locations or at a mid-block location to provide quicker, safer pedestrian crossing from residential areas on one side of Kildaire Farm to shopping areas on other side.  |
| 19               | Cary Parkway and Black Creek Trail   | Greenway/pedestrian crossing for Black Creek Trail across Cary Parkway to North Cary Park  |
| 9                | Ederlee and Swift Creek Trail  | Greenway/pedestrian crossing to connect to Symphony Lake Trail   |

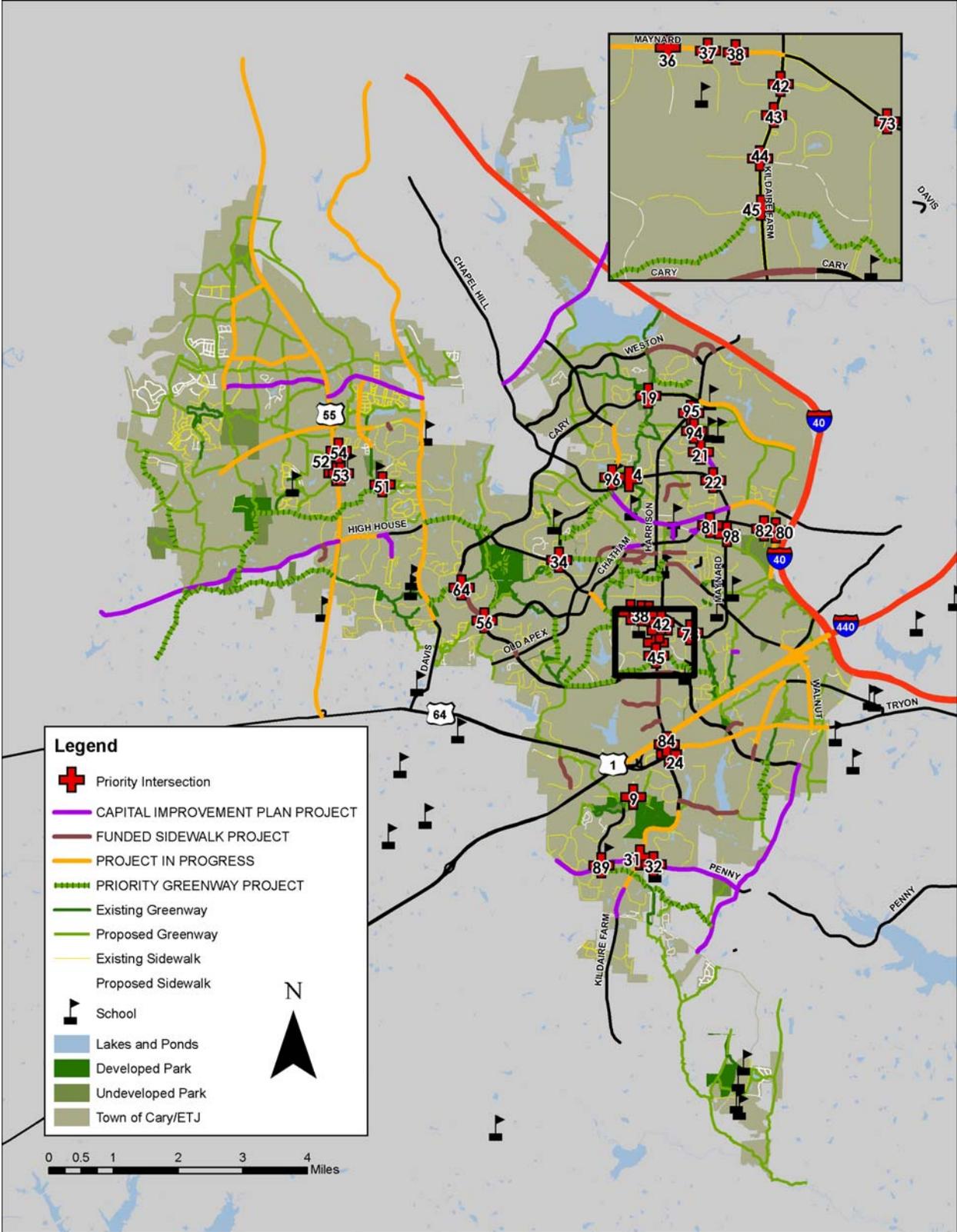
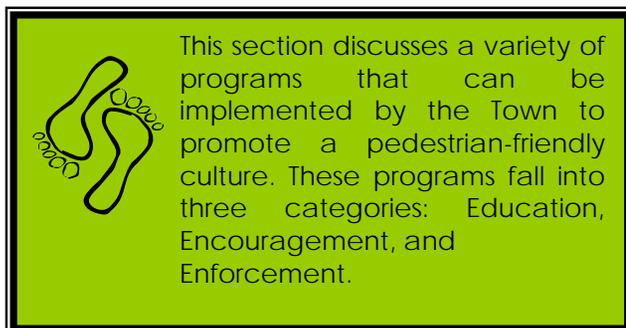


Figure 6-4. Map of locations of priority intersection improvement projects in the Town relative to on-going and planned projects. The numbers associated with each intersection correspond with the reference numbers in Table 6-6.





## Section 7. Program Recommendations

### 7.1. Introduction

Pedestrian facilities alone do not make a town pedestrian-friendly; a variety of programs can also be implemented to create and support a pedestrian-friendly culture. A pedestrian-friendly culture has several different characteristics, including the behavior of the people in the town, the attitude of motorists in the town towards pedestrians, and the role of police and other law officials to enforce pedestrian safety. For this reason, programs are often created to fit within the three E's of pedestrian planning: education, encouragement, and enforcement. Education programs teach others about safe pedestrian behaviors, the benefits of walking, and are necessary to assist people in feeling more comfortable with their "new" mode of travel. Education programs can also be used to teach motorists how to interact safely with pedestrians. Encouragement programs, like education programs, can also teach about the benefits of walking, and serve to promote walking and pedestrian-friendly behavior through activities and incentives. Finally, enforcement programs provide the "teeth" of creating a safe and legal pedestrian environment. When law enforcement officers and other officials protect pedestrians and encourage walking, this sends a clear message that the presence of pedestrians is a legitimate and permanent condition in the town's transportation network.

The Town of Cary already has several programs that encourage a pedestrian-friendly town, including their sidewalk request program (see Section 4). As part of the Capital Area Metropolitan Planning Organization (CAMPO), the Town participates in several yearly activities which are sponsored by RTP SmartCommute and the Triangle Transit Authority (TTA), including:

- ◆ The SmartCommute Challenge, which is intended to encourage alternative forms of work commuting.
- ◆ International Walk-to-School Day, which encourages students and their parents to walk to school.
- ◆ International Car-Free Day, in which participants pledge not to use their cars all day.

In addition, in 2007 the Town renewed its Bronze designation as a Bicycle Friendly Community with the League of American Bicyclists (LAB). The LAB originally awarded the Town the Bronze designation in May 2003. Although this is a designation intended

## Cary Pedestrian Plan

### Section 7: Program Recommendations

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primarily for bicycling, a bicycle-friendly community frequently has characteristics which make it pedestrian-friendly. The Town also has a strong greenway program which includes a Greenway Advisory Committee to its Parks, Recreation, and Cultural Resources Committee. The Greenway Advisory Committee also has a webpage with information about Cary's greenways and committee members, located through the Town of Cary webpage at [www.townofcary.org](http://www.townofcary.org).

Some of Cary's previous planning documents have also recommended several programs; they are listed below. These recommendations are incorporated into the Pedestrian Plan.

- ◆ Implementation of a program of systematic sidewalk gap closure with construction projects initiated by the Town (*Cary Comprehensive Transportation Plan, Jan 2001*)
- ◆ Pursuit of a set of five short-term priority sidewalk construction projects in specific locales (*Cary Comprehensive Transportation Plan, Jan 2001*)
- ◆ Establishment of a Pedestrian/Bicycle Advisory Committee (*Cary Comprehensive Transportation Plan, Jan 2001*)
- ◆ Initiation of a "Pathways to Progress" program that would focus on connectivity. This program would identify and prioritize needs for linkages between adjacent neighborhoods, activity centers, shopping centers, greenways, and schools (*Cary Comprehensive Transportation Plan, Jan 2001*)
- ◆ For the downtown area (from Town Center Plan): Comprehensive system of signage and wayfinding to complement all modes of travel in downtown. (*Town Center Plan, Aug 2001*)

The combined effect of pedestrian-oriented programs with projects to improve pedestrian facilities can be a strong, lasting force in making a town more pedestrian-friendly. The following discussion identifies several programs that the Town should consider implementing to promote pedestrian-friendliness. These programs would augment the impact of any pedestrian facility construction to create a more pedestrian-friendly culture in the Town.

#### 7.2. Program Recommendations

The following programs have been organized according to the three E's of pedestrian planning: Education, Encouragement, and Enforcement; however, some of the programs categorized as one type of program will have some overlaps with other types

of programs. Unlike sidewalk and intersection construction projects, programs often require the partnering of various town departments with other town departments, and potentially with other outside agencies or community groups, in order to be successful. In addition, programs are often recurrent in nature, such as a yearly event. For these types of programs to be successful, they will need a sustained and coordinated effort between the lead agency or organization and its partners. Taking this into account, the programs recommended in the Cary Pedestrian Plan have been developed using input from Town staff, Stakeholders, and the potential partnering agency representatives. Although programs can seem more complex and demanding than construction projects, with successful implementation they will have long-lasting effects on pedestrian-friendliness in the Town.

### 7.2.1. Education

#### Safe Routes to School Program

According to the Federal Highway Administration's website for Safe Routes to School, in 1969, about half of all students walked or bicycled to school. Today, however, over half of all children arrive at school in private automobiles and only 15 percent of all school trips are made by walking or bicycling<sup>1</sup>. Designed to address these dramatic statistics, the Safe Routes to School Program is intended to create and promote safe walking and cycling to school in order to improve safety near schools, promote active lifestyles, and reduce pollution and congestion caused by school traffic.

**Did you know?** In 1969, about half of all students walked or bicycled to school. Today, however, only 15 percent of all school trips are made by walking or bicycling<sup>1</sup>.

The first Safe Routes to School program was begun in Europe in the late 1970's, but the first program in the United States began in the Bronx, NY, in 1997. Now, less than 10 years later, the Safe Routes to School Program has become both a federally-funded and grassroots national movement. Safe Routes to School programs are usually kicked-off with a celebration of International Walk to School Day. On this day, schools will often create various incentives for students and their parents to walk or bike to school, including a Walking School Bus and Walk-to-School assembly and luncheon. The 2006 International Walk to School Day was on October 4, 2006, and over 2,200 schools participated. Throughout the year, schools with Safe Routes to School programs continue to conduct encouragement programs for walking or bicycling to school, and also incorporate education into the school curriculum for students about safe walking and bicycling skills and the benefits of an active lifestyle.

<sup>1</sup> FHWA Safety: Safe Routes to School Program. <http://safety.fhwa.dot.gov/saferoutes/>

## Cary Pedestrian Plan

### Section 7: Program Recommendations

In North Carolina, the North Carolina Department of Transportation (NCDOT), in conjunction with the Federal Highway Administration, has established the North Carolina Safe Routes to School program, which is a state-wide program to promote safe walking and bicycling to elementary and middle schools in North Carolina. The North Carolina Safe Routes to School program provides opportunities for schools to apply for funding for both programs and capital improvement projects to encourage walking and cycling to school. In order to receive funding, representatives from eligible schools must first apply for a Safe Routes to School training session to be conducted at their school. This free training session brings together school administrators, faculty, staff, and representatives from related agencies such as health departments, law enforcement, engineering, and town planning, to educate them about Safe Routes to School, its purpose, and techniques that can be used to create a successful program. Once the training session has been conducted, the school will be prepared to start an effective Safe Routes to School program, and is eligible to apply for grants for both programs and capital improvements.

In 2005, the Town of Cary's Briarcliff Elementary participated in a very successful Safe Routes to School pilot program. It is recommended that Town Staff should coordinate with Wake County Public School System officials to continue this work to establish an on-going Safe Routes to School program in the Town's schools. Many of the Town's schools have facilities, such as greenways and street crossings, which are designed to encourage pedestrian and bicycle access. It is important that the Town work with the Wake County Public School system to take advantage of these facilities and to encourage walking and biking to school. In addition, when new schools are planned and constructed, Wake County Public School System representatives should work with Town Staff to plan for and design safe walking and cycling routes to new schools. A Safe Routes to School program is a recurring activity, and it will require support from Town Staff, school administration, and parents and faculty; however, the benefits of a Safe Routes to School program will continue with children into adulthood.

**Recommendation:** *In continuation of the successful Safe Routes to School pilot program held at Briarcliff Elementary, Cary Town Staff should coordinate with school administration, at either a system-wide or individual school level, to encourage and support the establishment of an on-going Safe Routes to School program at all schools within the Town. In addition, when new schools are planned and constructed, Wake County Public School System representatives should work with Town Staff to plan for and design safe walking and cycling routes to new schools.*

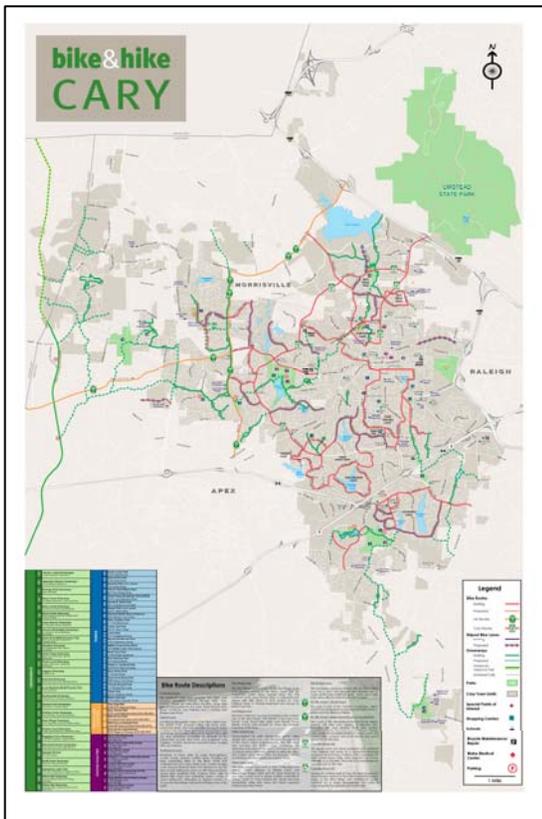


**Figure 7-1.** Weatherstone Elementary is one of the schools in Cary that would be eligible for Safe Routes to School funds.

Promotional/educational materials

A simple way to spread information about walking and safe pedestrian behavior is to create promotional and educational materials for distribution at various venues throughout Town, and to Town staff, major employers, and future residents. Already, the Town has Bike + Hike Map that includes safe cycling instructions; In the same manner, the Town can prepare similar materials with pedestrian-related instructions. The purpose of these materials would be to educate Cary's citizens about safe walking behaviors, safe driving behaviors around pedestrians, the proper use of pedestrian facilities like pedestrian signals, and the benefits of walking on health and the environment. The educational materials can be distributed to outdoor groups and outdoor supply vendors, as well as distributed at town events, kiosks, or Parks and Recreation Department activities. In addition, materials could be created for distribution to developers which would educate them about pedestrian-friendly design and construction.

***Recommendation: Town Staff should design and distribute educational and promotional materials to Town Staff, major employers, and future residents, as well as for display at Town Hall and other public locations (for example: parks, bus stops, recreational facilities).***



**Figure 7-2.** Cary's Bike + Hike Map serves both as a map and as an educational tool for bicycle safety. The Town should also consider preparing similar materials for pedestrian safety.

Council and Administration/Town Hall Employees Education day

One of the major characteristics of a pedestrian-friendly town is to have public officials and leaders who support and encourage pedestrian-friendliness. Usually this requires that town officials and staff are educated about the economic, health, and general quality of life benefits of a pedestrian-friendly town. In order to facilitate this, it is recommended that Town Staff establish a Pedestrian-friendliness Education Day, perhaps in conjunction with a Bicycle-friendliness Education Day. During this day, Town Council members and staff representatives will attend presentations on pedestrian- and bicycle-friendliness to learn about the projects, programs, and policies that can encourage a more bicycle- and pedestrian-friendly town. Several organizations, such as Walkable Communities, Inc. and the Complete the Streets program ([www.completestreets.org](http://www.completestreets.org)), provide resources such as speakers, handouts, guides, and publications which can be used for the Education Day. The purpose of this day would be to both educate about pedestrian-friendliness and to help create a greater acceptance of pedestrian-related projects and initiatives in the future. Should this education effort prove successful, the Town could consider using it as a model for employers and businesses to educate their employees and staff.

## Cary Pedestrian Plan

### Section 7: Program Recommendations

**Recommendation:** *Town staff should create a Pedestrian-friendliness Education Day, in which Town staff, Town Council members, and other officials are educated about the benefits of a pedestrian-friendly town and some of the projects, programs, and policies that can be used to create a better walking environment supportive of adult pedestrians, economic goals, and students.*

#### 7.2.2. Encouragement

##### Walk-to-Work Week and Employer Outreach

As part of the Triangle Region, Cary is served by several organizations intended to promote alternative modes of transportation, such as walking. Some of these organizations include the Capital Area Metropolitan Planning Organization (CAMPO), the Triangle Transit Authority (TTA), and RTP SmartCommute. All of these organizations hold throughout the year various promotional events, such as the SmartCommute Challenge and Bike-to-Work Week. The SmartCommute Challenge, in particular, occurs each year between the months of August and July, and is designed to promote taking alternative modes of travel for the work commute by challenging individuals to pledge to test out one alternative mode of travel to work at least once between the start and finish of the Challenge. Participants in the program receive special incentives such as wristbands and discounts at participating stores, as well as recognition for their efforts. The SmartCommute Challenge often coincides with International Walk-to-Work Week and International Car-Free Day.

It is recommended that the Town of Cary take a more active role in these events by coordinating a Town-supported Walk-to-Work Week in conjunction with the SmartCommute Challenge and International Car-Free Day. The Town's Walk-to-Work Week could join promotional efforts with the SmartCommute Challenge to advertise in local papers and the Town's internal BUD newsletter. During the week, the Town could set-up a booth in a central location to provide food and drink to participants and to distribute flyers and educational material as previously described in the Education Programs discussion. Although this may have already been done in the past during various alternative commuting events, this should become a consistent activity. The Town could also consider providing incentives to employers who encourage their employees to walk to work – incentives could be either monetary or publicity.



**Figure 7-3.** The SmartCommute Challenge is one of the Triangle-wide activities to encourage alternative forms of transportation, including walking.

***Recommendation:*** *Town staff should coordinate with the various alternative commuting organizations in the Triangle area to create a joint-effort event. This joint effort may be a Walk-to-Work week, which encourages employees and employers to walk to work or use other alternative modes of travel.*



**Figure 7-4.** The Northwoods Trail is one of Cary's many greenways. It serves not only as a recreational facility but also as access to Northwoods Elementary.

#### Greenway Activities

Another way to encourage walking is to encourage more recreational activity. Already the Town has a Greenways Advisory Committee, which reports to the Parks, Recreation, and Cultural Resources Commission; the Town could use this committee and its presence to promote greenways and encourage their use. Some of the activities that the Greenways Advisory Committee could support include:

- Creating repeating Education Walks which would occur on the Town's greenway system and help to familiarize residents with the greenways;
- Establishing an Adopt-a-Trail Program whereby participants maintain and monitor greenway trails and report needs back to Town staff; and
- Creating a more interactive greenway promotional webpage and enhancing the content with educational materials, a greenway map, and fun facts.

By promoting greenways, the Town will be encouraging residents to get out and walk, and thereby use the pedestrian facilities available to them in order to live a more healthy and active lifestyle.

***Recommendation:*** *Town staff should use its Greenways Advisory Committee as a platform to promote greenways through activities such as an Education Walk on the Town's Greenway system, an Adopt-a-Trail program, and designing a promotional greenway webpage.*

#### *7.2.3. Enforcement*

##### School zone monitors/crossing guards

As part of Cary's school zone policy and new Safe Routes to School Program, schools in the Town should establish school zone monitors and crossing guards to assist students as they walk or bike to school. Crossing guards are trained individuals hired for school drop-off and pick-up hours to control traffic flow and direct children when and where to safely cross the street. They are usually placed at intersections or mid-block crossings near a school which are used by a high number of students. School crossing guards should be formally trained in traffic control, first aid, and CPR, but do not have to be a police officer. Also, crossing guards should wear reflective vests and similar uniforms to be distinguishable as an official and to create consistency throughout the Town. School

## Cary Pedestrian Plan

### Section 7: Program Recommendations

zone monitors are usually police or other law enforcement officials who are stationed at the school during drop-off and pick-up to monitor the school zone and make sure all policies, such as reduced speeds and yielding to pedestrians in crosswalks, are enforced. Unlike crossing guards, school zone monitors are the “teeth” of the enforcement in school zones because they are empowered to write tickets and arrest others.

Although some of the schools in Cary, such as Cary Elementary, already have a school crossing guard, crossing guards and monitors should be placed at ALL of the Town’s schools, in both urban and rural settings. The presence of school crossing guards and school zone monitors can have several benefits, including increasing children safety when walking or bicycling to and from school, raising parents’ level of comfort about allowing their children to walk or bike to and from school, and also improving traffic flow during school drop-offs and pick-ups. The presence of a crossing guard or school zone monitor also indicates to others that the Town has a commitment to making it safer for children to walk and bike to all schools.

**Recommendation: Establish school crossing guards and school zone monitors at all schools during drop-off and pick-up periods.**

#### Police Pedestrian Stings

A police pedestrian sting is used to improve safety at locations by enforcing the laws that create safe pedestrian and motorist behavior. Sting operations can be targeted at both pedestrians and motorists. Similar to police stings in locations with high incidents of speeding, a pedestrian sting occurs when a police officer waits in an inconspicuous location near to where there have been frequent pedestrian-vehicle incidents and then takes the appropriate action when an incident occurs. A more aggressive form of a pedestrian sting can occur when a plain-clothed police officer attempts to cross the street at a crosswalk while another uniformed officer waits nearby to apprehend motorists that fail to yield the right-of-way. Pedestrian stings can be used especially at crosswalks in which vehicles frequently fail to yield to pedestrians. They can also be used at mid-block locations where pedestrians frequently jaywalk; however, monitoring for jaywalking should be done with caution because jaywalking frequently occurs not out of disrespect for the law, but because there is a need for a mid-block crossing. Rather than ticketing first-time offenders, officers could provide educational material about pedestrian safety and the existing laws protecting pedestrians.



**Figure 7-5.** Cary Elementary is one of the schools in the Town that already has a crossing guard. It is recommended that all schools have crossing guards and school zone monitors to make it safer for students to walk to school.

Police pedestrian stings should be used with caution and only at locations which are particularly troublesome. Frequently, they are used to enforce laws at locations where no other engineering or preventative measure can be taken to improve safety. Police pedestrian stings also require coordination between town staff and police to identify those trouble locations.

**Recommendation:** *Create a program of police pedestrian stings conducted at locations with high rate of pedestrian-vehicle incidents in order to enforce the laws that create safe pedestrian and motorist behavior.*

#### Coordination between Engineering, Planning, and Police

During the Plan's preparation process, one of the major issues identified was the need for more communication between police and other law enforcement officials and Town staff, particularly engineering and planning, to share information about locations which are frequently problematic for pedestrians. Currently, Cary police officers receive complaints about pedestrian issues and respond to crashes and other pedestrian-vehicle incidents, while the Planning and Engineering Departments plan for and design new pedestrian facilities or projects that will improve pedestrian conditions at existing facilities. In order to improve communication, a monthly meeting should be established in which police share with town staff their records of trouble locations and incidents, as well as their perceptions of the pedestrian needs in the Town, while Town staff share with police their plans for new projects and improvements. In addition to Engineering and Planning staff, other Town staff that could be invited to the meeting include representatives for street and crossing maintenance, traffic engineers, and school representatives. A school representative should provide information on trouble locations near schools, which would be particularly important if Cary should create a Safe Routes to School program and hire additional crossing guards. This monthly meeting to exchange information would help to quickly target trouble locations with both engineering and enforcement solutions, and improve the effectiveness of new projects or improvements on pedestrian safety.

**Recommendation:** *Better coordination between the Police Department and other Town staff, especially those in the Engineering and Planning Departments, to identify locations which are particularly hazardous for pedestrian safety and cooperatively craft both engineering and enforcement solutions.*

## Cary Pedestrian Plan

### Section 7: Program Recommendations

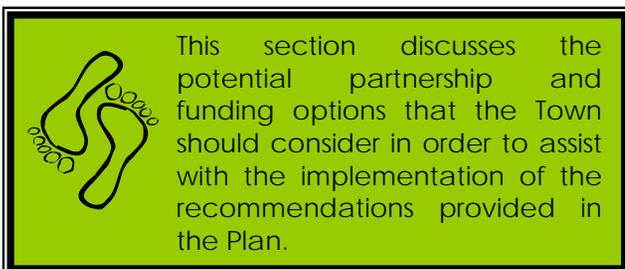
#### 7.3. Prioritization

The following tables provide prioritization for the recommendations with Section 7 and discuss potential coordination efforts that may be necessary. Prioritization is based on ease and cost of implementation, as well as coordination with other on-going projects. Many programs require coordination with organizations beyond Town staff.

| Program Recommendation                                   | Reason for Prioritization  | Coordination Required   |
|--|--|---|
| ◆ Safe Routes to School Program                          | Near future availability of NCDOT Safe Routes to School grants. Improve safety.  | Coordination with Wake County School System, North Carolina Department of Transportation, volunteers, and Town staff.     |
| ◆ School zone monitors/crossing guards                   | Immediate safety need.   | Requires coordination with Wake County School System, Police Department, and North Carolina Department of Transportation. |
| ◆ Promotional/Educational Materials                      | Coordinate with current CAMPO development of educational and promotional materials.  | Needs funding to produce materials. Requires coordination with CAMPO.   |
| ◆ Coordination between Engineering, Planning, and Police | Rapid development and new project construction requires immediate coordination to improve pedestrian safety and accessibility. | Requires inter-staff coordination and leadership with a commitment to communication.                                      |
| ◆ Walk-to-Work Week and Employer Outreach                | To encourage walking to work and a healthier lifestyle.  | Needs staff time to coordinate and committed employers.   |
| ◆ Greenway Activities                                    | To promote greenway use and raise awareness about pedestrian issues.   | Needs volunteer effort to develop and maintain webpage and informational material. Also needs server support.             |

|  |  |  |
|--|--|--|
| <p>◆ Police Pedestrian Stings</p>                        | <p>To improve pedestrian safety.</p>   | <p>Requires coordination with Police and other law enforcement.</p>              |
| <p>◆ Council &amp; Town Hall Employees Education Day</p> | <p>To encourage Town-wide participation in pedestrian-related events and promote walking as a form of commuting.</p> | <p>Requires staff coordination with Town departments and funding for events.</p> |





## Section 8. Partnerships and Funding

### 8.1. Introduction

It is important to identify both funding sources and potential partners for recommendations in order to maximize the funding opportunities available to the community. This section provides recommended partnerships and suggested funding sources that the Town should consider to assist with implementing the recommendations in this plan. Finally, this section provides a vision of the future for what Cary should look like with the implementation of this plan.

### 8.2. Funding and Partnerships

For project recommendations, the Town already has several established funding sources and mechanisms, as well as strong partnerships with the North Carolina Department of Transportation. However, for program recommendations, the Town should consider more non-traditional partnerships and funding sources. The following paragraphs discuss these partnerships and funding sources.

Pedestrian-related physical improvement projects can often be the result of a variety of partnerships and coordinated efforts, with multiple funding sources. Generally, when one thinks of engineering construction projects, one usually thinks of the Town's Public Works Department or the North Carolina Department of Transportation as potential partners and funding sources. However, there are other team members that could be considered when a pedestrian project is needed. If a project is a greenway or greenway crossing, or located near a park or community center, the Town's Parks, Recreation and Cultural Resources Department should be incorporated into the planning and funding process. For maintenance of greenways and sidewalks, the Town could partner with neighborhood and community groups, or establish trail volunteers. Near schools, the Town should work with the Wake County School System when constructing greenways, pedestrian crossings (mid-block or at intersections), and sidewalk access. Improvements near bus stops, such as pedestrian crossings or sidewalk connections, should be coordinated with C-Tran and the Triangle Transit Authority. For long-term projects, the town should coordinate with the Capital Area Metropolitan Planning Organization (CAMPO), of which they are a part, in order to make future plans and identify funding sources.

## Cary Pedestrian Plan

### Section 8: Partnerships and Funding

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For pedestrian-related programs, often funding and partnerships must come from “outside the box” sources, and require the partnering of multiple organizations. For example, a Safe Routes to School Program will necessitate partnerships between, at the least, the Wake County School System, the Town of Cary, Parent-Teacher Associations, North Carolina Department of Transportation, the Police Department, and the Wake County Health Department. Although the Town can spear-head tasks such as town-specific educational materials, it should also consider coordinating with the Capital Area Metropolitan Planning Organization, which may have materials that can be tailored to the Town’s needs. For events such as walk-to-work week, the Town should again work with the Capital Area Metropolitan Organization, as well as organizations such as Triangle SmartCommute and the Triangle Transit Authority.

#### Funding Sources

The Town already has an excellent, well-funded sidewalk request program which receives \$1 million annually in the Town budget. In addition to this, projects can also be funded as incidental projects to other roadway construction projects or improvements. These are often funded by either NCDOT, the Town, or a joint effort. In addition to these sources, there are other sources of funding which target more specific types of projects. NCDOT’s Division 5, which includes the Town of Cary, receives \$100,000 annually for small pedestrian projects such as sidewalk links. Funding sources for program recommendations can range from NCDOT Safe Routes to School grants to Blue Cross Blue Shield Fit Together Grants. The following is a discussion of some of the potential funding sources the town should consider.

