



# Rocky River Road

area plan



CHARLOTTE

Charlotte-Mecklenburg Planning Commission  
Adopted by Charlotte City Council on June 26, 2006

# Acknowledgements

The Charlotte-Mecklenburg Planning Commission is grateful for the time and energy dedicated to developing the *Rocky River Road Area Plan* by stakeholders and staff. The list below includes the names of stakeholders who participated in at least ten of the twenty-two stakeholder meetings.

## *Stakeholders*

Mark Ball  
Keisha Barnes  
Michael Barnes  
Tom Dulin  
Garth Dunklin  
Walter Fields  
Jana Finn  
Del Holford  
Gale Holford  
Tom Kelley  
Althea Kieffer  
Buddy Livingston  
Richard McCollister  
Nancy Newton  
Laura Simmons  
Joanna Swanson  
Leif Swanson

## *Staff*

Ruchi Agarwal, *Charlotte Mecklenburg Schools*  
Phillip (Chip) Bean, *Police*  
Alysia Davis,  
*Charlotte Department of Transportation*  
Tom Drake, *Planning*  
Bridget Dixon, *Planning*  
Matthew Ennis, *Charlotte-Mecklenburg Utilities*  
Richard Farmer, *Land Use and Environmental Services; Water Quality*  
Dan Gallagher,  
*Charlotte Department of Transportation*  
Brian Garrett, *Solid Waste*  
Jennifer Glotfelty,  
*City Engineering and Property Management*  
Carl W. Jarrett,  
*City Engineering and Property Management*  
Randy Harris, *Neighborhood Development*  
Melony McCullough, *Planning*  
Heidi McNulty, *Land Use and Environmental Services; Air Quality*  
William Moore, *Planning*  
Barry Mosley, *Planning*  
Cheryl Neely, *Planning*  
Robert Pearson, *Charlotte-Mecklenburg Utilities*  
Lori Quinn, *Planning*  
Randy Turner, *Fire*

# Table of Contents

## VOLUME I: CONCEPT PLAN

<b>Executive Summary</b>	1
• Study Area Boundaries	1
• Purpose of Plan	1
• Policy Framework	3
○ Centers and Corridors Growth Framework	3
○ Previously Adopted Planning Initiatives	5
○ General Development Policies	5
• Plan Organization	5
• Plan Development Process	5
• Key Opportunities and Issues	7
• Vision	7
<b>Background</b>	8
• Area History	8
• Growth Trends and Socioeconomic Profile	11
<b>Existing Conditions, Goals and Recommendations</b>	14
<b>1. Land Use</b>	14
• Existing Conditions	14
○ Residential Land Uses	14
○ Nonresidential Land Uses	16
○ Zoning	17
○ Accessibility	19
• Goals and Recommendations	19

<b>2. Design</b>	28
• Introduction	28
• Existing Conditions	28
• Goals and Recommendations	28
○ General Character	28
○ Building Orientation	28
○ Building Massing, Scale and Articulation	28
○ Open Space	29
○ Parking and Driveways	29
○ Connectivity, Accessibility, Streets and Streetscapes	29
○ Landscaping	29
○ Site Preparation	29
<b>3. Transportation</b>	34
• Introduction	34
• Existing Conditions	35
○ Connectivity	35
○ Pedestrian Facilities	36
○ Bicycle Facilities	38
○ Streets and Intersections	38
○ Planned Transportation Improvements	40
○ Basic Roadway Design Considerations	45
• Goals and Recommendations	45
<b>4. Transit</b>	48
• Existing Conditions	48
• Goals and Recommendations	48
<b>5. Public Facilities</b>	49
• Existing Conditions	49
○ Water and Sewer	49
○ Schools	50
○ Police	51
○ Fire	51
○ Libraries	52
○ Parks and Open Space	52
• Goals and Recommendations	53
<b>6. Environment</b>	54
• Existing Conditions	54
○ Air Quality	54
○ Land Quality	55
○ Water Quality	56
• Goals and Recommendations	57
<b>Conclusion</b>	57

## Figures

Figure 1	Study Area Boundary Map	2
Figure 2	Draft Centers, Corridors & Wedges Definition Project Map	4
Figure 3	Previously Adopted Land Use Plans Map	6
Figure 4	Historic Properties & Cemeteries Map	8
Figure 5	Total Land Area in Acres	11
Figure 6	Building Permits	11
Figure 7	Population Growth	11
Figure 8	Population By Race – 1990 Census	12
Figure 9	Population By Race – 2000 Census	12
Figure 10	Household Growth 1990 – 2000	12
Figure 11	Household Size	13
Figure 12	Homeownership/Tenure	13
Figure 13	Median Household Income	13
Figure 14	Poverty Level for 1990 & 2000	13
Figure 15	Existing Land Use Chart	14
Figure 16	Existing Land Use Map	15
Figure 17	Zoning Districts Chart	17
Figure 18	Existing Zoning Map	18
Figure 19	Land Use Accessibility	19
Figure 20	Previously Adopted Future Land Use Map	21
Figure 21	Previously Adopted Future Land Use Chart	23
Figure 22	Land Use Recommendations Chart	23
Figure 23	Rocky River Adopted Future Land Use Changes Map	26
Figure 24	Rocky River Adopted Future Land Use Map	27
Figure 25	Design Goals	31
Figure 26	Residential Design Guidelines	32
Figure 27	Non-residential Design Guidelines	33
Figure 28	Connectivity Index Comparison	36
Figure 29	Connectivity Opportunities	37
Figure 30	Existing Street Network Map	39
Figure 31	Area Plan Road Improvements Map	44
Figure 32	Proposed Bicycle Facilities Map	47

## Tables

Table 1	Recently Approved Rezoning Petitions	17
Table 2	Comparison of Land Use Recommendations	23
Table 3	Recommended Land Use Changes	24
Table 4	Roadway Improvements	42

## **VOLUME II: IMPLEMENTATION PLAN**

• Introduction	i
• Implementation Strategies	i
○ Land Use	i
○ Design	i
○ Transportation	ii
○ Transit	iv
○ Public Facilities	v
○ Environment	v

## **APPENDIX**

### Maps

• Figure 33: Existing And Proposed Retail Centers Map	A-1
• Figure 34: Public Facilities and Amenities Map	A-2
• Figure 35: FY 07 – Capital Improvement Water Projects Map	A-3
• Figure 36: FY 07 – Capital Improvement Sewer Project Map	A-4

### Transportation

• Recommended Street Design Elements	A-5
• Figure 37: Congested Intersection Locations Map	A-9

Figure 38: Harrisburg Area Plan Future Land Use Map	A-10
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# **Rocky River Road Area Plan**

*Volume I: Concept Plan*

# Executive Summary

## Study Area Boundaries



*Rocky River Road Study Area Aerial*

The Rocky River Road Study Area is located in the northeastern portion of Mecklenburg County just southeast of the University of North Carolina at Charlotte (UNC – Charlotte). The boundaries are NC Highway 49 to the north, Robinson Church, Harrisburg, and Camp Stewart roads to the south, McLean, Grier and Plott roads to the west and the Mecklenburg/Cabarrus County Line to the east (see *Figure 1, Study Area Boundary Map*).

This area serves as a gateway into Mecklenburg County from Cabarrus County, Interstate 85 and NC Highway 49. Many people travel through this area to access UNC – Charlotte, University Research Park and the Center City. Some area landmarks are Reedy Creek Park, Reedy Creek Elementary School, and Back Creek Presbyterian Church (see *Appendix, Figure 34, Public Facilities and Amenities Map*).

## Purpose of Plan

The purpose of the *Rocky River Road Area Plan* is to establish a vision for the community's future growth and development, provide guidance for better integration of land use and transportation and make recommendations to protect the area's resources. This plan is not a regulatory document and serves as a policy guide for future development within the study area.

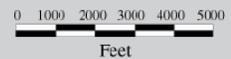
The plan addresses how the community should be maintained and/or changed in the future and outlines implementation strategies to help achieve the plan vision and goals. It also helps direct city services and identify priorities for capital projects.

Adoption of this plan amends recommendations for the Rocky River Road area in the *East District Plan* and the *Northeast District Plan* as well as recommendations from more focused planning initiatives; the *Eastside Strategy Plan* and the *I-485 Interchange Analysis*.

# Figure 1: Study Area Boundary



Produced by the Charlotte-Mecklenburg Planning Commission, February 2004



# Policy Framework

## Centers and Corridors Growth Framework

By 2030, Charlotte’s population is expected to increase by over 300,000. The *Centers and Corridors Growth Framework* provides the structure for organizing the area’s future growth and development. It was adopted by the City of Charlotte in 1994 and is currently being updated (see *Figure 2, Draft Centers, Corridors, and Wedges*). It supports a growth pattern that:

- Promotes Charlotte as a livable, urban community with choices in housing, employment, recreation and transportation.
- Directs most intense land uses to areas that have the most extensive transportation system, typically centers and corridors.
- Protects existing low density residential neighborhoods.
- Encourages redevelopment and reuse of underutilized sites in strategic locations.

The Rocky River Road study area is located within a “Wedge”. The Centers, Corridors and Wedge’s strategy recognizes the importance of preserving existing single family residential neighborhoods in Charlotte. Although mainly lower density, the Wedges still offer a variety of housing types.

The function of the Wedges is to support community living choices by protecting existing residential neighborhoods. The Wedges should also accommodate moderate and higher density housing in strategic locations as well as neighborhood serving retail, office and civic uses such as religious institutions, schools and parks.

The *Centers and Corridors Growth Framework* is currently being refined and updated to:

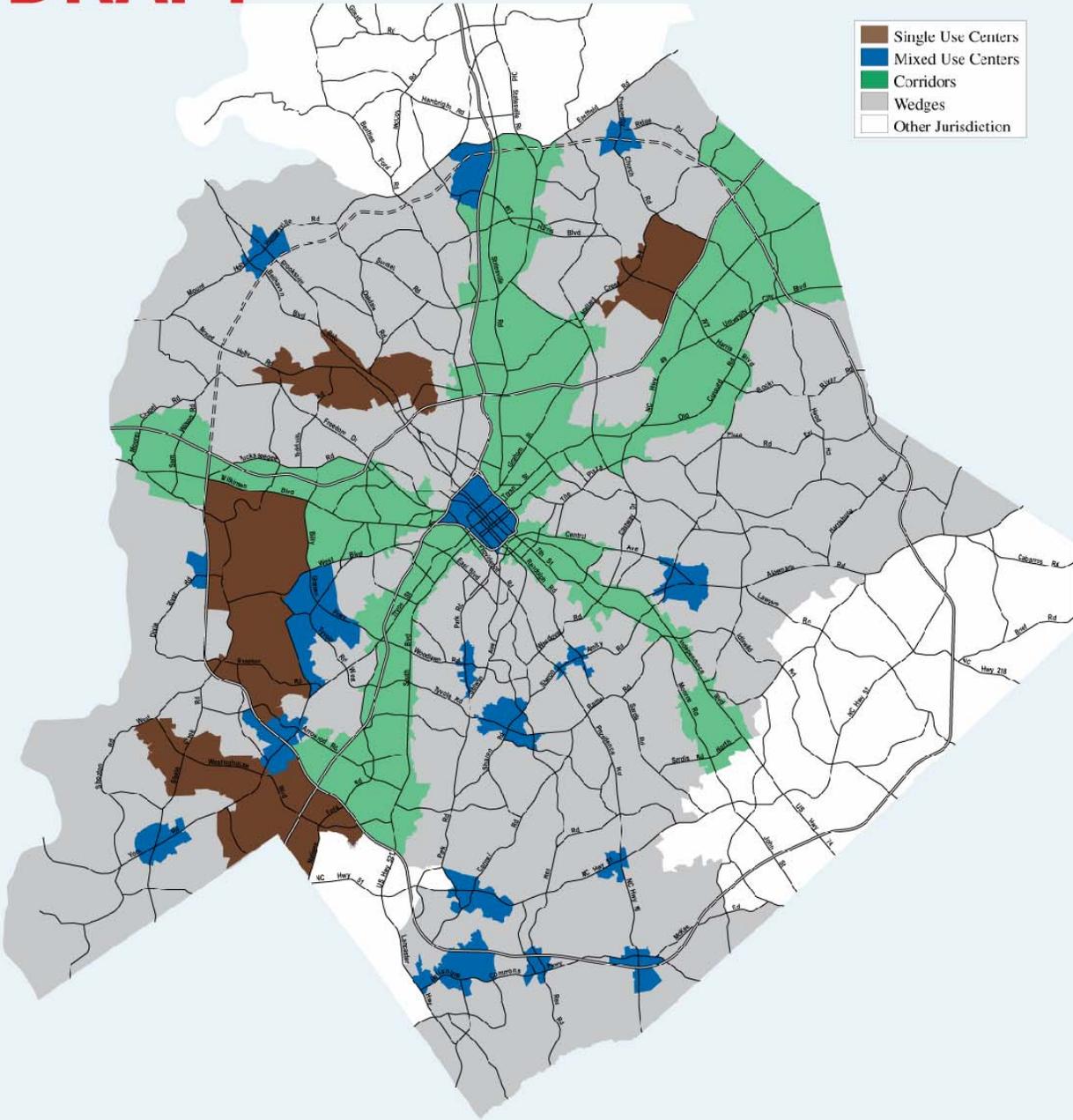
- Complement updated policies such as the General Development Policies (GDPs).
- Include specific boundaries for centers, corridors and wedges.
- Use *Centers and Corridors* as the framework for the *Transportation Action Plan*.
- Provide general policy direction for land use, urban design, transportation and infrastructure.
- Define targets to measure success.

The diagram is titled "Rocky River Road Area Plan Centers, Corridors, and Wedges". It features a vertical line on the left and a horizontal line across the top, intersecting at a circular symbol. The text below the diagram defines three key concepts:

- Centers** are concentrations of economic and/or mixed use activity varying in size and form.
- Corridors** are linear districts with a concentration of high capacity transportation facilities. These facilities include interstates/expressways, planned rapid transit lines, major arterials and freight lines.
- Wedges** are the large areas between Corridors and outside Centers where single family neighborhoods have developed and will continue to be the predominant land use.

# Figure 2: Centers, Corridors, and Wedges Definition Project Proposed Centers, Corridors, and Wedges

## DRAFT



Produced by the Charlotte-Mecklenburg Planning Commission.



Date: October 24, 2005

## Previously Adopted Planning Initiatives

The previously adopted land use plans for this area, the East and Northeast district plans were adopted in 1990 and 1996, respectively. These district plans have been updated with more focused planning initiatives that include the *I-485 Interchange Analysis* adopted in 1999 and the *Eastside Strategy Plan* adopted in 2001 (see *Figure 3, Previously Adopted Land Use Plans*). Additionally, it is the City of Charlotte's policy that once a rezoning petition is approved that is inconsistent with the adopted land use plan, that rezoning amends the adopted land use plan. There have been several rezonings approved in the Rocky River Road area that have amended the district plans.

## General Development Policies

The *General Development Policies (GDP)*, adopted in 2003, is a policy document that provides guidance for the location, intensity and form of future development and redevelopment throughout the community. Because the *Rocky River Road Area Plan* provides specific land use and design guidance, it will supersede the GDP in terms of residential density as well as residential and nonresidential design. However, the GDP will continue to provide direction for specific types of centers, particularly in regards to size and uses.

## Plan Organization

The *Rocky River Road Area Plan* is organized into two parts. Volume I: *The Concept Plan* outlines the existing conditions, opportunities, issues and includes the vision, goals and recommendations. It contains the core parts of the plan; the land use plan which guides development and the transportation plan which shows planned and needed improvements to the transportation system. There are other recommendations for community facilities and services. *The*

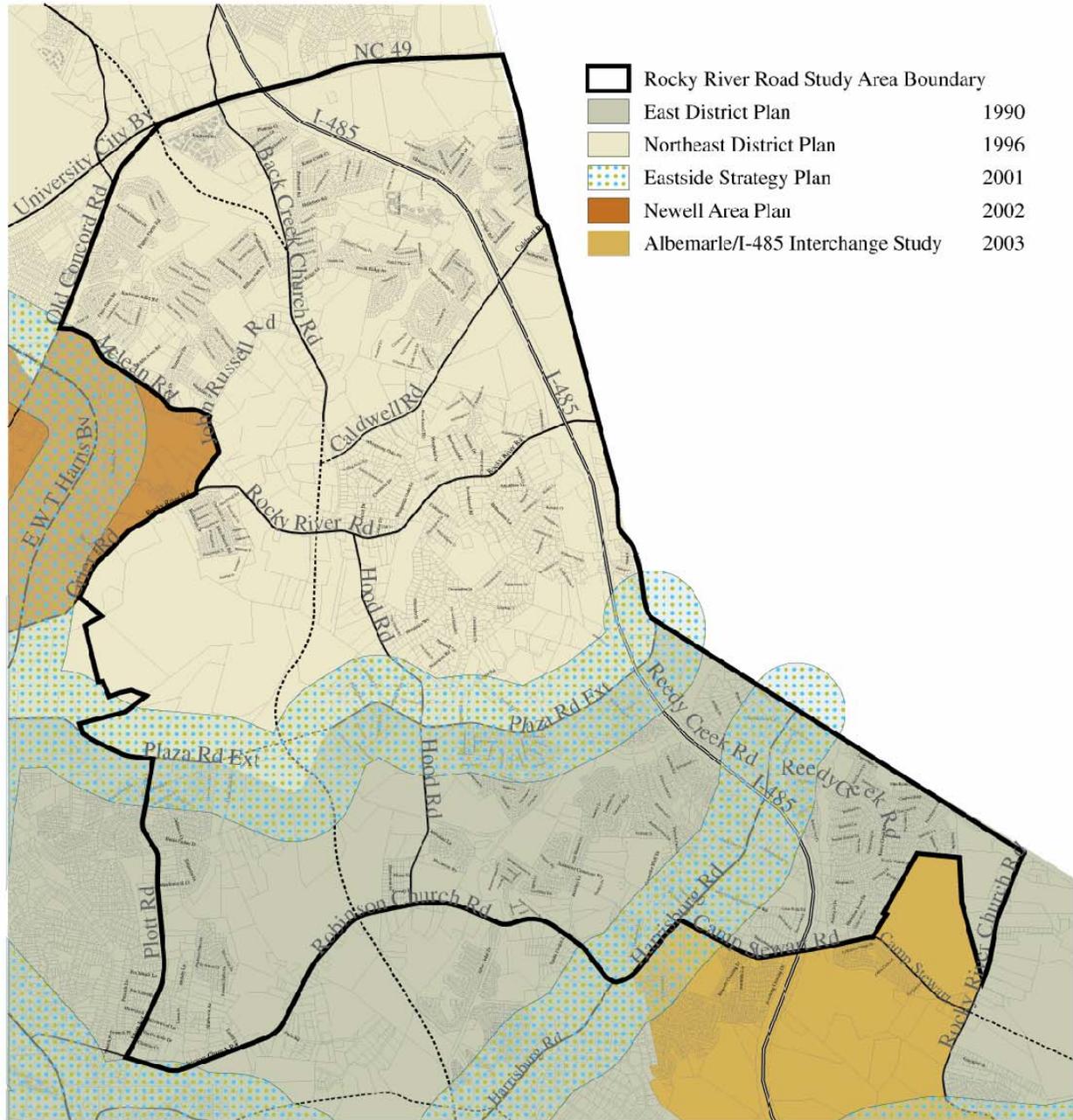
*Concept Plan* is the only part of the document that City Council will be asked to adopt. Volume II: *The Implementation Plan* will serve as a guide for implementing recommendations in the *Concept Plan*. It includes strategies to implement the plan recommendations. City Council will not be asked to adopt the *Implementation Plan*.

## Plan Development Process

The City fully engaged the community in an open planning process with several opportunities for public input. At the beginning of the planning process, the Charlotte-Mecklenburg Planning Commission held two public meetings in the Rocky River Road area to receive public input on the area's future. A record number of area residents and property owners attended the first meeting at Reedy Creek Park in comparison to the typical attendance for similar meetings. Therefore, the Planning Commission held a second public meeting at Northridge Middle School, a larger facility, to allow for additional public input.

At these meetings, approximately 89 citizens volunteered to serve on a stakeholders group to work with City, County and Charlotte-Mecklenburg School's staff to develop the area plan. However, the highest attendance at any of the stakeholders meetings was 36 and average attendance was 17. Through a series of 20 meetings staff shared information, responded to concerns, and received input from stakeholders on this plan. Citizens and developers who were not on the stakeholder's group attended some of the meetings to listen to discussions and participate in the process.

# Figure 3: Previously Adopted Land Use Plans



Produced by the Charlotte-Mecklenburg Planning Commission, March 2006.



0 1,000 2,000 3,000 4,000 5,000  
Feet

# Key Opportunities and Issues

The amount of undeveloped land and growth in the area presents the community with a number of opportunities as well as challenges. Significant population increases, development pressure, completion of I-485 in the area, traffic congestion, commuter traffic and inadequate infrastructure are some of the elements that contribute to the growing pains that the area is experiencing.

During the two public meetings held at the beginning of the planning process, citizens shared their view of the opportunities and issues in this area. The many opportunities and issues identified were discussed and refined during stakeholder meetings and are summarized as follows:

## Opportunities Identified by Citizens

1. Develop a balanced mix of land uses
2. Manage growth
3. Apply quality design principles to future development
4. Preserve rural characteristics and sense of community
5. Preserve natural resources (i.e. open space, trees, wildlife)
6. Develop greenways as connectors
7. Celebrate diversity

## Issues Identified by Citizens

1. Inadequate infrastructure (water and sewer, greenways, schools and roads)
2. Large amount of development and lack of growth management
3. Lack of a rural zoning classification
4. Insufficient police and fire resources
5. Proposed street closings at rail crossings by State/Federal officials
6. Inadequate roads (congestion, improvements and street maintenance)

7. Lack of connectivity between developments
8. Lack of transportation alternatives (vehicular, bicycle and pedestrian facilities)
9. Poor coordination between state and regional organizations on transportation projects

# Vision

During the planning process, stakeholders developed a vision statement for the Rocky River Road area. The vision statement describes the kind of place residents would like for the area to be in the future. When developing the vision statement, stakeholders considered all of the opportunities and issues identified during the public meetings

The graphic is a vertical rectangular box with a decorative border. At the top, it reads "Rocky River Road Area Plan" in a serif font, with "Area Plan" in a smaller font below it. To the right of this, the word "VISION" is written in a large, bold, sans-serif font. Below the title, there is a decorative horizontal line with a circular motif on the left side. The main body of the graphic contains three bullet points, each preceded by a small square marker. The text of the vision statement is as follows:

The vision for the Rocky River Road Area is to be a **safe, walkable, livable, and diverse** community that meets the needs of residents by:

- Offering a **balanced mix of land uses** and **housing opportunities** that utilize **high-quality design principles** for new development.
- Preserving the **rural character** of the area, **open space, natural resources, and tree canopy.**
- Providing a **well connected, safe, and walkable** transportation system with **transportation choices** that keep pace with development in the area.

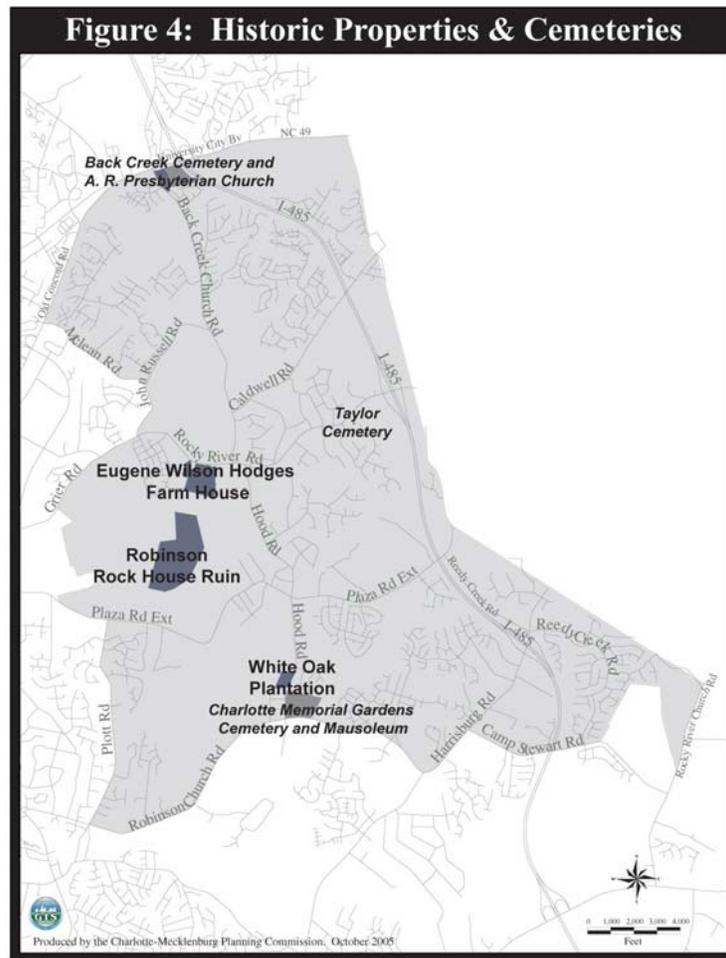
# Background

## Area History

The Rocky River Road area was settled largely by Scotch-Irish pioneers during the middle of the eighteenth century when farming such things as cotton and tobacco was profitable. These farmers subsequently built large plantation manor houses and maintained large tracts of family-owned land, setting in place a development pattern of rural farmsteads and large open tracts of land. Residents often refer to the rural character of the area as its major asset and strongly desire to have those features remain.

Currently, there are four properties within the Rocky River Road area that have been designated as historic structures by the Historic Landmarks Commission. In addition, there are three cemeteries, two of which date back to the 19<sup>th</sup> century and early 20<sup>th</sup> century (*see Figure 4, Historic Properties and Cemeteries*).

Information about historic structures in the study area was taken from the Historic Landmarks Commission Website and information on cemeteries from the Public Library of Charlotte & Mecklenburg County Website.



**Back Creek ARP Church and Cemetery**

The old brick sanctuary located at University City Boulevard and Back Creek Church Road was constructed by local members between 1869 and 1871. Today, this is one of Mecklenburg County’s oldest rural church buildings that is still in use.

The first cemetery is near the end of Camp Stewart Road and the second is adjacent to the church. This cemetery contains burials dating back prior to 1850 and is still maintained.



**Back Creek Cemetery (Camp Stewart Road)**



**Back Creek Presbyterian Church**

**Eugene Wilson Hodges Farm House**

A 187-acre tract of fields, pastures, and wooded fence lines is an example of the early 19<sup>th</sup> century agriculture presence in Mecklenburg County. This house is located on Rocky River Road west of Hood Road and was built around 1908.



**Hodges Property: Part of this property was recently rezoned to allow a neighborhood retail center**



**Back Creek Presbyterian Church and Cemetery**

### **Robinson Rock House Ruin**

The Robinson Rock House was built between 1780 and 1810. The remains from this old stone house are located off Plaza Road Extension in Reedy Creek Park and Nature Preserve and are currently owned by Mecklenburg County.



**Robinson Rock House Ruin**

### **White Oak**

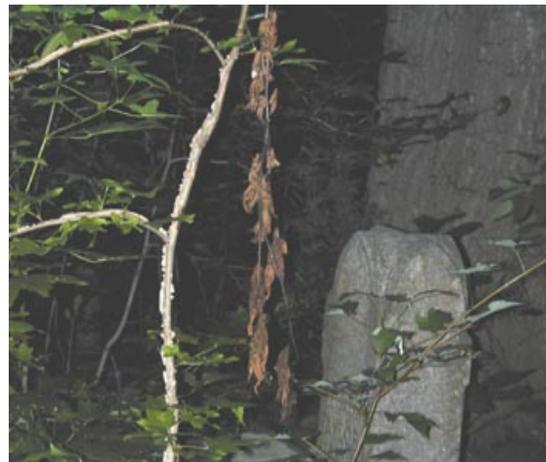
The house is a brick walled structure, located on Hood Road, south of Reedy Creek. This is one of the earliest federal style homes in Mecklenburg County. It was built in 1792 by William Johnston who was a prominent Scotch-Irish resident of Mecklenburg County in the 18<sup>th</sup> Century and was the center of a major plantation.



**White Oak**

### **Taylor Cemetery**

This abandoned cemetery is located between two houses on Rocky River Road near the Brantley Oaks Subdivision. It has less than 25 grave sites, most of which are unmarked. Two of the burial sites date back to 1912.



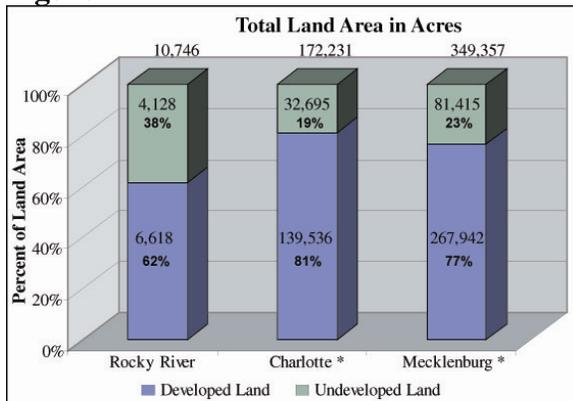
**Taylor Cemetery**

# Growth Trends: Socioeconomic Profile

## Acreage

The Rocky River Road Study area is comprised of 10,746 acres. It is one of the few remaining areas in Mecklenburg County with large tracts of undeveloped land. Thirty-eight percent of the land in the area is undeveloped compared to 19% and 23% in the City and County, respectively

**Figure 5**



Sources: Charlotte-Mecklenburg Planning Commission 2004

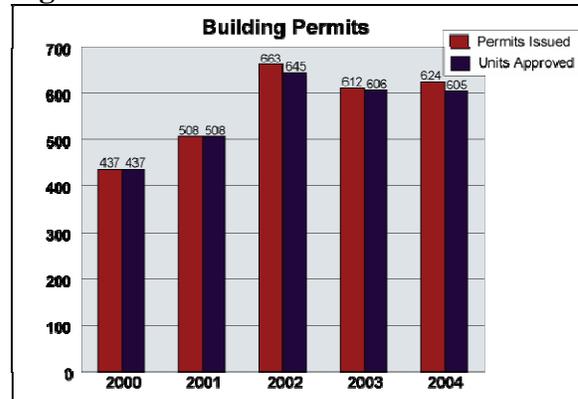
\* City of Charlotte Engineering & Property Management 2004

*When calculating vacant/undeveloped acreage, parcels of five acres or greater with only one single family structure were considered vacant property.*

## Building Permits

Over 600 building permits were issued for this area in 2004 which is only a slight increase in the number of building permits issued in 2003. However, the area experienced an increase in building permits annually four of the last five years.

**Figure 6**

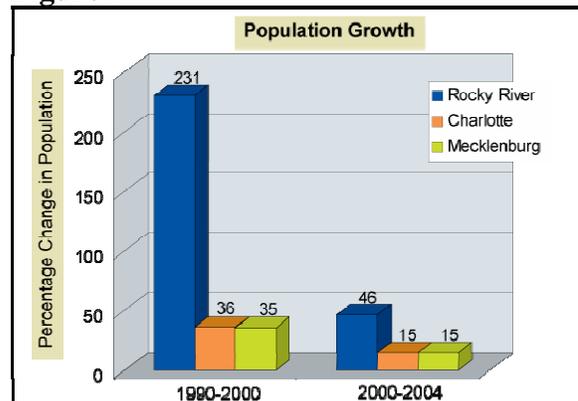


## Population

Approximately 20,000 people live in the study area today. From 2000 to 2004, the area experienced a 46% increase in population. The overall change in population from 1990 to 2000 was 231%.

Over the next 20 years, the City's population is projected to increase by approximately 350,000 and the study area's population is projected to reach approximately 78,000.

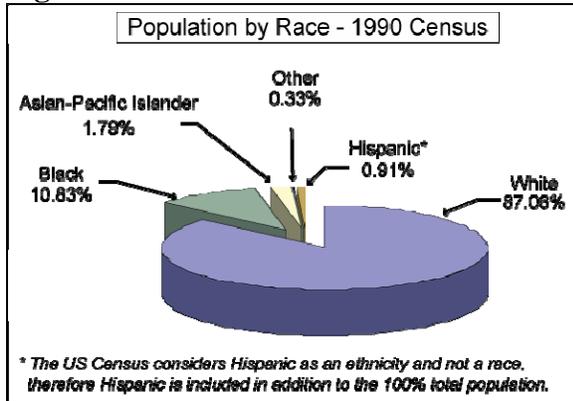
**Figure 7**



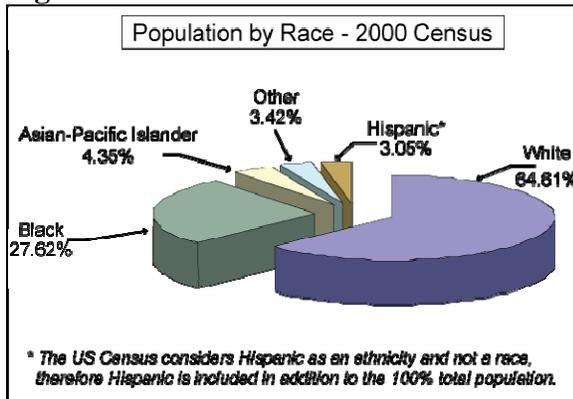
### Population by Race

Figures 8 and 9 illustrate changes in diversity of the population between the 1990 and 2000 Census. Overall, the white population decreased by approximately 22%, the black population increased by 17% and the Asian-Pacific Islander population increased by 3%.

**Figure 8**



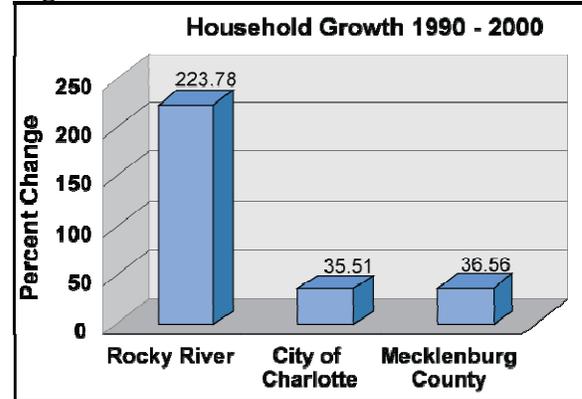
**Figure 9**



### Household Growth

From 1990 to 2000, the number of households in the study area increased by approximately 224%.

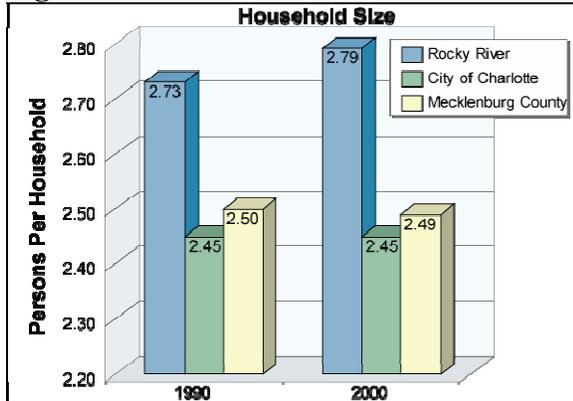
**Figure 10**



### Household Size

The average household size within the study area is 2.79. Data indicates that the number of persons per household is substantially higher than the City and County, indicating the predominance of families in the study area.

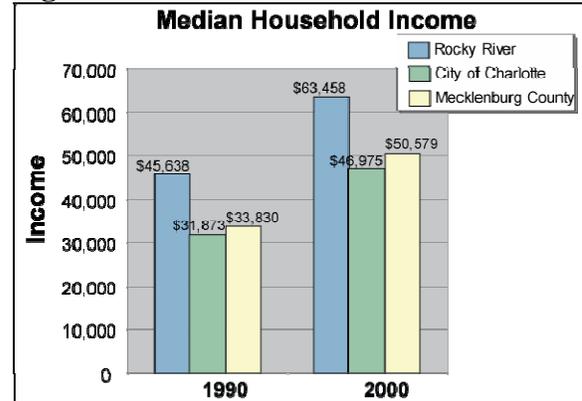
Figure 11



### Household Income

This area contains a higher concentration of middle-income households and a lower concentration of lower-income households than the City and County. However; from 1990 to 2000, there was an increase in residents living below the poverty level.

Figure 13



### Home Ownership/Tenure

The home ownership rate in the study area is higher than that of the City and County. Newly developed single family homes and townhomes provide numerous home ownership opportunities in the area.

Figure 12

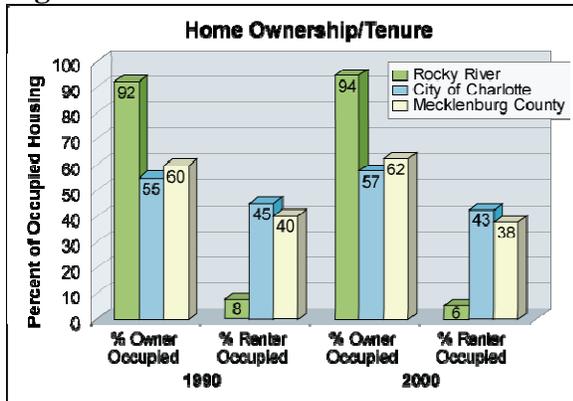
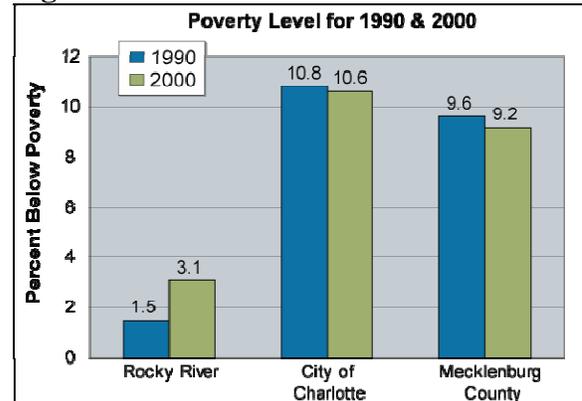


Figure 14



# Existing Conditions, Goals and Recommendations

## Land Use

### Existing Conditions

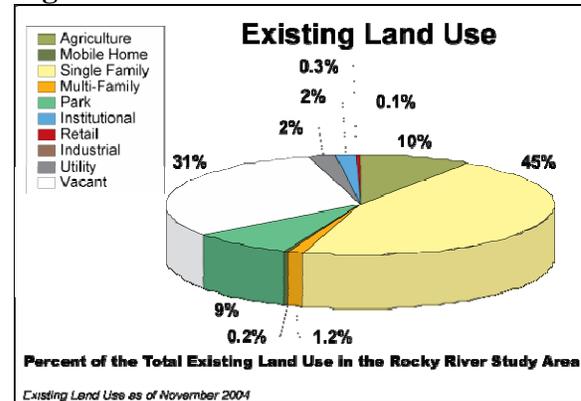
The Rocky River Road study area is comprised of 10,746 acres and is one of the few remaining areas in Mecklenburg County with large tracts of undeveloped land. Thirty-eight percent of the land in the study area is undeveloped compared to 19% and 23% in the City and County, respectively (see Figure 5, *Land Area in Acres*).

This area is primarily developed with single family homes; although, there are multi-family, agriculture, open space, institutional, office, retail and industrial land uses within the boundaries of the study area (see Figure 16, *Existing Land Use Map*).