- ◆ **State Transportation Improvement Program (TIP)** - Bicycle and pedestrian projects are broadly eligible for funding from most of the major federal-aid transportation sources. One of the most cost-effective ways of providing bicycle and pedestrian facilities is to incorporate them as part of larger reconstruction, new construction and some repaving projects. Generally, the same source of funding can be used for the bicycle and pedestrian accommodation as is used for the larger highway improvement if the bicycle and pedestrian facility is “incidental” in scope and cost to the overall project. In addition, many times a cost-sharing approach with local municipalities will be used to fund pedestrian facilities. Overall, most bicycle and pedestrian accommodations within the state are made as incidental improvements. The other type of specific bicycle project is termed “independent” because it is not connected to a specific roadway improvement funded by NCDOT, which sets aside \$6 million annually through the Bicycle & Pedestrian Transportation Division for the construction of bicycle and pedestrian improvements across the State. Eighty

percent of these funds are from STP-Enhancement funds, while state funds provide the remaining 20 percent. For more information on the TIP process, see:

[http://www.ncdot.org/transit/bicycle/funding/funding\\_TIP.html](http://www.ncdot.org/transit/bicycle/funding/funding_TIP.html).

For NCDOT's Pedestrian Policy Guidelines, please see:

[http://www.ncdot.org/transit/bicycle/laws/laws\\_pedpolicy.html](http://www.ncdot.org/transit/bicycle/laws/laws_pedpolicy.html).

For NCDOT's Greenway Policy, please see the following link at the Division of Bicycle and Pedestrian Transportation's website:

[http://www.ncdot.org/transit/bicycle/laws/laws\\_greenways\\_admin.html](http://www.ncdot.org/transit/bicycle/laws/laws_greenways_admin.html).

- ◆ **Transportation Enhancement Program** - Transportation enhancements are transportation-related activities that are designed to strengthen the cultural, aesthetic, and environmental aspects of transportation systems. The transportation enhancements program provides for the implementation of non-roadway capacity improvement projects, including bike and pedestrian facilities; landscaping; and similar aesthetic improvements. Various forms of pedestrian facilities such as sidewalks, pedestrian tunnels and bridges, and crossing improvements are eligible for funding.
- ◆ **Spot Improvement Program** - The NCDOT Bicycle and Pedestrian Transportation Division budgets \$500,000/year for "spot" safety improvements throughout the State. These improvements might include signing, grate replacement, bike rack installations, hazard remediation at skewed RR crossings, and other small-scale improvements. The Spot Improvement Program is used only for bicycle and pedestrian projects; however, it should not be viewed as a priority source for funding identified projects. It is typically used for small-scale and special situation projects that are not of a significantly large enough scale to merit being a TIP project. Taking these requirements into consideration, proposals should be submitted directly to the Bicycle & Pedestrian Transportation Division.
- ◆ **Small Urban Funds** - Each NCDOT Highway Division has \$2 million of small urban funds available annually. Although not commonly used for bicycle and pedestrian projects, local requests for small bicycle and pedestrian projects can be directed to the NCDOT Highway Division office for funding through this source. A written request should be submitted to the Division Engineer providing technical information such as location, improvements being requested, timing, etc. for thorough review.
- ◆ **Hazard Elimination Program** - Although not commonly used for bicycle and pedestrian projects, they are eligible for this program, which is administered through

## Cary Pedestrian Plan

### Section 8: Partnerships and Funding

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the NCDOT Division of Highways. This program focuses on projects intended for locations that should have a documented history of previous crashes. Similar to the Small Urban Funds, it is a significantly limited funding source.

- ◆ **Governor's Highway Safety Program (GHSP)** - Substantial progress in reducing crashes, injuries and fatalities is required as a condition of receiving funding through the annual GHSP program. All funding is considered to be "seed money" to get programs started – the grantee is expected to provide a portion of the project costs and to continue the program after GHSP funding ends. Projects are only approved for one full or partial federal fiscal year at a time; however, projects may be funded for up to three consecutive years. Amounts of GHSP funds vary from year to year, according to the specific amounts requested.
- ◆ **Statewide Discretionary Funding** - The Statewide Discretionary Fund consists of \$10 million and is administered by the Secretary of the Department of Transportation. This fund can be used on any project at any location within the State. Primary, urban, secondary, industrial access, and spot safety projects are eligible for this funding. To request funding, an agency must submit a written request to the NCDOT Highway Division office with a clear description of project and project justification.
- ◆ **Safe-Routes-to-School Program** – The federal Safe Routes to School Program is intended to create and promote safe walking and cycling in order to improve safety near schools, promote active lifestyles, and reduce pollution and congestion caused by school traffic. In North Carolina, NCDOT, in conjunction with the Federal Highway Administration, has established the North Carolina Safe Routes to School program, which is a state-wide program to promote safe walking and bicycling to elementary and middle schools in North Carolina. The North Carolina Safe Routes to School program provide opportunities for schools to apply for funding for both programs and capital improvements projects to encourage walking and cycling to school. For more information about the Safe Routes to School Program, please see the North Carolina Safe Routes to School's webpage at : <http://www.ncdot.org/programs/saferoutes>.
- ◆ **Blue Cross Blue Shield Fit Together Grants** – The FitCommunity Program is one of the programs established by the Fit Together partnership of Blue Cross Blue Shield and the NC Health and Wellness Trust Fund. The Fit Together partnership was created to promote physical activity and healthy eating in an effort to combat the recent dramatic increase of obesity in North Carolina. The FitCommunity Program is a

designation and grant program to recognize and reward municipality and county efforts to promote physical activity, healthy eating and tobacco-free programs, policies, environments and lifestyles. A municipality or county is eligible for grant money once it has received a FitCommunity designation. Cary's strong bicycle program, greenway system, and parks facilities, make it a likely candidate for the FitCommunity designation. Potential grant money could be used for starting a Safe-Routes-to-School program, Walk-to-Work week, or another community event to promote walking.

- ◆ **Coordination with CAMPO for CMAQ Funds** – As part of the Capital Area Metropolitan Planning Organization, Cary is eligible for assistance in receiving funding through the FHWA's Congestion Management and Air Quality (CMAQ) Improvement Program. Through this program, projects which may help to reduce traffic congestion and improve air pollution, such as pedestrian-related improvements, are eligible for funding.

### 8.3. The Future

With the implementation of this Plan, the Town of Cary should be on its way to becoming the vision of a walkable, pedestrian-friendly place that was discussed in Section 1. In this future Cary, the Town will provide its residents with an enjoyable, and safe, walking experience. The improvements that will have been implemented as a result of the Plan will have made walking a convenient and comfortable transportation alternative. In return, the Town should see a healthier, happier citizenry. Increasing walking as a form of transportation will have reduced traffic congestion and therefore air pollution, while boosting pedestrian traffic along the Town's major shopping streets. Because of its popularity as a destination for window-shopping, the Town will be an economically vibrant location attractive to new employers and future residents. In general, the implementation of this Plan will put Cary on the path to maintaining its status as a popular location to live, improving its transportation alternatives, and creating an even better quality of life for its residents.





This section provides a summary of all the recommendations contained within the Plan. The recommendations are listed in Tables organized by the section in which the recommendations are first made.

## Section 9. Summary of Recommendations

This section provides a summary of all the recommendations contained within the Plan. The recommendations are listed in Tables organized by the section in which the recommendations are first made.

### Section 4. Plan and Policy Recommendations

| Best Practices Recommendations  |
|---|
| <p>Comprehensive Transportation Plan – Pedestrian Element</p> <ul style="list-style-type: none"> <li>◆ Include trails in the system. This focuses on sidewalk to the exclusion of the greenways and trail system.</li> </ul>  |
| <p>Town Center Plan</p> <ul style="list-style-type: none"> <li>◆ Update to have sidewalk requirements for both sides of the street per adopted Streetscape Plan.</li> <li>◆ Identify needed connections to Cary’s greenway system.</li> </ul>   |
| <p>Cary Design Guidelines Manual</p> <ul style="list-style-type: none"> <li>◆ Revise to clarify design guidance for sidewalk, greenways, and multi-use paths. Currently, the Manual’s guidance for sidewalks seems to conflict with the recommendation for sidewalks on only one side of secondary streets contained in the Town Center Plan and LDO.</li> </ul>  |
| <p>Cary Parks, Recreation, and Cultural Resources Facilities Master Plan</p> <ul style="list-style-type: none"> <li>◆ Since this plan is the most comprehensive among the plans reviewed in addressing the multiple purposes of walking and pedestrian facilities, it would be beneficial for the master plan to reference the area plans.</li> <li>◆ Update plan to include guidance to be followed by Town Staff and the Greenways Committee for determining when developers should build greenways.</li> </ul>   |
| <p>Southwest Cary Area Plan</p> <ul style="list-style-type: none"> <li>◆ Address walking in rural areas to improve safety. This plan is centered on a rural area of Cary and as such focuses on greenways for pedestrian access. It does not recognize that walking on the roadway edges for recreation or exercise is a common activity in rural areas. The plan recommends four-foot shoulders along rural roadways, but this is expressly to accommodate bicyclist needs. One way to address this is to require sidewalk for pedestrians, in addition to four foot shoulders.</li> </ul> |

**Section 4. Plan and Policy Recommendations cont'd.**

Land Development Ordinance

- ◆ Include opportunities to claim a reduction in trip generation for trips diverted to alternate modes of transportation, including walking.
  - ◆ Update to refer to new Parks and Greenways plan rather than old one.
  - ◆ Provide incentives to developers to provide exemplary pedestrian circulation systems.
  - ◆ Town staff should review parking requirements in downtown (and at other activity centers) and consider creating more leniency in the requirements or reducing them.
  - ◆ Strengthen Pedestrian Connectivity and Greenway Requirements (discussed more below).
- 
- ◆ Establish a formal sidewalk maintenance policy and program in the near future.
  - ◆ Consider expanding traffic calming approaches to include bulb-outs, reductions in curb-radii, medians, and pedestrian islands to allow for more flexibility in traffic calming approaches while also improving conditions for pedestrians.

**Section 4: Connectivity and Greenway Improvement Recommendations**

In Section 4, a special emphasis is placed on improving and strengthening connectivity and greenway policies. The following recommendations provide a variety of options for the Town to consider implementing in order to improve Cary's connectivity and greenway policies

Connectivity Policy Recommendations

1. Modify Language in the LDO and *Design Guidelines Manual*.

*Changes to the LDO.* The following modifications to the text of the LDO place emphasis on including pedestrian connections along with vehicular connections in Cary's Connectivity Ordinance, train Cary staff on the LDO changes, and reinforce existing pedestrian requirements. The following text provides recommended language in bold and red in certain sections of the LDO.

§7.10.3.B. Street Arrangement.

1. The proposed public or private street system shall be designed to provide vehicular **and pedestrian** interconnections to all similar or compatible adjacent uses (existing and future) when such interconnections would facilitate internal and external travel... If the common property boundary in any direction is less than 1,250 linear feet, the subject property will be required to provide an interconnection if it is determined by the Planning Director that the interconnection in that direction can best be accomplished through the subject property... The intent of this standard is to improve access/egress for Town

neighborhoods, provide faster response time for emergency vehicles, and improve the **vehicular and pedestrian** connections between neighborhoods.

2. Any development of more than 100 residential units or additions to existing development such that the total number of units exceeds 100 shall be required to provide vehicular **and pedestrian** access to at least two public streets unless such provision is deemed impractical...

3. Where new development is adjacent to vacant land likely to be sub-divided in the future, all streets, bicycle paths, **sidewalks or pedestrian pathways** and access ways in the development's proposed street system shall continue through to the boundary lines of the area under the same ownership as the subdivision, as determined by the Planning Director or the Town Engineer, to provide for the orderly subdivision of such adjacent land or the transportation and access needs of the community. In addition, all redevelopment and street improvement projects shall take advantage of opportunities for retrofitting existing streets to provide increased vehicular and pedestrian connectivity, **such as sidewalks, chatwalks, crosswalks, and pedestrian signals.**

4. In general, permanent cul-de-sacs and dead-end streets are discouraged in the design of street systems, and should only be used when topography, the presence of natural features, and/or vehicular safety factors make a vehicular connection impractical. Where cul-de-sacs or dead-end streets are unavoidable, site and/or subdivision plans shall incorporate provisions for future vehicular **and pedestrian** connections to adjacent, undeveloped properties, and to existing adjacent development where existing connections are poor. **A chatwalk should be constructed where a vehicular connection is impossible.**

#### §7.10.3.C. Cross Access.

All non-residential development shall be designed to allow for **both vehicular and pedestrian** cross-access to adjacent properties to encourage shared parking and shared access points on public or private streets. A minimum distance of 100 feet shall be required between a cross-access way and an intersection or driveway entrance. When **vehicular** cross-access is deemed impractical by the Planning Director on the basis of topography, the presence of natural features, or vehicular safety factors, this requirement may be waived provided that appropriate bicycle and pedestrian connections are provided between adjacent developments or land uses. A cross access easement must be recorded prior to issuance of a Certificate of Occupancy for the development.

#### § 7.10.4 Standards for Pedestrian Facilities

A.6. Where residential **and non-residential** developments have cul-de-sacs or dead-end streets, such streets shall be connected to the closest local or collector street or to cul-de-sacs in adjoining **residential subdivisions, commercial development, or**

similar compatible land uses including schools, parks, recreation facilities, libraries, and greenways, via a sidewalk or multi-use path, except where deemed impractical by the Planning Director.

*Changes to Design Guidelines Manual.* Although the Manual addresses pedestrian needs in all three of its sections (Design Principles, Development Types, and Guidelines Toolkit), the Manual in general needs a greater emphasis on providing specific pedestrian connections, such as chatwalks and greenways. Without adding new requirements for the Manual, the following textual modification is recommended:

Page 10. Connect Uses, Characteristics of Connectivity:

**5. Streets stubs, sidewalks, and pedestrian pathways to adjacent developable sites** are provided in existing developments for future connections between new projects and uses.

2. Add Language to the LDO and *Design Guidelines Manual*.

The following recommendations look at adding language to the LDO and Design Guidelines Manual that would put new requirements on developers for specific actions. These requirements are stricter than the existing requirements, and are listed in sequence from least to most dramatic changes.

a. **Include requirements for pedestrian connections that minimize the pedestrian travel time distance between specific, explicitly defined land uses.** Pedestrian connections should be defined as sidewalks adjacent to roads, greenways, and chatwalks. Compatible land uses should be defined as: commercial and commercial; residential and residential; office and commercial; residential and commercial; and, residential and office. In addition, to these land uses, pedestrian connections should also be required to schools, greenways, libraries, parks, recreation facilities, and other public locations. In the LDO, text could be added to §7.10.4: Standards for Pedestrian Facilities. In the *Design Guidelines Manual*, text may be placed in the "Connect Uses" section under Design Principles, and reiterated in the section "Plan for Pedestrians, Bicyclists, and Transit Users". Although the Toolbox section "Circulation: Pedestrian Routes" already states "Provide, where feasible, unbroken pedestrian routes between developments", this text should be modified to include language calling specifically for chatwalks between developments of compatible land uses where sidewalks accompanying vehicular connections are unavailable.

b. **Add language to restrict fences or barricades (landscape or structural) between compatible land uses.** Where chatwalks are constructed, they should

not be blockaded by fences or other barriers, such as steep slopes that do not comply with ADA requirements. The pedestrian connection between land uses, such as from residential to commercial, should be a pleasant experience. Where feasible, the pedestrian connection should avoid garbage units, blank walls, poorly lit locations, or other deterrents to pedestrian travel. A requirement could be added into the LDO, and/or language could be included in the Design Manual under the section "Connect Uses" or the Tool Kit sections "Buildings", "Circulation", or "Transitions and Screens".

c. **Create requirements for reservation of greenway space.** Both the LDO and the Design Guidelines Manual call for the reservation of land if proposed or existing greenways are located on the site, however, text could be added to require developers to reserve land not identified on the Parks, Recreation, and Cultural Resources Facilities Master Plan to ensure adequate greenway connectivity. This would mean that the developer must think in terms of the greater pedestrian system context by identifying locations for potential greenway extensions or linkages to existing or proposed greenways.

d. **Create a Pedestrian Connectivity Index/Ordinance.** This recommendation is specific to the LDO, which currently contains a general Connectivity Index that primarily focuses on vehicle access. It is recommended that the LDO be amended to include a Pedestrian Connectivity Index, which would measure the level of pedestrian connectivity both within a site and from the site to the rest of the pedestrian system. The Pedestrian Connectivity Index would consider sidewalks, greenways, and chatwalks as links, and nodes would be roadway intersections where there is sidewalk, mid-block crossings, and pedestrian intersections independent of a roadway.

e. **Create an Off-site Pedestrian Improvements requirement.** As a part of developing a property, landowners and developers are typically required to make on-site and off-site improvements to public infrastructure to offset potential impacts directly caused or contributed to by the development. While on-site pedestrian improvements and design standards are the most common requirement during the site plan review process, off-site pedestrian improvements – additions to sidewalk, off-street trails, greenways, and crosswalks – are already required in certain situations in many cities in North Carolina and the U.S. These requirements are comparable to similar off-site vehicular improvements and dedications, such as traffic signal modifications, roadway capacity improvements, mitigation for wetland impacts, and intersection improvements. Modifications to the LDO could be made to allow for these off-site pedestrian improvements under certain conditions. (For more information, please see

attached "White Paper: Off-Site Pedestrian Improvements." Prepared by the Louis Berger Group, Inc. for the City of Durham, 2006.)

f. **Add language to require developers to construct "multi-use trails" through a development when it is shown on the Parks, Recreation, and Cultural Resources Facilities Master Plan.** As part of developing a property developers are required to construct sidewalks. A multi-use trail in simple terms is a large sidewalk to allow for shared use of the sidewalk due to the fact that the road is generally very busy that the multi-use trail is adjacent too. In the past the developers would receive credit from the Park Payment-in-lieu fee for constructing the 5' additional feet of sidewalk. Changing this requirement would no longer provide the credit for construction of the additional 5' nor for any easement required for the additional space of the multi-use trail.

g. **Add language to require developers to provide public connection(s) to public "multi-use trails" and "greenways".** The locations of these connections would be determined at time of site plan submittal. These connections would be 6' to 8' in width depending on amount of use. Material would be asphalt or concrete.

h. **Add language to indicate that developers should not be compensated for greenway constructions or easements.** Greenways, like roads, are a public good which are necessary for the functioning of a healthy community. Currently, developers build the roads internal to their development without compensation from the Town because it is necessary for these roads to be in place for access to the existing transportation system. Similar to roads, greenways also play an integral role in the Town's transportation system. Thus, developers should provide greenway access from their development to the existing greenway system at no cost to the Town in the same manner that they would provide roadway access to the existing roadway system in the Town. Without access to the greenway system, the development's access to the Town's transportation system as a whole would be inadequate and incomplete.

### 3. Procedural and program changes.

In addition to changes in the LDO and Design Guidelines Manual, the Town of Cary can also make procedural and programmatic changes to place an emphasis on pedestrian connectivity in site development. The following recommendations include changes to the site plan review process and the establishment of an annual review meeting with developers and town staff to emphasize the existing key pedestrian connectivity points in the LDO and Design Guidelines Manual.

- A. **Require Pedestrian Circulation Study as part of site plan review process.** As a part of the existing “traffic study” requirements, Town planners could request developers include a pedestrian circulation study. This study would provide information on internal-to-the-site pedestrian travel, connections to the pedestrian system externally to the site, and also require developers to consider the future pedestrian use of a location as it becomes more developed, or new types of development are constructed.
- B. **Establish LDO and Design Guidelines Manual review meeting with developers and staff as part of the existing Development Review Committee.** This review meeting between developers and staff would emphasize pedestrian connectivity issues and highlight existing pedestrian requirements, such as LDO Section 7.10.4(A4) and 7.10.4(A6) which require mid-block crossings and sidewalks between cul-de-sacs or dead end streets. This review meeting would also allow staff to explain in more detail situations to developers in which they would like to see better pedestrian connectivity and developers the opportunity to ask questions and provide feedback with staff. A better understanding between developers and Town staff of the existing LDO requirements and recommended practices in the *Design Guidelines Manual* would also mean less time spent in the review process on pedestrian connectivity.

#### Greenway Policy Recommendations

The following are some recommendations to strengthen even further Cary’s greenway ordinance and increase connectivity in Cary’s pedestrian system.

- ◆ Strengthen language in the LDO to require developers to build greenways as part of pedestrian connectivity requirements, rather than use payment-in-lieu fees.
- ◆ Create requirements that developers must identify connections to existing greenways near their development and build them, just as they would identify and construct connections with existing roads. These adjacent connections should be identified clearly on mapping submitted for site, subdivision, and zoning reviews.
- ◆ The Parks, Recreation, and Cultural Resources Advisory Board and Greenways Committee shall continue to prioritize greenway segments to be constructed and notify developers if they are to construct their section.
- ◆ Language should be added to clarify the acceptable locations for greenway easements. If a stream only has zone 1 and zone 2 stream buffers, then the

## Cary Pedestrian Plan

### Section 9: Summary of Recommendations

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greenway easement is required to be outside of zone 2. If the stream has zone 3, then the greenway easements are allowed on the outer edge of zone 3 stream buffers.

### Section 5. Best Practices

| Best Practices Recommendations  |
|---|
| ◆ Consider using more permeable materials for all pedestrian in order to reduce run-off from storm events.  |
| ◆ Provide multi-use trail to connect the Symphony Lake Trail to Swift Creek Trail along Regency Parkway   |
| ◆ On multi-use trails with separated travel lanes for pedestrians and cyclists, provide signs to clarify the appropriate users for each designated travel lane  |
| ◆ Formalize existing Town practice of installing pedestrian signal heads and crosswalks with the installation of any new signalized intersection.   |
| ◆ Provide pedestrian signals even in locations without sidewalk on one or both sides of an intersection.  |
| ◆ Create a database of intersections with signals and pedestrian treatments for reference.  |
| ◆ At intersections with protected right-on-red for automobiles, provide signal phases which specifically create protected crossings for pedestrians.  |
| ◆ Restrict use of free-flowing turn lanes. When used, provide appropriate treatments to warn both motorists and pedestrians of potential conflicts.   |
| ◆ Amend Policy 128 to reference the Parks, Recreation, and Cultural Resources Facility Master Plan for greenway crossings.  |
| ◆ Continue to explore ways to refine grade-separated crossing criteria as discussed in this Plan.   |
| ◆ Develop with NCDOT a mutually acceptable mid-block crossing policy for greenways.   |
| ◆ Ensure that the Town's Engineering Standard Specifications to explicitly state that all facilities must comply with the requirements outlined in the American Disabilities Act Accessibility Guidelines for Buildings and Facilities. |
| ◆ In downtown, provide plenty of pedestrian facilities and street amenities, such as street trees, signage, trash cans, benches, and signature street lamps.  |

Section 5. Best Practices cont'd.

| Best Practices Recommendations   |
|--|
| ◆ As described in the Town Center Plan, orient buildings towards the street to provide an interesting and inviting walking environment.  |
| ◆ Implement the recently adopted school zone policy that requires “safe zones” around schools with more than 100 students in which speeds are reduced by 10 mph within a quarter mile of the school and signs are posted warning of school and student presence. These treatments should also be applied even on major streets that don’t have direct access to school property, under the discretion of the Town Engineer and staff. Additionally, pedestrian push buttons and sidewalks should be installed at intersections and on streets within a ¼-mile of the school. |
| ◆ Implement parking lot design requirements in the LDO or Design Guidelines Manual as recommended in this section.   |

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### Section 9: Summary of Recommendations

#### Section 6. Top Priority Corridor Projects.

| Reference Number | Location         | From                          | To               | Recommended Treatment   | Cost Estimate (\$1,000's) |
|------------------|------------------|-------------------------------|------------------|---|---------------------------|
| 4                | Maynard          | Northwoods                    | Evans            | Provide sidewalk, both sides of Maynard and connections to Godbold Park.  | 137.28                    |
| 51               | Maynard          | Plantation                    | Kildaire Farm    | Provide sidewalk along north side of Maynard with connections to existing sidewalk and platforms for bus shelters.  | 200.64                    |
| 7                | Chapel Hill      | Maynard                       | Academy          | Construct continuous sidewalk along both sides of Chapel Hill with connections to Northwoods Elementary, Northwoods Trail, Maynard, and Academy. Location is part of proposed multi-use trail, should consider 10 ft. wide sidewalk minimum.  | 224.4                     |
| 89               | Griffis/Harrison | Cornwall                      | Dry              | Construct sidewalk on west side for connections to downtown and sidewalk for transit patrons waiting for the bus.   | 208.56                    |
| 66               | Harrison         | Grande Heights                | Adams            | Provide sidewalk along west side of Harrison for access to downtown, Jordan Hall Arts Center, and transit.  | 256.08                    |
| 5                | Maynard          | Evans                         | Chapel Hill      | Construct sidewalk west side of Maynard. Provide pedestrian access across Maynard at Evans and Chapel Hill.   | 18.48                     |
| 38               | Weston           | Reedy Creek Greenway Crossing | Harrison         | Construct sidewalk along Weston from Harrison to Reedy Creek Greenway with connection to the greenway from the road (grade-separated).  | 337.92                    |
| 15               | Chatham          | Dixon                         | Jason            | Construct sidewalk both sides of Chatham with connections to proposed Higgins Trail and provisions for transit stops.   | 174.24                    |
| 63               | Chatham          | Maynard                       | I-40             | Construct sidewalk along at least one side of Chatham (south side recommended) with connections to sidewalk in Raleigh. Requires coordination with City of Raleigh. Include connections to proposed Trinity Road multi-use trail and Walnut Creek Trail. Include crossing at SAS Park, Trinity, and Maynard.  | 242.88                    |
| 10               | Old Apex         | Dixon                         | High House       | Construct sidewalk both sides of Old Apex with connections to existing sidewalk along Chatham and High House.   | 198                       |
| 64               | Chatham          | Maynard                       | Durham           | Complete missing links in sidewalk on north side of Chatham. Consider providing 10 ft. sidewalk due to highly commercial nature of nearby land uses.  | 121.44                    |
| 13               | High House       | Old Apex                      | Chatham          | Construct sidewalk on north side of High House for access to downtown between Chatham and Old Apex.   | 89.76                     |
| 16               | Chatham          | Jason                         | Danforth         | Construct continuous sidewalk on the north side of Chatham with connections to existing sidewalk and Higgins Trail.   | 71.28                     |
| 1                | Evans            | Dynasty                       | Evans Estates Dr | Provide sidewalk on both sides of Evans with connections to existing sidewalk.  | 134.64                    |
| 48               | Penny            | Kingsford                     | Loch Highlands   | Construct continuous sidewalk to provide connections between existing sidewalk and to Oak Grove Elementary. Sidewalk will serve to provide pedestrian access from neighborhoods to school. A 10 ft offset from the road is recommended to improve safety given the age of the potential users. Include adequate pedestrian crossings at Kingsford, Crickentree, and Loch Highlands. | 594                       |
| 19               | Regency          | Swift Creek Trail Entrance    | Peregrine        | Provide 10 ft. multi-use trail on west side of Regency with connections to existing sidewalk, Swift Creek Greenway Connection, and Symphony Lake Trail. Ensure adequate pedestrian crossings from Trail to Greenway Connection.   | 132                       |

**Section 6. Top Priority Corridor Projects cont'd.**

| Reference Number | Location      | From        | To                | Recommended Treatment   | Cost Estimate (\$1,000's) |
|------------------|---------------|-------------|-------------------|---|---------------------------|
| 62               | Old Apex      | Chatham     | Laura Duncan      | Provide continuous sidewalk on at least one side of Old Apex for connections between neighborhoods/residential development to shopping and commercial development.  | 498.96                    |
| 88               | Donaldson     | Nottingham  | Walnut            | Provide sidewalk on east side of Donaldson for transit users and residents to access shopping, residential area safely.   | 66.00                     |
| 71               | Melody        | Harrison    | Reedy Creek       | Part of proposed Beechwold Connector Trail. Construct 10 ft. multi-use trail south side of Melody for connection from Harrison to Reedy Creek Schools. Include adequate pedestrian crossings at Harrison and Reedy Creek. Consider constructing sidewalk on north side of Melody.   | 60.72                     |
| 79               | Buck Jones    | Nottingham  | Town Limits       | Construct sidewalk on both sides of Buck Jones to Cary/Raleigh Limit. Requires coordination with City of Raleigh. Part of Buck Jones Multi-use Trail, consider providing 10 ft. wide multi-use trail. Part of regional transit system, consider including transit facilities such as shelters or platforms.   | 44.88                     |
| 25               | Walnut        | Donaldson   | Piney Plains      | Provide sidewalk along both sides of Walnut St. Bridge over US 1/64 with connections to existing sidewalk on east side of Walnut. Consider providing sidewalk on west side of Walnut St. Requires coordination with NCDOT. Town is currently in talks with NCDOT to address this issue. Cost estimates vary based on treatments that are selected.  |                           |
| 46               | Kildaire Farm | Queensferry | Keisler           | Provide sidewalk on west side of Kildaire Farm for access from residential areas at north end of corridor to commercial area at south end of corridor while reducing crossings  | 287.76                    |
| 35               | Cary          | Hampton Lee | Norwell           | Construct sidewalk north side of Cary with connection to Black Creek Trail, North Cary Trail, existing sidewalk, and North Cary Park. Part of length is proposed Cary Parkway Multi-use Trail, consider constructing a 10 ft. multi-use trail. Provide adequate pedestrian crossings at intersection of Black Creek Trail and Cary Parkway.   | 89.76                     |
| 67               | Cary Towne    | Maynard     | I-40              | Part of proposed Cary Towne Boulevard Multi-use Trail. Construct 10 ft. multi-use trail along north side and sidewalk along south side of Cary Towne Center with adequate pedestrian crossings at Adams Elementary and Cary Towne Center Mall. Provide connections to proposed Walnut Creek Trail and Pirate's Cove Trail, existing sidewalk, and sidewalk across I-40 bridge to Raleigh. Will require coordination with NCDOT and City of Raleigh. | 213.84                    |
| 26               | Nottingham    | Buck Jones  | Nottingham Circle | Provide sidewalk for transit users on north side of Nottingham for transit users and residents to access shopping/residential area safely.  | 116.16                    |
| 28               | Crossroads    | Caitboo     | Caitboo           | Provide sidewalk for transit users and Crossroads patrons to improve safety and comfort when walking in the Crossroads Shopping Center area.  | 158.40                    |
| 44               | Reedy Creek   | Harrison    | Maynard           | Construct continuous sidewalk on both sides of Reedy Creek with connections to Reedy Creek Schools and proposed Reedy Creek Trail. Provide adequate crossings at Harrison, Dynasty, Wyatt's Pond, and Maynard.  | 316.8                     |
| 90               | Meeting       | Dillard     | Walnut            | Provide sidewalk for pedestrians to improve safety and comfort when walking from Crossroads area to other nearby shopping and residential development, transit access.  | 81.84                     |
| 17               | Chatham       | Danforth    | Old Apex          | Construct continuous sidewalk along both sides of Chatham with connections to existing sidewalk. Provide adequate pedestrian crossings at Old Apex and Maynard.   | 168.96                    |
| 12               | Old Apex      | Berentwood  | Chatham           | Construct sidewalk on north side of Old Apex to connect with existing sidewalk. Include adequate pedestrian crossings at Berentwood and Chatham.  | 81.84                     |