Entrance to Old Stone Crossing

Figure 15



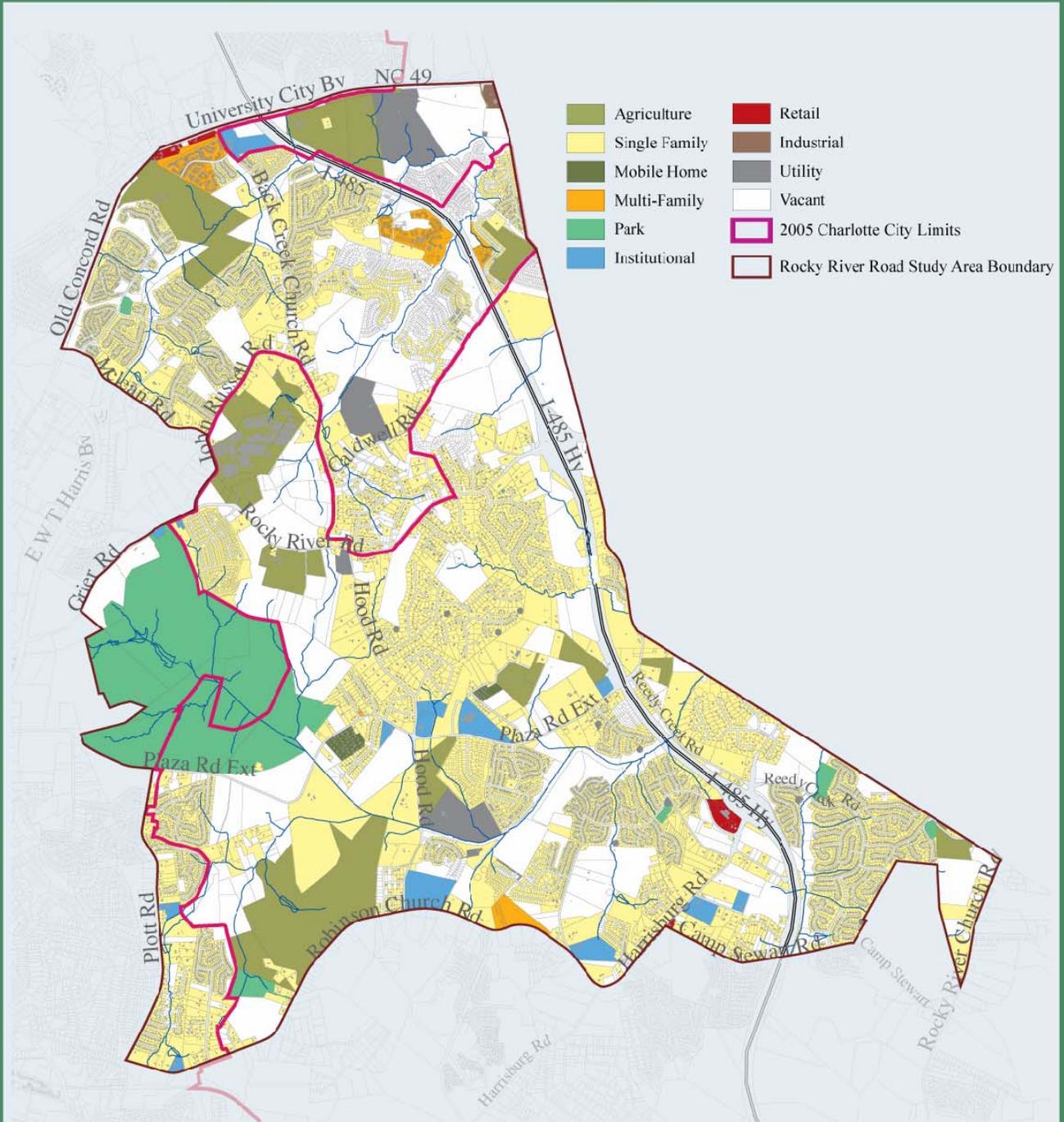
### Residential Land Uses

Single family development accounts for approximately 45% and multi-family for 1% of developed land in the study area (see Figure 15, *Existing Land Use*). Existing residential development is dispersed throughout the study area. The area has a low density residential development pattern and many opportunities exist for additional residential development at varying densities.

Single family land uses in the area were traditionally developed on large lots with several acres of land or in low density, suburban subdivisions at densities of three dwelling units per acre (dua) or less. However, more recent residential developments have included a mixture of residential densities.

Residents indicate that many people have moved to this area because of the cow pastures, farms and to escape more urban areas. As a result, in the last ten years a number of residential communities have been built and the number of agriculture land uses in the area are slowly disappearing.

# Figure 16: Existing Land Use



- |   |   |
|---|---|
| <span style="display:inline-block; width:15px; height:15px; background-color:olive; border:1px solid black;"></span> Agriculture          | <span style="display:inline-block; width:15px; height:15px; background-color:red; border:1px solid black;"></span> Retail         |
| <span style="display:inline-block; width:15px; height:15px; background-color:yellow; border:1px solid black;"></span> Single Family       | <span style="display:inline-block; width:15px; height:15px; background-color:brown; border:1px solid black;"></span> Industrial   |
| <span style="display:inline-block; width:15px; height:15px; background-color:darkolivegreen; border:1px solid black;"></span> Mobile Home | <span style="display:inline-block; width:15px; height:15px; background-color:grey; border:1px solid black;"></span> Utility       |
| <span style="display:inline-block; width:15px; height:15px; background-color:orange; border:1px solid black;"></span> Multi-Family        | <span style="display:inline-block; width:15px; height:15px; background-color:white; border:1px solid black;"></span> Vacant       |
| <span style="display:inline-block; width:15px; height:15px; background-color:lightgreen; border:1px solid black;"></span> Park            | <span style="display:inline-block; width:15px; height:15px; border:2px solid pink;"></span> 2005 Charlotte City Limits            |
| <span style="display:inline-block; width:15px; height:15px; background-color:blue; border:1px solid black;"></span> Institutional         | <span style="display:inline-block; width:15px; height:15px; border:2px solid brown;"></span> Rocky River Road Study Area Boundary |



Produced by the Charlotte-Mecklenburg Planning Commission, November, 2004.



## Nonresidential Land Uses

Nonresidential land uses make up approximately 23% of the study area and include agriculture, open space, institutional, utility, retail and industrial uses.

- **Agriculture** land uses such as farms and cow pastures comprise 10% of land uses in the area.
- Nine percent of the land area is devoted to **open space**. In addition to the greenway along area creeks, open space land uses include:
  - Reedy Creek Park (125 acres)
  - Reedy Creek Nature Preserve (727 acres)
  - Proposed Back Creek District Park (80 acres)
- **Institutional** land uses comprise 3% of the area and include schools, religious institutions and public facilities (i.e. fire station).



Reedy Creek Elementary School

- Duke Energy has a major substation in the study area that is located along NC 49 and a smaller substation is located at Rocky River and Hood roads. Other **utility** land uses in the area include a television tower. Utilities make up 2% of land uses in the study area.

- Existing **retail** opportunities within the boundaries of the study area are limited (only .1% of land uses) but there are additional retail opportunities located just outside the study area. Retail land uses in the study area include a small amount of retail (restaurant and gas station) located along the southerly side of NC 49 west of Back Creek Church Road and a retail center at the I-485/Harrisburg Road Interchange.

Existing retail land uses that surround the study area include a number of retail centers along both sides of NC Highway 49 (this is in addition to the small amount of retail within the study area). Brookdale Shopping Center is located in Cabarrus County at the I-485/Rocky River Road Interchange. Although this center is located in Cabarrus County, the future adopted land use allows an additional 70,000 square feet of retail at this interchange within Mecklenburg County. Another retail center is located at Harris Boulevard and Plaza Road Extension, and a retail center is under construction at Harris Boulevard and Rocky River Road.



Brookdale Retail Center (Cabarrus County)

- Industrial land uses are limited in this area. Baucom's Nursery is the largest industrial land user in the area.

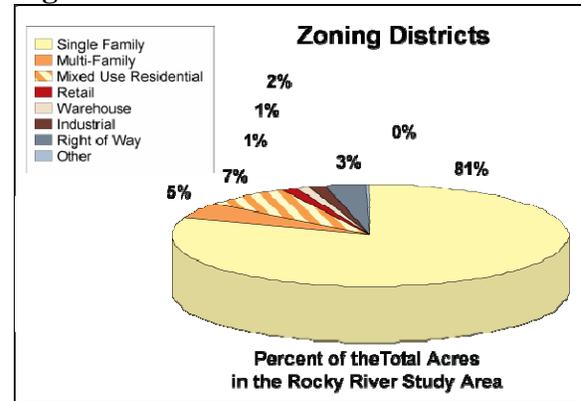
## Zoning

Zoning regulates how land can be used and is often used as a tool for implementing land use recommendations in area plans.

Approximately 94% of property in the study area is zoned for residential land uses and 77% of that property is zoned R-3 (single family land uses at a maximum density of three dwelling units per acre). Other zoning districts in the study area include multi-family, residential mixed-use, retail and industrial (see Figures 17, Zoning Districts and 18, Existing Zoning).

The Rocky River Road area has experienced an increasing number of rezoning petitions for increases in density and neighborhood services. Some of these petitions have been inconsistent with publicly adopted plans for the area. *Table 1, Recently Approved Rezoning Petitions*, provides a summary of the most recently approved rezoning petitions in the area.

**Figure 17**



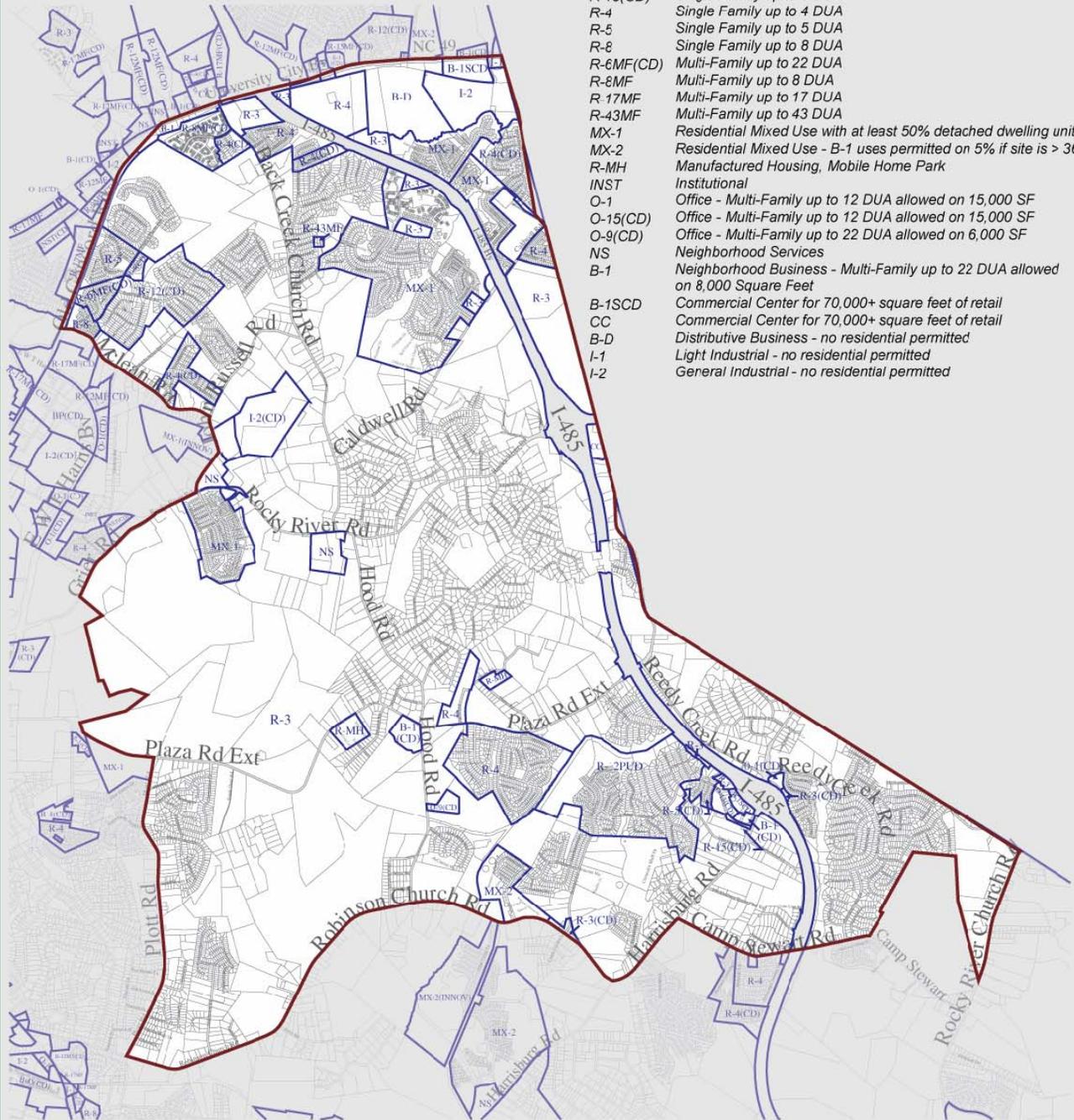
**Table 1: Recently Approved Rezoning Petitions**

Petition No.	Location	Approved Zoning Changes
2005-021	North of Rocky River Road east of John Russell Road.	R-3 to NS (Neighborhood Services) to allow a 100,000 square foot shopping center
2005-022	North of Rocky River Road east of John Russell Road.	R-3 to MX-1 to allow 273 residential units (single family and townhomes) on 11 acres at a density of 4.14 du.
2005-023	North of Rocky River Road east of John Russell Road	R-3 to I-2(CD) to allow the renovation and modernization of the plant nursery. The approved site plan notes that if the nursery operation ceases, the land use recommendation will convert to residential up to 4 du.
2005-027	Southwesterly corner of Rocky River and Hood roads	R-3 to NS to allow a 125,000 square foot shopping center.

# Figure 18: Existing Zoning

## Zoning Classifications:

R-3	Single Family up to 3 DUA
R-12(CD)	Single Family up to 3 DUA
R-12PUD	Single Family up to 3 DUA
R-15(CD)	Single Family up to 3 DUA
R-4	Single Family up to 4 DUA
R-5	Single Family up to 5 DUA
R-8	Single Family up to 8 DUA
R-8MF(CD)	Multi-Family up to 22 DUA
R-8MF	Multi-Family up to 8 DUA
R-17MF	Multi-Family up to 17 DUA
R-43MF	Multi-Family up to 43 DUA
MX-1	Residential Mixed Use with at least 50% detached dwelling units
MX-2	Residential Mixed Use - B-1 uses permitted on 5% if site is > 36 acres
R-MH	Manufactured Housing, Mobile Home Park
INST	Institutional
O-1	Office - Multi-Family up to 12 DUA allowed on 15,000 SF
O-15(CD)	Office - Multi-Family up to 12 DUA allowed on 15,000 SF
O-9(CD)	Office - Multi-Family up to 22 DUA allowed on 6,000 SF
NS	Neighborhood Services
B-1	Neighborhood Business - Multi-Family up to 22 DUA allowed on 8,000 Square Feet
B-1SCD	Commercial Center for 70,000+ square feet of retail
CC	Commercial Center for 70,000+ square feet of retail
B-D	Distributive Business - no residential permitted
I-1	Light Industrial - no residential permitted
I-2	General Industrial - no residential permitted



Produced by the Charlotte-Mecklenburg Planning Commission, February 2006

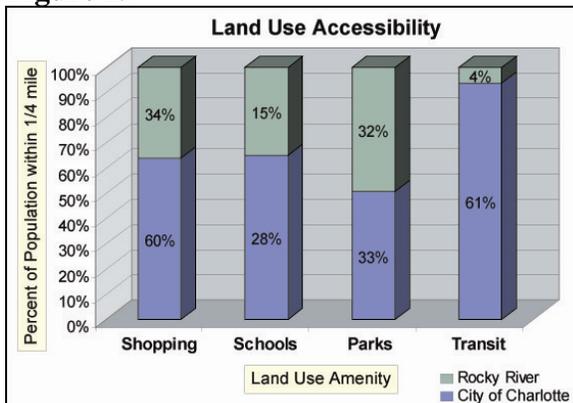


## Accessibility

Land use accessibility can be defined as the directness of travel path and the proximity of neighborhood serving land uses to residential land uses. Increased or improved land use accessibility tends to reduce the number of trips and trip distances. As the area continues to develop, poor connectivity and limited access to neighborhood services will result in serious congestion issues, if there is not a change in the development pattern.

Figure 19, *Land Use Accessibility*, compares the percentage of residents within the study area to residents in the City that are located within a quarter-mile of shopping, transit and other land uses. Thirty-four percent of the study area’s residents are within a quarter-mile of shopping and four percent are within a quarter-mile of a transit route. Approximately sixty percent of the City’s population is within a quarter-mile of shopping and transit.

**Figure 19**



Source: Charlotte Department of Transportation 2005

## Land Use Goals and Recommendations

The land use goals seek to establish a land use pattern that is sensitive to the area’s existing character, natural resources and vision for the future while considering the projected growth and development. These goals were developed to help achieve the envisioned future and guided development of the recommendations.

### Goals:

- Encourage a mixture of housing types.
- Develop a land use pattern that allows for a mixture of land uses, reduces VMT per capita and furthers the plan vision.
- Integrate land use and transit.
- Allow intensification of land uses in areas with complementary uses and supporting infrastructure.
- Improve land use accessibility rating.

### Recommendations:

In general, the land use recommendations in this plan amend the previously adopted future land use to:

- Align the future land use with the existing, appropriate land use.
- Support moderate changes in density to provide for a variety of housing types at various densities.
- Allow intensification of land uses in areas with complementary uses and supporting infrastructure.
- Provide additional park/open space land uses.

Adoption of this plan amends recommendations for the Rocky River Road area in the *East District Plan* and the *Northeast District Plan* as well as recommendations from more focused planning initiatives; the *Eastside Strategy Plan* and the *I-485 Interchange Analysis*.

The previously adopted land use for this area is illustrated on *Figure 20, Previously Adopted Future Land Use Map*.

There are 26 specific land use changes to the previously adopted future land use. The land use changes are summarized in the following paragraphs and illustrated in *Table 3* and *Figure 23, Adopted Future Land Use Changes* shows these recommended land use changes.

### **Residential Recommendations**

(See *Table 3: #5, #8a&b, & 10 a&b*)

Residential land use recommendations allow for moderate increases in density in areas generally located near I-485 interchanges or with direct access to major thoroughfares. Those densities range from 8 to 12 dwelling units per acre. There is also a recommendation for a decrease in density from 8 dwelling units per acre to 4 dwelling units per acre in an area off Faires Road near Reedy Creek Elementary School and in another area south of Reedy Creek Park and Nature Preserve, along the proposed Plaza Road Extension Relocation.

Additionally, this plan recommends changing the single family and multi-family land use categories used in previously adopted plans to residential with a specific density. For example, a recommendation for single family residential up to 4 dwelling units per acre will become residential up to 4 dwelling units per acre. This will help implement the community vision by accommodating a variety of housing types at a density appropriate for the specific location. It also allows this plan to provide specific density guidance rather than deferring to the *General Development Policies* for density guidance.

This change will allow more flexibility in development and a mixture of residential densities. Developments could include single family detached, attached single family, patio homes and townhomes. Larger parcels of land with open space areas will be

required for developments with attached housing to meet the four dwelling units per acre requirement. Old Stone Crossing is an example of a subdivision with a mixture of housing types and an overall density of 3.94 dwelling units per acre.