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### Section 9: Summary of Recommendations

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#### Section 6. Top Priority Corridor Projects cont'd.

| Reference Number | Location | From          | To         | Recommended Treatment  | Cost Estimate (\$1,000's) |
|------------------|----------|---------------|------------|--|---------------------------|
| 65               | Ralph    | Walnut        | Maynard    | Construct sidewalk on at least one side of Ralph with connection to existing sidewalk at Maynard and Walnut. Include adequate pedestrian crossings at Cornwall, Maynard, and Walnut. | 232.32                    |
| 29               | Caitboo  | Crossroads    | Crossroads | Provide sidewalk for transit users and Crossroads patrons to improve safety and comfort when walking in the Crossroads Shopping Center area.   |                           |
| 61               | Cary     | Tryon         | Lochmere   | Construct sidewalk at least one side of Cary with connections to existing sidewalk at Lochmere and Tryon.  | 129.36                    |
| 47               | Penny    | Killingsworth | Kingsford  | Provide missing sidewalk link along northwest segment of Penny.  | 52.8                      |

**Section 6. Top priority crossings improvement projects.**

| Reference Number | Location   | Recommended Treatment  |
|------------------|--|--|
| 96               | Evans and Lake   | Provide signal with pedestrian heads or pedestrian-activated signal for safer access from residential development to school and nearby commercial development.   |
| 98               | Tate/Maple and Maynard   | Provide crossing for access to shopping center from residential area   |
| 4                | Maynard and Black Creek Trail  | Greenway/pedestrian crossing to Godbold Park   |
| 36, 37, 38       | Crossing of Maynard at Wicklow, Pond, and Kilmayne                               | Provide signalized pedestrian-activated crossing at one or more of these locations to improve connectivity and provide a safer passage between neighborhoods, commercial development along Kildaire Farm, and Briarcliff Elementary School. There is already a signal for motorists at the intersection of Pond and Maynard – the Town should consider providing pedestrian heads at this location at the minimum. |
| 52, 53, 54       | Green Hope Schools Entrances and Hwy 55/Carpenter Upchurch Rd.                   | Consider pedestrian improvements such as pedestrian-activated signals at one or more of these crossings to create safer access to schools. Improvements could also include re-evaluating school drop-off and pick-up procedures to limit student/vehicle interaction.  |
| 94               | Reedy Creek and Wyatt's Pond   | Greenway/pedestrian crossing to Reedy Creek schools for nearby neighborhoods and greenway  |
| 89               | Penny and Ederlee  | Greenway/pedestrian crossing to Penny Elementary School from nearby neighborhoods and proposed Dutchman's Branch Trail greenway  |
| 73               | Maynard and Hampton Valley   | Provide signal with pedestrian heads or pedestrian-activated signal for safer crossing of Maynard from neighborhood to neighborhood and also from neighborhood to commercial development.  |
| 64               | Cary Parkway and White Oak Creek Trail   | Greenway/pedestrian crossing for White Oak Creek Trail over Cary Parkway to proposed trail   |
| 34               | Maynard and High House   | Provide pedestrian heads at all four legs of intersection for safer crossings, as requested by Seniors Focus Group.  |
| 32               | Penny and Crickentree  | Install pedestrian crossing to Oak Grove Elementary School from nearby neighborhood for safer access.  |
| 51               | Louis Stephens and Upchurch Meadow   | Consider signal with pedestrian heads or pedestrian-activated signal to improve access within residential development and to nearby schools.   |
| 22               | Maynard and Reedy Creek  | Provide pedestrian heads and crosswalks at all four legs of this signalized intersection.  |
| 24, 84           | Kildaire Farm Rd. and Tryon Rd. and other nearby intersections                   | Pedestrian crossing accommodations for access from Wake Med Hospital to Waverly Place shopping dining establishments   |
| 81               | Chatham and S. Reedy Creek   | Consider providing signal with pedestrian heads or pedestrian-activated signal for better connectivity and easier access across Chatham for pedestrians from commercial and office development.  |
| 21               | Dynasty and Reedy Creek  | Provide pedestrian-activated signal or standard signal with pedestrian heads for safe crossing of Reedy Creek from neighborhood to neighborhood and to access Reedy Creek Schools area.  |
| 80, 82           | Chatham and SAS Soccer Park Entrance   | Provide safer pedestrian crossing over Chatham from SAS Soccer Park to Trinity and nearby development. Consider signals and pedestrian heads or pedestrian-activated signal.   |
| 56               | Cary Parkway and Chatham   | Greenway/pedestrian crossing over Cary Parkway for connection between Swift Creek Trail and Bishop's Gate Trail  |
| 42, 43, 44, 45   | Intersections of Kildaire Farm and Wren, Commonwealth, Kilmayne, and High Meadow | Consider installing pedestrian-activated signal at one or more of these locations or at a mid-block location to provide quicker, safer pedestrian crossing from residential areas on one side of Kildaire Farm to shopping areas on other side.  |
| 19               | Cary Parkway and Black Creek Trail   | Greenway/pedestrian crossing for Black Creek Trail across Cary Parkway to North Cary Park  |
| 9                | Ederlee and Swift Creek Trail  | Greenway/pedestrian crossing to connect to Symphony Lake Trail   |
| 25               | Walnut and Donaldson   | Provide sidewalk on both sides of Walnut St. Bridge over US 1/64 with connections to existing sidewalk on east side of Walnut. Consider providing sidewalk on west side of Walnut St.  |

**Section 7. Program Recommendations.**

| Program Recommendation                                   | Reason for Prioritization  | Coordination Required   |
|--|--|---|
| ◆ Safe Routes to School Program                          | Near future availability of NCDOT Safe Routes to School grants. Improve safety.  | Coordination with Wake County School System, North Carolina Department of Transportation, volunteers, and Town staff.     |
| ◆ School zone monitors/crossing guards                   | Immediate safety need.   | Requires coordination with Wake County School System, Police Department, and North Carolina Department of Transportation. |
| ◆ Promotional/Educational Materials                      | Coordinate with current CAMPO development of educational and promotional materials.  | Needs funding to produce materials. Requires coordination with CAMPO.   |
| ◆ Coordination between Engineering, Planning, and Police | Rapid development and new project construction requires immediate coordination to improve pedestrian safety and accessibility. | Requires inter-staff coordination and leadership with a commitment to communication.                                      |
| ◆ Walk-to-Work Week and Employer Outreach                | To encourage walking to work and a healthier lifestyle.  | Needs staff time to coordinate and committed employers.   |
| ◆ Greenway Activities                                    | To promote greenway use and raise awareness about pedestrian issues.   | Needs volunteer effort to develop and maintain webpage and informational material. Also needs server support.             |
| ◆ Police Pedestrian Stings                               | To improve pedestrian safety.  | Requires coordination with Police and other law enforcement.  |
| ◆ Council & Town Hall Employees Education Day            | To encourage Town-wide participation in pedestrian-related events and promote walking as a form of commuting.                  | Requires staff coordination with Town departments and funding for events.   |

## Appendix 1. Demographics Analysis

#### 1.1. General Town Analysis

It is important to analyze the demographics of Cary's residents because this tells us much about their current needs and future needs. Age, race, and income indicators can identify a population's general characteristics, propensity to use the pedestrian system, and potential attitude towards pedestrian facilities. Car ownership and commuting patterns indicate the overall current demand for pedestrian facilities. In addition to walk-to-work numbers, transit and bicycle commuting numbers can also reflect pedestrian facility usage because of the dependency of these two modes on the pedestrian network. Most transit trips begin and end with a walk to a transit stop, and thus depend on a well-connected pedestrian network to augment its service. Often, bicycle-friendly communities with high levels of bicycle commuting also have characteristics that are pedestrian-friendly.

The Town of Cary's population can generally be characterized as affluent, well-educated, and growing. As of the 2000 Census, the median household income in Cary was \$75,122, while Wake County's median household income was only \$54,988. Compared to neighboring Triangle municipalities, Cary also has a much lower percent population below the poverty line and a much higher percent adult population with a bachelor's degree or higher. Since 1990, the Town has more than doubled its size with a growth rate twice that of the County and more than four times that of the State and Nation. To accommodate this population, Cary has also seen a boom in residential and commercial development.

Cary's population can also be defined as mostly middle-aged and Caucasian. In the Triangle Region, the Town is often seen as a popular location for families, and demographics reflect this perception with a higher percent of the population between the ages of 30 – 49 years old and under nine years old than the County, State, and Nation. Cary also has a higher percent of the population Caucasian and Asian-American than the County, State, and Nation but a much lower percent of the population African-American.

Reflective of its population's affluence, Cary has a lower percentage of households with no vehicle than the County, State, and Nation. Census data shows that over 50 percent of the Town's households have two vehicles available. Over 90 percent of Cary's workers 16 years and older commute to work by car, truck, or van alone, which is comparable to the County and State. Out of the remaining 10 percent of commuters who travel by an

alternative means, over 42 percent walk to work and 16 percent take public transportation. It should be noted that now that Cary has recently begun its C-Tran service (fixed route bus service), the Town should expect an increase in the proportion of work-commute trips made by public transportation.

**1.2. Population, 2000 Census data.**

|  | Town of Cary  | Wake County  | North Carolina | United States |
|--|---------------|--------------|----------------|---------------|
| 1990 Population                                  | 43,858        | 423,380      | 6,628,637      | 248,709,873   |
| 2000 Population                                  | 94,530        | 627,846      | 8,049,313      | 281,421,906   |
| <i>Percent Change<br/>1980 – 2000</i>            | <i>115.54</i> | <i>48.29</i> | <i>21.43</i>   | <i>13.15</i>  |
| Current Gender Ratio: 49.71 male to 50.29 female |               |              |                |               |

**1.3. Race, 2000 Census data.**

|                               | Town of Cary | Wake County | North Carolina | United States |
|-------------------------------|--------------|-------------|----------------|---------------|
| <b>Total Population</b>       | 94,530       | 627,846     | 8,049,313      | 281,421,906   |
| <i>Percent of Population:</i> |              |             |                |               |
| <b>White Alone</b>            | 81.79        | 72.30       | 72.08          | 75.10         |
| <b>Black Alone</b>            | 6.12         | 19.60       | 21.54          | 12.21         |
| <b>American Indian</b>        | 0.46         | 0.36        | 1.25           | 0.87          |
| <b>Asian</b>                  | 7.96         | 3.30        | 1.38           | 3.61          |
| <b>Two or More Races</b>      | 1.39         | 2.63        | 2.30           | 5.49          |
| <b>Other</b>                  | 1.45         | 2.68        | 2.35           | 5.62          |
| <b>Hispanic*</b>              | 4.28         | 5.41        | 4.71           | 12.55         |

\*Hispanic is considered an ethnicity and is not a race.

## Cary Pedestrian Plan

### Appendix 1: Demographics Analysis

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#### 1.4. Age, 2000 Census data.

|                               | Town of Cary  | Wake County    | North Carolina   | United States      |
|-------------------------------|---------------|----------------|------------------|--------------------|
| <b>Total Population</b>       | <b>94,530</b> | <b>627,846</b> | <b>8,049,313</b> | <b>281,421,906</b> |
| <i>Percent of Population:</i> |               |                |                  |                    |
| 4 and under                   | 8.07          | 7.15           | 6.66             | 6.77               |
| 5 - 9                         | 8.61          | 7.32           | 6.99             | 7.32               |
| 10 - 14                       | 0.08          | 0.07           | 0.07             | 0.07               |
| 15 - 19                       | 5.87          | 6.43           | 6.60             | 7.08               |
| 20 - 24                       | 4.60          | 7.86           | 7.20             | 6.76               |
| 25 - 29                       | 7.57          | 8.86           | 7.41             | 6.83               |
| 30 - 39                       | 20.80         | 18.90          | 15.78            | 15.44              |
| 40 - 49                       | 18.62         | 16.28          | 15.13            | 15.28              |
| 50 - 59                       | 10.07         | 10.04          | 11.24            | 10.94              |
| 60 - 69                       | 3.95          | 5.11           | 7.58             | 7.23               |
| 70 - 79                       | 2.40          | 3.40           | 5.64             | 5.80               |
| 80 and up                     | 1.24          | 1.67           | 2.85             | 3.23               |

1.5. Educational Attainment, 2000 Census data.

|  | Town of Cary | Wake County | North Carolina | United States |
|--|--------------|-------------|----------------|---------------|
| Total Population                               | 94,530       | 627,846     | 8,049,313      | 281,421,906   |
| <i>Percent of Population:</i>                  |              |             |                |               |
| Less than 9th Grade                            | 2.13         | 3.76        | 7.83           | 7.55          |
| 9th to 12th Grade, no diploma                  | 2.80         | 6.92        | 14.03          | 12.05         |
| High School Graduate<br>(includes equivalency) | 10.70        | 17.76       | 28.45          | 28.63         |
| Some college, no degree                        | 16.34        | 20.06       | 20.45          | 21.05         |
| Associate Degree                               | 7.33         | 7.63        | 6.78           | 6.32          |
| Bachelor's Degree                              | 37.74        | 29.59       | 15.30          | 15.54         |
| Graduate or Professional Degree                | 22.96        | 14.29       | 7.17           | 8.86          |

1.6. Income, 2000 Census data.

|                                       | Town of Cary  | Wake County    | North Carolina   | United States      |
|---------------------------------------|---------------|----------------|------------------|--------------------|
| Median Household Income (1999)        | \$75,122      | \$54,988       | \$39,184         | \$41,994           |
| Median Family Income (1999)           | \$88,074      | \$67,149       | \$46,335         | \$50,046           |
| <b>Total Population</b>               | <b>94,530</b> | <b>627,846</b> | <b>8,049,313</b> | <b>281,421,906</b> |
| Percent Population Below Poverty Line | 3.43          | 7.82           | 12.28            | 12.38              |
| <i>Percent Under Age 5</i>            | <i>8.28</i>   | <i>10.94</i>   | <i>11.81</i>     | <i>12.10</i>       |
| <i>Percent Over Age 65</i>            | <i>4.99</i>   | <i>8.23</i>    | <i>12.75</i>     | <i>9.70</i>        |

# Cary Pedestrian Plan

## Appendix 1: Demographics Analysis

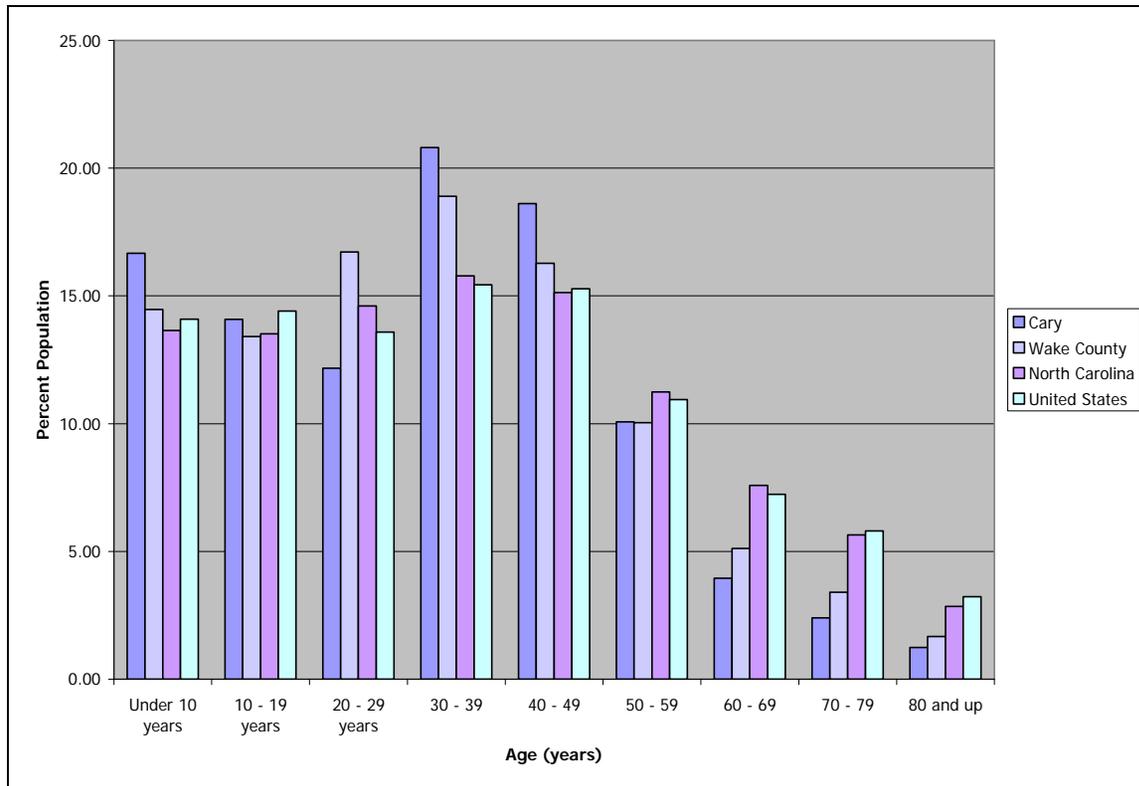


Figure 1. Graph of Cary's population by age, 2000 Census Data.

1.7. Household Vehicle Availability, 2000 Census data.

|                              | Town of Cary | Wake County | North Carolina | United States |
|------------------------------|--------------|-------------|----------------|---------------|
| Total Households             | 34,887       | 242,040     | 3,132,013      | 105,480,101   |
| <i>Percent Households:</i>   |              |             |                |               |
| No vehicle available         | 2.28         | 4.88        | 7.51           | 10.30         |
| 1 vehicle available          | 26.04        | 32.05       | 32.27          | 34.25         |
| 2 vehicles available         | 53.71        | 44.68       | 39.93          | 38.36         |
| 3 vehicles available         | 14.22        | 14.11       | 14.91          | 12.46         |
| 4 vehicles available         | 2.95         | 3.31        | 3.97           | 3.37          |
| 5 or more vehicles available | 0.81         | 0.96        | 1.41           | 1.27          |

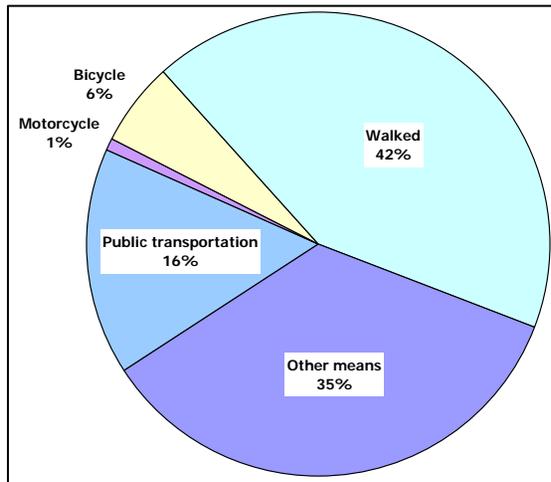


Figure 2. Pie chart of percent of Cary's population that travel by various modes to work, 2000 Census Data.

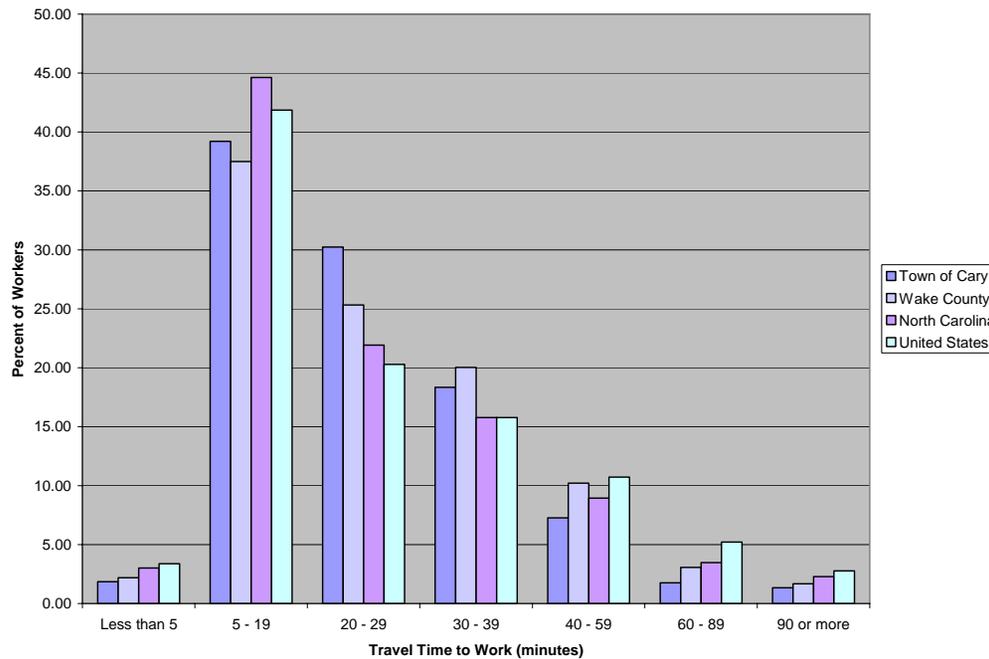
1.8. Work Commute (for workers over 16 years) , 2000 Census data.

|  | Town of Cary | Wake County | North Carolina | United States |
|--|--------------|-------------|----------------|---------------|
| Total Workers 16 Years and Over              | 51,175       | 338,602     | 3,837,773      | 128,279,228   |
| <i>Percent of Workers 16 Years and Over:</i> |              |             |                |               |
| Car, truck, or van – drove alone             | 93.10        | 92.29       | 93.41          | 87.88         |
| Walked                                       | 0.83         | 1.73        | 1.93           | 2.93          |
| Bicycle                                      | 0.12         | 0.19        | 0.18           | 0.38          |
| Public Transit                               | 0.31         | 1.23        | 0.91           | 4.73          |
| Work at Home                                 | 4.95         | 3.76        | 2.68           | 3.26          |
| Other  | 0.67         | 0.08        | 0.89           | 0.81          |

Cary Pedestrian Plan  
Appendix 1: Demographics Analysis

1.9. To-Work Travel Time, 2000 Census data.

| Travel Time (in minutes)                     | Town of Cary | Wake County | North Carolina | United States |
|--|--------------|-------------|----------------|---------------|
| Total Workers 16 years and older             | 51,175       | 338,602     | 3,837,773      | 128,279,228   |
| <i>Percent of Workers 16 Years and Over:</i> |              |             |                |               |
| Less than 5                                  | 1.85         | 2.19        | 3.01           | 3.37          |
| 5 - 19                                       | 39.21        | 37.49       | 44.62          | 41.86         |
| 20 - 29                                      | 30.25        | 25.32       | 21.91          | 20.28         |
| 30 - 39                                      | 18.34        | 20.03       | 15.77          | 15.78         |
| 40 - 59                                      | 7.26         | 10.22       | 8.93           | 10.74         |
| 60 - 89                                      | 1.76         | 3.07        | 3.47           | 5.21          |
| 90 or more                                   | 1.34         | 1.67        | 2.28           | 2.77          |



## Appendix 2. Survey Results

## Cary Pedestrian Plan

### Appendix 2: Survey Results

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#### Introduction

The Cary Pedestrian Plan Survey was conducted from April 9, 2006 to July 31, 2006, both online and through a paper version of the survey. The paper version of the survey was distributed at a variety of public events and locations such as the Cary Earth Daze event at Bond Park, Town Hall, Town Council, and the Cary Pedestrian Plan's Stakeholder Committee Group meetings. The purpose of the survey is to gather input from citizens of the Town of Cary about their pedestrian habits and preferences, and the condition and needs of the pedestrian system in the town. This memo summarizes the results of the survey, identifies focus areas based on survey responses, and provides recommended projects to be included in the forthcoming Pedestrian Plan.

The analysis of the survey responses found that respondents generally feel safe walking in their neighborhoods, but are uncomfortable crossing streets, especially streets with high speed and volumes of traffic. Most respondents enjoy walking for recreation and/or exercise in parks and to other recreation facilities, and would like to be able to walk to more of these locations, as well as places like a shopping center, post office, library, or cultural event. Overall, weather and level of fitness have little impact on respondents' reasons for walking or not.

In general, respondents approve of Cary's progress with sidewalk and greenways that make up the Town's pedestrian network, but they would like to see things improved. Some of the major issues include:

- ◆ Lack of pedestrian system connectivity. A top reason respondents did not walk to a location was because it did not have continuous sidewalk or a greenway to that location.
- ◆ Need for better pedestrian access to locations such as other neighborhoods, parks, shopping centers, post offices, or cultural events. Many respondents indicated they would like to walk to these destinations. With better pedestrian access to these locations, respondents hopefully would be able to walk to them more readily than they can now.
- ◆ Establish better crossings. Many of the comments from the survey responses indicated a need for better pedestrian crossings at mid-block locations and at intersections of major roads with smaller roads for access to schools, parks, greenways, shopping, neighborhoods, and work.

Some recommendations for addressing these issues include:

- ◆ target identified focus areas for improving the concentrated needs of many people quickly;
- ◆ construct more sidewalks and greenways; and
- ◆ provide crossings at selected mid-block locations.

The results of the survey also have implications for project prioritization. Based on survey responses, priority should be given to projects that include crossing treatments and intersection improvements for pedestrians; improve connectivity of the pedestrian system; and, create better accessibility for pedestrians.

#### Survey Results

The Cary Pedestrian Plan survey received a total of 524 responses. The majority of respondents are between the ages of 30 – 49, as can be seen in Figure 1 which shows survey respondents' ages in comparison to the age distribution in the Town of Cary. In addition, the majority of respondents (60.5 percent) are female. Thirty-seven percent of respondents reside in zip code 27513 and 35 percent of respondents reside in zip code 27511.

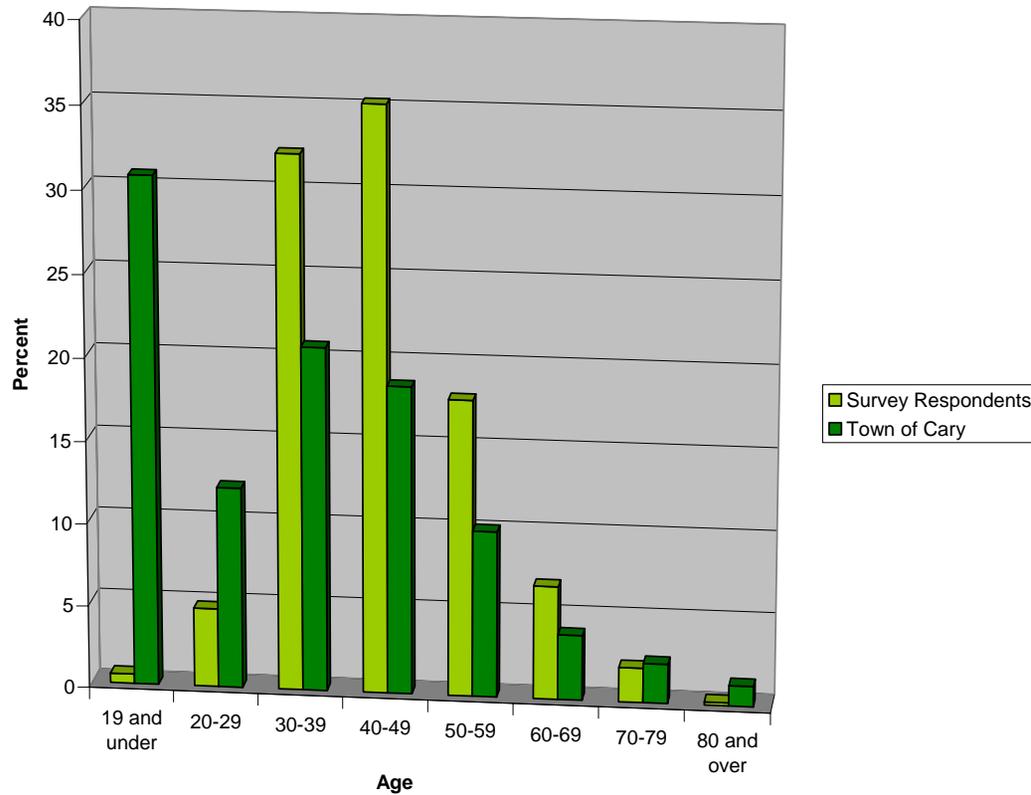


Figure 1. Age distribution of survey respondents in comparison to the age distribution for the population of the Town of Cary.