### **Institutional Recommendations**

(See *Table 3: #1 and #7*)

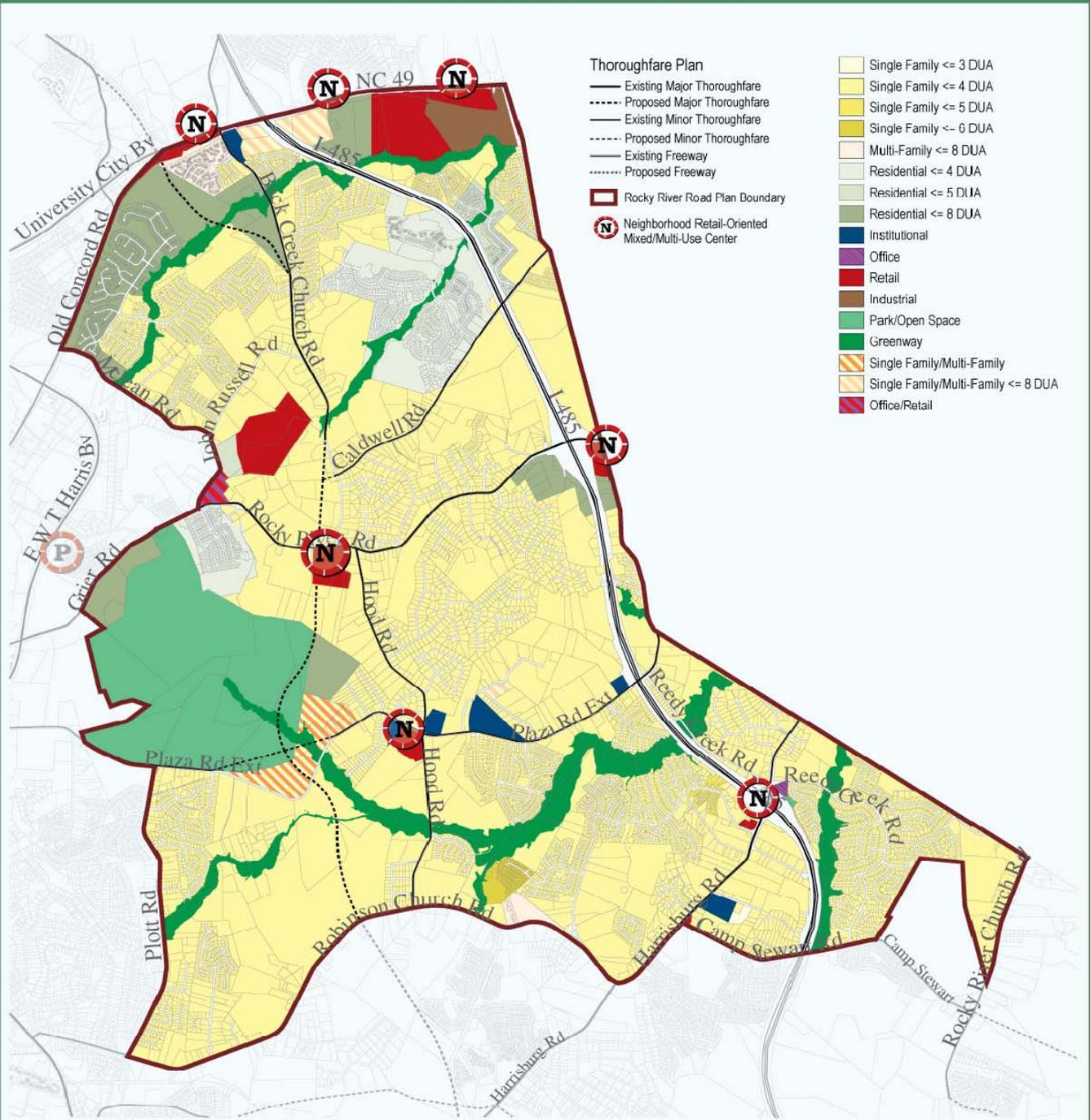
Previously adopted plans did not recognize many of the institutional land uses in the study area. These uses are primarily religious institutions located in areas recommended for residential land uses, with the exception of one that is located in an area recommended for park/open space. The *Rocky River Road Area Plan* changes the adopted land use to institutional to align it with the existing institutional use. Opportunities for additional institutional uses are located along Grier Road, adjacent to Reedy Creek Park.

### **Mixed Use Recommendations**

(See *Table 3: #6 and #9*)

A mixture of land uses are recommended at key locations within the study area to provide for additional retail and office uses near residential development. The location of areas previously recommended for mixed use development were considered when identifying additional areas for mixed use to ensure that these land uses would be located in underserved areas. The mixtures of uses can be all residential; however, if office and/or retail uses are developed on the site, it must be in conjunction with residential land uses. Uses may be mixed vertically or horizontally. In addition, smaller convenience type centers may be considered at appropriate locations to reduce vehicle miles traveled.

# Figure 20: Previously Adopted Future Land Use



Produced by the Charlotte-Mecklenburg Planning Commission, March 2006.



0 1,000 2,000 3,000 4,000 5,000  
Feet

### **Office Recommendations**

*(See Table 3: #6, 9 and #11)*

Office land uses are recommended as part of two mixed use areas and adjacent to an existing shopping center. In addition, office land uses can be integrated into areas zoned for retail uses.

### **Park/Open Space Recommendations**

*(See Table 3: #3 and #7)*

The plan recommends providing additional greenway/open space in areas along Back Creek Greenway and providing a greenway connection between Reedy Creek Park and Nature Preserve and the proposed Back Creek District Park site located off Back Creek Church Road (the County has plans to develop a district park at this location). The plan also recognizes the opportunity to provide open space land uses along the proposed Eastern Circumferential Road adjacent to Reedy Creek Park. If Park and Recreation does not acquire, the recommendation is for residential up to 4 du.

### **Utility Recommendations**

*(See Table 2: #4)*

A large Duke Energy Substation is located on NC Highway 49 between Back Creek Church Road and the Cabarrus County Line. This facility is bounded by NC Highway 49, the rail line and areas recommended for warehouse distribution land uses. Access is an issue because of recommendations by the Federal Railroad Administration to close the rail crossings that provide access to these sites as part of the high speed rail project. Because of the abutting right-of-way, recommended land uses adjacent to this site and size of the utility use, this plan recommends utility land uses at this location. However, if utility ceases, the recommended land use is warehouse/distribution.

The land use recommendation for the other utility facilities in the study area is for residential land use development. These uses are located on large parcels of land that are primarily undeveloped and could be appropriate for residential development; if the utility use ceases (utility substations are permitted uses in residential zoning districts).

### **Warehouse/Distribution Recommendations**

*(See Table 3: #2a-b)*

Two areas along NC Highway 49 west of the County Line are recommended for warehouse/distribution type land uses. Both of these areas are located along the railroad tracks and separated from residential areas by I-485, Back Creek Greenway and industrial land uses. This area is also located along the high speed rail corridor and access is an issue because the Federal Railroad Administration recommends closing the rail crossings that provide access to these sites.

The adopted land use for the Rocky River Area is reflected on *Figure 22, Land Use Recommendations*.

## Comparison of Land Use Recommendations

Figure 21

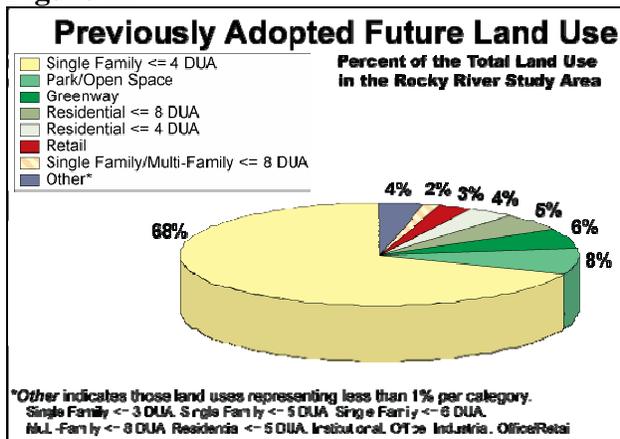


Figure 22

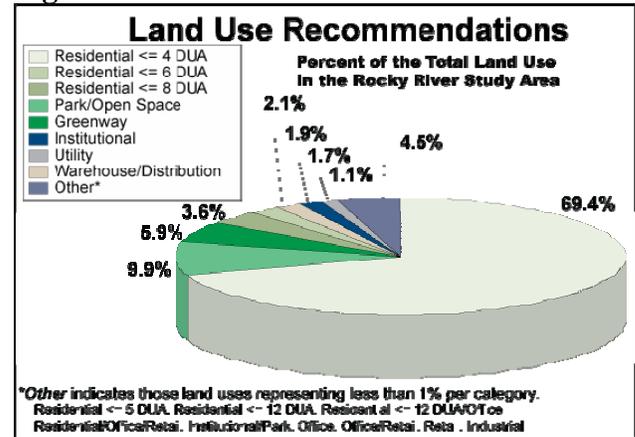


Table 2: Comparison of Land Use Recommendations

Land Use	Previously Adopted Land Use	Adopted Future Land Use
Residential <= 4 du	68%	69%
Residential <= 8 du	7%	6%
Park/Open Space	14%	16%

Table 2, Comparison of Land Use Recommendations, compares the previously adopted land use to the adopted land use recommendations in the Rocky River Road Area Plan. It reflects that an increase in the amount of land recommended for residential development at four dwelling units per acre or less and a decrease in the amount of land recommended for residential development at a density between five and eight dwelling units per acre. There is a 2% increase in the area recommend for parks and open space.

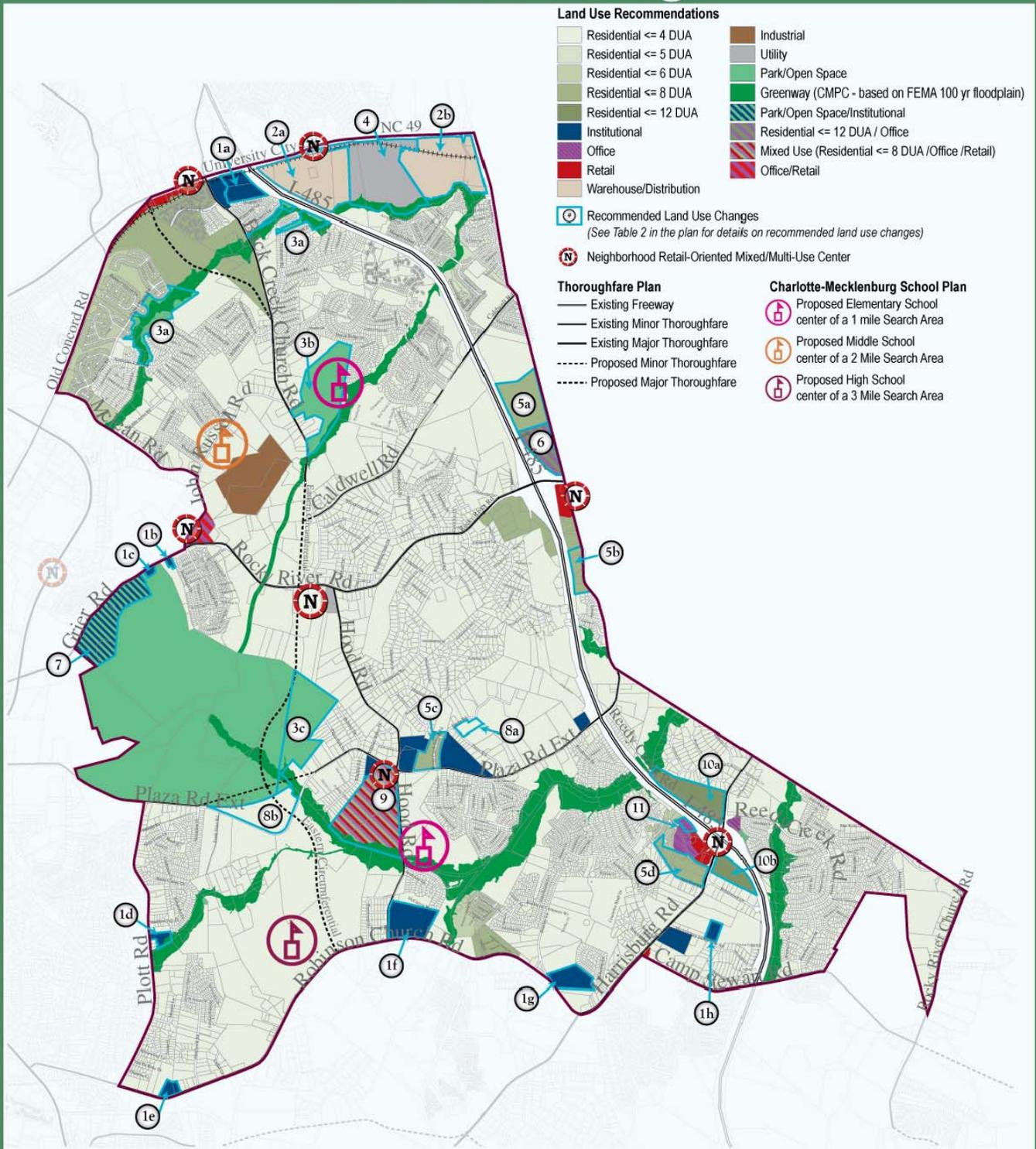
**Table 3: Rocky River Road Area Plan  
Adopted Future Land Use Recommendations**

AREA	LOCATION	ROCKY RIVER LAND USE RECOMMENDATIONS	PREVIOUSLY ADOPTED PLAN LAND USE RECOMMENDATION	PURPOSE OF RECOMMENDATIONS	EXISTING LAND USE	EXISTING ZONING
1. Institutional	a. Southeasterly corner of NC 49 and Back Creek Church Road	<b>Institutional</b>	<i>NE District</i> Plan - Single Family/Multi-Family up to 8 dua	Align recommended future land use with existing, appropriate land use (Back Creek Presbyterian Church) and allow for future church expansion.	Church, Vacant	R-3
	b. Southerly side of Grier Road adjacent to Buckleigh	<b>Institutional</b>	<i>NE District</i> - Residential up to 4 dua	Align future land use with existing, appropriate land use.	Church	R-3
	c. Southerly side of Grier Road west of John Russell Road (adjacent to Reedy Creek Park)	<b>Institutional</b>	<i>NE District</i> - Park/Open Space	Align future land use with existing, appropriate land use.	Fire Station	R-3
	d. Easterly side of Plott Road south of Meadowcroft Court	<b>Institutional</b>	<i>E District</i> - Single Family up to 4 dua	Align future land use with existing, appropriate land use.	Church	R-3
	e. Northerly side of Robinson Church Road east of Plott Road	<b>Institutional</b>	<i>E District</i> - Single Family up to 4 dua	Align future land use with existing, appropriate land use.	Church, Associated Facility (Parsonage)	R-3
	f. Northeasterly corner of Robinson Church and Hood roads	<b>Institutional</b>	<i>E District</i> - Single Family up to 4 dua	Align future land use with existing, appropriate land use.	Cemetery	R-3
	g. Easterly side of Robinson Church Road at Brawley Lane	<b>Institutional</b>	<i>E District</i> - Single Family up to 4 dua	Align future land use with existing, appropriate land use.	Church	R-3
	h. Northerly side of Mecklenburg Shrine Club Road (off Harrisburg Road)	<b>Institutional</b>	<i>E District</i> - Single Family up to 4 dua	Align future land use with existing, appropriate land use.	Shriner's Club	R-3
2. Warehouse/Distribution	a. Southerly side of NC 49 east of I-485	<b>Warehouse/Distribution</b>	<i>NE District</i> - Residential up to 8 dua, Single Family/Multi-family up to 8 dua	Provide for a more appropriate land use. Nonresidential land uses are considered more appropriate in this area bounded by NC Highway 49, Back Creek Greenway, a Duke Energy Substation and I-485. In addition, the Federal Railroad Administration recommends closing rail crossings in this area, limiting access, and for an overpass to be constructed as development occurs.	Vacant, Single Family, Agriculture	R-3, R-4
	b. Southerly side of NC 49 west of the Cabarrus County Line	<b>Warehouse/Distribution</b>	<i>NE District</i> - Neighborhood Retail Mixed Use Size Retail Center, Industrial	Provide for a more appropriate land use and implement recommendation in the <i>I-485 Analysis</i> to delete retail center and retail land uses previously recommended in the <i>NE District Plan</i> . Since the <i>NE District Plan</i> was adopted, several retail centers have developed along NC 49. The site is split by the rail line and bounded by NC Highway 49, Back Creek Greenway, a Duke Energy Substation and industrial land uses in Cabarrus County.	Vacant, Utility, Industrial	B-1SCD, I-1, I-2
3. Park / Open Space	a. Along Back Creek Greenway between Katherine Kiker Road and I-485	<b>Park/Open Space</b>	<i>NE District</i> - Single Family up to 4 dua, Single Family/Multi-family up to 8 dua	Provide additional park/open space opportunities. Mecklenburg County owns the property and plans to develop it as greenway. Property is adjacent to Back Creek Greenway.	Vacant, Greenway, Park/Open Space	R-3, R-4, R-4(CD), R-12(CD)
	b. Easterly side of Back Creek Church Road south of Timber Ridge Road	<b>Park/Open Space</b>	<i>NE District</i> - Single Family up to 4 dua	Provide additional park/open space opportunities. Mecklenburg County owns the property and plans to develop a district park.	Vacant	R-3
	c. Easterly side of proposed Eastern Circumferential north of Plaza Road Ext. (adjacent to Reedy Creek Park)	<b>Park/Open Space</b> <i>If Park and Recreation does not acquire, the recommendation is for residential up to 4 dua.</i>	<i>NE District</i> - Residential up to 8 dua, Single Family/Multi-family up to 8 dua	Provide additional park/open space opportunities. Park and Recreation does not plan to acquire; however, during the planning process, area was viewed as appropriate for future expansion of Reedy Creek Park and Nature Preserve.	Vacant, Park/Open Space	R-3
4. Utility	Southerly side of NC 49 between I-485 and the Cabarrus County Line	<b>Utility</b> <i>However, if utility ceases, the recommended land use is warehouse/distribution.</i>	<i>NE District</i> - Retail	Align future land use with existing appropriate, land use. <b>Agriculture use is</b> surrounded by Duke Energy Substation and areas recommended for warehouse/distribution land uses. It is also impacted by the potential closing of rail crossings.	Vacant, Agriculture, Utility (Duke Energy Substation)	B-D

AREA	LOCATION	ROCKY RIVER LAND USE RECOMMENDATIONS	PREVIOUSLY ADOPTED PLAN LAND USE RECOMMENDATION	PURPOSE OF RECOMMENDATIONS	EXISTING LAND USE	EXISTING ZONING
5. Residential - 8 dua	a. Northeasterly quadrant of Rocky River Road/I-485	Residential up to 8 dua	NE District - Single Family up to 4 dua	Provide for moderate density increase to allow varying densities near the I-485/Rocky River Road Interchange.	Vacant	R-3
	b. Southeasterly quadrant of Rocky River Road/I-485	Residential up to 8 dua	NE District - Single Family up to 4 dua	Provide for moderate density increase to allow varying densities near the I-485/Rocky River Road Interchange.	Single Family	R-3
	c. Both sides of Reedy Creek School Road north of Plaza Road Ext.	Residential up to 8 dua	NE District - Single Family up to 4 dua	Provide for moderate density increase to allow varying densities for a site near an elementary school, church, and retail center.	Vacant	R-4
	d. Northwesterly quadrant of Harrisburg Road/I-485 along Sam Dee Road	Residential up to 8 dua	E District - Single Family up to 4 dua	Provide for moderate density increase to allow varying densities near the I-485/Harrisburg Road Interchange for parcels with access to Sam Dee and Harrisburg roads.	Single Family, Vacant	R-3
6. Residential - 12 dua/Office	Northeasterly quadrant of Rocky River Road/I-485	Residential up to 12 dua, and/or Office up to 30,000 sf	NE District - Single Family up to 4 dua	Provide a mix of office and/or residential land uses at varying densities near I-485/Rocky River Road Interchange. The office land uses would abut nonresidential development (retail/office) in Cabarrus County.	Vacant	R-3
7. Institutional & Park/Open Space	Southerly side of Grier Road adjacent to Reedy Creek Park	Institutional, Park/Open Space	NE District - Residential up to 8 dua	Provide additional institutional and/or park uses adjacent to institutional and park uses (Reedy Creek Park, Joseph W. Grier Elementary School, Fire Station #34). Property is owned by Mecklenburg County.	Vacant	R-3
8. Residential - 4dua	a. Easterly side of Faires Road north of Plaza Road Extension	Residential up to 4 dua	NE District Plan - Single Family/Multi-Family up to 8 dua	Provide for a reduction in the overall density recommended for this site. Lower density with some flexibility is appropriate at this location. Poor access to this area limits its ability to support higher density.	Mobile Home Park	R-MH
	b. Southerly side of Plaza Road Extension proposed relocation south of Reedy Creek Park along both sides of the proposed Eastern Circumferential Road	Residential up to 4 dua	NE District - Single Family/Multi-Family	Provide opportunity for single family development adjacent to Reedy Creek Park.	Vacant	R-3
9. Mixed Use	Westerly side of Hood Road between Plaza Road Extension and Reedy Creek Greenway	Neighborhood Retail-Oriented Mixed/Multi-Use Center - 100,000 sf non-residential land uses (office/retail) and residential up to 8 dua	E District as amended by the ES Strategy Plan - Neighborhood Size Retail Center	Provide for a mixed use development that includes a moderate density increase to allow a variety of housing types at varying densities (residential up to 8 dua), retail, and office land uses in an underserved area adjacent to complementary land uses. (The mixture of uses can be all residential; however, if office and/or retail land uses are developed on the site, it must be in conjunction with residential land uses.)	Vacant, Single Family, Agriculture	R-3, B-1(CD)
10. Residential - 12 dua	a. Northwesterly quadrant of Harrisburg Road/I-485	Residential up to 12 dua	E District - Single Family up to 4 dua	Provide for moderate density increase in an area with supporting infrastructure (adjacent to I-485, access to Reedy Creek and Harrisburg roads).	Vacant, Single Family	R-3
	b. Southeasterly quadrant of Harrisburg Road/I-485	Residential up to 12 dua	E District - Single Family up to 4 dua	Provide for moderate density increase to allow varying densities near the I-485/Harrisburg Road Interchange.	Vacant	R-3
11. Office	Southwesterly quadrant of Harrisburg Road/I-485	Office up to 5,000 sf, Residential up to 4 dua	E District - Single Family up to 4 dua	Provide for a minor increase in office land uses adjacent to Cambridge Shopping Center. The site is accessed through the shopping center and a change in topography separates the property from residential land uses.	Vacant, Residential Single Family	R-3