*Popular walking destinations and purposes*

The most numbers of respondents indicated that they currently walk very frequently to (1) a park or recreation facility (23.4 percent), and (2) a friend’s house or to visit family (22.2 percent). Destinations to which the most number of respondents indicated they never walk were: work (83.1 percent of respondents), the store (79 percent of respondents), the post office (74.6 percent of respondents), the library (73 percent of respondents), or a cultural event like a concert or movie (70.7 percent of respondents). Similarly, the most number of respondents (72.4 percent) indicated that they would *like* to walk to a park or

recreational facility. Other popular destinations to which respondents would very much like to walk include:

- ◆ A friend's house or to visit family (67.2 percent)
- ◆ A shopping center (53.7 percent)
- ◆ A cultural event (50.5 percent)
- ◆ The library (48.7 percent)
- ◆ The post office (48.6 percent)

Over 50 percent of respondents indicated the purpose of their walk is most frequently for exercise or recreation.

#### *Perception of Cary's Pedestrian System*

The most number of respondents indicated that they feel very comfortable walking in their neighborhood (53.6 percent of respondents). Conversely, only 25.4 percent of respondents feel very comfortable walking in the area near their work, and 12.9 percent feel very uncomfortable. At pedestrian crossings, only 11.6 percent of respondents feel very comfortable and 15.5 percent of respondents feel very uncomfortable.

The most number of respondents (52.7 percent) feel that the existing greenways in Cary are adequate, but don't provide enough connections to places. Over nineteen percent of respondents feel that the existing greenways are excellent. Similarly, 42.6 percent of respondents feel that sidewalks in Cary are adequate but don't provide enough connections to places, and 31.9 percent feel that they are inadequate.

#### *Constraints on Walking*

The most number of respondents (40.8 percent) indicated that they very frequently choose not to walk somewhere because "there isn't continuous sidewalk to that destination". Other reasons why respondents very frequently choose *not* to walk somewhere are as follows:

- ◆ Traffic makes it unsafe and unpleasant (36.8 percent); and
- ◆ It is too far (36.5 percent).

Many respondents indicated that the following are never reasons for *not* walking somewhere:

- ◆ There are many hills (46.5 percent);
- ◆ I have a health condition (83.3 percent);
- ◆ The neighborhood is dangerous (63.7 percent); and

## Cary Pedestrian Plan

### Appendix 2: Survey Results

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- ◆ I don't like walking (82.3 percent).

Reasons such as "I have a lot to carry" and "I have to run many errands in many different locations and it would take too long to walk" that relate to families and parents who chauffeur children from one destination to another received lower response rates as causes for not walking. However, this may be due to the fact that few respondents had children, or if they do, they are grown and capable of driving themselves.

#### Sidewalk/Pedestrian-way Comments Summarized

Most survey comments requested new sidewalk on locations where none existed or providing sidewalk on both sides of the street if there was sidewalk on only one side of the street. The following is a listing of road corridors which received comments from more than two separate survey respondents during the course of the survey period. Figure 2 shows road locations where comments were made.

- |                      |                                 |                        |
|----------------------|---------------------------------|------------------------|
| ◆ Cary Parkway       | ◆ Jenks Road                    | ◆ Old Apex Road        |
| ◆ Chapel Hill Road   | ◆ Jenks Carpenter Road          | ◆ Old Jenks Road       |
| ◆ Chatham Street     | ◆ Kildaire Farm Road            | ◆ Park Street          |
| ◆ Davis Drive        | ◆ Lochmere Drive                | ◆ Penny Road           |
| ◆ Evans Road         | ◆ Louis Stephens Drive          | ◆ Ralph Drive          |
| ◆ Harrison Avenue    | ◆ Maynard Road                  | ◆ Reedy Creek Road     |
| ◆ High House Road    | ◆ Morrisville Carpenter<br>Road | ◆ Tryon Road           |
| ◆ Holly Springs Road | ◆ Norwell Boulevard             | ◆ Waldo Rood Boulevard |
| ◆ Holt Street        | ◆ Nottingham Drive              | ◆ Walnut Street        |
| ◆ NC 55              |                                 | ◆ Weston Parkway       |

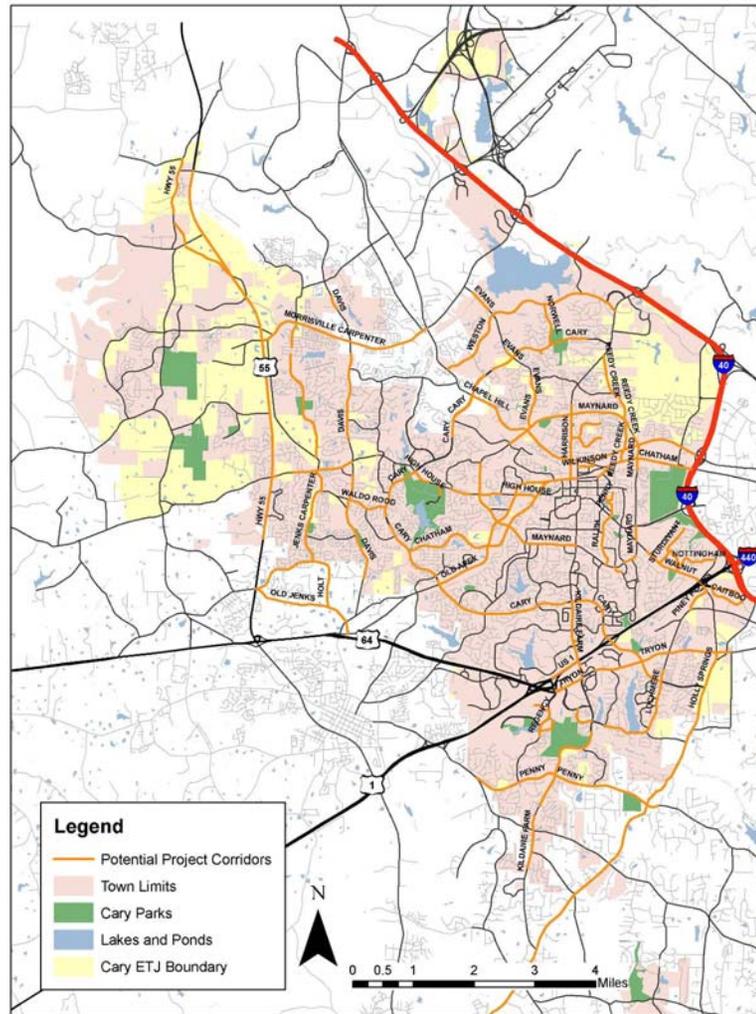


Figure 2. Corridors in Cary that received the most comments from respondents to the Cary Pedestrian Plan.

## Cary Pedestrian Plan

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#### Intersection Comments Summarized

Major issues related to intersections for survey respondents included having trouble crossing intersections of major roads, and also trouble crossing major roads at mid-block to reach trails, commercial centers, other neighborhoods, parks, or sidewalk where the sidewalk may have been incomplete on the other side of the road. In some of the situations discussed in the comments, respondents were requesting crossings for roadways where there may already be sidewalk on one side of the road, but they can't reach it from the side that they are on without crossing a major road. Many of the intersections on the following roads received comments from survey respondents:

- ◆ Cary Parkway
- ◆ Chatham Street
- ◆ Davis Drive
- ◆ Dry Avenue
- ◆ Evans Road
- ◆ Harrison Avenue
- ◆ High House Road
- ◆ NC HWY 55
- ◆ Kildaire Farm Road
- ◆ Laura Duncan Road
- ◆ Maynard Road
- ◆ Morrisville Carpenter Road
- ◆ Penny Road
- ◆ Walnut Street
- ◆ Regency Parkway
- ◆ Weston Parkway

Figure 3 shows the locations of intersections that received comments from more than one survey respondent.

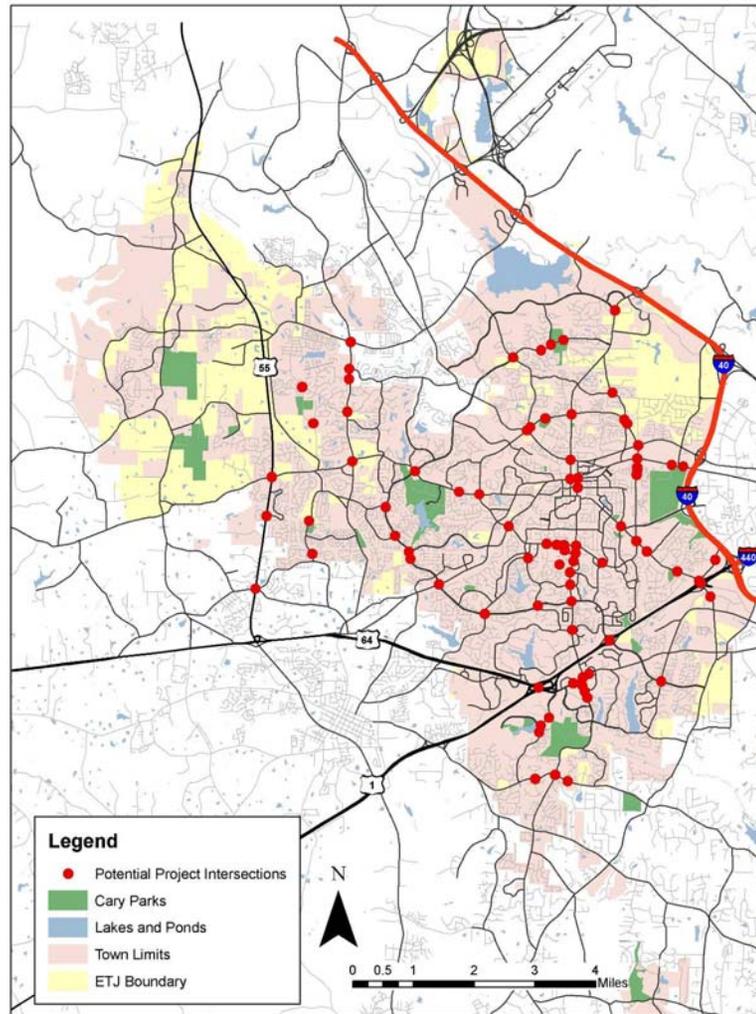


Figure 3. Intersections that received the most comments from respondents to the Cary Pedestrian Plan survey.

## Cary Pedestrian Plan

### Appendix 2: Survey Results

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#### Major Focus Areas

After analyzing the results of the survey, several focus areas begin to present themselves from the comments (Figure 4). These focus areas are where there may be one or several major destinations, such as a school, park, greenway, or shopping center, that received comments from many survey respondents indicating trouble accessing the location as a pedestrian. These locations have a variety of needed improvements on a variety of roads. Maps of each of the focus areas are listed in Appendix 3.

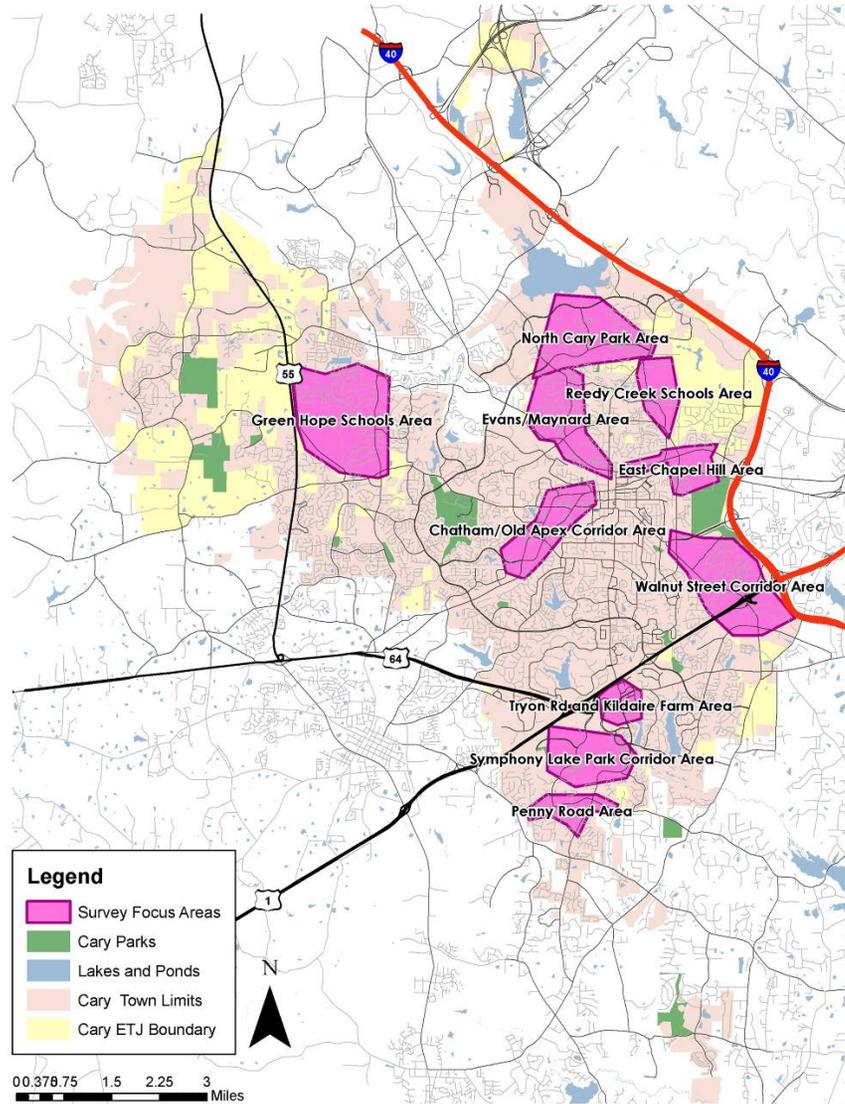


Figure 4. Map of focus areas developed from survey responses.

## Cary Pedestrian Plan

### Appendix 2: Survey Results

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#### *Evans/Maynard Area*

Residential areas off of Evans and Chapel Hill Street, such as homes in the Dynasty Dr and Silvergrove neighborhoods, have a great potential to generate pedestrians to destinations such as Cary Middle School on Evans, Northwoods Elementary School on Chapel Hill Road, and the Lowe's and other commercial development at the Maynard Road intersections with Evans and Chapel Hill Road. Although the streets in this area have some sidewalks, these sidewalks are not fully connected to each other, and may stop on one side of the street and start on another. Survey respondents have reported it is difficult to cross Maynard, Evans, and Chapel Hill Street, both at intersections and mid-block crossings from one subdivision to sidewalk or some other destination. Recommended projects:

- ◆ Intersection improvements for pedestrian access at Maynard Road and Harrison Avenue
- ◆ Intersection improvements for pedestrian access at Maynard Road and Evans Road
- ◆ Complete sidewalk on Chapel Hill Street from Maynard Road to Harrison Avenue.
- ◆ Add sidewalk on other side of Evans Road from Maynard Road to Cary Parkway
- ◆ Provide sidewalk on Chapel Hill Street from Maynard Road to Fairbanks Road
- ◆ Consider intersection improvements at:
  - Evans Road and Cary Middle School entrance
  - Evans Road and Dynasty Drive
  - Evans Road and Silvergrove Drive
  - Evans Road and Thorpe Drive
  - Evans Road and Windbyrne Drive
  - Evans Road and Cary Parkway
  - Chapel Hill Street and Woodland Drive

#### *Chatham Street/Old Apex Corridor Area*

Many respondents requested sidewalk on both sides of the street along both Chatham Street and Old Apex Road for pedestrian connections into downtown from neighborhoods, fire department, a nursing home, and other commercial and residential areas. Recommended projects:

- ◆ complete sidewalk on Chatham Street from Old Apex Road to Dixon Avenue
- ◆ complete sidewalk on Old Apex Road from Chatham Street to Maynard Road
- ◆ complete sidewalk on Old Apex Road from High House Road to Dixon Avenue
- ◆ improvements for pedestrian access at intersection of Maynard Road and Chatham Street
- ◆ consider intersection improvements at:

- Chatham Street and High House Road
- Chatham Street and Danforth Drive
- Old Apex Road and High House Road
- Old Apex Road and Castalia Drive
- Chatham Street and Old Apex Road

*Symphony Lake/Hemlock Bluffs Area*

Respondents have requested access from the residential neighborhoods and offices to the Symphony Lake Park, Hemlock Bluffs Park, and nearby Swift Creek Trail/Greenway, as well as the restaurants and shopping at the commercial development at the intersection of Regency Parkway, Ederlee Drive, and Tryon Road. Recommended projects include:

- ◆ Complete sidewalk on Ederlee Drive from Kendleton Place to Avenue of the Estates Road.
- ◆ Provide sidewalk on both sides of Ederlee Drive from Kendleton Place to Tryon Road.
- ◆ Improve crossings for pedestrian access at intersection of Regency Parkway/Ederlee Drive/Tryon Road.
- ◆ Improve trail crossing at Swift Creek Trail and Ederlee Drive.
- ◆ Improve crossing for pedestrian access at Symphony Lake Trail and Ederlee Drive.

*Walnut Street Corridor Area*

Walnut Street Corridor Area runs the length of Walnut Street, and can be divided into three sub-areas: (1) the area near Cary Towne Center at the intersection of Walnut Street and Maynard Road, (2) the crossing at US 1/64, and (3) the area around Crossroads Plaza and into Crossroads Plaza. Walnut Street has residential development near the middle of its length and major commercial development at either end. Respondents have indicated several issues:

- ◆ Trouble walking from residential neighborhoods off of Sturdivant Drive, Nottingham Drive, Greenwood Circle, Lawrence Road, and Kingston Ridge Road to commercial areas such as Crossroads Plaza and Cary Towne Center
- ◆ No pedestrian facilities at the intersection of US 1/64 and Walnut Street
- ◆ Lack of pedestrian connectivity around and within Crossroads Plaza, and to commercial developments across Walnut Street. Several respondents requested pedestrian facilities from the Ruby Tuesdays on one end of Caitboo Avenue to the movie theater on the other end.
- ◆ Difficulty crossing the street at various intersections near Cary Towne Center

## Cary Pedestrian Plan

### Appendix 2: Survey Results

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In addition, many respondents have requested sidewalk to be placed along Nottingham Drive, which serves single-, and multi-family residences and commercial retail uses. Nottingham Drive is also part of a bus route and has become a major cut-through to avoid construction at Walnut Street and US 1/64. Recommended projects include:

- ◆ Construct sidewalk on both sides of Walnut Street from Maynard Road to Dillard.
- ◆ Construct sidewalk on Nottingham Drive from Walnut Street to Buck Jones Road
- ◆ Add sidewalk on Caitboo Avenue within Crossroads
- ◆ Intersection improvements for pedestrian access at Meeting Street and Walnut Street intersection
- ◆ Provide pedestrian facilities and access on Walnut Street St/US 1/64 crossing
- ◆ Intersection improvements for better pedestrian access at Walnut Street and Hubbard Lane for access from Cary Towne Center to the Barnes and Nobles Shopping Center
- ◆ Intersection improvements for pedestrian access at Walnut Street and Nottingham Drive
- ◆ Intersection improvement for pedestrian access at Nottingham Drive and Buck Jones Road

#### *North Cary Park Area*

Respondents have requested sidewalk on Norwell Boulevard, Cary Parkway, and Weston Parkway for access to the North Cary Park from neighborhoods and to commercial development at Evans and Cary Parkway. Recommended projects include:

- ◆ Complete sidewalk on both sides of Cary Parkway from Evans Road to Harrison Avenue
- ◆ Provide sidewalk on Norwell Boulevard from Weston Parkway to Cary Parkway
- ◆ Complete sidewalk on Evans Road from Woodway Bluff Circle to Cary Parkway
- ◆ Intersection improvements for better pedestrian access at the following intersections:
  - Cary Parkway and Thorpe Drive
  - Cary Parkway and Evans Road
  - Cary Parkway and Norwell Boulevard
- ◆ Improve trail crossing and pedestrian access to trail at the intersection of Cary Parkway and the Black Creek Trail

#### *East Chapel Hill Area*

Respondents' needs in this area included pedestrian access into downtown and to Northwoods Elementary from the residential neighborhood off of Gregory Drive and south of the intersection with Maynard Road and Chatham Street. Respondents also

reported the need for intersection improvements in order to safely cross Maynard Road, Chatham Street, and Chapel Hill Street. Also in the same area is the SAS Soccer Park, which several respondents indicated needs pedestrian access at its entrance. Proposed projects:

- ◆ Provide sidewalk on Chapel Hill Street from Academy Street to Maynard Road
- ◆ Complete sidewalk on Johnson Street from Academy Street to Chapel Hill Street
- ◆ Provide sidewalk on Chatham Street from Maynard Road to SAS Soccer Park
- ◆ Intersection improvements at:
  - Chapel Hill Street and Maynard Road
  - Chapel Hill Street and SAS Soccer Park
  - Maynard Road and Tate Street
  - Maynard Road and Reed Street
  - Chatham Street and Maynard Road

*Reedy Creek Area*

Respondents indicated a strong need for sidewalk the full length of Reedy Creek Road from Harrison Avenue to Maynard Road for access from residential neighborhoods along Dynasty Drive, Electra Drive, Country Court, and Dublin Woods Drive to the Reedy Creek Middle and Elementary Schools. Respondents also indicated a need for pedestrian access to the commercial development on Harrison Avenue and Maynard Road. Proposed projects:

- ◆ Provide sidewalk the full length of Reedy Creek Road
- ◆ Intersection improvements for pedestrian access at:
  - Dynasty Drive and Reedy Creek Road
  - Maynard Road and Reedy Creek Road

*Tryon Road and Kildaire Farm Road Area (Waverly Place)*

Respondents indicated a need for more connectivity among the various shopping centers at the intersection of Tryon Road and Kildaire Farm Road, and access from these shopping centers to the medical and office buildings nearby. Proposed projects include:

- ◆ Construct continuous sidewalk on the north side of Tryon Road from Crescent Green to Kildaire Farm Road
- ◆ Intersection improvements for better pedestrian access at:
  - Tryon Road and Ashville Avenue
  - Tryon Road and Kildaire Farm Road
  - Tryon Road and Colonades Way
  - Kildaire Farm Road and Colonades Way
  - Kildaire Farm Road and Advent Court

## Cary Pedestrian Plan

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- Kildaire Farm Road and Bald Eagle Lane

#### *Penny Road*

Respondents requested improvements for pedestrian access from residential neighborhoods along Penny Road to the Penny Road Elementary School and Oak Grove Elementary School. Recommended projects include:

- ◆ Sidewalk on both sides of Penny Road from Killingsworth Drive to Ederlee Drive
- ◆ Sidewalk on both sides of Penny Road from Ederlee Drive to Crickentree Drive
- ◆ Sidewalk on both sides of Kildaire Farm Road from Fern Ridge Drive to Penny Road
- ◆ Intersection improvements for pedestrian access at:
  - Kildaire Farm Road and Penny Road intersection
  - Penny Road and Kingsford Drive
  - Penny Road and Oakenridge

#### *Green Hope Area*

Respondents indicated a need for sidewalk along Louis Stephens Drive, NC 55/Alston Avenue, and Davis Drive for access to Green Hope High and Elementary Schools; the Cary Tennis Park; and Morrisville Elementary from the various neighborhoods. Respondents would also like better pedestrian crossings for access from one neighborhood to another. Recommended projects include:

- ◆ complete sidewalk on both sides of Louis Stephens Drive from Dominion Hill Drive to the Cary Tennis Park
- ◆ complete sidewalk on both sides of Louis Stephens Drive from the Cary Tennis Park to Carpenter Upchurch Road, or at least from the Cary Tennis Park to Upchurch Meadow Road
- ◆ complete sidewalk on both sides of Davis Drive from Morrisville Parkway to High House Road
- ◆ complete sidewalk on both sides of Preston Village Way from Davis Drive to Morrisville Parkway
- ◆ Improvements for pedestrian access at the following intersections:
  - Davis Drive and Morrisville Parkway
  - Davis Drive and Caviston Way
  - Davis Drive and Preston Village Way
  - Davis Drive and High House Road
  - Louis Stephens Drive and Heritage Pines Drive
  - Louis Stephens Drive and Upchurch Meadow Road

## Appendix 3. Project Development

## Cary Pedestrian Plan

### Appendix 3: Project Development

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#### 3.1. Introduction

This appendix contains all of the projects considered for the Cary Pedestrian Plan. These projects were developed from input received during the public involvement process and staff meetings. This section is organized to present projects based on their source in the public involvement process. Projects and focus areas are listed by one of three categories:

- ◆ Projects that were developed through focus group comments
- ◆ Projects that were developed through study corridor analysis
- ◆ Projects and focus areas that were developed based on survey results

It should be noted that some projects were identified by two or three public input sources and reinforced by staff comment. For each category, projects are itemized as either a corridor or intersection project, and their lengths and appropriate actions to be taken are included. Accompanying maps are for conceptual purposes only – more accurate maps should be requested from Town Staff.

#### 3.2. Focus Group Results

Three focus groups were conducted for this project. They targeted the following populations: Hispanics, Seniors, and Cary transit riders. The discussion in Section 2 more thoroughly details the results of the focus groups. The following tables present the specific projects that were identified as a result of the focus groups.

**Table 3-1. Focus group corridor projects.**

| Location                    | From              | To            | Length | Proposed Action                      |
|-----------------------------|-------------------|---------------|--------|--------------------------------------|
| <i>Hispanic Focus Group</i> |                   |               |        |                                      |
| Maynard                     | Plantation        | Kildaire Farm | 0.76   | Add sidewalk on one side of the road |
| <i>Seniors Focus Group</i>  |                   |               |        |                                      |
| High Meadow*                | Two Creeks        | Cary          | 0.91   | add sidewalk on one side             |
| Two Creeks*                 | Cary              | Plantation    | 0.9    | construct new sidewalk               |
| Chatham                     | Dixon             | Jason         | 0.66   | construct new sidewalk               |
| Chatham                     | Jason             | Danforth      | 0.27   | add sidewalk on one side             |
| Chatham                     | Danforth          | Old Apex      | 0.64   | construct new sidewalk               |
| <i>Transit Focus Group</i>  |                   |               |        |                                      |
| James Jackson               | Cary              | Maynard       | 1.05   | connectivity                         |
| Maynard                     | Olde Weatherstone | High House    | 0.52   | add sidewalk on one side             |
| Buck Jones                  | Nottingham        | Town Limits   | 0.17   | Add sidewalk on one side             |

\*This project constrained by ROW availability.

**Table 3-2. Focus group intersection projects.**

| Intersections               |  |
|-----------------------------|--|
| <i>Hispanic Focus Group</i> |  |
| ◆ Wicklow and Maynard       | ◆ Kildaire Farm and Kilmayne                                       |
| ◆ Pond and Maynard          | ◆ Kildaire Farm and Commonwealth                                   |
| ◆ Kilmayne and Maynard      | ◆ Kildaire Farm and Wren   |
| ◆ Kilmayne and Iowa         | ◆ Kildaire Farm and High Meadow                                    |
| ◆ Cheswick and Pond         | ◆ Tate/Maple and Maynard   |
| <i>Seniors Focus Group</i>  | <i>Transit Focus Group</i>   |
| ◆ Lake Pine and Plantation  | ◆ Provide benches at shared TTA stop south of Maynard and Harrison |
| ◆ Maynard and High House    | ◆ Provide benches with shade at Cary Towne Center                  |
| ◆ High House and Abbeydale  | ◆ Provide sidewalk at Maynard and High House                       |

#### 3.3. Study Corridors

Based upon survey results and stakeholder input, town staff selected six corridors for an in-depth analysis of the opportunities and constraints present to create a more pedestrian-friendly environment. These locations were:

- ◆ E. Chatham Street: Chatham Street/E. Durham Road split to I-40, 1.4 miles
- ◆ Kildaire Farm Road: SE Maynard Road to Cary Parkway, 0.9 miles
- ◆ Kildaire Farm Road: Queensferry Road to Glen Echo Lane, 1.8 miles
- ◆ Old Apex Road: Chatham Street/Old Apex Road split to Laura Duncan Road, 3.1 miles
- ◆ Penny Road: Killingsworth to Winding Ridge, 3.2 miles
- ◆ Reedy Creek Road: NE Maynard Road to Harrison Avenue, 1.2 miles

For each corridor, a field review was conducted which included both an in-vehicle and walking assessment. The reviewers considered the following elements for each corridor study:

##### Facility Quality/Condition

- |  |   |
|--|---|
| ◆ Missing Sidewalk and Missing Small Segments of Sidewalk  | ◆ Buffers between Sidewalk and Traffic  |
| ◆ Sidewalk Condition   | ◆ Speed Limits  |
| ◆ ADA Curb Ramps   | ◆ Roadway Cross-sections  |
| ◆ Pedestrian Amenities (Furniture, Pedestrian-scale lighting)  | ◆ Obstructions in Sidewalk/Pedestrian Pathway (eg, light poles, trash cans, etc.)                         |
| ◆ Off-Road Trail Connections   | ◆ Underpasses and their Condition   |
| ◆ Transit Stops and Pedestrian Accessibility (eg, is it necessary to walk through the grass/mud to reach the stop?)          | ◆ Neighborhood Condition/Perception of Personal Safety (eg, abandoned cars/houses, people wandering, etc) |
| ◆ Parking lots and Pedestrian Accessibility (eg, does the sidewalk “dump” pedestrians into the path of parking lot traffic?) |   |

##### Intersections

- |   |   |
|---|---|
| ◆ Presence and Condition of Crosswalks              | ◆ Intersection Control Type (stop-controlled or signal-controlled)            |
| ◆ Presence and Condition of Pedestrian Signal Heads | ◆ Presence of Free-Flow Right Turns   |
| ◆ Adequacy of the Pedestrian Signal Crossing Time   | ◆ Presence of Wide-Radii that allow cars to make fast turns across ped’s path |

Potential Latent Demand for Pedestrian Facilities

- ◆ Presence of Worn Paths (“Desire Lines”)
- ◆ Presence of trash and litter
- ◆ Number of Pedestrians/People walking nearby
- ◆ Compatible Land Uses (shopping, office, schools, parks)

## Cary Pedestrian Plan

### Appendix 3: Project Development

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#### *East Chatham Street (E. Durham Road to Interstate 40)*

The East Chatham Street corridor provides a connection between Cary and west Raleigh. This corridor was selected because of its dual nature as a major connection route between downtown Cary and West Raleigh and also as an area with the potential for high levels of pedestrians.