E District refers to the East District Plan, NE District refers to the Northeast District Plan, ES Strategy Plan refers to the Eastside Strategy Plan, I-485 Analysis refers to I-485 Interchange Analysis  
dua – dwelling units per acre

# Figure 23: Rocky River Adopted Land Use Changes



### Land Use Recommendations

- |  |                        |  |  |
|--|------------------------|--|--|
|  | Residential <= 4 DUA   |  | Industrial   |
|  | Residential <= 5 DUA   |  | Utility  |
|  | Residential <= 6 DUA   |  | Park/Open Space                                    |
|  | Residential <= 8 DUA   |  | Greenway (CMPC - based on FEMA 100 yr floodplain)  |
|  | Residential <= 12 DUA  |  | Park/Open Space/Institutional                      |
|  | Institutional          |  | Residential <= 12 DUA / Office                     |
|  | Office                 |  | Mixed Use (Residential <= 8 DUA / Office / Retail) |
|  | Retail                 |  | Office/Retail                                      |
|  | Warehouse/Distribution |  |  |

- Recommended Land Use Changes  
(See Table 2 in the plan for details on recommended land use changes)
- Neighborhood Retail-Oriented Mixed/Multi-Use Center

### Thoroughfare Plan

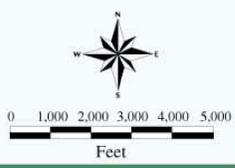
- Existing Freeway
- Existing Minor Thoroughfare
- Existing Major Thoroughfare
- Proposed Minor Thoroughfare
- Proposed Major Thoroughfare

### Charlotte-Mecklenburg School Plan

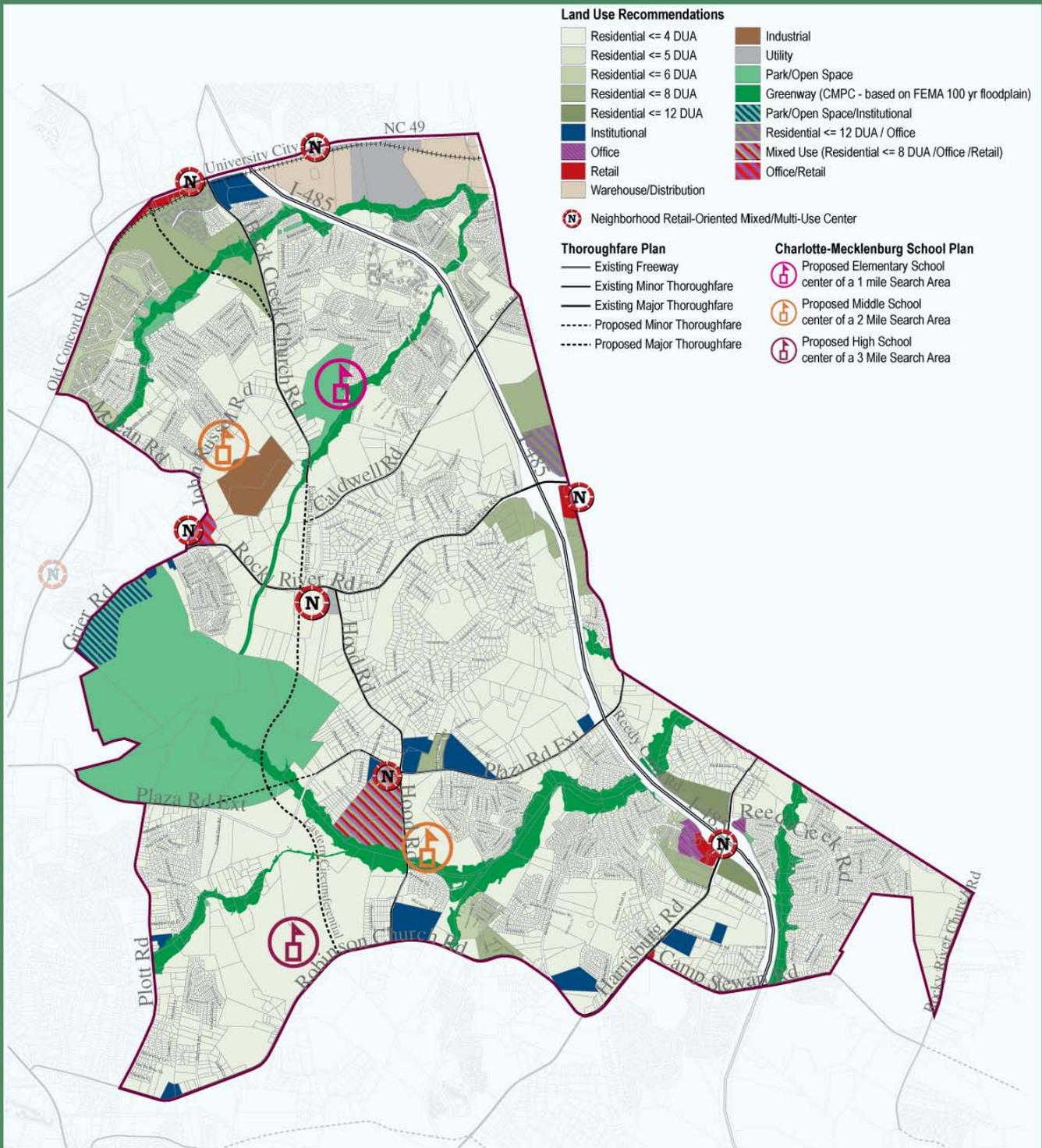
- Proposed Elementary School center of a 1 mile Search Area
- Proposed Middle School center of a 2 Mile Search Area
- Proposed High School center of a 3 Mile Search Area



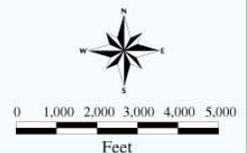
Produced by the Charlotte-Mecklenburg Planning Commission. March 2006



# Figure 24: Rocky River Adopted Future Land Use



Produced by the Charlotte-Mecklenburg Planning Commission, March 2006



# Design

## Introduction

The design guidelines help to ensure that new development complements the existing or desired character of the Rocky River Road community. Design does not dictate land use or zoning, rather it strengthens how various uses fit together in context or connection with each other within their environment. It considers the built environment with the natural environment and how we move through those spaces and places as pedestrians or by other means of transportation.

## Existing Conditions

The Rocky River Road community reflects a variety of architectural styles and development patterns that have evolved over time. There is not a prevalent theme or period that sets the character; the most identifiable pattern or unifying element is open space. Most development is occurring on greenfields, and in many cases, there is little consideration for context sensitive design. This trend has created several disconnected neighborhoods.

## Design Goals and Recommendations

The five goals listed in *Figure 25* set the framework for the design of both residential and non-residential development within the Rocky River Road Plan area. They address streetscape, architectural style, character, scale, connectivity, orientation and open space.

The recommendations set expectations for site and building design for new residential and non-residential development. The recommendations will be applied to properties within the study area, primarily through the rezoning and subdivision processes, yet compliance with the recommendations is also strongly encouraged for properties not requiring subdivision or rezoning approval.

The recommendations fall under eight categories defined below and illustrated in detail on *figures 26 & 27, Residential Design Guidelines* and *Non-residential Design Guidelines*.

### General Character

How buildings, parking, site circulation and amenities are organized help define the character of a development and contribute to the overall character of a community. Specific amenities or lack of amenities can define whether a site is pedestrian friendly or automobile oriented.

### Building Orientation

Building orientation addresses how buildings relate to the remainder of the site and adjacent public streets, private drives or uses. It refers to how a building's elevation may serve as the "front door" or "major entrance" to a building. Orientation has a significant impact on how both pedestrians and automobiles circulate around the building and site in general. Both public and private streets, as well as public spaces, are more pedestrian friendly when buildings are oriented towards them. Buildings fronted towards the street can also enhance the streetscape by adding visual interest for pedestrians through the use of windows, doors, displays, awnings and porches.

## **Building Massing, Scale, and Articulation**

A building's massing, scale and articulation in addition to the environment (low, medium or high density) in which it is located contribute to the overall architectural design. In the Rocky River Road area, these elements can be utilized to accomplish the design goals, achieve this community's vision and create a balance between the built and natural environment.

*Massing* is the relationship between the elements of the building to each other and to similar elements on adjacent buildings, uses or features. The relationship of windows, doors, openings, awnings, light fixtures and roof lines all contribute to the building mass.

*Scale* is the relationship of a building to adjacent buildings, uses, features, natural elements or people. Scale addresses building height, size, intensity and aesthetics. Scale is a critical element that can determine how well a building or overall development fits into the context and compliments its surrounding environment.

When locating large office buildings, multi-family developments, retail developments, etc. adjacent to single family residential uses; transition areas can help improve the relationship between varying scales. Transition areas can be, but are not limited to lower density development, common open spaces or natural areas and buffers.

*Articulation* refers to the elements on the elevation (i.e. façade, side, back) of a building that break up monotonous walls, add visual interest, establish character and provide functional components (i.e. doors, windows, dormers).

## **Open Space**

Open spaces are a critical component of placemaking. Large areas that preserve mature trees can help preserve the rural character while community parks function as gathering spaces or places for play

## **Parking and Driveways**

Driveways and parking areas can negatively impact pedestrian and motorist accessibility and set an unpleasant and unwelcoming environment. If parking areas are not designed with the pedestrian in mind, it can force the pedestrian to have to walk through driveways and drive aisles, competing with vehicular traffic. In addition, large expanses of parking areas increase the amount of impervious surface and are visually unattractive, often lacking sufficient softscape treatment to balance out the amount of pavement. On-street parking provides an alternative to large surface parking areas and can also serve as a traffic calming measure throughout a development.

Shared driveways and parking areas within a development helps to limit the visual and functional impact on the pedestrian experience.

## **Connectivity, Accessibility, Streets and Streetscape**

Utilizing connectivity and accessibility in development can encourage a more pedestrian oriented environment or even shorten vehicle trips.

Streetscape treatments can be used to slow traffic, improve the pedestrian realm and enhance and define the character of the development while complimenting the surrounding context. Streetscape elements can include, but are not limited to: bike lanes, on street parking, medians, pedestrian refuge islands, raised pedestrian crossings, sidewalks, roundabouts, landscaping, benches, trash receptacles, way finding signage and street trees.

## **Landscaping**

Landscaping is used to achieve functional and aesthetic goals. It can define edges between vehicular and pedestrian areas, pedestrian areas and buildings, adjacent uses, etc. Landscaping can also strengthen site character and create a balance with buildings and pavement. It can also help stabilize soil, reduce run-off caused by impervious areas and screen visually undesirable areas.

## **Site Preparation**

Site preparation refers to the pre-construction activities required to make the site suitable for development. How a site is prepared can have a significant impact on the environment and character of the neighborhood. Large amounts of grading can disturb soils and re-arrange the topography of the site. Not only can this detract from the individuality of the site, it can result in increased run-off. Removing trees further induces erosion and run-off, while also affecting shade, privacy and wind blockage.

Incorporating natural features as part of the site will assist in maintaining the rural character and heritage for the Rocky River Road area. Integrating large mature tree stands and slopes as site amenities are examples of incorporating natural features. While the quality or worth of the type of trees on the site may be deemed of varying values, mature landscape, regardless of type, add significant aesthetic value to a site, in addition to maintaining rural heritage.

# Rocky River design goals

## design goals

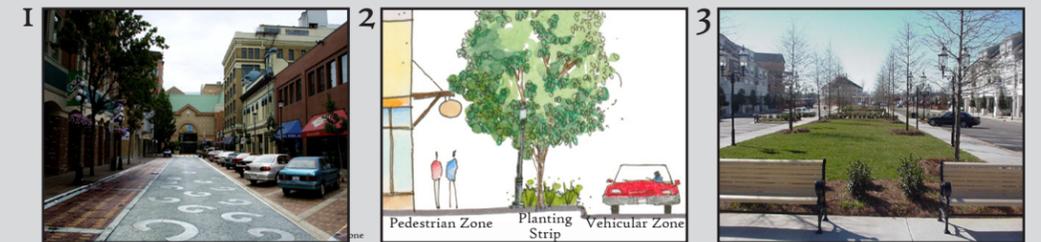
## general design recommendations\*

## examples

1

Create streetscapes that promote pedestrian activity & strengthen the Rocky River area's unique character.

- Provide on-street parking (1)
- Develop a hierarchy of zones (building, pedestrian, vehicular) (2)
- Provide streetscape features and amenities that strengthen the pedestrian experience (3)



2

Utilize architectural styles that reflect & enhance the rural character of the Rocky River area.

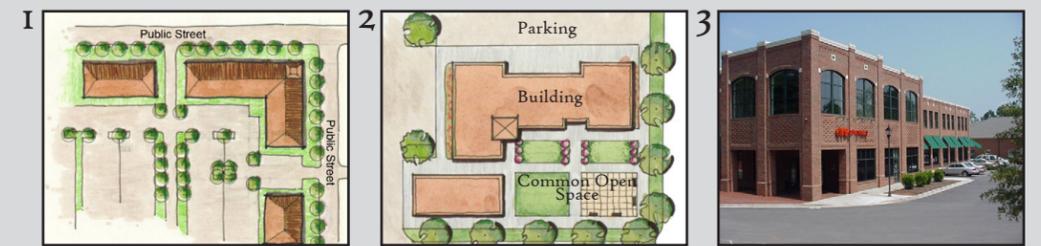
- Scale buildings to complement adjacent development.
- Incorporate complementary building signage (1)
- Incorporate human scale details such as windows, lighting and doorways. (2)
- Break elevations into small components. (3)



3

Develop neighborhood centers and other non-residential development at appropriate locations to complement the scale & character of the surrounding environment, promote connectivity & balance density with quality open spaces.

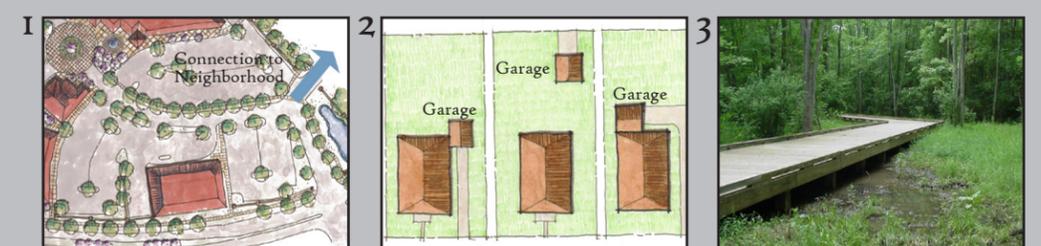
- Balance density with open space
- Do not permit parking between building and street (1)
- Break up surface parking areas
- Integrate common open spaces (2)
- Orient buildings toward public streets; provide four-sided architecture (3)
- Locate service areas away from pedestrian areas



4

Offer a variety of housing types that balance density with quality open space, promote connectivity & whose overall character reflects the vision of the Rocky River area.

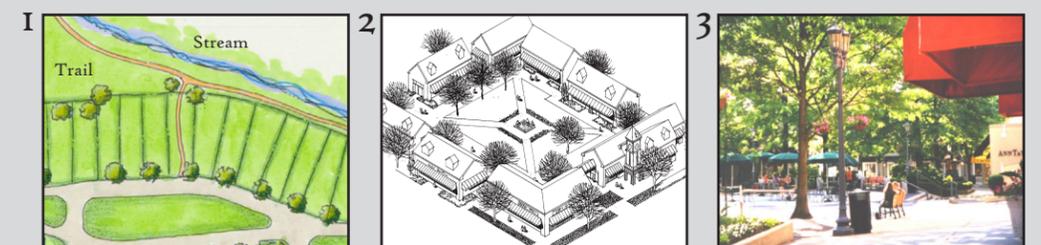
- Design sites to promote connectivity (1)
- Locate garages recessed from the front elevation, oriented for side or rear access (2)
- Utilize natural features (3)
- Scale buildings to complement existing development.



5

Preserve and create open spaces that are integrated & functional components of development for recreation, gathering spaces, natural resource preservation & connectivity.

- Utilize buffers along the perimeter of the site for trail opportunities (1)
- Provide a variety of open spaces (i.e. urban gathering spaces, active parks, nature preserves or trails)
- Preserve significant natural areas
- Integrate required "common open space" at centers of developments or highly visible locations (3)
- Utilize open spaces for placemaking & community spaces (2)



\* Recommendations provided in detail on Residential and Non-Residential Design Guidelines pages.

Diversity ~ Scale ~ Style ~ Site Design ~ Connectivity ~ Streetscape

# Rocky River

## residential design recommendations

### general character

- ① Encourage a variety of housing types (floor plans, exterior treatments and materials, massing, and roof forms).  
Repeat design elements to contribute to an overall character.
- ② Ensure development fits contextually.

### building orientation

- ③ Define and enhance entrances to encourage an active pedestrian corridor. Provide four sided architecture.
- ④ Locate residential garages to reduce visual impact from the street. Access garage from the side or rear.
- ⑤ Orient façades parallel to public streets or common opens spaces. Use multiple entrances.

### building massing / scale / articulation

- Vary the horizontal and vertical plane of elevations.
- Incorporate human scale details such as porches, balconies, overhangs, doors and windows to visually define streetscape.
- ⑥ Balance density with open space.  
Encourage a mixture of lot sizes.  
Distinguish ground level design from upper stories in multi-family development.

### open space

- ⑦ Ensure that common areas are accessible, usable, and centrally located.
- ⑧ Ensure that common areas include amenities such as seating, lighting, bike parking, to promote an active space.
- ⑨ Design open space to create a network of green spaces.
- ⑩ Utilize buffers for trail opportunities
- ⑪ Integrate natural areas into the site design.

Provide street furniture, such as benches, drinking fountains and trash receptacles in public or common open spaces.

### parking & driveways

Locate parking in rear or side of building and screen from public streets.  
Use streets to break up expanses of parking.

- Use shared access driveways where possible.
- Utilize rear alleys to reduce curb cuts along public streets and sidewalk (Single Family).
- Locate driveways for residential structures to the rear (Single Family).
- Provide on-street parking where appropriate.
- Provide pedestrian pathways throughout parking area.
- Use landscaping to break parking lots into smaller pockets.
- Site service areas and dumpsters as not to impede with the visual character of the development. (Multi-Family)
- Design major driveways through parking areas as public streets. (Multi-Family)
- Provide bike parking. (Multi-Family)

### connectivity & accessibility

- ⑫ Provide multiple connections (pedestrian and vehicular) to adjoining properties to alleviate the impacts on the thoroughfare system.  
Provide sidewalks on both sides of public and private streets.
- ⑬ Provide pedestrian connections to transit, open space, trails, bikeways, etc.

### landscape

- Utilize native species to preserve the rural character of the area.
- Use soft and hardscape elements to enhance the character of the area.
- Blend topography with existing natural terrain.
- Provide landscape islands throughout parking areas to break up consecutive spans of pavement (Multi-Family).
- Orient landscape layout and design toward the pedestrian environment.
- Plant street trees along both sides of internal private driveways.
- ⑭ Preserve prominent stands of existing trees, regardless of type, wherever possible.  
Create a gradual transition between the open space and the built environment where development adjoins natural areas or other open spaces.



Diversity ~ Scale ~ Style ~ Site Design ~ Connectivity ~ Streetscape

# Rocky River

## non-residential recommendations

Figure 27

### general character

- 1 Repeat design elements to contribute to an overall character.
- 2 Ensure development fits contextually.

### building orientation

- 3 Orient façades to public streets or common open spaces. Use multiple entrances.
- 4 Enhance entrances to encourage pedestrian activity. Provide four sided architecture.

### building massing/scale/articulation

- 5 Vary the horizontal and vertical plane of elevations.
- 6 Human scale details such as windows, cornice lines, signage, overhangs, and awnings should be incorporated to visually reduce the mass of buildings.

Balance density with open space.

- 7 Scale buildings to complement adjacent development.

Avoid bland, monolithic, redundant elevations. Break up elevations into small components to compliment the residential character of the community.

- 8 Provide a variety of building sizes.
- 9 Use clear glass to provide a visual connection to the street.
- 10 Consider recessing or extending windows or doors to add variation to the buildings depth.

### open space

- 11 Ensure that common areas are accessible, usable, and centrally located.
- 12 Ensure that common areas include amenities such as seating, lighting & bike parking to promote an active space.

Design open space to create an overall network of green spaces.

Utilize buffers for trail opportunities

Integrate natural areas into the overall site design.

### parking

- 13 Locate parking in rear or side of building and screen from public streets.

Provide bike parking.

- 14 Use streets as an organizing element to break up expanses of parking.
- 15 Use shared access driveways to eliminate curb cuts and promote shared parking.

Provide on-street parking.

- 16 Provide pedestrian pathways throughout parking areas.
- 17 Use landscaping to break parking lots into smaller pockets.
- 18 Site service areas and dumpsters as not to impede with the visual character of the development.
- 19 Provide multiple connections (pedestrian and vehicular) to alleviate impacts on the thoroughfare system.

- 20 Provide an extensive internal sidewalk system.

- 21 Utilize unified paving materials and landscape patterns to identify pedestrian or vehicular areas.

- 22 Light all pedestrian areas with fixtures that focus on walkways and sitting areas.

- 23 Calm traffic through parking areas to improve pedestrian safety.

### landscape

- 24 Preserve prominent stands of existing trees, regardless of type, wherever possible.

- 25 Use soft and hardscape elements to enhance the character of the development.

Utilize native species to preserve the rural character.

Blend topography with existing natural terrain.

Orient landscape layout and design toward the pedestrian environment.

- 26 Plant street trees along both sides of internal private driveways.

Create a gradual transition between open space and the built environment.

\* For guidelines on the classification and limitations on freestanding single tenant buildings, refer to the GDP - Retail-oriented Mixed/Multi Use Centers.



Diversity ~ Scale ~ Style ~ Site Design ~ Connectivity ~ Streetscape

# Transportation

## Introduction

A neighborhood's streets are among its most significant public places. They have a great effect on the quality of life enjoyed by residents. Streets are where neighbors cross paths and share news, friends gather at a neighborhood restaurant for a meal, children walk to the corner market for ice cream, commuters travel to work and where a parent teaches a child the joy of riding a bicycle. Streets connect people to every destination within a city, provide access to public transit, fuel economic development and are the corridors for travel for many thousands of motor vehicles every day. Streets perform many essential community functions and help to frame a community. Great streets can define a city and its neighborhoods.

Currently, Rocky River Road area residents do not experience the benefits of having a highly connected street network. The area lacks facilities and does not have a balanced mixture of land uses that support a live, work, play and shop lifestyle within their neighborhood. The Rocky River Road area can be best characterized as a historically rural residential area that is transitioning into a suburban "Wedge".

Today, approximately 20,000 residents live in the area with an anticipated population of 78,311 by 2025. This area has the potential to offer its residents a mixture of land uses that would enable them to live, work, play, socialize and shop within close proximity of their homes. In addition, as development occurs within the area, there is potential to create a highly connected street network that minimizes levels of congestion and shortens travel distances for all transportation users.

The purpose of this section of the *Rocky River Road Area Plan* is to assess and make recommendations that will enhance the area as it transitions from a historically rural area to a suburban wedge area by developing a comprehensive approach to the following transportation-related elements:

- Connectivity
- Pedestrian Facilities
- Bicycle Facilities
- Streets and Intersections
- Transit Facilities

The *Rocky River Road Area Plan* will provide a blueprint for making the area's streets true public assets and ensuring that all modes of transportation are safe, attractive and community-enhancing for residents and visitors of the area.

Transportation concerns were shared at most of the meetings during the Rocky River Road area planning process. The issues raised generally focused on traffic, congestion, road conditions and pedestrian amenities as noted below and in the opportunities and issues section of this plan. Meeting participants stressed the importance of providing transportation infrastructure that keeps pace with development. Unfortunately, adequate funding is not in place to immediately remedy these issues.

Transportation issues identified by citizens during the planning process are summarized below:

1. Need for road improvements that keep pace with development within the area
2. Timing and funding of transportation projects
3. Coordination with Cabarrus County and North Carolina Department of Transportation (NCDOT) on road issues
4. Connectivity
5. Congestion
6. Street maintenance
7. Sidewalk construction
8. Potential closing of roads at rail crossings by State and Federal Officials
9. Timing of and need for additional traffic signals

By implementing transportation recommendations in this plan, the community's **vision** to provide a **well connected, safe and walkable** transportation system that offers **transportation choices, keeps pace with development and adequately meets the area's transportation needs** can be achieved.

## Existing Conditions

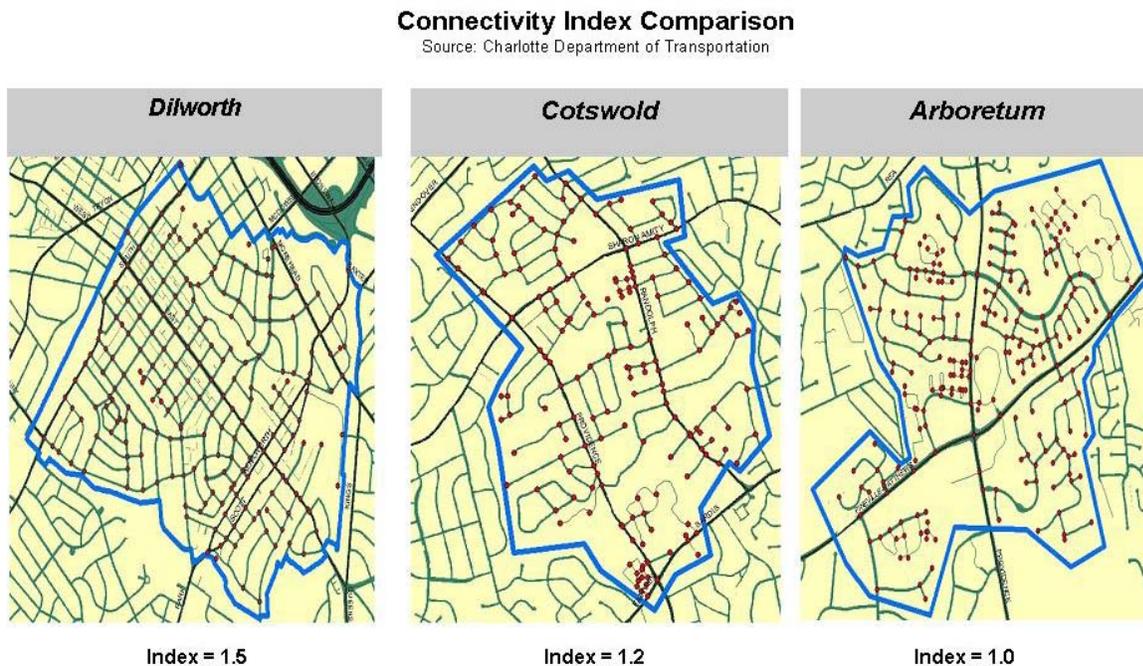
### Connectivity

Connectivity is the degree to which a system of streets provides multiple routes and connections that service the same origins and destinations. An area with high connectivity has multiple points of access as well as a dense system of parallel routes and cross-connections.

Several methods have been developed to determine the level of connectivity within an area. In many cases, a connectivity index is used to quantify how well a roadway network connects destinations by simply calculating the number of roadway links (segment between nodes) divided by the number of roadway nodes (intersections or the end of a cul-de-sac). A connectivity index rating of 1.2 is considered marginal and 1.5 is an excellent level of connectivity.

The Rocky River Road area has a connectivity index of 1.1, somewhat higher than the Arboretum community, a recently developed area with a sparse street network. The Cotswold community, which is closer to Center City, has a denser street network and has a connectivity score of 1.2. Older Charlotte neighborhoods, like Dilworth, have a connectivity score of 1.5 with a denser street network that offers multiple route options, shorter travel distances, and shorter block lengths; thus, providing better connectivity in the community (*see Figure 28, Connectivity Index Comparison*).

**Figure 28**



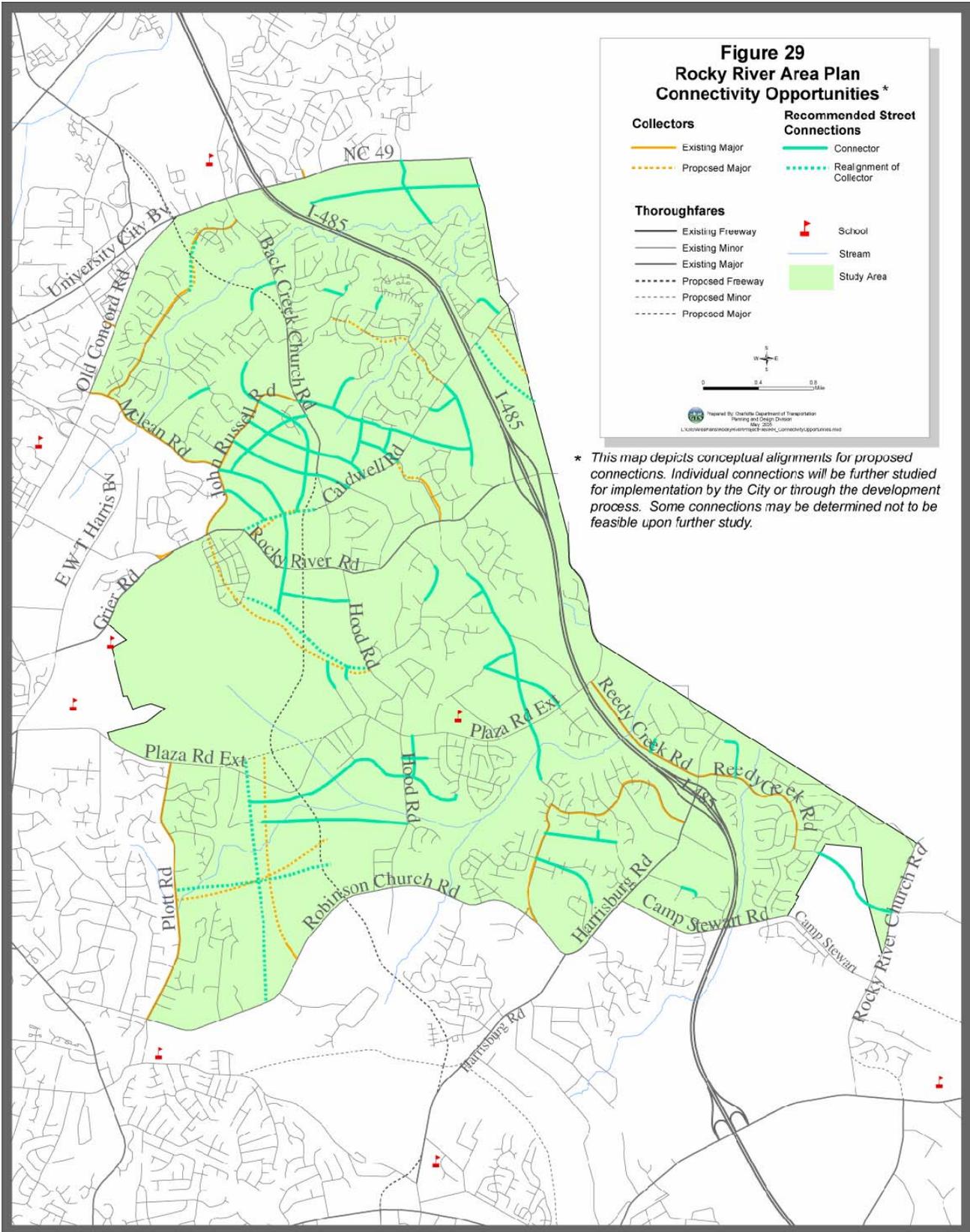
Improving connectivity and creating a finer grained network of streets is critical to the success of the Rocky River Road area as it develops. Failure to improve connectivity will likely result in an over-reliance of the area's major thoroughfares and significant congestion at signalized intersections. As part of this plan, staff worked with the stakeholders to identify opportunities to create connected street systems as development occurs (see Figure 29, *Rocky River Road Area Plan Connectivity Opportunities*). Based on results from the 2025 Transportation Model, increased connectivity (in addition to capacity improvements) will significantly help the area accommodate anticipated growth.

### **Pedestrian Facilities**

A well-connected neighborhood sidewalk system enables residents to safely travel from one place to another. Sidewalks accommodate a wide range of users (from

children to seniors) and activities (baby strollers, children on bicycles and wheelchair users). They also provide a place for transportation access, recreational opportunities and community interaction.

Pedestrian facilities include sidewalks, greenways, trails and other walkways. The Rocky River Road area has numerous rural roads without sidewalks. A number of the older residential developments were constructed before the City or County required sidewalks. The lack of a connected street system, pedestrian amenities and neighborhood serving land uses reduce the likelihood of someone walking in the area. To make the Rocky River Road area more walkable, new developments must include sidewalks on both sides of the street and new or redesigned streets must include pedestrian amenities. This is consistent with subdivision regulations, which require sidewalks on both sides of the street.



\* This map depicts conceptual alignments for proposed connections. Individual connections will be further studied for implementation by the City or through the development process. Some connections may be determined not to be feasible upon further study.

## Bicycle Facilities

The bicycle is becoming a more popular mode of transportation. Like motorists, cyclists often seek the most direct routes to destinations. Because major roadways often provide the most direct travel routes, it is important to provide bicycle lanes along roads when possible.

Bicycle lanes identify roadway space for cyclists and decrease the intimidation many feel when sharing the road with higher traffic volumes. Streets with low traffic volumes and lower speed limits can typically be shared safely by bicyclists and motorists. They readily accommodate bicyclists with signs identifying routes.

Currently, the Rocky River Road area is not bicycle-friendly. However, as new subdivisions are developed in a more connected way, roads are built or improved to accommodate bicycle lanes and the regional greenway trail system is developed; the area will likely become bicycle-friendly. The presence of trails, bike lanes, bike routes, bike parking, destination points and a connected network with moderate travel speeds all influence the decision to use bicycles for transportation. As a part of this plan, staff worked with stakeholders to develop a network of future bikeways (see *Figure 32, Proposed Bicycle Facilities Map*).

## Streets and Intersections

Streets serve to move motor vehicles and help frame communities. The connected block structure works to provide direct and convenient routes of travel and allows for an efficient mixture of land uses. Streets also

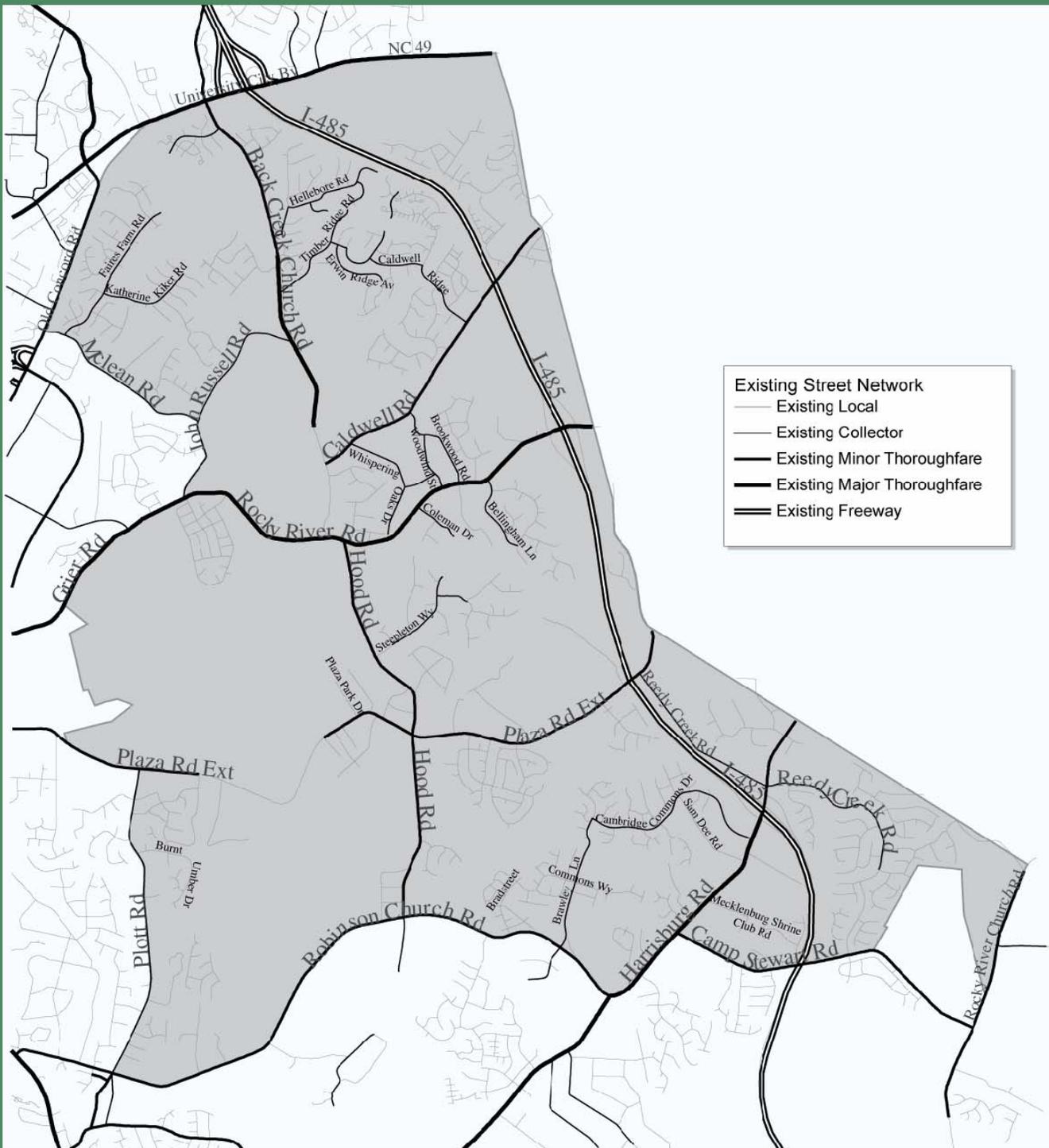
influence the aesthetic, historic, cultural and physical characteristics of an area.

The Rocky River Road area street network can be characterized as a predominantly two-lane farm-to-market (rural) system of streets with some major roadways servicing the area. *Figure 30* illustrates the existing street network.

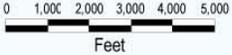
As part of the *Rocky River Road Area Plan* analysis, staff analyzed 2025 transportation conditions to reflect a highly connected development pattern and a more conventional development pattern. The analysis assumed that all the transportation improvements included in the 2025 Long Range Transportation Plan were funded and completed by 2025. Under current funding resources, this is an optimistic assumption and it is likely that key projects in the area will not be implemented in a timely fashion. The analysis indicated that there will be significantly less congestion under the connected development pattern and significant traffic congestion along several corridors under the conventional development pattern.

As the Rocky River Road area continues to develop, additional transportation improvements like the proposed Eastern Circumferential and other projects must be implemented in a timely fashion to keep pace with travel demand in the area (see *Figure 31, Rocky River Area Plan Road Improvements*). Equally important is that future development is well connected to reduce trip distances and dependency upon the thoroughfare system.

# Figure 30: Existing Street Network



- Existing Street Network**
- Existing Local
  - Existing Collector
  - Existing Minor Thoroughfare
  - Existing Major Thoroughfare
  - Existing Freeway



Produced by the Charlotte-Mecklenburg Planning Commission. September 20, 2005

## Planned Transportation Improvements

Growth in the Rocky River Road area is expected to increase significantly over the next twenty years. Estimates reveal that the area's population is anticipated to increase by 392.67% between 2004 (19,943 estimated population) and the year 2025 (78,311 estimated population). The ability to take trips within and through the area could be compromised if additional infrastructure does not keep pace with development.

The existing street network is becoming increasingly challenged by the area's population growth. Escalating congestion is compounded by an over-reliance on two-lane farm-to-market roads with limited left-turn accommodations. In order to have the capacity to accommodate anticipated growth; roads will need to be improved, new collector/connector streets constructed and new developments must include a series of interconnected local streets.

A system of interconnected collector and local streets combined with thoroughfare improvements will provide the needed capacity to moderate congestion on area major thoroughfares. As new streets are built and existing streets are widened, special consideration should be given to sidewalk, bike lanes and trail connections to create a more multi-modal transportation system and a more livable community. *Table 4 and Figure 31, Road Improvements* details the current timetable of the area's proposed transportation improvement.