Land use along the corridor between the E. Durham Rd/Chatham Street split and Maynard Road intersection is primarily mixed-use commercial and residential development with several adjacent large shopping centers, restaurants, and some office space. This is also a bus route, with well-used bus stops and several pedestrians were noted during field review. Projects for this location should provide adequate pedestrian crossings between land uses and connect missing segments of sidewalk.

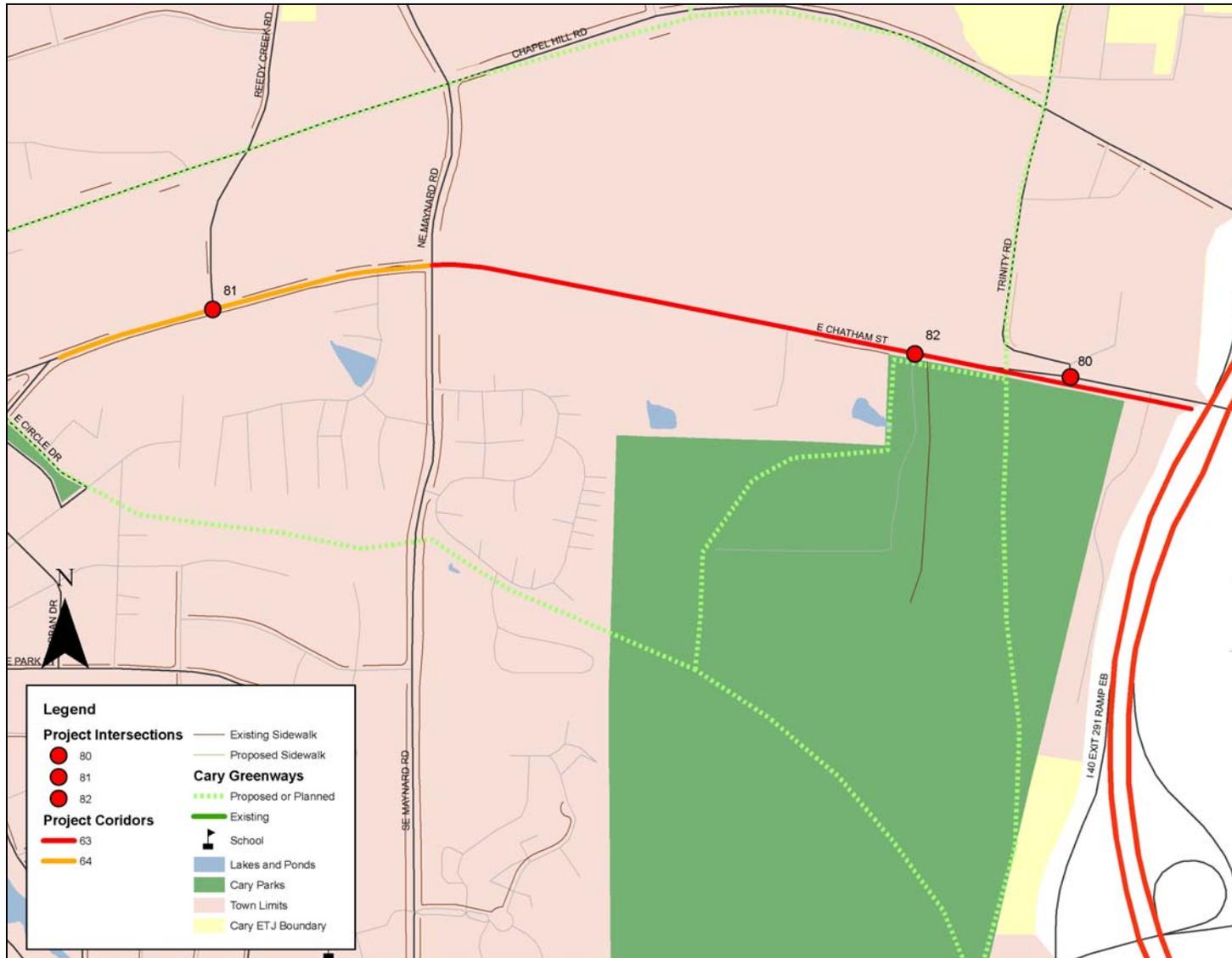
West of the Maynard Road intersection, land use along the corridor is more office and industrial uses, with many vacant lots. The most notable feature here is the SAS Soccer Complex on the south side of the street. Continuous sidewalk should be provided along at least one side of the road for access from the town limits into downtown. Improvements to the Trinity Road/Chatham intersection should include crosswalks and a pedestrian signal for pedestrians to cross to SAS Soccer Complex.

#### *Corridor Projects*

| Reference Number | Location | From    | To     | Length | Proposed Action        |
|------------------|----------|---------|--------|--------|------------------------|
| 63               | Chatham  | Maynard | I-40   | 0.92   | construct new sidewalk |
| 64               | Chatham  | Maynard | Durham | 0.46   | connectivity           |

#### *Intersection Projects*

| Reference Number | Intersection                         |
|------------------|--------------------------------------|
| 80               | Chatham and Trinity                  |
| 81               | Chatham and Reedy Creek              |
| 82               | Chatham and SAS Soccer Park Entrance |



3-1. Descriptive image of proposed project locations along E. Chatham St.

## Cary Pedestrian Plan

### Appendix 3: Project Development

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#### 3.3.1. Kildaire Farm Road (Maynard Road to Cary Parkway)

The Kildaire Farm Road corridor between Maynard Road and Cary Parkway has several features which give it potential as a pedestrian generator, including a healthy mix of retail, office, and residential (set off the street) land uses as well as a bus route. Notable features of the corridor include a greenway underpass between High Meadow and Cary Parkway and popular shopping and restaurant locations between Kilmayne and High Meadow.

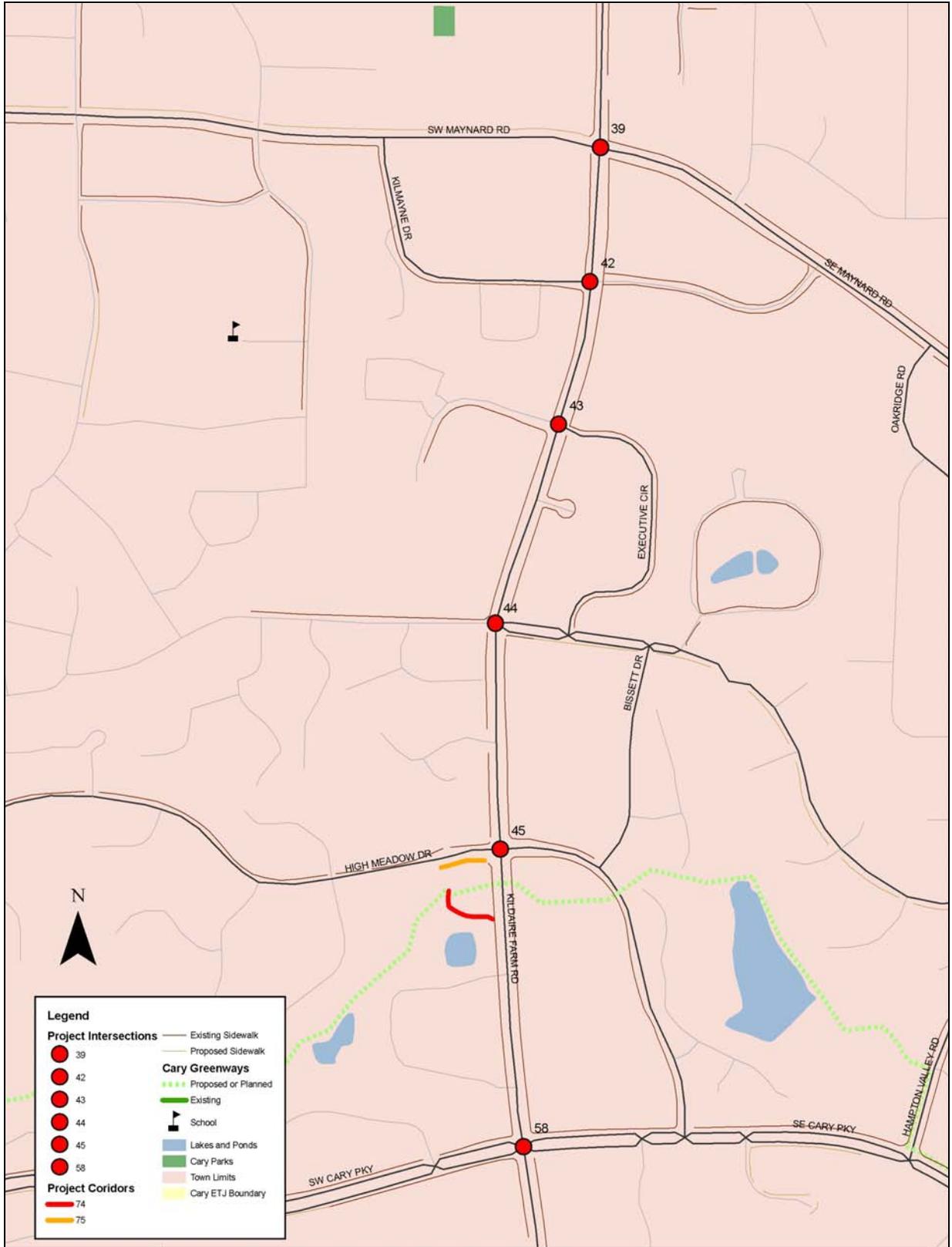
A pedestrian connection should be provided from the greenway at Kilmayne to the intersection with Kildaire Farm, and another connection should be provided from the greenway to Kildaire Farm. Mid-block crossings should be considered to reduce pedestrian travel distances from one destination to another. It is recommended that a number of intersections, including High Meadow Drive, Wrenn Drive, and Kilmayne Drive, be improved with additional pedestrian crossing treatments, such as crosswalks and pedestrian-activated signals (“ped heads”) in order to allow pedestrians to cross from one side of Kildaire Farm Road to another.

#### Corridor Projects

| Reference Number | Location            | From                | To            | Length | Proposed Action        |
|------------------|---------------------|---------------------|---------------|--------|------------------------|
| 74               | Greenway Connection | Underpass           | Kildaire Farm | 0.06   | construct new sidewalk |
| 75               | High Meadow         | Greenway Connection | Kildaire Farm | 0.04   | construct new sidewalk |

#### Intersection Projects

| Reference Number | Intersection                   |
|------------------|--------------------------------|
| 39               | Maynard and Kildaire Farm      |
| 42               | Kilmayne and Kildaire Farm     |
| 43               | Commonwealth and Kildaire Farm |
| 44               | Wren and Kildaire Farm         |
| 45               | Kildaire Farm and High Meadow  |
| 58               | Cary and Kildaire Farm         |



3-2. Descriptive image of proposed project locations along Kildaire Farm Rd.

## Cary Pedestrian Plan

### Appendix 3: Project Development

#### 3.3.2. Kildaire Farm Road (Queensferry to Glen Echo)

Located in southern Cary, the Kildaire Farm Road corridor from Queensferry Road to Glen Echo Lane has strong pedestrian generators concentrated at its south end, including the Cary Wake Medical Hospital, several shopping centers, and an assisted living center. Land uses in the north end of the corridor are primarily residential, but lack sidewalk for access to the shopping and other amenities at the south end of the corridor. The intersection of Tryon Road and Kildaire Farm Road is a major intersection with few pedestrian amenities. During the field visit, several pedestrians witnessed crossing the street at this intersection, indicating there is a demand for pedestrian facilities and a need to improve safety at the intersection.

It is recommended that improvements for pedestrians are made at the intersection of Kildaire Farm and Tryon Road that will include pedestrian-activated signals and crosswalks as outlined in the Opportunities and Constraints map. Additional sidewalk should also be provided for better pedestrian access between and within the neighborhoods and commercial areas.

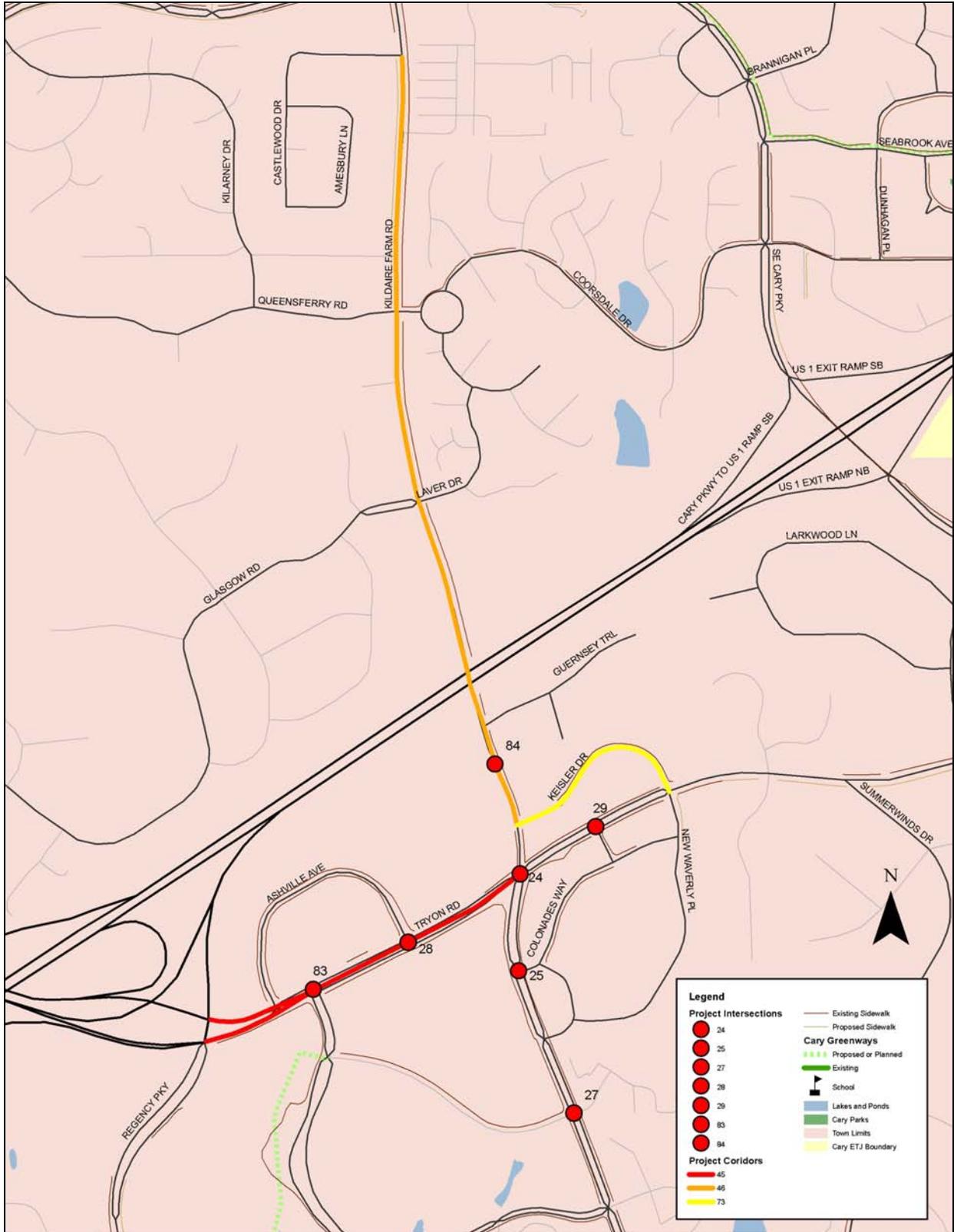
#### Corridor Projects

| Reference Number | Location       | From          | To            | Length | Proposed Action          |
|------------------|----------------|---------------|---------------|--------|--------------------------|
| 45               | Tryon          | Regency       | Kildaire Farm | 0.65   | connectivity             |
| 46               | Kildaire Farm* | Castlewood    | Keisler       | 1.09   | add sidewalk on one side |
| 47               | Keisler        | Kildaire Farm | Tryon         | 0.287  | connectivity             |

\*Part of funded sidewalk request project: Castlewood to Queensferry

#### Intersection Projects

| Reference Number | Intersection                                 |
|------------------|--|
| 24               | Kildaire Farm and Tryon                      |
| 27               | Kildaire Farm and Crescentcommons            |
| 28               | Tryon and Ashville                           |
| 25               | Tryon and Colonnades                         |
| 83               | Tryon and Crescent Green                     |
| 84               | Kildaire Farm and Wake Med Hospital Entrance |



3-3. Descriptive image of proposed projects along Kildaire Farm Rd.

3.3.3. Old Apex Road (Chatham Street to Laura Duncan)

This corridor has a rural “feel,” but is one of the main connecting routes into the center of Cary, inducing higher travel speeds than the 45mph limit. The area is predominantly residential except in the immediate vicinity of the roadway, and includes some light industrial uses associated with the railroad that parallels the roadway on its south side. The area will continue to develop and re-develop, and as it does so, several key intersections (Chatham Street, Maynard Road, High House Road) should be improved; care needs to be taken that these improvements include accommodations and designs amenable to pedestrian traffic.

Although the majority of the east end of the corridor has sidewalk on one side, traffic volumes and speeds necessitate sidewalk on both sides of the street, and pedestrian connections to this sidewalk. Between Castlefern Drive and W. Chatham Street, sidewalk should be provided for pedestrian access between neighborhoods and to the nearby swimming pool and school. An on-street multi-use path is recommended over the standard 5-ft. wide sidewalk to provide adequate width for strollers and children on bikes.

At the west end of the corridor, which is as-of-yet less developed than the east end, sidewalk should be required as new developments go in to connect to existing and future developments. This was of particular concern to stakeholders, who recommended the corridor because of new developments that are occurring and the need to provide pedestrian connections between them.

Many survey respondents also discussed Chatham Street in conjunction with Old Apex Road, and for this reason the two are discussed here together, although Chatham Street did not receive as thorough a study as Old Apex. Most frequent responses requested sidewalk on both sides of the street along Chatham for pedestrian connections into downtown from neighborhoods, the fire department, a nursing home, and other commercial and residential areas. Pedestrian improvements to both Old Apex and W. Chatham will need to be done in coordination with each other to maximize the benefit to pedestrians in the area.

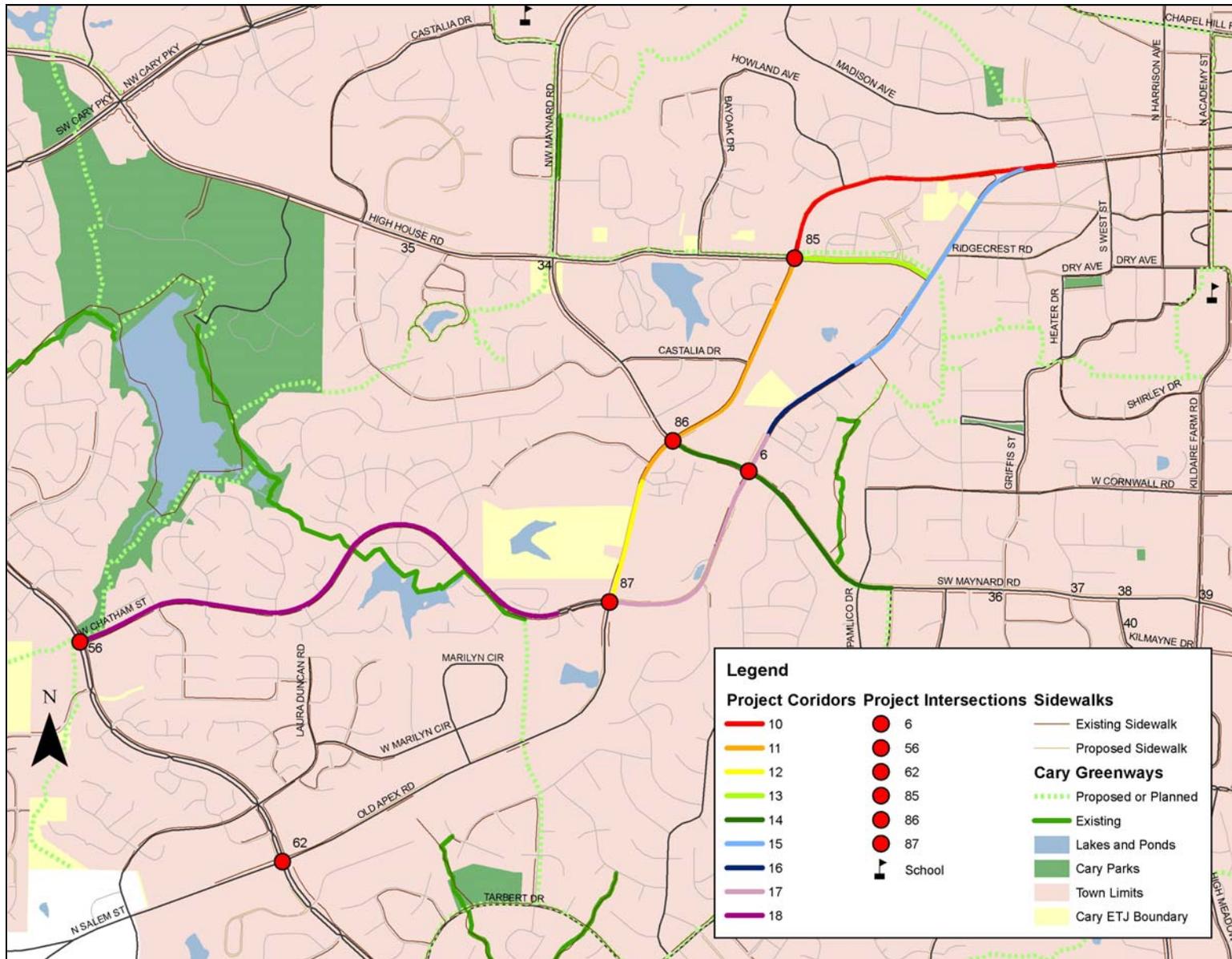
| Reference Number | Location   | From       | To         | Length (mi) | Proposed Action          |
|------------------|------------|------------|------------|-------------|--------------------------|
| 10               | Old Apex   | Dixon      | High House | 0.75        | construct new sidewalk   |
| 11               | Old Apex   | High House | Berentwood | 0.69        | add sidewalk on one side |
| 12               | Old Apex   | Berentwood | Chatham    | 0.31        | construct new sidewalk   |
| 13               | High House | Old Apex   | Chatham    | 0.34        | add sidewalk on one side |
| 14               | Maynard*   | Old Apex   | Plantation | 0.67        | construct new sidewalk   |
| 15               | Chatham    | Dixon      | Jason      | 0.66        | construct new sidewalk   |
| 16               | Chatham    | Jason      | Danforth   | 0.27        | add sidewalk on one side |
| 17               | Chatham    | Danforth   | Old Apex   | 0.64        | construct new sidewalk   |
| 18               | Chatham    | Old Apex   | Cary       | 1.35        | add sidewalk on one side |

Table 3-3. Corridor Projects.

\*From Chatham to Plantation: Part of Maynard Road Widening Phase II (Kildaire Farm Rd to W. Chatham St)

| Reference Number | Intersection            |
|------------------|-------------------------|
| 6                | Maynard and W. Chatham  |
| 62               | Cary and Old Apex       |
| 85               | High House and Old Apex |
| 86               | Maynard and Old Apex    |
| 56               | Chatham and Old Apex    |

Table 3-4. Intersection Projects.



3-4. Descriptive image of proposed projects in the Chatham St. and Old Apex Rd. area.

## Cary Pedestrian Plan

### Appendix 3: Project Development

#### 3.3.4. Penny Road (Ten-Ten Road to Holly Springs Road)

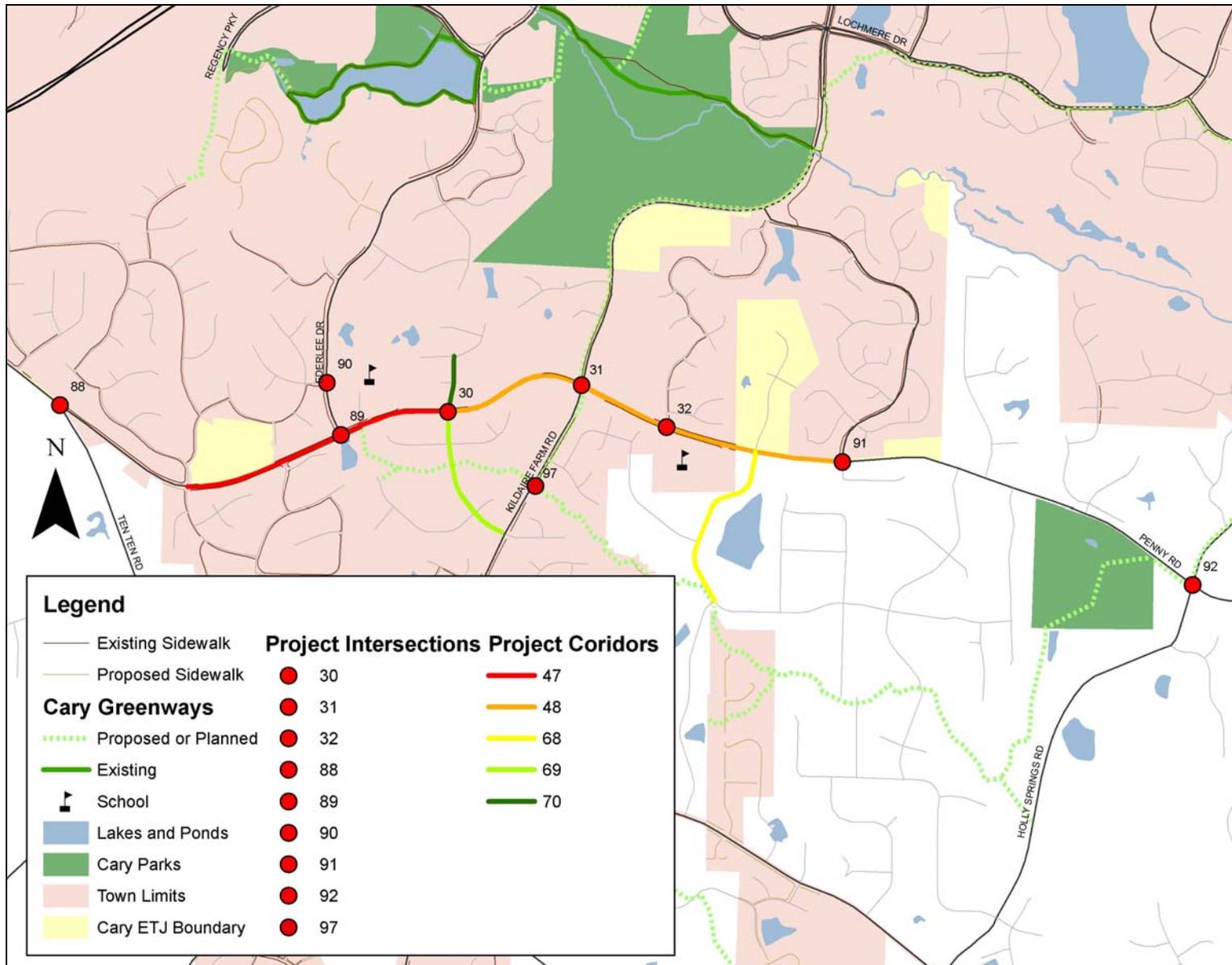
This corridor is characterized by a primarily rural and residential nature, with two elementary schools near the middle of its length. These elementary schools, Penny Road Elementary and Oak Grove Elementary, drive the majority of the recommendations for the corridor as they are currently two of the key destinations for pedestrians in the area. Residential neighborhoods and future greenways are other pedestrian destinations, and as the area further develops there will need to be sidewalk connecting any new commercial development to existing residential development. The predicted rapid development along the corridor will guarantee future increases in traffic volume and therefore it is recommended that both sidewalks and well-designed pedestrian crossings be provided to the two elementary schools from all nearby neighborhoods. It should be noted that the proposed greenway system in the area can serve some of the need for connections between neighborhoods; connections from the schools and existing development to the greenway system should be considered.

#### Corridor Projects

| Reference Numbers | Location       | From          | To             | Length (mi) | Proposed Action        |
|-------------------|----------------|---------------|----------------|-------------|------------------------|
|                   | Penny          | Killingsworth | Kingsford      | 1.25        | connectivity           |
|                   | Penny          | Kingsford     | Loch Highlands | 2.25        | connectivity           |
|                   | Belgium        | Penny         | Den Heider     | 0.46        | construct new sidewalk |
|                   | Kingsford      | Penny         | Kildaire Farm  | 0.35        | construct new sidewalk |
|                   | Magnolia Woods | Penny         | Rose Point     | 0.14        | construct new sidewalk |

#### Intersection Projects

| Reference Numbers | Intersection                        |
|-------------------|-------------------------------------|
| 30                | Penny and Kingsford                 |
| 31                | Penny and Kildaire Farm             |
| 32                | Penny and Cricketree                |
| 88                | Penny and Ten-Ten                   |
| 89                | Penny and Ederlee                   |
| 90                | Ederlee and Whitcomb                |
| 91                | Penny and Loch Highlands            |
| 97                | Kildaire Farm and Proposed Greenway |
| 92                | Penny and Holly Springs             |



3-5. Descriptive image of proposed projects in the Penny Road area.

3.3.5. Reedy Creek Road (Maynard Road to Harrison Avenue)

This corridor connects Harrison Ave (a major north-south route between downtown Cary and I-40) with Maynard Road (the major loop road around the town). Prior to the Pedestrian Plan’s start, Cary staff had already received several requests for sidewalk along the road but had been constrained by lack of curb and gutter. Fortunately, the roadway is scheduled to be widened in 2009-10, and this may allow for curb and gutter and sidewalk construction. An additional constraint to this corridor is that portions of it are outside of the Town’s corporate limits, although within the Town’s ETJ. Land use along the corridor is primarily residential, although there are commercial nodes at either end. The Reedy Creek Schools site at the intersection of Wyatt Pond and Reedy Creek is another major pedestrian attractor and generator, as will be the proposed greenway along Melody and through the school property when completed.