### ***NC Moving Ahead***

NCDOT currently has an initiative underway that is expected to make an impact on road improvements in North Carolina. This program, "NC Moving Ahead," is to direct approximately \$700 million to road improvements (*see Table 4, Roadway Improvements*). Those funds are to be used for highway *maintenance*

(resurface and rehabilitate highways across the state in rural and urban areas), *modernization* (widen lanes and shoulders, build turn lanes, improve intersections, replace substandard bridges and upgrade traffic signal systems across the state) and public *transportation* (fund regional rail systems in the Charlotte metropolitan area, the Triangle and the Triad and modernize the aging public transportation infrastructure across the state).

Funding for this program is from approximately \$700 million in bonds that were sold. Two roads in the Rocky River Road area (Rocky River and Harrisburg Roads) are slated to receive NC Moving Ahead funding for improvements.

### ***State, Local and Developer Projects***

State, local and developer projects will contribute to short and long term improvements to roads in the area (*see Table 4, Planned Roadway Improvements and Figure 31, Road Improvements Map*). Many of the state and local government projects can be found in the Transportation Improvement Program (TIP) and 2030 Long Range Transportation Plan (LRTP). The *City's Transportation Action Plan (TAP)* could help advance key transportation projects within the area, if fully funded by the City.

### ***Transportation Improvement Program (TIP)***

The TIP lists all anticipated federally funded and non-federally funded projects that are regionally significant. In addition, the TIP documents the anticipated schedule and cost of each project phase (preliminary engineering, final design, right-of-way acquisition and construction). The TIP is required by federal law (Transportation Equity Act for the 21<sup>st</sup> Century, or TEA-21) and represents prioritized transportation improvements. Projects must be financially constrained to the amount of funds that are

expected to be available. A minimal amount of roadway enhancements will be done by developers who agree to make improvements as a part of their respective projects.

***Long Range Transportation Plan (LRTP)***

The LRTP document sets forth the metropolitan area's long range plan (20 years) for providing *intermodal* mobility to citizens. The plan is based on projected population and employment information for the future. It integrates all components of surface transportation. This includes roads, transit, bicyclists facilities, pedestrian provisions and freight movement.

*Table 4, Roadway Improvements*, lists state, local and developer road projects within the Rocky River Road area anticipated to be constructed between the years 2005 – 2030.

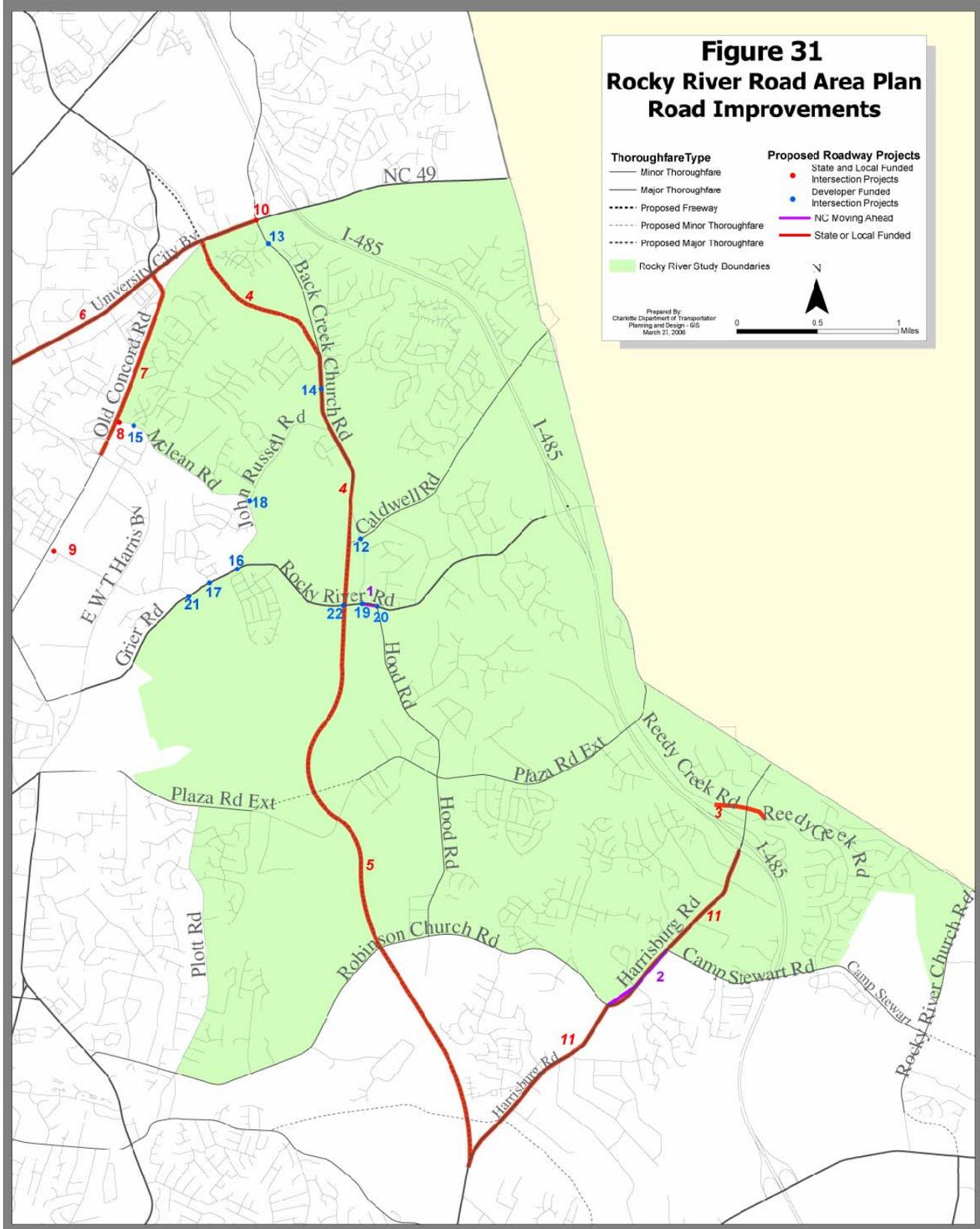
**Table 4: Road Improvements Chart**

Project Location	Description	Estimated Completion Date
<b>Moving Ahead Projects</b>		
1. Rocky River Road (SR 2828/2802) (NCMA#: MA10191R)	Back Creek Church Road to Hood Road - Construct 3-lane section between Back Creek Church and Hood roads, install traffic signal(s)	2007
2. Harrisburg Road (SR 2805) (NCMA#: MA10204R)	Robinson Church Road to Camp Stewart Road - Construct left turn lanes at Robinson Church and Camp Stewart roads, resurface, install traffic signal(s)	2007
<b>State and Local Projects</b>		
3. Reedy Creek (SR 2804) and Harrisburg roads (SR 2805) TIP #: U-4401	Realign Reedy Creek Road to intersect Harrisburg Road further north away from I-485.	2010
4. Eastern Circumferential	NC 49 to Rocky River Road – Construct new four lane road, median, bike lanes	2020/Unfunded
5. Eastern Circumferential	Pence Road to Rocky River Road - Widening, construct new road, four lanes, median, bike lanes	2030/Unfunded
6. University City Boulevard (NC 49)	North Tryon Street (US 29) to I-485 - Widening, six lanes, median, bike lanes	2030/Unfunded
7. Old Concord Road	Harris Boulevard to University City Boulevard (NC 49) - Widening, four lanes, bike lanes	2030/Unfunded
8. McLean/Old Concord roads	NCDOT Rail Division Improvements	2010
9. Rocky River Road	NCDOT Rail Division Improvements to close RR crossing	2010
10. Back Creek Church Road and NC 49 Intersection	Construct second northbound left-turn lane on Back Creek Church Road (Merryhue), construct two left-turn lanes from outbound NC 49 onto Pavilion Boulevard	2007
11. Harrisburg Road Widening	Eastern Circumferential to I-485 - Widening, four lanes, median, bike lanes	2030/Unfunded
<b>Developer Improvements</b>		
12. Back Creek Church /Caldwell roads Intersection	Southbound left-turn lane on Back Creek Church Road, westbound right-turn lane on Caldwell Road, lower hill on north side of intersection to improve sight distance.	In permit review/2006
13. Back Creek Church Road/Hanberry Boulevard Intersection	Northbound left-turn lane on Back Creek Church Road	Linked to Merryhue development
14. Back Creek Church /Timber Ridge roads Intersection	Southbound left-turn lane on Back Creek Church Road, westbound left-turn lane on Timber Ridge Road	2006
15. Faires Farm/McLean roads Intersection	Eastbound left-turn lane on McLean Road	Linked to Merryhue development/TBD

Project Location	Description	Estimated Completion Date
16. Rocky River/John Russell roads Intersection Relocation	Relocate John Russell Road to intersect perpendicularly with Rocky River Road, construct 2 <sup>nd</sup> eastbound through lane on Rocky River Road across from Buckleigh Subdivision; eastbound left-turn lane, westbound left-turn lane, westbound right-turn lane, and eastbound right-turn lane all on Rocky River Road, right-turn lane on Rocky River Road	2006
17. Rocky River Road/Seven Oaks/Reedy Creek Park Driveway	Westbound and eastbound left-turn lanes on Rocky River Road	2006
18. McLean/John Russell roads Intersection	Left-turn lane on northbound John Russell Road onto northbound McLean Road	TBD
19. Rocky River/Back Creek Church roads Intersection	Left-turn lane on eastbound Rocky River Road onto northbound Back Creek Church [linked to Village of Seven Oaks rezoning, 05-21], left-turn lane on southbound Back Creek Church onto eastbound Rocky River Road [linked to JDH rezoning, 05-27], traffic signal [linked to JDH rezoning, 05-27]	TBD
20. Rocky River/Hood roads Intersection	Construct a right-turn lane on eastbound Rocky River Road onto southbound Hood Road [linked to Village of Seven Oaks rezoning, 05-21] Install a traffic signal [linked to JDH rezoning, 05-27]	TBD
21. Rocky River/Grier roads Intersection	Construct dual left-turn lanes from eastbound Rocky River Road to eastbound Rocky River Road, widen eastbound Rocky River Road to 2 lanes to receive dual lefts	TBD
22. Rocky River/Eastern Circumferential roads Intersection	Construct 2 lanes of Eastern Circumferential on 4-lane right-of-way to serve JDH site, construct left-turn lane on westbound Rocky River Road to southbound Eastern Circumferential, construct east-west collector street parallel to Rocky River Road on rear side of JDH site between Eastern Circumferential and Hood roads	TBD

*Other improvements to the Rocky River Road Area Street Network may result from the rezoning process and built as development of the respective projects occurs.*

**Figure 31  
Rocky River Road Area Plan  
Road Improvements**



## Basic Roadway Design Considerations

Most design elements for future streets and intersections within the City of Charlotte and its extra-territorial jurisdiction (ETJ) will be governed by the proposed *Urban Street Design Guidelines* and design guidelines included in this plan. The *Urban Street Design Guidelines* apply to all streets in Mecklenburg County and are not limited to urban areas. These guidelines will assist the City in creating “complete streets” by accommodating a variety of travel modes that reflect the appropriate street function for the surrounding land uses.

During the planning process, area residents expressed significant concern about the design elements that will be considered for the proposed road improvements and streets that will be built as development occurs. Specific questions were raised about the potential street elements for the proposed Eastern Circumferential and the Rocky River Road corridors. Both staff and area residents share the desire to create neighborhood-friendly streets for the area. The recommended roadway design elements will be described in detail in the implementation section of this document.

## Transportation Goals and Recommendations

Staff worked closely with the Rocky River Road area residents in developing the following goals and recommendations. The City of Charlotte and Rocky River Road Area residents understand that the area will undergo significant growth in the next several decades. This growth will require a substantial increase in street capacity in the Rocky River Road Area including the need for a denser street network to provide a safe, connected, and multi-modal transportation system that will adequately meet the needs

of Rocky River Area. The following recommendations will help to achieve the vision for the area:

### Connectivity

**Goal:** Improve the area’s connectivity ratio from 1.1 to greater than 1.35 by 2015.

#### Recommendation:

Create a dense street network that offers multiple route options, shorter travel distances and shorter block lengths.

### Pedestrian Facilities

**Goal:** Ensure that new development and streets include appropriate sidewalk and pedestrian features.

#### Recommendations:

- Work with NCDOT to design roadways that include sidewalks and pedestrian features consistent with the proposed *Urban Street Design Guidelines*.
- Encourage pedestrian connections to greenways.
- Improve pedestrian safety and amenities at signalized intersections.
- Construct additional sidewalks to complete “gaps” in sidewalk through the City’s sidewalk program.

### Bicycle Facilities

**Goal:** Construct bicycle facilities along new and improved roads and greenways.

#### Recommendations:

- Ensure that all new thoroughfare and non-residential collector street construction, including NCDOT roads, include bicycle lanes as recommended in this plan (*see Bicycle Facilities, Figure 32*).
- Encourage bike paths and connections to the existing and proposed greenway system.

## **Streets and Intersections**

**Goal:** Advance area road projects.

### **Recommendations:**

- Advance construction of the following road projects:
  - Rocky River Road improvements
  - Proposed Eastern Circumferential construction
  - University City Boulevard (NC Highway 49) widening
- Seek additional funding sources to advance other Rocky River Road area transportation projects.
- Design streets and intersections that are denser and provide for shorter trip distances.

**Goal:** Create a highly-connected and dense thoroughfare, collector and local street network to accommodate local trips and reduce trip distances between land uses.

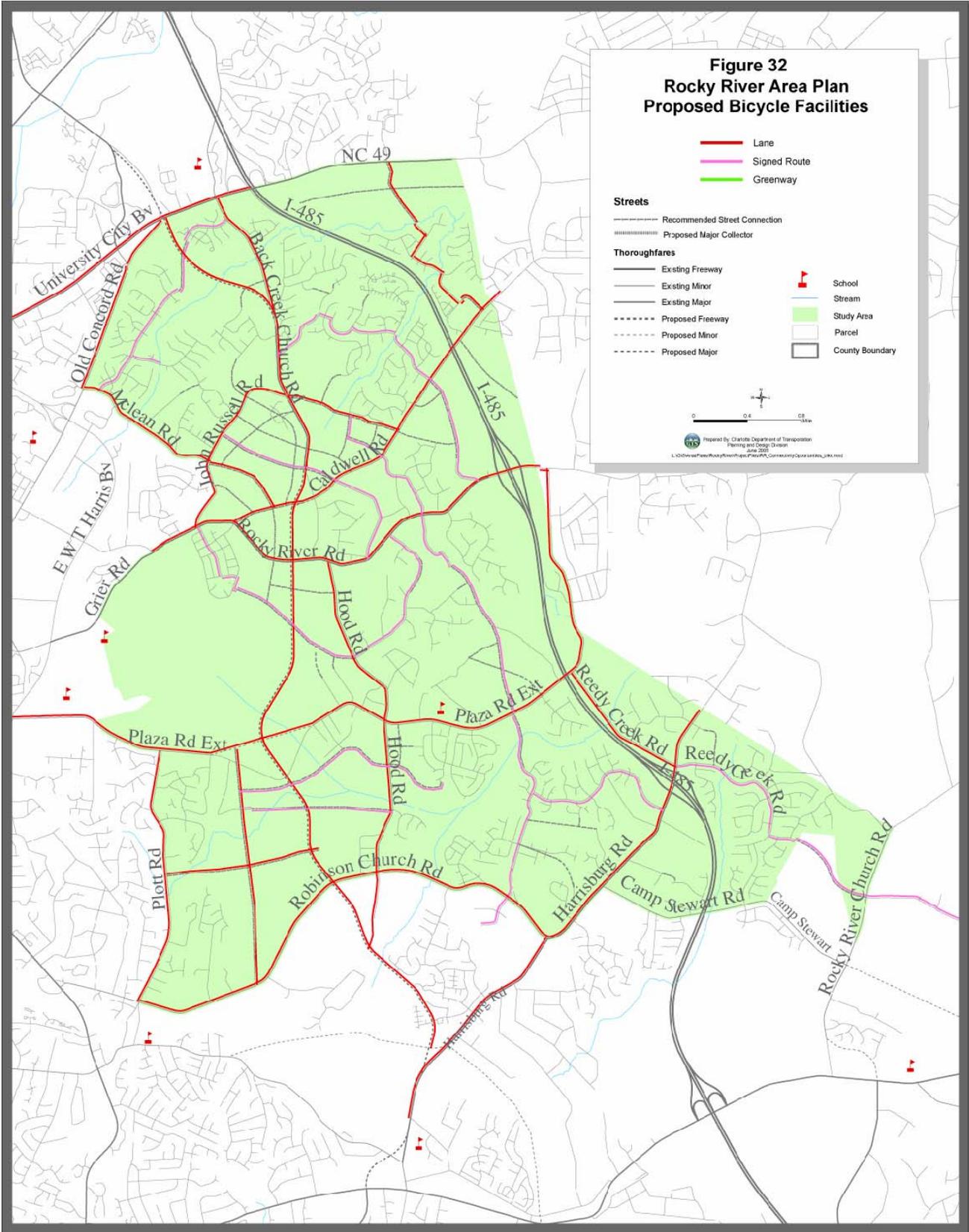
### **Recommendations:**

- Provide travel choices by enabling shorter and more direct trips, reducing impacts on the thoroughfare system.
- Seek to protect thoroughfare capacity by ensuring that new developments reserve and/or dedicate right-of-way as identified in the Mecklenburg-Union Thoroughfare Plan and City Collector Street Plan.

**Goal:** Improve regional and state coordination of road projects.

### **Recommendation:**

Continue to strengthen the regional long-range transportation planning efforts with the Mecklenburg Union Metropolitan Planning Organization (MUMPO), Cabarrus County, local, state and regional transportation organizations to advance area transportation projects.



# Transit

## Existing Conditions

The Charlotte Area Transit System (CATS) provides one fixed-route with service along the edge of the Rocky River Road community. Route 11 North Tryon/UNCC operates along portions of the northern boundary of the study area. During Fiscal Year 2004-2005 the entire route carried approximately one million passengers.

CATS does not have immediate plans to expand the existing bus service in this area. However: CATS is currently updating the *Countywide Transit Services Plan*, a short-range service planning policy guide used to establish priorities for managing and improving day-to-day operations of transit services over the next five years.

The Rocky River Road community is located near the proposed Northeast Rapid Transit Corridor. The Northeast Corridor Light Rail Project, one of Charlotte's five rapid transit corridors, is proposed to extend 14 miles from the Center City through the North Davidson (NoDa) and University areas (along US Highway 29) to I-485 north of UNC-Charlotte. The dual track system is considered an extension of the South Corridor with 13 proposed stations.

A Draft Environmental Impact Statement (DEIS) is currently underway for the Northeast Corridor Rapid Transit Project. The DEIS will identify any environmental impacts that would be created by the rapid transit project. During this process alignment and station locations will be determined. When the DEIS is completed, application for funding will be made to the Federal Transit Administration (FTA).

Once the Northeast Corridor Rapid Transit Project is operating, revisions to the existing fixed-route bus service in the Rocky River

Road community will be needed to coordinate transit service between the bus and rapid transit modes. Bus routes will continue to serve the community, and where practicable will connect the Rocky River Road community with the rapid transit stations. CATS will seek significant public input prior to finalizing any proposed route revisions for bus-rail integration services in the Northeast Corridor

## Transit Goals and Recommendations



**Goal:** Expand transit service in the area.

### Recommendations:

- Maintain bus coverage in the area.
- Create future transit service opportunities by incorporating transit stop infrastructure along the proposed Eastern Circumferential, University City Boulevard, Rocky River Road and other major and minor thoroughfares as development occurs.
- Improve access to future rapid transit stations for area residents.

**Goal:** Integrate transit and land use plans.

### Recommendations:

Create nodes of higher intensity development and destinations that can be served with transit in the future (as indicated in the Land Use Recommendation section of this document).

## Public Facilities

Throughout the planning process stakeholders identified the lack of adequate sewer service and facilities such as police, and fire stations, libraries, schools, and recreational facilities as needs to serve the existing and projected population.

## Existing Conditions

### Water and Sewer

While Charlotte-Mecklenburg Utilities (CMU) currently provides water service to portions of the area, providing sewer service has been a challenge. This is due primarily to the fact that the study area straddles two major river basins, Catawba and Rocky River. There is a ridge line that separates the two basins. The majority of Mecklenburg County is located within the Catawba River basin which flows west of the ridge line; however, a large portion of the study area is located within the Rocky River Basin which is not currently served by public sewer. Because this basin flows east of the ridge line, it requires sewer to flow into Cabarrus County, necessitating a pump station or a major pipeline into Cabarrus County, which is a very expensive endeavor.