Improvements for pedestrians, including crosswalks, pedestrian heads, and a pedestrian-activated stop signal, should be made at the intersection Wyatt’s Pond and Reedy Creek to accommodate children crossing to the schools. In order to minimize the need for two crossing treatments within close proximity of each other, this intersection could also serve as a crossing for the nearby proposed greenway which could be re-routed to pass from Melody down to the school entrance. The connecting pedestrian facility along Melody and between Melody and Wyatt’s Pond should be a multi-use trail since it serves the dual purpose of a greenway and sidewalk. A school zone should also be established along Reedy Creek leading to the school entrances in either direction.

Pedestrian improvements are also recommended at the intersections at either end of the corridor for access to the nearby commercial land uses. At Reedy Creek and Maynard, the traffic light should have a pedestrian signal with pedestrian activated crossings, crosswalks, and curb ramp. At the intersection of Reedy Creek and Harrison Ave, pedestrian signals and crosswalks should also be installed. In addition, the school warning sign should be moved to prior to the intersection for north bound traffic.

| Reference Number | Location     | From        | To             | Length (mi) | Proposed Action        |
|------------------|--------------|-------------|----------------|-------------|------------------------|
|                  | Reedy Creek* | Harrison    | Maynard        | 1.2         | construct new sidewalk |
|                  | Melody       | Harrison    | Reedy Creek    | 0.23        | construct new sidewalk |
|                  | Maynard**    | Reedy Creek | S. Reedy Creek | 0.087       | construct new sidewalk |

3-6. Corridor Projects.

\* Part of Reedy Creek Road Widening (Capital Improvement Plan)

\*\* may already be in development/construction

| Reference Number | Intersection                                    |
|------------------|---|
|                  | Dynasty and Reedy Creek                         |
|                  | Maynard and Reedy Creek                         |
|                  | Maynard and S. Reedy Creek                      |
|                  | Reedy Creek and Proposed Greenway/Melody        |
|                  | Reedy Creek Schools/Wyatts Pond and Reedy Creek |
|                  | Harrison and Reedy Creek                        |

3-7. Intersection Projects.

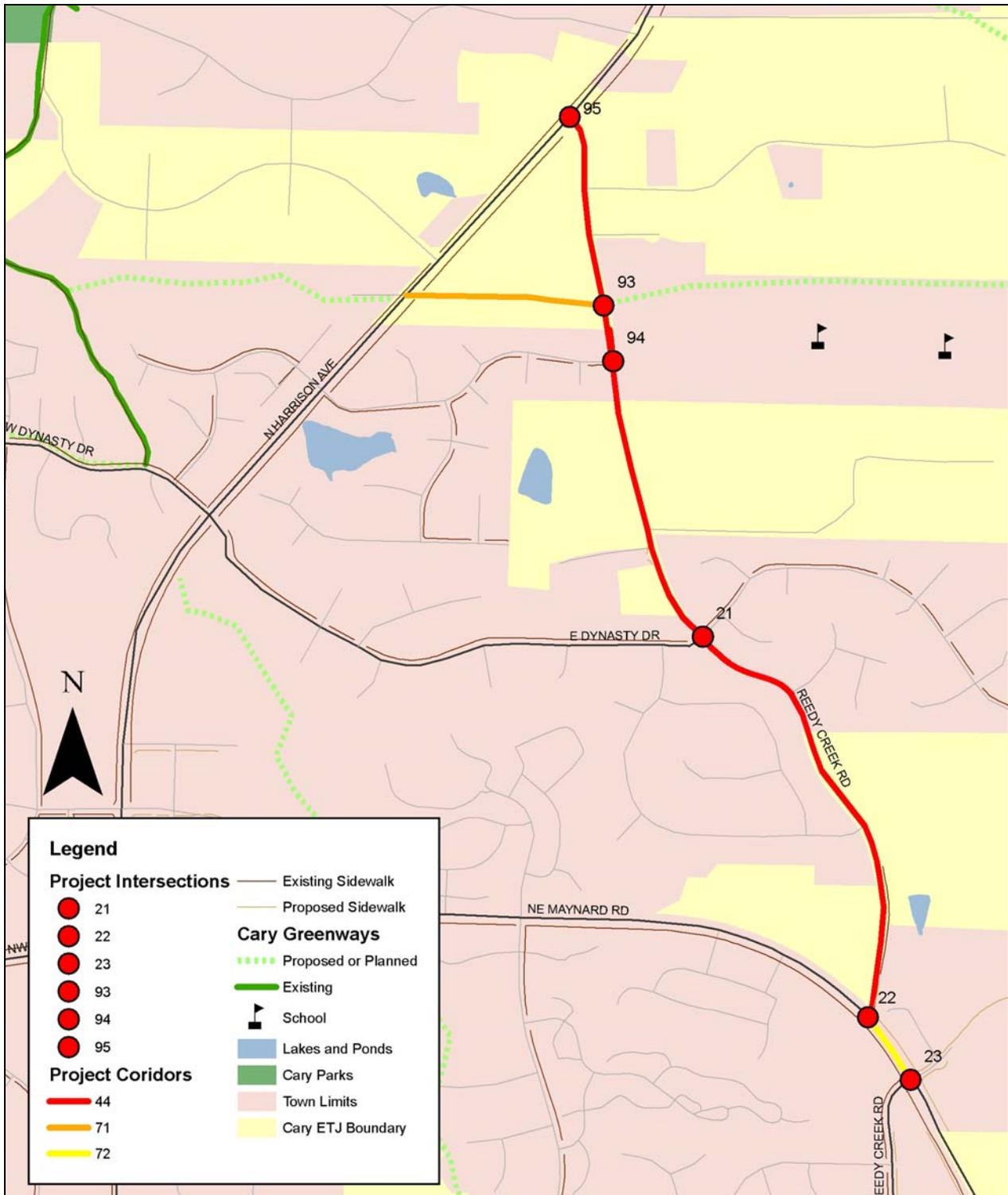


Figure 3-8. Descriptive image of proposed projects in the Reedy Creek area.

## Cary Pedestrian Plan

### Appendix 3: Project Development

#### 3.4. Survey Results

In addition to the Study Corridors, there were several areas that were frequently discussed by survey respondents. Within each area are contained several locations that were identified by respondents for further attention.

##### 3.4.1. Evans/Maynard Area

Residential areas off of Evans and Chapel Hill Street, such as homes in the Dynasty Drive and Silvergrove neighborhoods, have the potential to generate pedestrians to destinations such as Cary Middle School on Evans, Northwoods Elementary School on Chapel Hill Road, and the Lowe's and other commercial development at the Maynard Road intersections with Evans and Chapel Hill Road. Although the streets in this area have some sidewalks, these sidewalks are not fully connected to each other, and may stop on one side of the street and start on another. The Black Creek Greenway Trail, which runs through the middle of this area, could serve as a major pedestrian route, but needs more connections to adjacent subdivisions. In addition, survey respondents have reported it is difficult to cross Maynard, Evans, and Chapel Hill Street, both at intersections and mid-block crossings from one subdivision to sidewalk or some other destination. A formal greenway crossing is needed at the intersection of Black Creek Greenway and Maynard Road for safe access to Godbold Park.

##### Corridor Projects

| Reference Number | Location      | From             | To            | Length | Proposed Action          |
|------------------|---------------|------------------|---------------|--------|--------------------------|
| 1                | Evans*        | Dynasty          | Evans Estates | 0.51   | construct New Sidewalk   |
| 2                | Evans*        | Evans Estates Dr | Maynard       | 0.54   | connectivity             |
| 3                | Chapel Hill   | Fairbanks        | Maynard       | 0.71   | construct New Sidewalk   |
| 4                | Maynard       | Northwoods       | Evans         | 0.52   | connectivity             |
| 5                | Maynard       | Evans            | Chapel Hill   | 0.07   | add sidewalk on one side |
| 6                | Maynard       | Chapel Hill      | James Jackson | 0.36   | connectivity             |
| 7                | Chapel Hill** | Maynard          | Middleton     | 0.07   | add sidewalk on one side |
| 8                | Chapel Hill** | Middleton        | Hickory       | 0.35   | connectivity             |
| 9                | Chapel Hill   | Hickory          | Academy       | 0.43   | add sidewalk on one side |

\*Part of Evans Road Widening Project (current project)

\*\*Part of Chapel Hill Road Widening from NE Maynard to NW Maynard (proposed project, CIP)

##### Intersection Projects

| Reference Number | Intersection                  |
|------------------|-------------------------------|
| 2                | Maynard and W. Chapel Hill    |
| 3                | Evans and Maynard             |
| 4                | Maynard and Black Creek Trail |
| 5                | Chapel Hill and Harrison      |

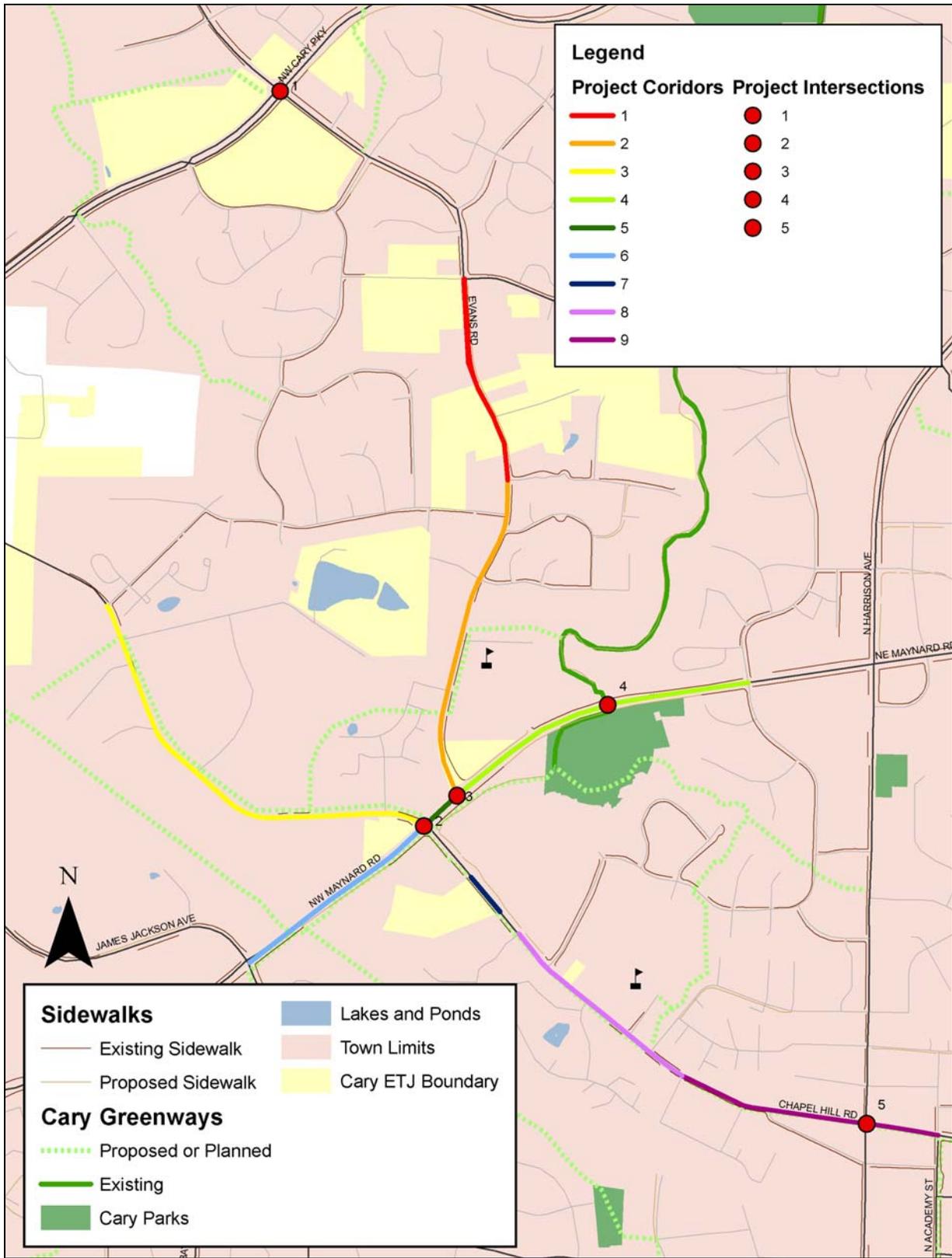


Figure 3-9. Descriptive image of proposed projects in the Evans/Maynard area.

## Cary Pedestrian Plan

### Appendix 3: Project Development

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#### 3.4.2. Symphony Lake/Hemlock Bluffs Area

Respondents have requested access from the residential neighborhoods and offices to the Symphony Lake Park, Hemlock Bluffs Park, and nearby Swift Creek Trail/Greenway, as well as the restaurants and shopping at the commercial development at the intersection of Regency, Ederlee, and Tryon.

#### Corridor Projects

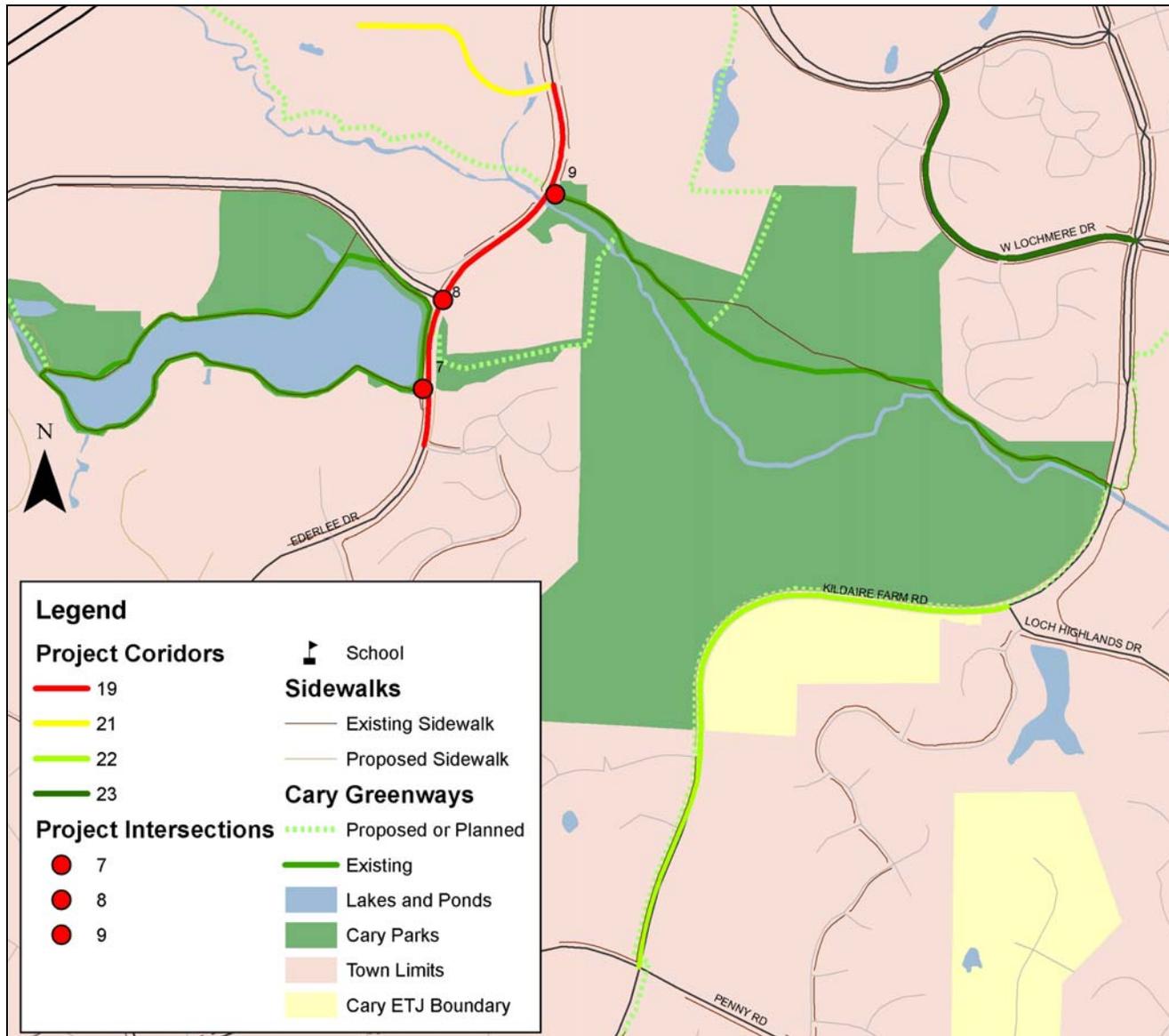
| Reference Number | Location        | From                       | To            | Length (mi) | Proposed Action          |
|------------------|-----------------|----------------------------|---------------|-------------|--------------------------|
| 19               | Regency*        | Regency Forest             | Peregrine     | 0.5         | add sidewalk on one side |
| 21               | Regency Forest  | Regency                    | end           | 0.27        | construct new sidewalk   |
| 22               | Kildaire Farm** | Swift Creek Trail Entrance | Penny         | 0.48        | construct new sidewalk   |
| 23               | Lochmere        | Crescent Green             | Kildaire Farm | 0.44        | add sidewalk on one side |

\*Part of proposed sidewalk projects, 2007

\*\* Part of Kildaire Farm Road Widening

#### Intersection Projects

| Reference Number | Intersection                    |
|------------------|---------------------------------|
| 7                | Ederlee and Symphony Lake Trail |
| 8                | Regency and Ederlee             |
| 9                | Ederlee and Swift Creek Trail   |



3-10. Descriptive image of proposed projects in the Symphony Lake/Hemlock Bluffs area.

## Cary Pedestrian Plan

### Appendix 3: Project Development

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#### 3.4.3. Walnut Street Corridor Area

Walnut Street Corridor Area runs the length of Walnut Street, and can be divided into three sub-areas: (1) the area near Cary Towne Center at the intersection of Walnut and Maynard, (2) the crossing at US 1/64, and (3) the area around Crossroads Plaza and into Crossroads Plaza. Walnut Street has residential development near the middle of its length and major commercial development at either end. Respondents have indicated several issues:

- ◆ Trouble walking from residential neighborhoods off of Sturdivant, Nottingham, Greenwood, Lawrence, and Kingston Ridge to commercial areas such as Crossroads Plaza and Cary Towne Center.
- ◆ No pedestrian facilities at the intersection of US 1/64 and Walnut Street
- ◆ Lack of pedestrian connectivity around and within Crossroads Plaza, and to commercial developments across Walnut Street. Several respondents requested pedestrian facilities from the Ruby Tuesdays on one end of Caitboo to the movie theater on the other end.
- ◆ Difficulty crossing the street at various intersections near Cary Towne Center.

In addition, many respondents have requested sidewalk to be placed along Nottingham, which serves single- and multi-family residences and commercial retail uses. Nottingham is also part of a bus route and has become a major cut-through to avoid construction at Walnut Street and US Highway 1/64.

*Corridor Projects*

| Referenc Number | Location          | From           | To                 | Length (mi) | Proposed Action                    |
|-----------------|-------------------|----------------|--------------------|-------------|------------------------------------|
| 24              | Walnut            | Hubbard        | Donaldson          | 0.81        | add sidewalk on one side           |
| 25              | Walnut*           | Donaldson      | Piney Plains       | 0.4         | connectivity                       |
| 26              | Nottingham        | Buck Jones     | Nottingham Cir.    | 0.44        | add sidewalk on one side           |
| 27              | Nottingham        | Walnut         | Nottingham Cir.    | 0.33        | connectivity                       |
| 28              | Crossroads+       | Caitboo        | Caitboo            | 0.6         | connectivity                       |
| 29              | Caitboo           | Crossroads     | Crossroads         | 0.65        | connectivity                       |
| 30              | Maynard           | Cary Towne     | Walnut             | 0.25        | add sidewalk on one side           |
| 31              | Sturdivant**      | Walnut         | Manchester         | 0.73        | construct new sidewalk             |
| 32              | Kimbolton**       | Nottingham     | Manchester         | 0.35        | construct new sidewalk             |
| 33              | Manchester**      | Sturdivant     | Kimbolton          | 0.05        | construct new sidewalk             |
| 80              | Greenwood         | Vicki          | Doylin             | 0.35        | construct new 8ft. Multi-use trail |
| 81              | Greenwood         | Doylin         | Walnut             | 0.12        | construct new sidewalk             |
| 82              | Whitehall         | Nottingham     | end                | 0.4         | construct new sidewalk             |
| 83              | Fairlane          | Kingston Ridge | Kingston Ridge     | 0.48        | construct new sidewalk             |
| 84              | Kingston Ridge    | Walnut         | Bloomington        | 0.97        | construct new sidewalk             |
| 85              | Proposed greenway | Fairlane       | Walnut Street Park | 0.05        | construct greenway connection      |

\*part of current Walnut Street improvements/NCDOT US1-64 Widening project

\*\*potential to be funded through sidewalk request program

+ within Crossroads Shopping Center private property

*Intersection Projects*

| Reference Number | Intersection              |
|------------------|---------------------------|
| 10               | Walnut and Maynard        |
| 11               | Walnut and Hubbard        |
| 12               | Walnut and Nottingham     |
| 13               | Walnut and Buck Jones     |
| 14               | Walnut and US 1/64        |
| 15               | Walnut and Meeting        |
| 16               | Nottingham and Buck Jones |
| 77               | Walnut and Tanglewood     |

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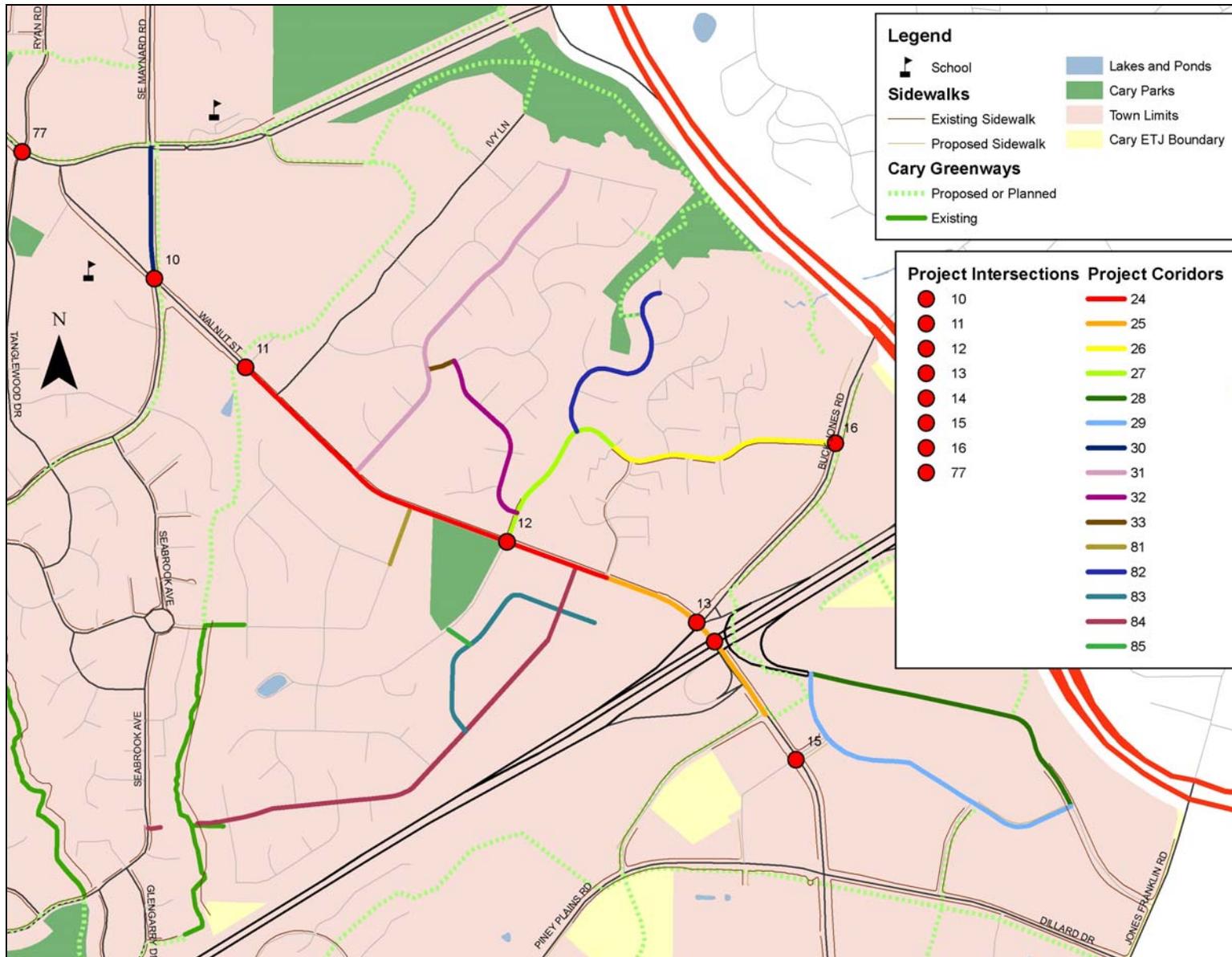


Figure 3-11. Descriptive image of proposed projects in the Walnut St. area.

## Cary Pedestrian Plan

### Appendix 3: Project Development

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#### 3.4.4. North Cary Park

Respondents have requested sidewalk on Norwell, Cary, and Weston for access to the North Cary Park from neighborhoods and to commercial development at Evans and Cary Parkway. More greenway connections should be provided from cul-de-sacs to the Black Creek Greenway.

#### Corridor Projects

| Reference Numbers | Location | From           | To          | Length (mi) | Proposed Action          |
|-------------------|----------|----------------|-------------|-------------|--------------------------|
| 34                | Cary     | Westover Hills | Hampton Lee | 0.26        | add sidewalk on one side |
| 35                | Cary     | Hampton Lee    | Norwell     | 0.34        | connectivity             |
| 36                | Cary     | Norwell        | Evans       | 0.72        | add sidewalk on one side |
| 37                | Norwell  | Weston         | Cary        | 0.69        | construct new sidewalk   |
| 38                | Weston   | Harrison       | Evans       | 2.23        | construct new sidewalk   |
| 39                | Thorpe   | Cary           | Silvercliff | 0.06        | connectivity             |

#### Intersection Projects

| Reference Numbers | Intersection               |
|-------------------|----------------------------|
| 17                | Cary and Thorpe            |
| 18                | Cary and Norwell           |
| 19                | Cary and Black Creek Trail |

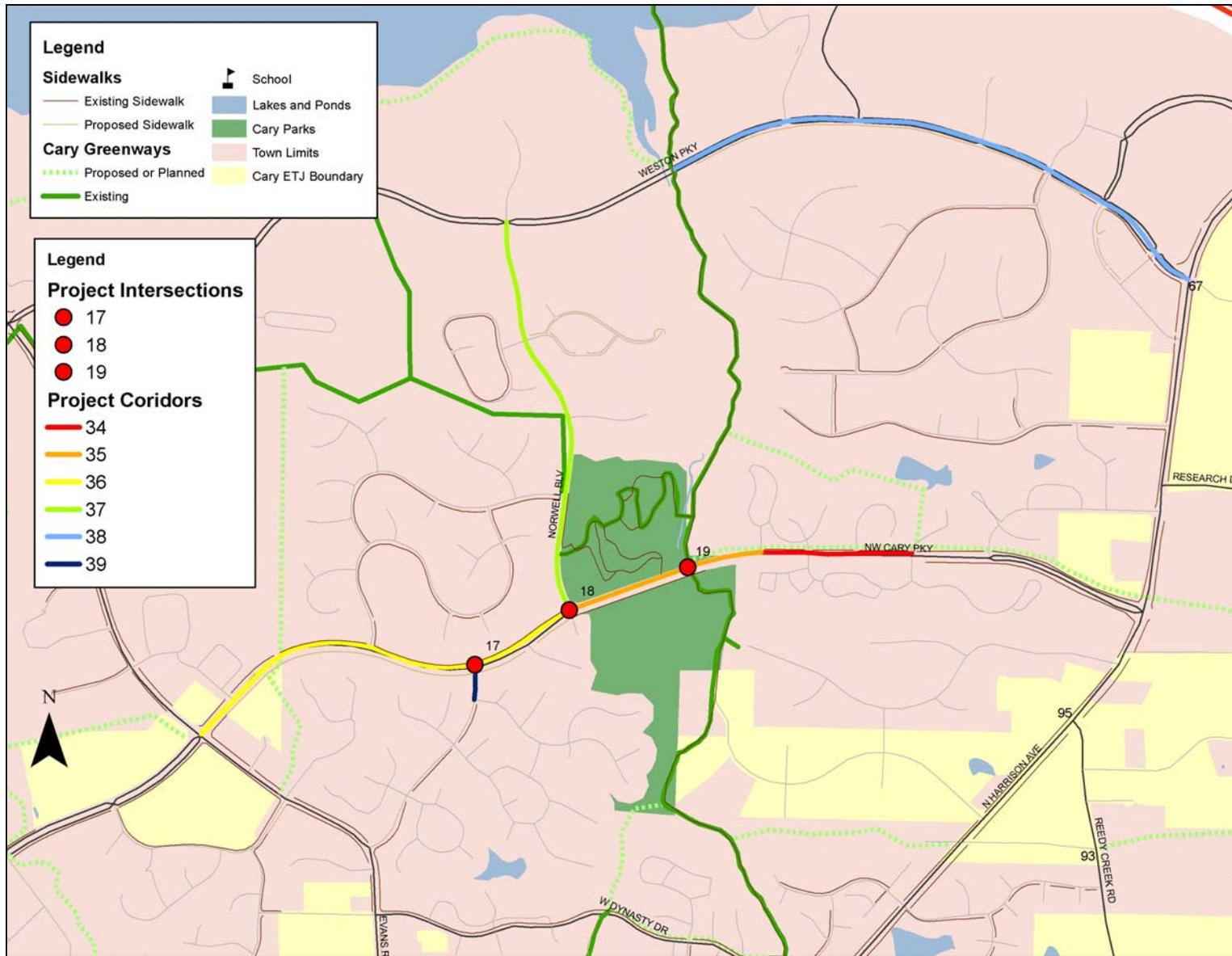


Figure 3-12. Descriptive image of proposed projects for the North Cary Park area.

## Cary Pedestrian Plan

### Appendix 3: Project Development

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#### 3.4.5. East Chapel Hill Area

Respondents' needs in this area included pedestrian access into downtown and to Northwoods Elementary from the residential neighborhood off of Gregory and south of the intersection with Maynard and Chatham. Respondents also reported the need for intersection improvements in order to safely cross Maynard, Chatham, and Chapel Hill. Also in the same area is the SAS Soccer Park, which several respondents indicated needs pedestrian access at its entrance.

#### *Corridor Projects*

| Reference Number | Location      | From    | To          | Length (mi) | Proposed Action       |
|------------------|---------------|---------|-------------|-------------|-----------------------|
| 40               | Chapel Hill*  | Durham  | Maynard     | 0.87        | connectivity          |
| 41               | Chapel Hill** | Maynard | Trinity     | 0.75        | add sidewalk one side |
| 42               | Reedy Creek   | Maynard | Chapel Hill | 0.45        | add sidewalk one side |

\*Part of Chapel Hill Road Widening from NE Maynard to NW Maynard (proposed project, Capital Improvements Plan)

\*\*Part of Chapel Hill Road Widening: NE Maynard to Trinity (current project)

#### *Intersection Projects*

| Reference Number | Intersection               |
|------------------|----------------------------|
| 20               | Maynard and E. Chapel Hill |

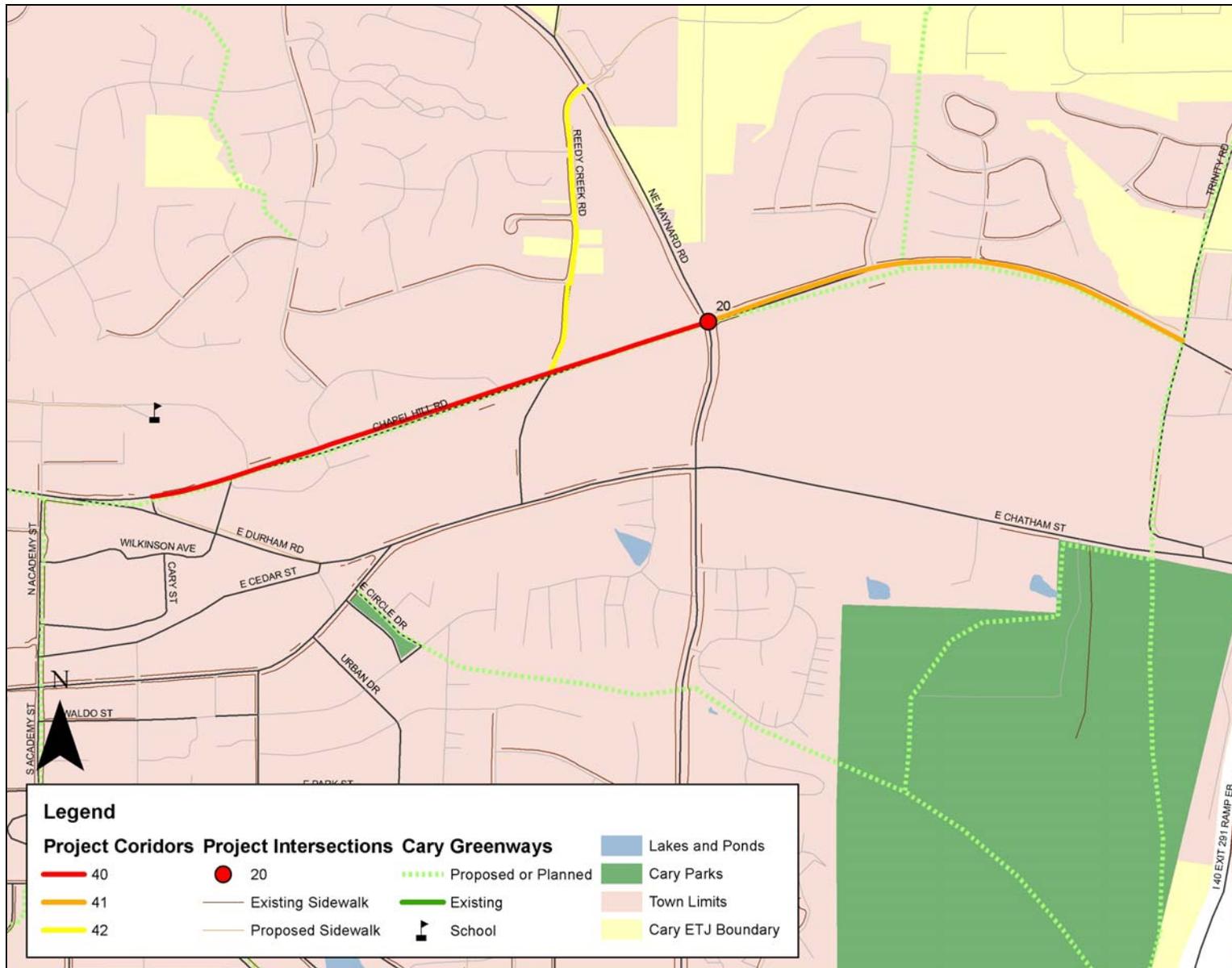


Figure 3-13. Descriptive image of proposed projects along Chapel Hill St.

## Cary Pedestrian Plan

### Appendix 3: Project Development

#### 3.4.6. Davis Drive and Green Hope Area

Davis Drive and the Green Hope Schools area is currently a rural, but fast-developing part of Cary. Survey respondents have requested sidewalk and pedestrian connections already in this area, but as it develops, the town should expect a need for even more pedestrian amenities and connections. The area is primarily residential, and has two schools – Green Hope Elementary School and Green Hope High School, both of which should have safe pedestrian access to them. Already during the course of this plan’s preparation process there has been one accident involving a student at Green Hope High School walking to school – this simply highlights the need for pedestrian improvements in the area.

It is recommended that corridor improvements focus on providing a safe pedestrian walkway in light of increasing traffic volumes at high speeds along the roads in the area – this is why both Davis Drive and NC 55 are recommended to have sidewalk. Safe pedestrian crossings are also recommended at major intersections and between neighborhoods. A greenway connection is recommended between Green Hope Elementary and Green Hope High School to reduce travel time for those traveling to the schools.

#### Corridor Projects

| Reference Number | Location       | From                               | To                 | Length (mi) | Proposed Action          |
|------------------|----------------|------------------------------------|--------------------|-------------|--------------------------|
| 52               | NC 55*         | Indian Wells                       | Glendon            | 1.44        | construct new sidewalk   |
| 53               | NC 55*         | Glendon                            | High House         | 1.24        | add sidewalk on one side |
| 54               | Louis Stephens | Green Hope Elementary School       | Carpenter Upchurch | 1.05        | construct new sidewalk   |
| 55               | Davis**        | Morrisville Carpenter /Town Limits | Caviston           | 0.42        | construct new sidewalk   |
| 56               | Davis**        | Caviston                           | Council Gap        | 0.93        | connectivity             |
| 57               | Davis**        | Riggsbee Farm                      | High House         | 0.33        | construct new sidewalk   |

\*Part of NCDOT/Town of Cary joint project for widening NC 55 from Cornwallis to US 64

\*Part of NCDOT/Town of Cary joint project for widening NC 55 from Cornwallis to US 64

\*\*Part of Davis Drive Widening Project

#### Intersection Projects

| Reference Number | Intersection                             |
|------------------|--|
| 46               | Davis and Caviston                       |
| 47               | Davis and Morrisville                    |
| 48               | Davis and Preston Village                |
| 49               | High House and Davis                     |
| 50               | Louis Stephens and Heritage Pines        |
| 51               | Louis Stephens and Upchurch Meadow       |
| 52               | HWY 55 and Green Hope School             |
| 53               | Carpenter Upchurch and Green Hope School |
| 54               | Carpenter Upchurch and Heritage Pines    |

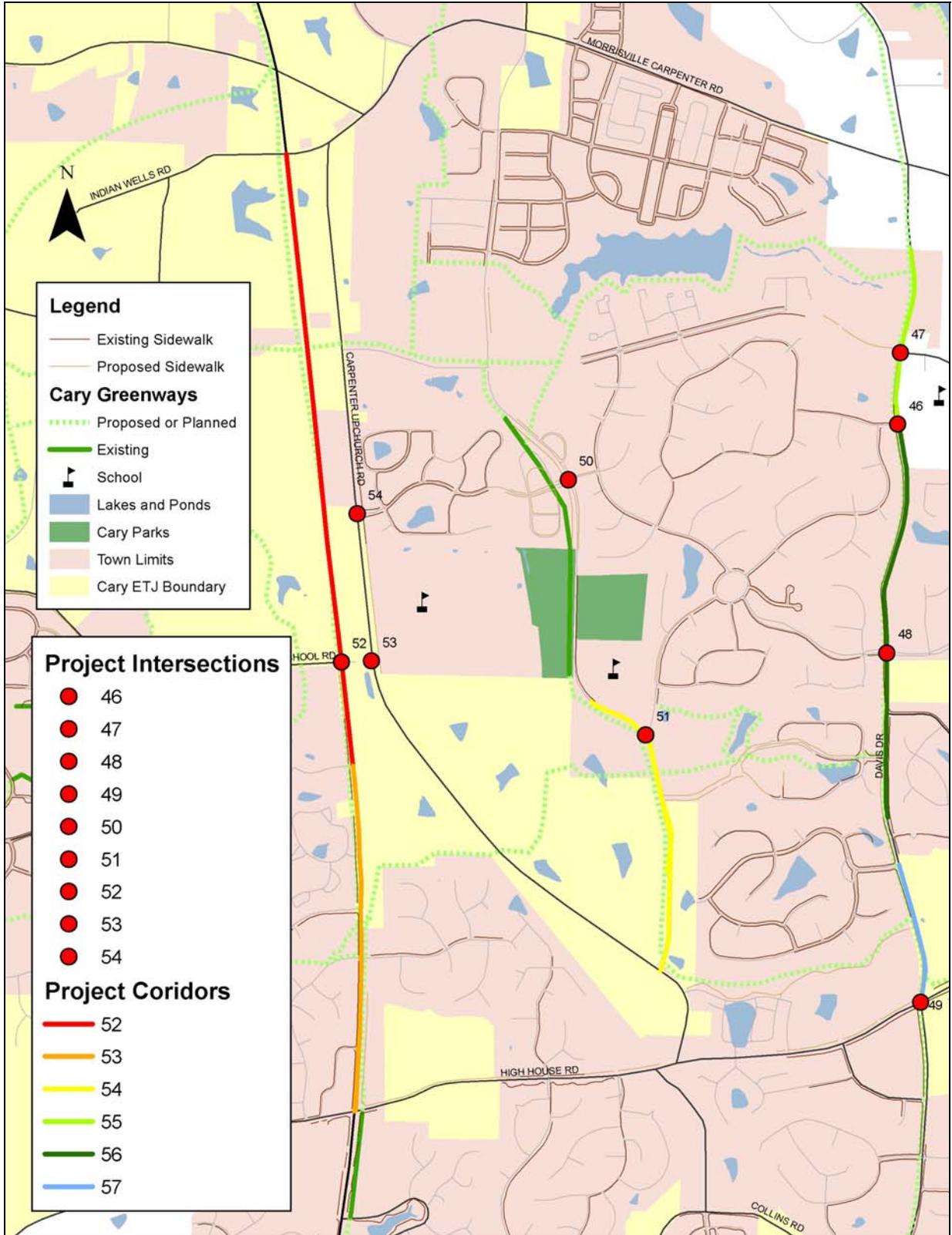


Figure 3-14. Descriptive image of proposed projects in the Davis Dr. and Green Hope area.

## Cary Pedestrian Plan

### Appendix 3: Project Development

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#### 3.4.7. Other Locations

Some locations were mentioned frequently in survey results, but did not apply to an area-wide focus. These projects were:

#### Corridor Projects

| Location          | From           | To           | Length (mi) | Proposed Action          |
|-------------------|----------------|--------------|-------------|--------------------------|
| Tryon*            | Keisler        | Walnut       | 2.06        | Construct new sidewalk   |
| Cary**            | Coorsdale      | US 1/US 64   | 0.21        | Construct new sidewalk   |
| Cary**            | US 1/US 64     | Tryon        | 0.58        | Add sidewalk on one side |
| Cary              | Tryon          | Lochmere     | 0.49        | Connectivity             |
| Old Apex          | Chatham        | Laura Duncan | 1.89        | Construct new sidewalk   |
| Ralph             | Walnut         | Maynard      | 0.88        | Construct new sidewalk   |
| Harrison***       | Grande Heights | Adams        | 0.97        | Add sidewalk on one side |
| Cary Towne Center | Maynard        | I-40         | 0.81        | Construct new sidewalk   |

\* Part of Tryon Road Widening Project

\*\* Part of Cary Parkway sidewalk construction project

\*\*\* Part of funded sidewalk project – under construction

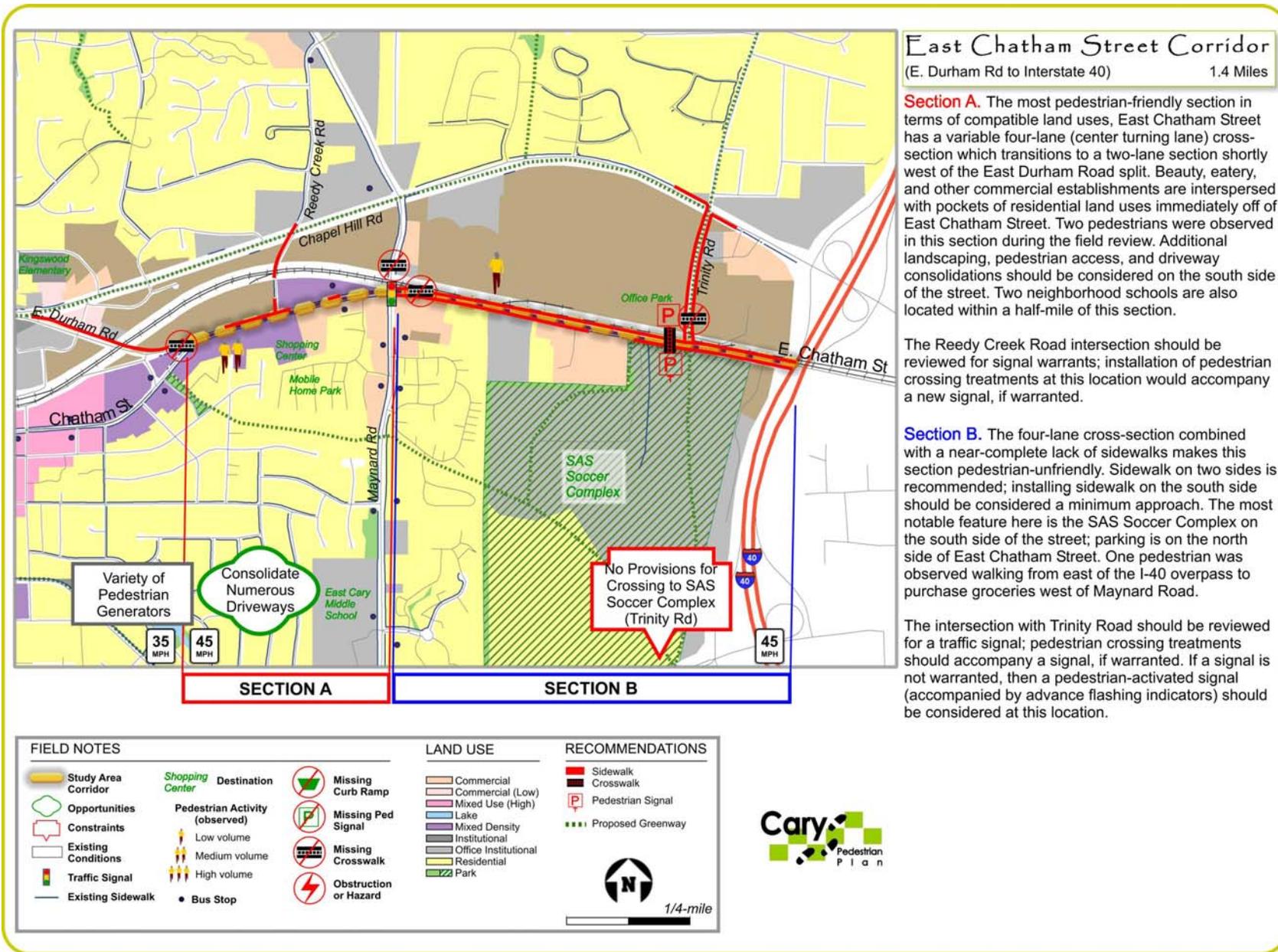
*Intersection Projects*

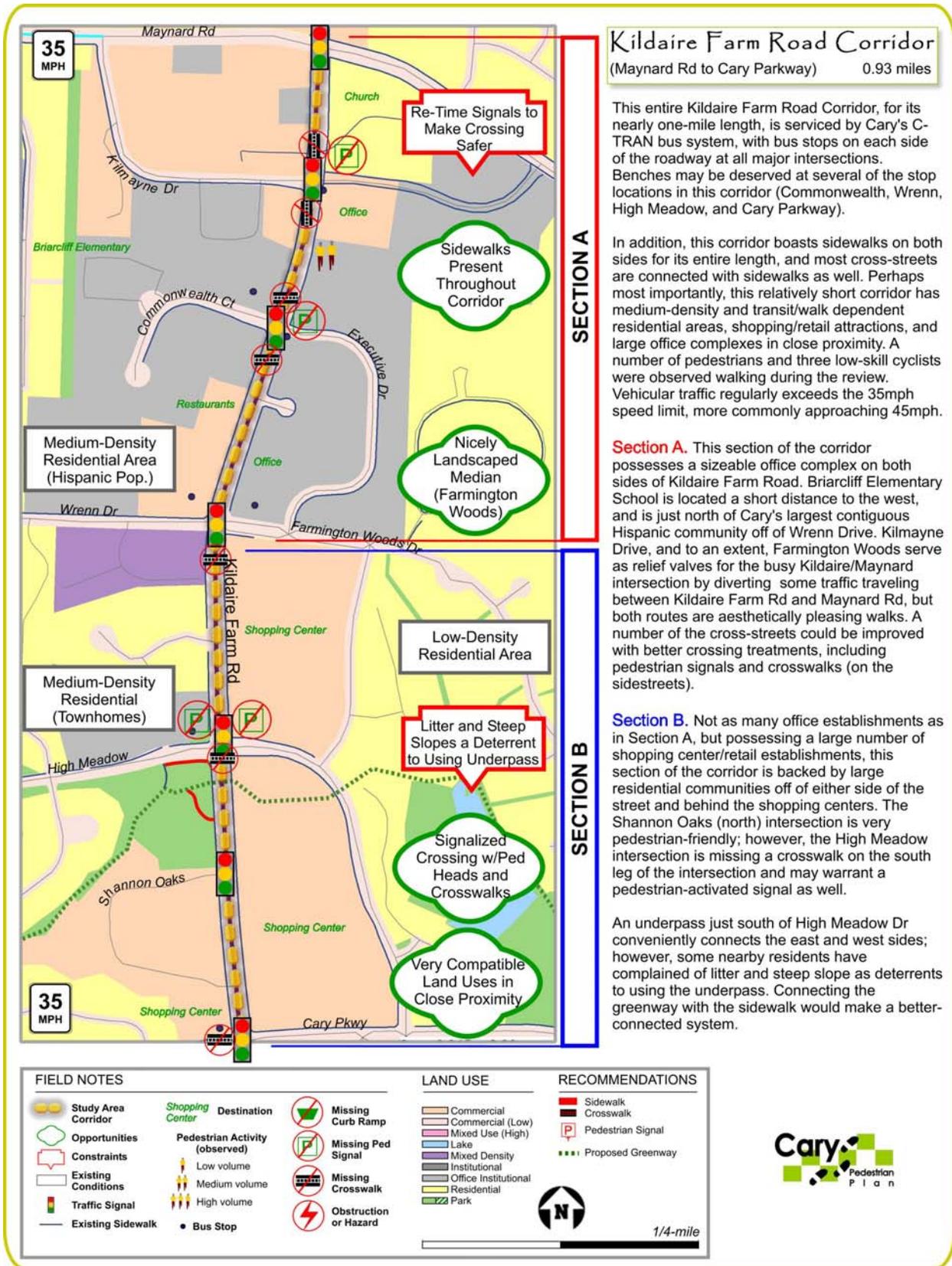
| Intersection                           |
|--|
| Academy and E. Park                    |
| Cary and Chatham                       |
| Cary and High House                    |
| Cary and Lake Pine                     |
| Cary and Lochmere                      |
| Cary and MacArthur                     |
| Cary and Two Creeks                    |
| Cary and Waldo Road                    |
| Cary and Westhigh                      |
| Chatham and Harrison                   |
| Harrison and Weston                    |
| High House and HWY 55                  |
| HWY 55 and Catlin                      |
| HWY 55 and Jenks                       |
| HWY 55 and Old Jenks                   |
| Kildaire Farm and Queensferry          |
| Maynard and Hampton Valley             |
| Maynard and Harrison                   |
| Morrisville Carpenter and Davis        |
| Jenks Carpenter and White Oak Greenway |



## Appendix 4. Study Corridors

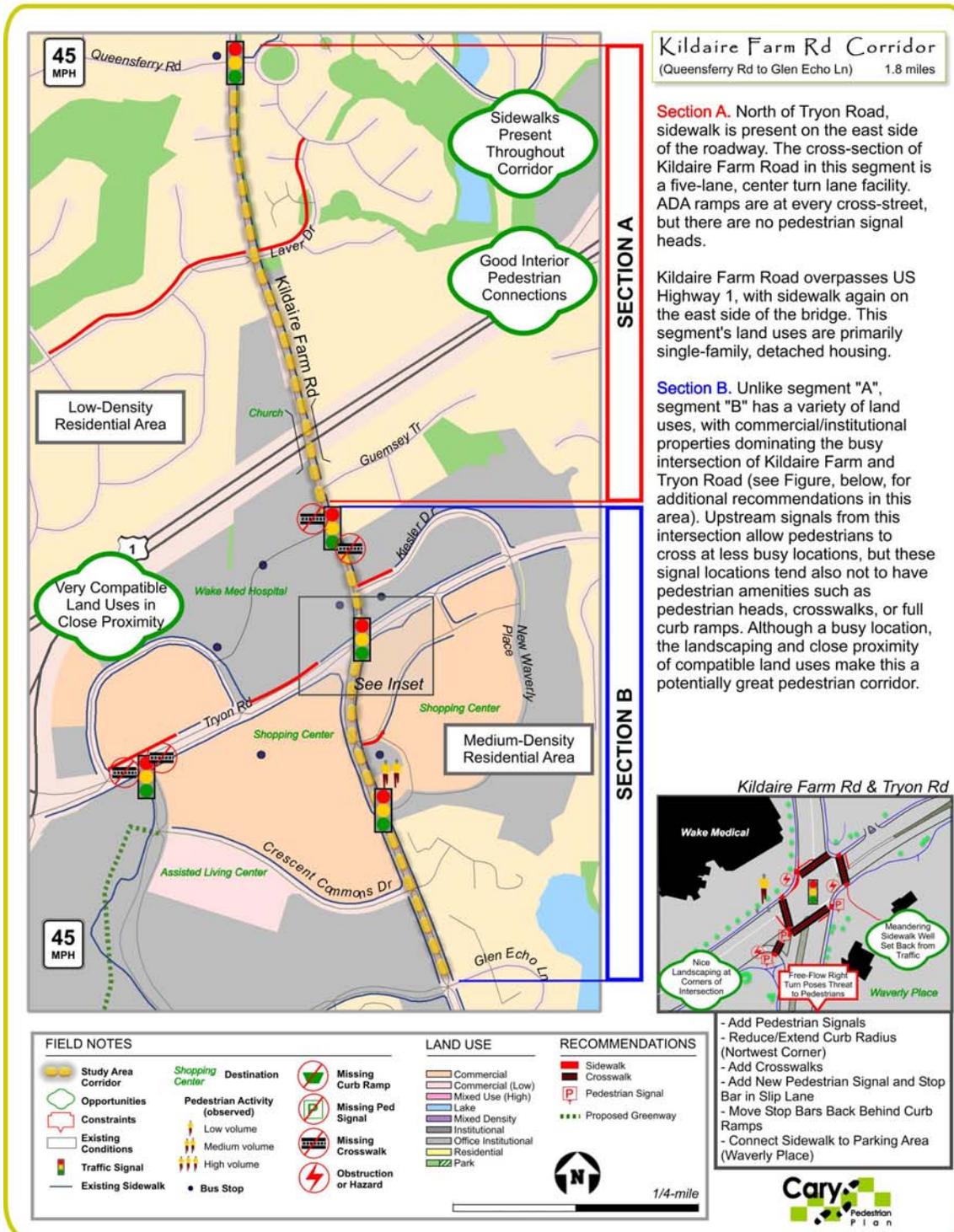
**Cary Pedestrian Plan**  
 Section 1: Introduction, Goals, and Objectives

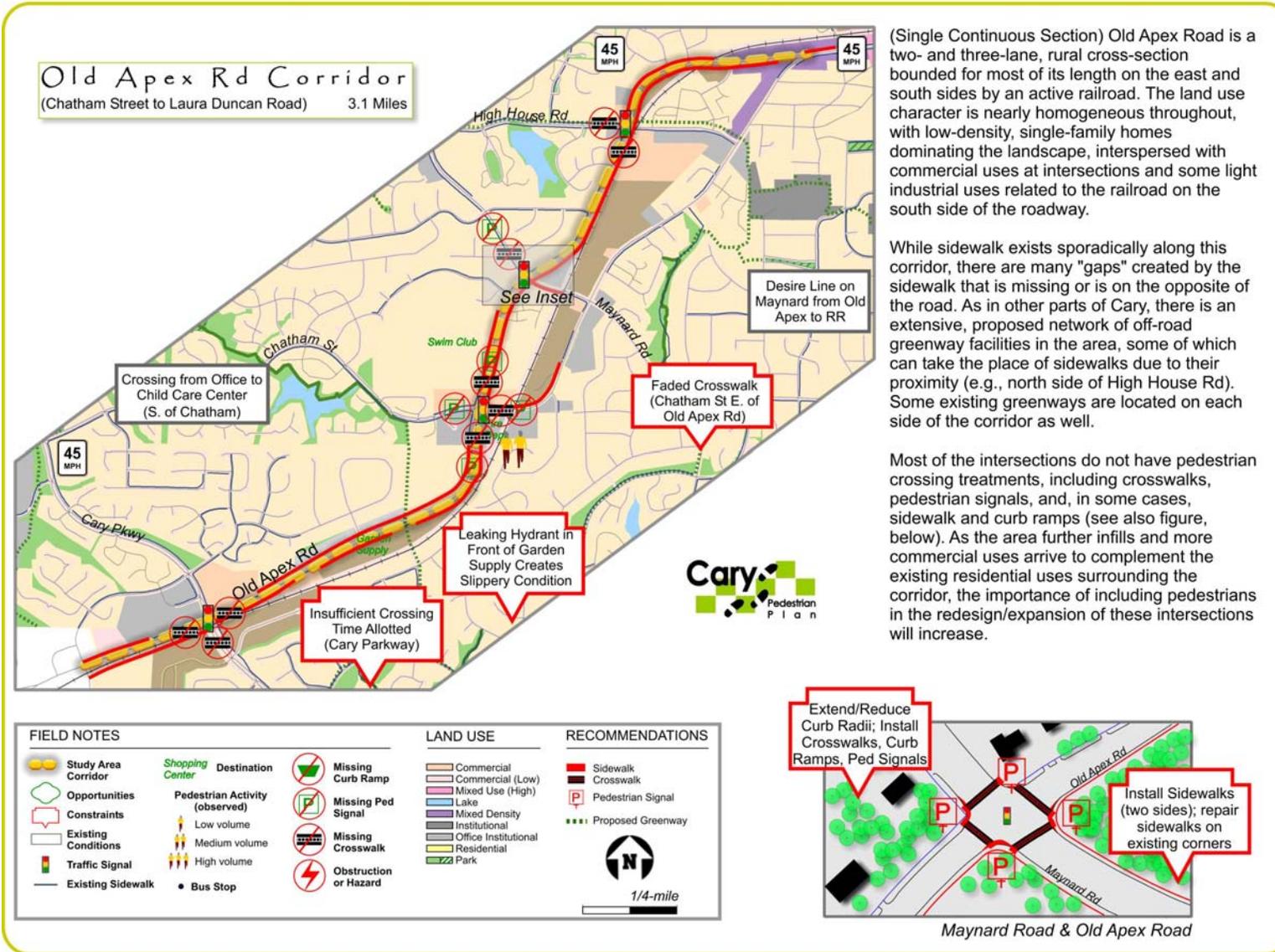




# Cary Pedestrian Plan

## Section 1: Introduction, Goals, and Objectives



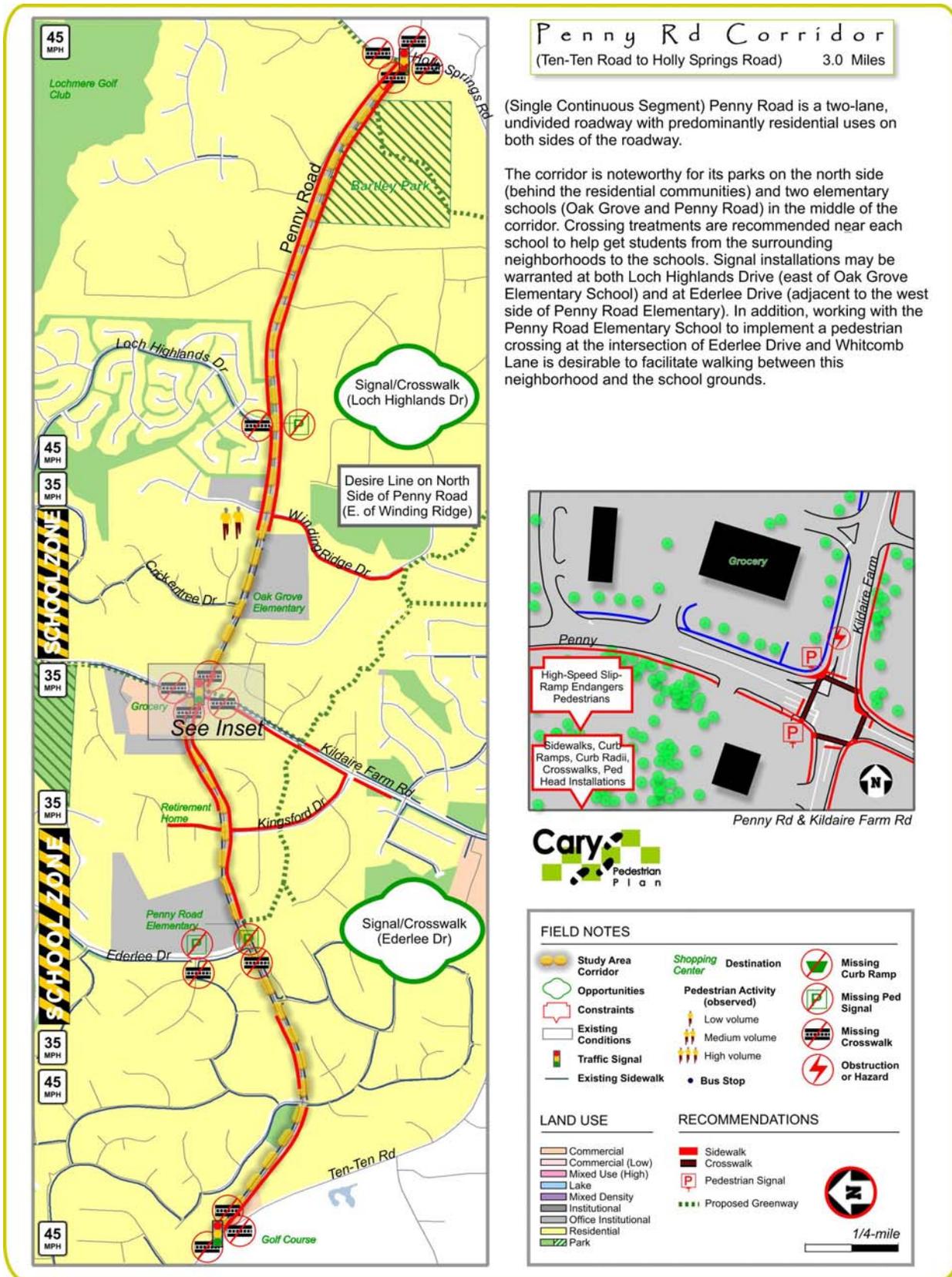


(Single Continuous Section) Old Apex Road is a two- and three-lane, rural cross-section bounded for most of its length on the east and south sides by an active railroad. The land use character is nearly homogeneous throughout, with low-density, single-family homes dominating the landscape, interspersed with commercial uses at intersections and some light industrial uses related to the railroad on the south side of the roadway.

While sidewalk exists sporadically along this corridor, there are many "gaps" created by the sidewalk that is missing or is on the opposite of the road. As in other parts of Cary, there is an extensive, proposed network of off-road greenway facilities in the area, some of which can take the place of sidewalks due to their proximity (e.g., north side of High House Rd). Some existing greenways are located on each side of the corridor as well.

Most of the intersections do not have pedestrian crossing treatments, including crosswalks, pedestrian signals, and, in some cases, sidewalk and curb ramps (see also figure, below). As the area further infills and more commercial uses arrive to complement the existing residential uses surrounding the corridor, the importance of including pedestrians in the redesign/expansion of these intersections will increase.

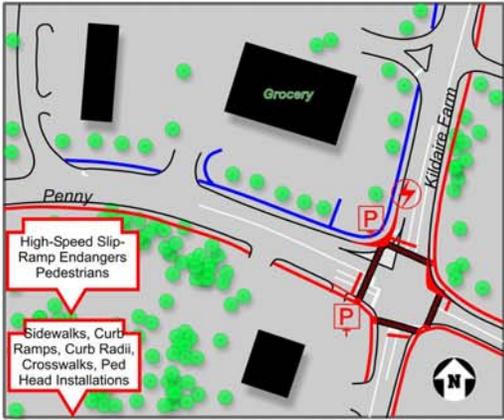
**Cary Pedestrian Plan**  
 Section 1: Introduction, Goals, and Objectives



**Penny Rd Corridor**  
 (Ten-Ten Road to Holly Springs Road) 3.0 Miles

(Single Continuous Segment) Penny Road is a two-lane, undivided roadway with predominantly residential uses on both sides of the roadway.

The corridor is noteworthy for its parks on the north side (behind the residential communities) and two elementary schools (Oak Grove and Penny Road) in the middle of the corridor. Crossing treatments are recommended near each school to help get students from the surrounding neighborhoods to the schools. Signal installations may be warranted at both Loch Highlands Drive (east of Oak Grove Elementary School) and at Ederlee Drive (adjacent to the west side of Penny Road Elementary). In addition, working with the Penny Road Elementary School to implement a pedestrian crossing at the intersection of Ederlee Drive and Whitcomb Lane is desirable to facilitate walking between this neighborhood and the school grounds.



Penny Rd & Kildaire Farm Rd



**FIELD NOTES**

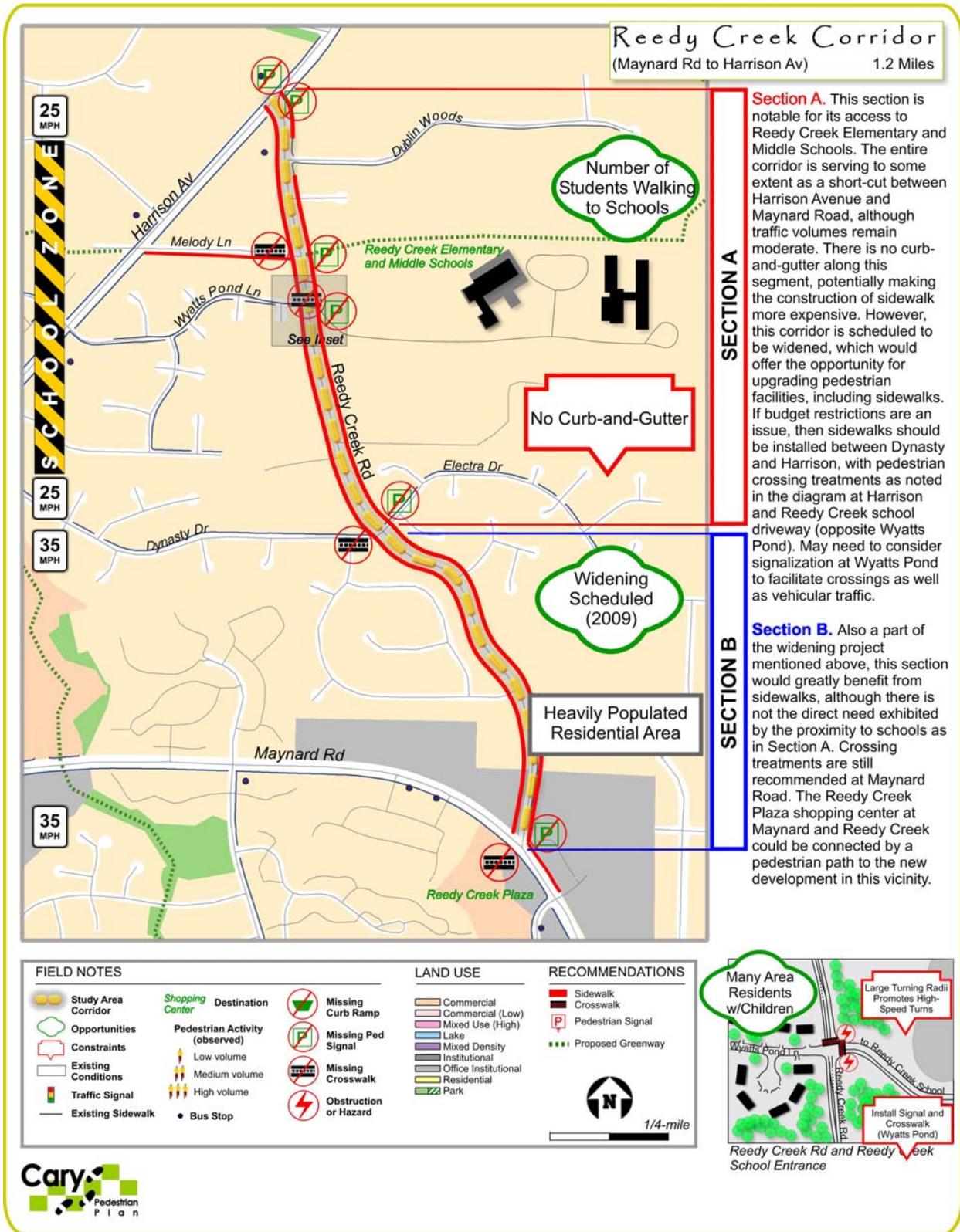
|                     |                                |                       |
|---------------------|--------------------------------|-----------------------|
| Study Area Corridor | Shopping Center Destination    | Missing Curb Ramp     |
| Opportunities       | Pedestrian Activity (observed) | Missing Ped Signal    |
| Constraints         | Low volume                     | Missing Crosswalk     |
| Existing Conditions | Medium volume                  | Obstruction or Hazard |
| Traffic Signal      | High volume                    |                       |
| Existing Sidewalk   | Bus Stop                       |                       |

**LAND USE**

|                      |                   |
|----------------------|-------------------|
| Commercial           | Sidewalk          |
| Commercial (Low)     | Crosswalk         |
| Mixed Use (High)     | Pedestrian Signal |
| Lake                 | Proposed Greenway |
| Mixed Density        |                   |
| Institutional        |                   |
| Office Institutional |                   |
| Residential          |                   |
| Park                 |                   |

**RECOMMENDATIONS**

1/4-mile scale bar





## Appendix 5. Proposed Projects List

#### 5.1. Introduction

The following tables contain all of the projects, both corridor and intersection improvements, that were identified as a result of the planning process. Corridor projects are organized into three tables:

- ◆ Table 5-1 for projects where there is no sidewalk in the corridor and therefore new sidewalk should be constructed;
- ◆ Table 5-2 for projects where sidewalk exists along the corridor, but it is not continuous and therefore sidewalk should be constructed to “fill in the gaps”; and,
- ◆ Table 5-3 for corridors which have sidewalk on one side of the road, but sidewalk on the other side of the road has been requested or recommended.

The intersections that are listed are those intersections that, during the course of the public involvement process, it was requested that improvements be made to better accommodate safe pedestrian crossings. It is recommended that the Town investigate the existing conditions and issues at each intersection further prior to making improvements.

**5.2. Corridor Projects**

**Table 5-1. Existing Conditions:** No existing sidewalk on road, either side. **Action:** Construct sidewalk, at least one side.

| Road Name<br>(Project On) | Begin                                | End                | Length<br>(MI) |
|---------------------------|--------------------------------------|--------------------|----------------|
| Belgium                   | Penny                                | Den Heider         | 0.46           |
| Cary                      | Coorsdale                            | US 1/US 64         | 0.21           |
| Cary Towne<br>Center      | Maynard                              | I-40               | 0.81           |
| Chapel Hill               | Fairbanks                            | Maynard            | 0.71           |
| Chatham                   | Dixon                                | Jason              | 0.66           |
| Chatham                   | Danforth                             | Old Apex           | 0.64           |
| Chatham                   | Maynard                              | I-40               | 0.92           |
| Davis                     | Morrisville Carpenter/Town<br>Limits | Caviston           | 0.42           |
| Davis                     | Riggsbee Farm                        | High House         | 0.33           |
| Evans                     | Dynasty                              | Evans Estates Dr   | 0.51           |
| Fairlane                  | Kingston Ridge                       | Kingston Ridge     | 0.48           |
| Greenway<br>Connection    | Underpass                            | Kildaire Farm      | 0.06           |
| Greenwood                 | Doylin                               | Walnut             | 0.12           |
| High Meadow               | Greenway Connection                  | Kildaire Farm      | 0.04           |
| Kildaire Farm             | Swift Creek Trail Entrance           | Penny              | 0.48           |
| Kimbolton                 | Nottingham                           | Manchester         | 0.35           |
| Kingsford                 | Penny                                | Kildaire Farm      | 0.35           |
| Kingston Ridge            | Walnut                               | Bloomington        | 0.97           |
| Louis Stephens            | Green Hope Elementary School         | Carpenter Upchurch | 1.05           |
| Magnolia Woods            | Penny                                | Rose Point         | 0.14           |
| Manchester                | Sturdivant                           | Kimbolton          | 0.05           |
| Maynard                   | Old Apex                             | Plantation         | 0.67           |
| Maynard                   | Reedy Creek                          | S. Reedy Creek     | 0.087          |
| Melody                    | Harrison                             | Reedy Creek        | 0.23           |
| NC 55                     | Indian Wells                         | Glendon            | 1.44           |

## Cary Pedestrian Plan

### Appendix 5: Proposed Projects List

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Table 5 – 1 Cont'd.

| Road Name<br>(Project On) | Begin                            | End                              | Length<br>(MI) |
|---------------------------|----------------------------------|----------------------------------|----------------|
| Norwell                   | Weston                           | Cary                             | 0.69           |
| Old Apex                  | Dixon                            | High House                       | 0.75           |
| Old Apex                  | Berentwood                       | Chatham                          | 0.31           |
| Old Apex                  | Chatham                          | Laura Duncan                     | 1.89           |
| Ralph                     | Walnut                           | Maynard                          | 0.88           |
| Reedy Creek               | Harrison                         | Maynard                          | 1.2            |
| Regency Forest            | Regency                          | end                              | 0.27           |
| Sturdivant                | Walnut                           | Manchester                       | 0.73           |
| Tryon                     | Keisler                          | Walnut                           | 2.06           |
| Two Creeks                | Cary                             | Plantation                       | 0.9            |
| Weston                    | Reedy Creek Greenway<br>Crossing | Evans                            | 1.28           |
| Weston                    | Evans                            | Reedy Creek<br>Greenway crossing | 1.46           |
| Whitehall                 | Nottingham                       | end                              | 0.4            |

**Table 5-2. Existing Conditions:** Some sidewalk on road, but discontinuous. **Action:** Connect sidewalk to make continuous.

| Road Name<br>(Project On) | Begin            | End               | Length<br>(MI) |
|---------------------------|------------------|-------------------|----------------|
| Caitboo                   | Crossroads       | Crossroads        | 0.65           |
| Cary                      | Hampton Lee      | Norwell           | 0.34           |
| Cary                      | Tryon            | Lochmere          | 0.49           |
| Chapel Hill               | Maynard          | Middleton         | 0.07           |
| Chapel Hill               | Middleton        | Hickory           | 0.35           |
| Chapel Hill               | Durham           | Maynard           | 0.87           |
| Chatham                   | Maynard          | Durham            | 0.46           |
| Crossroads                | Caitboo          | Caitboo           | 0.6            |
| Davis                     | Caviston         | Council Gap       | 0.93           |
| James Jackson             | Cary             | Maynard           | 1.05           |
| Keisler                   | Kildaire Farm    | Tryon             | 0.287          |
| Maynard                   | Northwoods       | Evans             | 0.52           |
| Maynard                   | Chapel Hill      | James Jackson     | 0.36           |
| Nottingham                | Walnut           | Nottingham Circle | 0.33           |
| Penny                     | Killingsworth    | Kingsford         | 1.25           |
| Penny                     | Kingsford        | Loch Highlands    | 2.25           |
| Reedy Creek               | Chapel Hill      | Chatham           | 0.21           |
| Tryon                     | Regency          | Kildaire Farm     | 0.65           |
| Walnut                    | Donaldson        | Piney Plains      | 0.4            |
| Evans                     | Evans Estates Dr | Maynard           | 0.54           |

## Cary Pedestrian Plan

### Appendix 5: Proposed Projects List

**Table 5-3. Existing Condition:** continuous sidewalk on one side of the road. **Action:** Provide additional sidewalk on second side of road.

| Road Name<br>(Project On) | Begin                         | End               | Length<br>(MI) |
|---------------------------|-------------------------------|-------------------|----------------|
| Buck Jones                | Nottingham                    | Town Limits       | 0.17           |
| Cary                      | Westover Hills                | Hampton Lee       | 0.26           |
| Cary                      | Norwell                       | Evans             | 0.72           |
| Cary                      | US 1/US 64                    | Tryon             | 0.58           |
| Chapel Hill               | Hickory                       | Academy           | 0.43           |
| Chatham                   | Jason                         | Danforth          | 0.27           |
| Chatham                   | Old Apex                      | Cary              | 1.35           |
| Harrison                  | Grande Heights                | Adams             | 0.97           |
| High House                | Old Apex                      | Chatham           | 0.34           |
| High Meadow               | Two Creeks                    | Cary              | 0.91           |
| Kildaire Farm             | Castlewood                    | Keisler           | 1.09           |
| Lochmere                  | Crescent Green                | Kildaire Farm     | 0.44           |
| Maynard                   | Evans                         | Chapel Hill       | 0.07           |
| Maynard                   | Cary Towne                    | Walnut            | 0.25           |
| Maynard                   | Plantation                    | Kildaire Farm     | 0.76           |
| Maynard                   | Olde Weatherstone             | High House        | 0.52           |
| NC 55                     | Glendon                       | High House        | 1.24           |
| Nottingham                | Buck Jones                    | Nottingham Circle | 0.44           |
| Old Apex                  | High House                    | Berentwood        | 0.69           |
| Regency                   | Swift Creek Trail<br>Entrance | Peregrine         | 0.5            |
| Walnut                    | Hubbard                       | Donaldson         | 0.81           |
| Chapel Hill               | Maynard                       | Trinity           | 0.75           |
| Reedy Creek               | Maynard                       | Chapel Hill       | 0.45           |

**5.3. Intersections**

**Table 5-4.** Proposed intersections for improvements.

| Intersection       |   |                      | Intersection   |   |                            |
|--------------------|---|----------------------|----------------|---|----------------------------|
| Academy            | & | E. Park              | Kildaire Farm  | & | Wake Med Hospital Entrance |
| Carpenter Upchurch | & | Green Hope School    | Kildaire Farm  | & | Proposed Greenway          |
| Carpenter Upchurch | & | Heritage Pines       | Kildaire Farm  | & | Queensferry                |
| Cary               | & | Kildaire Farm        | Kilmayne       | & | Maynard                    |
| Cary               | & | Old Apex             | Kilmayne       | & | Iowa                       |
| Cary               | & | Thorpe               | Kilmayne       | & | Kildaire Farm              |
| Cary               | & | Norwell              | Kilmayne       | & | Kildaire Farm              |
| Cary               | & | Black Creek Trail    | Lake Pine      | & | Plantation                 |
| Cary               | & | Chatham              | Louis Stephens | & | Heritage Pines             |
| Cary               | & | High House           | Louis Stephens | & | Upchurch Meadow            |
| Cary               | & | Kildaire Farm        | Maynard        | & | High House                 |
| Cary               | & | Lake Pine            | Maynard        | & | Kildaire Farm              |
| Cary               | & | Lochmere             | Maynard        | & | E. Chatham                 |
| Cary               | & | Two Creeks           | Maynard        | & | Kildaire Farm              |
| Cary               | & | Waldo Road           | Maynard        | & | W. Chatham                 |
| Cary               | & | Westhigh             | Maynard        | & | Old Apex                   |
| Chapel Hill        | & | Harrison             | Maynard        | & | Reedy Creek                |
| Chatham            | & | Trinity              | Maynard        | & | S. Reedy Creek             |
| Chatham            | & | Reedy Creek          | Maynard        | & | W. Chapel Hill             |
| Chatham            | & | Soccer Park entrance | Maynard        | & | Black Creek Trail          |
| Chatham            | & | Old Apex             | Maynard        | & | E. Chapel Hill             |
| Chatham            | & | Harrison             | Maynard        | & | Hampton Valley             |
| Cheswick           | & | Pond                 | Maynard        | & | Harrison                   |
| Commonwealth       | & | Kildaire Farm        | Maynard        | & | HWY 54                     |

**Cary Pedestrian Plan**

Appendix 5: Proposed Projects List

**Table 5 – 4 Cont'd.**

| Intersection    |   |                        | Intersection                        |   |                |
|-----------------|---|------------------------|-------------------------------------|---|----------------|
| Commonwealth    | & | Kildaire Farm          | Morrisville<br>Carpenter            | & | Davis          |
| Davis           | & | Caviston               | Nottingham                          | & | Buck Jones     |
| Davis           | & | Preston Village        | Penny                               | & | Kingsford      |
| Dynasty         | & | Reedy Creek            | Penny                               | & | Kildaire Farm  |
| Ederlee         | & | Whitcomb               | Penny                               | & | Crickentree    |
| Ederlee         | & | Symphony Lake<br>Trail | Penny                               | & | Ten-Ten        |
| Ederlee         | & | Swift Creek Trail      | Penny                               | & | Ederlee        |
| Evans           | & | Cary                   | Penny                               | & | Loch Highlands |
| Evans           | & | Maynard                | Penny                               | & | Holly Springs  |
| Evans           | & | Lake                   | Pond                                | & | Maynard        |
| Harrison        | & | Reedy Creek            | Reedy<br>Creek/proposed<br>greenway | & | Melody         |
| Harrison        | & | Weston                 | Reedy<br>Creek/Schools              | & | Wyatts Pond    |
| High House      | & | Abbeydale              | Regency                             | & | Ederlee        |
| High House      | & | Old Apex               | Tate/Maple                          | & | Maynard        |
| High House      | & | Davis                  | Tryon                               | & | Ashville       |
| High House      | & | HWY 55                 | Tryon                               | & | Colonades      |
| HWY 55          | & | Green Hope<br>School   | Tryon                               | & | Crescent Green |
| HWY 55          | & | Catlin                 | Walnut                              | & | Maynard        |
| HWY 55          | & | Jenks                  | Walnut                              | & | Hubbard        |
| HWY 55          | & | Old Jenks              | Walnut                              | & | Nottingham     |
| Jenks Carpenter | & | White Oak<br>Greenway  | Walnut                              | & | Buck Jones     |
| Kildaire Farm   | & | High Meadow            | Walnut                              | & | US 1/64        |
| Kildaire Farm   | & | High Meadow            | Walnut                              | & | Meeting        |

**Table 5 – 4 Cont'd.**

| Intersections |                 |
|---------------|-----------------|
| Kildaire Farm | Tryon           |
| Kildaire Farm | Colonades       |
| Kildaire Farm | Advent          |
| Kildaire Farm | Crescentcommons |

| Intersections |               |
|---------------|---------------|
| Walnut &      | Tanglewood    |
| Wicklow       | Maynard       |
| Wren          | Kildaire Farm |
| Wren          | Kildaire Farm |



**Appendix 6. Existing Plans Summary**

#### **Appendix 6.1. Introduction**

The following paragraphs provide a context for this Pedestrian Plan in terms of other previous plans and documents prepared for the Town which have contained related pedestrian elements. This section provides a synopsis of the documents in the sequence in which they were adopted by the Town of Cary, in order for recommendations in this Plan to build upon the work of previous plans.

##### **6.1.1. January 2001 Comprehensive Transportation Plan - Pedestrian Element**

The Cary Comprehensive Transportation Plan is an all-inclusive plan for all modes of travel in the Cary area: auto, transit, pedestrian, and bicycle. Chapter 3 of the Plan deals with pedestrian travel and includes an assessment of pedestrian accident history and deficiencies in the sidewalk system. Chapter 3 also provides goals and policies that relate back to an overall vision statement for the Town's transportation system, as well as recommendations for future pedestrian-related activities in Cary. The pedestrian focus of this collective set of goals is threefold:

- ◆ To consider and take advantage of opportunities to improve pedestrian facilities and access in concert with or at the same time as thoroughfare improvements
- ◆ To minimize conflict points between pedestrians and vehicles
- ◆ To implement the "four E's" to promote walkability [adapted from a Cary resident transportation website] including encouragement, education, engineering, and enforcement

##### **6.1.2. August 2001 Town Center Area Plan**

The Town Center Area Plan is a detailed master plan for Cary's downtown and surrounding neighborhoods. It articulates the Town's vision for the type of environment desired in the Town Center Area, including its physical form and appearance. It provides long-range land use; transportation; parking; housing; and, parks and greenways recommendations. This Plan is intended to provide policy and design guidance for the construction of public projects as well as private development proposals. It divides the downtown into five planning sub-areas and contains text along with four maps and five background papers. One of the Plan's six elements or chapters focuses on the transportation network and discusses the pedestrian circulation system specifically. One of the plan maps includes existing and proposed locations for greenways, sidewalks (both budgeted and proposed), and bicycle facilities. Four greenways are proposed with three at the periphery of the downtown and one traversing the downtown along a

former rail corridor. The Town Center Area Plan was adopted as an amendment to the 1998 Land Use Plan.

**6.1.3. August 2001 Design Guidelines Manual**

The Design Guidelines Manual is an outgrowth of the Cary Land Use Plan (November, 1996) which established a comprehensive approach to changing the pattern of new development in Cary. That Plan called for the development of a design guidelines manual to put its planning concepts into action. The Design Guidelines Manual presents general design priorities and core design principles that can be adapted to individual circumstances of site and subdivision layout. The Manual is organized into a set of seven design principles correlated to a set of desired development forms or types, and provides a tool kit of graphics and text that illustrate what development would include or look like when the design guidelines are applied. Subsection 6 of the chapter on design principles calls for development to include plans for pedestrian, bicyclist, and transit user access. The Manual also provides a checklist for meeting the seven over-riding design principles that includes pertinent items for pedestrian circulation. Finally, the tool kit portion of the Manual lays out guidelines for pedestrian routes, intersection and mid-block street crossings, sidewalk widths, and tips for design to recognize pedestrian comfort needs, reduce street crossing distances and enhance safety.

**6.1.4. September 2002 Northwest Area Plan**

This Plan was developed in a format that complements and is consistent with that used for the Town Center Plan. It covers an area of about 8,000 acres in the northwest corner of Cary including the Research Triangle Park (RTP), a large scale bio-technology and research campus. The Northwest Area Plan was also adopted as an amendment to the 1996 Cary Land Use Plan. It includes text, three maps, and four background papers. Chapter 3 focuses on the transportation system, including pedestrian facilities, while Chapter 4 focuses on parks and open space and discusses greenways. The land use vision for the area is organized around a system of open space corridors and an interconnected multi-use path network intended to provide for pedestrian and bicycle commutes into RTP, as well as to other activity centers within the area.

**6.1.5. December 2003 Parks, Recreation, and Cultural Resources Facilities Master Plan**

The Cary Parks, Recreation and Cultural Resources Master Plan takes a comprehensive look at the need for recreation and cultural opportunities in Cary. The Parks Plan is driven by a set of eight goals, one of which calls for providing a “comprehensive greenway system that provides residents safe and convenient access to park, recreation and

## **Cary Pedestrian Plan**

### Appendix 6: Existing Plans Summary

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cultural arts facilities and allows alternative transportation opportunities”. Chapter 3 of the Parks Plan is an analysis of existing conditions and future demand for a broad range of facilities including walking trails. It provides an in-depth assessment of demand through a citizen preference survey and Level-of-Service analysis.

#### **6.1.6. August 2004 Southwest Area Plan**

This Plan follows the same format as the Northwest Cary Area Plan. It covers about 5,000 acres in a rural area of Cary. The Plan includes a vision for a system of preserved open spaces and greenways providing connections to the American Tobacco Trail. The Plan is guided by six principles, one of which is to provide an adequate transportation system. An important component of the transportation system principle is the use of greenways adjoining roads in the area. Chapter 3 of the Plan focuses on such greenways as opposed to sidewalks to meet Town-wide objectives for pedestrian circulation system connectivity.

#### **6.1.7. Land Development Ordinance (LDO)**

The Land Development Ordinance (LDO), as updated in July 2003, is Cary’s zoning regulations package and includes the basis for the Town’s policies relating to the pedestrian network. The LDO discusses the relationship of the ordinance to the Cary Land Use Plan and Growth Management Plan as well as other policy plans, thus establishing the legal link between policies in these plans and the requirements established in the regulations. The LDO not only articulates what is required for addressing pedestrian access in proposed developments, but also strongly ties the quality of development proposals to meeting the policies described in each of Cary’s policy plans.

Chapter 4 of the ordinance describes each of the use districts including conditional use districts and overlay zones. Some of the more specialized zones include requirements for pedestrian access and system connectivity (with varying degrees of detail on design) as part of the site design requirements. Chapter 7 of the ordinance contains minimum requirements related to site design and layout, appearance, landscaping, and building design. This chapter is to be used in conjunction with other related documents including, but not limited to, the Community Appearance Manual, General Design Guidelines, Downtown Design Guidelines, Standard Specifications and Details, Small Area Plans, and the Transportation Plan. There is one Section devoted to connectivity. Subsection 7.10.4 of this section establishes standards for pedestrian facilities, including sidewalks and paths. Finally, Chapter 8 has standards for subdivisions and uses requiring site plans. This includes requirements for set aside of land for greenways.