Several private and public sewer systems are located within the Reedy Creek drainage basin. Each system consists of a collection discharging to a pump station/force main or wastewater treatment plant and has the potential to connect with the proposed Reedy Creek Interceptor.

However, CMU generally discourages building private sewer and water systems within Mecklenburg County. Primarily, because if there is infrastructure in place when the City annexes an area, CMU generally buys the system. The pipes are not built to CMU standards and often have to be upgraded or replaced. Typically, CMU's water systems are designed to

handle higher water pressure than private lines. Also, most private systems don't have the capacity to provide the fire protection that the City requires (pipes may be too small or fire hydrants inadequate).

### Reedy Creek Interceptor

Charlotte-Mecklenburg Utilities is planning a new sanitary sewer interceptor along Reedy Creek and McKee Creek to bring public sewer service to properties within the Reedy Creek Basin. This project will provide a long-term solution to serving growth, while protecting the water quality of the region.

This project will convey water to the Rocky River Regional Wastewater Treatment Plant in Cabarrus County for disposal. However, this project has been placed on hold due to historical accounts of the presence of the federally endangered Carolina heelsplitter mussel. Extension of sewer in this area may pose a threat to this endangered species.

The Reedy Creek Inceptor will consist of approximately 44,000 linear feet of 30" through 54" piping with an estimated cost of \$13,600,000. The Reedy Creek Interceptor and Pump Station will receive the wastewater flow from the Reedy/McKee Interceptors located in Mecklenburg County and transport the wastewater to the Rocky River Wastewater Treatment plant in Cabarrus County.

## **Reedy Creek Basin Sanitary Sewer Project**

This project consists of approximately 33,000 linear feet of 12” – 36” sanitary sewer outfalls. The project will begin at a sanitary sewer measuring station located near the Mecklenburg/Cabarrus County Line and extend westerly along Reedy Creek to Plott Road. The project also includes the Reedy Creek Tributary #2 which will extend from Reedy Creek to Pine Circle. Total estimated cost for these wastewater facilities is \$9,200,000.

A benefit of the Reedy Creek Basin Sanitary Sewer Project is the elimination of the existing Plott Road and Kingstree sanitary Sewer Pumping Stations, which are currently owned and maintained by CMU. If the proposed public wastewater facilities are not constructed, the number of smaller privately owned and maintained wastewater facilities (pump stations and package treatment plants) will continue to increase.

In late 2003, the **Crozier Trunk branch** was added to this project. This trunk is roughly 5500’ of 15’ pipe (1500’ in Mecklenburg County). The need for this trunk became apparent during a recent study of potential future annexation areas. If this trunk is delayed it will increase annexation costs, or even make it necessary to install a sanitary sewer pumping station in the future to provide service to this area.

## **Schools**

School overcrowding is an ongoing issue for Charlotte-Mecklenburg and this area is no exception. The impact of population growth and increase in the number of residential subdivisions developed in recent years contribute to the need for additional schools in this area.



*Reedy Creek Elementary School*

Charlotte-Mecklenburg Schools (CMS) provides a student assignment plan that offers students within the study area a guaranteed seat at their home school and options to apply to Magnet Programs in the district and to other non magnet schools with space.

Reedy Creek Elementary School, located along Plaza Road Extension, is the only public school facility located within the study area boundaries. This school has approximately 725 students – generally, new elementary schools have a capacity of 800 students but Reedy Creek Elementary School has a building capacity of only 660 students.

Joseph W. Grier Elementary School, located on Grier Road, and Northridge Middle School, located on Plaza Road Extension are located just outside the study area.

CMS has identified the need for two elementary schools within the study area. One located in the Robinson Church Road vicinity approximately one and a half miles southwest of Reedy Creek Elementary

School. Another area identified as appropriate for an elementary school is the Back Creek Church Road/John Russell Road area. Mecklenburg County Park and Recreation currently plans to develop a district park in this area and this could be a park/school joint use opportunity. CMS expects that both of these elementary schools will be needed by August 2010.

Likewise, CMS has identified a need for a middle school within the study area by August 2010. The middle school search area is located in the John Russell Road area. This area is approximately two miles northeast of Northridge Middle School.

Growth in this area also warrants a high school and CMS has identified the Hood Road/Plaza Road Extension area as an appropriate area to locate a high school. This area is approximately four and a half miles southeast of the nearest high school and it is anticipated that a high school will be needed by 2013.

All school search areas are illustrated on *Figure 24, Rocky River Adopted Future Land Use Map*.

## Police

The study area is located in the Charlie 3 Patrol District of the Charlotte-Mecklenburg Police Department. This district is generally bounded by University City Boulevard to the north, Albemarle Road to the south, the Mecklenburg/Cabarrus County line to the east and North Tryon Street/Eastway Drive to the west. The Charlie 3 District is divided into 4 response areas and the majority of the study area is located in the Hickory Grove 4 response area. The district office opened in February of 2002 at 5727A North Sharon Amity Road.

## Fire

Station 34 is located on Rocky River Road adjacent to Reedy Creek Park and Nature Preserve near Joseph W. Grier Elementary School. It opened as a result of the July 2001 annexation in a temporary facility. The permanent station opened in the summer of 2003. This station serves a mostly residential area of northeast Charlotte including the University Area and the Newell community. The Charlotte Fire Department's benchmark is to reach 80 percent of all emergency calls within 6 minutes. So far in FY06, Engine 34 is meeting the benchmark at 62 percent.



**Fire Station 34**

The Robinson Volunteer Fire Department serves an unincorporated part of Mecklenburg County from the Charlotte City Limit to Cabarrus County. This Fire District is bordered to the north by Newell Volunteer Fire Department. The departments coordinate to serve this unincorporated portion of the County.

## Libraries

There is not a public library located within the study area. However, the University City Regional Branch is located northwest of the study area at the intersection of NC Highway 49 and Harris Boulevard.

## Parks and Open Space

Existing recreational amenities in the area include Reedy Creek Park and Nature Preserve and Back Creek Greenway. Portions of Back Creek and Reedy Creek are identified in the Mecklenburg County Greenway Master Plan as potential greenway trail locations, but are not currently developed. The amount of undeveloped land in the area presents many opportunities for open space preservation and recreational amenities.



Reedy Creek Park is comprised of 125 acres and Reedy Creek Nature Preserve is comprised of 727 acres. The Preserve provides passive outdoor recreational opportunities compatible with the protection of the natural area as well as a site for educational activities and the observation of wildlife and natural communities. The Preserve protects the major tributaries of Reedy Creek, a natural heritage site, and areas of cultural significance including the ruins of the Robinson Rockhouse.

Park amenities include athletic fields, picnic shelters, playgrounds, fishing ponds, disc golf course, two volleyball courts, basketball court and a dog park. Reedy Creek Nature Center, located in the Nature Preserve, features live, native animals, exhibit hall, classroom, backyard habitat garden and offers environmental education programs and services.

The proposed Eastern Circumferential road is proposed to bisect Reedy Creek Nature Preserve. Mecklenburg County Park and Recreation staff is concerned about the environmental impact of this type of road transversing park land and would like to see the alignment reviewed and shifted. The proposed alignment would impact a population of Georgia aster (*Symphyotrichum georgianum*), a candidate for the federal endangered species list, and one of the last know nesting locations in Mecklenburg County for Kentucky warbler (*Oporornis formosus*), a species of high conservation concern. The proposed alignment also bisects the Robinson Rock House Plantation, a circa 1790 site that has been nominated for listing on the National Register of Historic Places.



*Reedy Creek Park is home to one of the few dog parks in the county*

Mecklenburg County has acquired approximately 80 acres for the proposed Back Creek District Park, off Back Creek Church Road at Back Creek. The park is to connect directly with the proposed greenway along a tributary of Back Creek which is to extend through several neighborhoods east and northeast of the park site. An elementary school is also planned for this area, presenting an opportunity for joint use (*see Figure 24, Adopted Future Land Use Map*).

Currently, Park and Recreation owns approximately 50 acres for development of Back Creek Greenway. In the 1999 Greenway Master Plan, Back Creek Greenway is proposed to stretch 5.7 miles, from the Cabarrus County Line southwest to Reedy Creek Park and Nature Preserve. Due to environmentally sensitive site conditions, Back Creek Greenway will most likely align with the main entrance of Reedy Creek Park and Nature Preserve off of Rocky River Road. Any connection to trails within the nature preserve would be pedestrian-only as bicycles are prohibited along trails in the Preserve.

As the greenway crosses Back Creek Church Road, Back Creek Swamp, a Mecklenburg County Natural Heritage Site, spans both sides of Back Creek. The estimated total acreage of the site is between 100 and 150 acres. An additional 37 acres within the Old Stone Crossing subdivision has been dedicated to the greenway system. The dedication is adjacent to the future Back Creek District Park.

## Public Facilities Goals and Recommendations

### Water and Sewer

**Goal:** Provide necessary sewer infrastructure to support future growth and development.

**Recommendation:**

Complete the Reedy Creek Basin Sanitary Sewer Project and Reedy Creek Interceptor to protect the area's water quality.

**Goal:** Provide efficient and environmentally sound storm drainage facilities.

**Recommendations:**

- Develop adequate storm draining systems to serve existing and future developments.
- Encourage the use of natural storm water drainage systems to preserve and enhance the natural features of a site when possible.

### Schools

**Goal:** Develop school facilities to meet the needs of the area.

**Recommendations:**

- Encourage CMS, the City, and area residents to work with developers to reserve land for school sites when possible.
- Consider locating schools adjacent to parks, libraries, and other public facilities and support the joint use of these facilities.

## Police, Fire and Libraries

**Goal:** Provide public facilities to maintain and improve service levels and the quality of life for existing and future residents.

### Recommendations:

- Encourage the development of public service facilities such as fire stations, police substations and libraries as needed to serve the growing population.
- Promote joint use of facilities to reduce cost and make the best use of resources.

## Parks and Open Space

**Goal:** Provide additional open space/recreational facilities and improve access to existing recreational amenities in the area.

### Recommendations:

- Work with area residents to develop Back Creek District Park.
- Work with Park and Recreation to acquire property for the expansion of Reedy Creek Park and Nature Preserve to include property on the easterly side of the park as shown on *Figure 23, #3C*.
- Continue to develop greenway system along area creeks.
- Provide greenway connection between Reedy Creek Park and the proposed Back Creek District Park.
- Provide additional pedestrian and bicycle access to Reedy Creek Park and Nature Preserve from Plaza Road Extension.

## Environment

### Existing Conditions

The Rocky River Road area is one of the few remaining areas in Charlotte's jurisdiction that has a significant amount of undeveloped land. Future growth and development can harm the area's natural resources if it does not occur in an environmentally sensitive manner. Potential impacts include increased impervious surface resulting in water run-off which collects and carries pollutants to streams and erodes the natural stream channel, impacting aquatic life. Increased vehicle trips contribute to air quality problems while the loss of tree canopy, habitat, animal and plant species impacts land quality.

### Air Quality

Mecklenburg County's air quality is most significantly affected by ozone and particulate matter. Since the 1980s, the County has consistently exceeded the 8-hour ozone standard, which is set by the Environmental Protection Agency (EPA). As a consequence, the EPA designated the County and surrounding areas as an ozone "non-attainment" area in 2004. Since the EPA's standards for ozone and other pollutants are based upon public health and welfare thresholds, this means that multiple days a year the air is unhealthy to breathe, particularly for sensitive groups. Fine particulate matter affects air quality issues, and this is important because the County hovers near the **standard** for that pollutant.

Mobile sources, primarily cars, are the main culprit for the County's air quality problems. Therefore, improving air quality is directly contingent upon reducing the time and distance individuals spend traveling in automobiles, also called vehicle miles traveled (VMT) per capita (per person). Strategies in this plan to reduce VMT per capita include:

- concentrating an appropriate mix of land uses in close proximity to one another;
- developing vacant land with more intensive land uses that take advantage of existing infrastructure investments;
- providing the infrastructure and density in key locations to support alternative modes of transportation, including bicycling, walking, riding transit; and
- shortening travel distance by increasing street connections.

While these strategies have the most impact when employed on a regional level, implementation of them in the Rocky River Road area will contribute to improving our overall environment.

## Land Quality

Charlotte is estimated to be the tenth fastest growing Metropolitan Statistical Areas (MSA) in America. As Mecklenburg County becomes more urban in character, its land resources are threatened. Since 1960, Charlotte's population has grown 168%, while the land area has increased by 274%. This suggests a sprawling land development pattern compared to earlier, more compact development.

When land is developed, environmental features that are critical to the ecosystem function and quality of life are lost. For example, according to American Forest between 1984 and 2001, Mecklenburg County lost 22% of its tree canopy, an asset vital for natural habitat, water quality, air quality and energy efficiency. American Forest recommends a 40 to 55% tree cover and Charlotte's tree cover is 53%. As the area continues to grow, tree cover will be impacted substantially. As a result of this rapid growth, two important land quality issues emerge that impact Mecklenburg County and the greater Charlotte region:

1. How can we use land most efficiently?
2. What environmentally sensitive areas should we be protecting?

Much of the existing development in the plan area was constructed before central sewer was available. The residential lots had to be large to accommodate septic tanks with drainfields. This low density development pattern allowed trees to remain and disturbed less land; however, it is a development pattern that drives up VMT, with resultant air quality impacts. In effect, it is an inefficient use of land.

Back Creek, along with Reedy Creek and several of its tributaries are proposed for inclusion in the County's greenway system. These streams and their floodplains provide habitat and movement corridors for wildlife. Preserving these corridors has numerous environmental and flood prevention benefits. Unfortunately, the laws of physics and gravity sewers mean that these corridors also need to be utilized for sewer pipes. Other environmentally sensitive areas will be identified by public or private agencies or during the development process.

During the *Rocky River Road Area Plan* planning process, stakeholders expressed concern about the pattern of development in the area, the environment and tree loss.

## Water Quality

Mecklenburg County has over 2,000 miles of streams and 197 miles of lake shore. However, during 2002-2003, the Mecklenburg County Water Quality Program calculated that only 33 percent of the monitored streams in Mecklenburg County were suitable for prolonged human contact.

The three major creeks in the area are Back Creek, Reedy Creek and McKee Creek. In general, the three rated “Good/Excellent”. Their Water Quality Index ratings have been steady or improving. Furthermore, the Highbank Chub is an intolerant species that is present in all three creeks, indicating good water quality.

However, there are exceedances for various pollutants. McKee Creek is the most developed watershed and has suffered from streambank erosion and channel cutting, with an associated increase in turbidity.

All three creeks have been documented to have had a historical presence of the Carolina heelsplitter, an endangered species. Federal and state environmental agencies are seeking to protect the existing heelsplitter population and to ensure the species’ survival. They identify water quality conditions that would allow the heelsplitter to re-populate creeks in the Rocky River Basin. Because of concern over this species, the Reedy and McKee Creek sewer interceptor project has been put on hold due to an environmental impact finding of “cumulative and secondary impacts” that would result from the growth that the sewer would allow.

These impacts are primarily non-point sources of pollution associated with storm water run-off. In urbanized areas, large expanses of impervious surface, such as roads and parking lots, force storm water into drains and ditches. As the water runs off the land, it carries sediment, oil,

chemicals and other pollutants that degrade water quality in destination streams and lakes. Furthermore, channelized drainage causes the water to move quickly, eroding stream banks and picking up more sediment. An estimated 20% of Mecklenburg’s 530 square miles are covered by impervious surfaces. This percentage is expected to grow; therefore, non-point pollutants must be addressed if water quality is to be improved.

Strategies for reducing the impact of non-point pollution on water quality include:

- minimizing impervious surface area. This reduces the amount of runoff and allows more precipitation to soak into the ground, where it supplies water to the creeks in times of drought;
- improving the quality of stormwater run-off, most commonly through structural best management practices such as retention ponds;
- reducing channel erosion and sedimentation by reducing peak flows in the creeks;
- enforcing Post Construction and Surface Water Improvement and Management (SWIM) Stream Buffer ordinances that regulate how a site is maintained after development.

## Environment Goals and Recommendations

Compared with the rest of the City, the Rocky River Road area has less developed land and therefore more opportunity to protect its environment as development occurs. Its creeks and tree canopy are especially important opportunities.

Many of the following environmental recommendations have multiple and concurrent environmental benefits; therefore, they are not grouped as being specific to air, land or water. Additionally, to these recommendations, adherence to the recommendations in the Urban Design and Transportation sections of this plan as well as the environmental chapter of the *General Development Policies* (currently under development) and the *Post-Construction Ordinance* (currently under development) will help ensure that the environmental impact of new development and redevelopment is minimized.

**Goal:** Encourage environmentally sensitive development.

**Recommendation:**

Encourage well-designed, mixed-use development in accordance with the land use recommendation in this plan that stimulates pedestrian activities, and supports transit use and bicycling.

**Goal:** Provide transportation options that reduce trips and the use of single occupancy vehicles.

**Recommendation:**

Provide access to major activity centers within and outside the planning area and to public transportation.

**Goal:** Preserve tree coverage, native plants and open space amenities.

**Recommendations:**

1. Maintain the area's mature tree canopy. The urban tree canopy provides numerous environmental benefits from absorbing air pollutants to filtering out water pollutants.
2. Expand the park and recreation resources that exist in the Rocky River Road area.

**Goal:** Protect the area's water quality.

**Recommendation:**

Identify environmentally sensitive areas, such as significant wetlands, tree canopy and topography in development site plans and specify measures for protection and/or impact minimization.

## Conclusion

This plan updates land use recommendations in previously adopted plans for the study area. The plan's vision, goals, and recommendations address the growth projected to take place in this community long term.

Volume II: *The Implementation Plan* will serve as the tool to implement recommendations in Volume I: *The Concept Plan*. Implementation of the recommendations in this plan promotes different types of developments at varying densities, provide alternate methods of travel and minimize the environmental impacts of growth and development. Implementation requires the support of elected officials, residents, property owners, staff, the development community, and others.

# **Rocky River Road Area Plan**

## ***Volume II: Implementation Plan***

# IMPLEMENTATION PLAN

## Introduction

This document, Volume II: *The Implementation Plan* outlines actions necessary to implement recommendations in Volume I: *The Concept Plan of the Rocky River Road Area Plan*. Plan implementation will require participation by many with an interest in this community. In some instances, implementation may be the sole responsibility of area residents and property owners, a collaborative effort by neighborhood organizations and the public or private sector or the full responsibility of local governmental agencies. Charlotte City Council will not be asked to adopt *The Implementation Plan*; however, many of the strategies recommended in this plan will require future action by elected officials and will be presented to them for approval as needed.

## Strategies

The implementation strategies focus on the following six key plan areas found in the *Concept Plan*:

1. **Land Use**
2. **Design**
3. **Transportation**
4. **Transit**
5. **Public Facilities**
6. **Environment**

## Land Use

- Utilize the rezoning and subdivision processes to implement the future land use recommendations listed in *Table 3, Land Use Recommendations* in the *Concept Plan* to ensure that proposed development is consistent with land use recommendations for the Rocky River Area. Staff will make recommendations to City Council as to whether proposed rezonings fit the adopted policy framework. In addition, developers and property owners are encouraged to adhere to the land use recommendations when developing properties within the area.

## Design

Design guidelines were developed as a part of the planning process. The design guidelines help to ensure new development complements the existing or desired character of the Rocky River community.

- Use the subdivision and conditional rezoning process to ensure compliance with the design guidelines in the plan.
- Property owners and developers are encouraged to utilize the design guidelines when developing property in this area outside of the rezoning and subdivision process.

## Transportation

### ***Transportation Network and Streetscape Infrastructure Improvements***

Transportation infrastructure has not kept pace with development in the Rocky River Area. Without transportation infrastructure improvements in the near term, the Rocky River Area will become increasingly congested. Following are implementation strategies for the transportation recommendations:

- The City should seek to advance the construction of the following road improvements and seek additional funding sources to advance other Rocky River Road Area transportation projects (*CDOT and Planning*):
  - Rocky River Road Improvements
  - Eastern Circumferential Construction
  - University City Boulevard Widening
  - New connector roads as called for in *Figure 35, Connectivity and Opportunities Map*.
  - Intersection Improvements as needed.
- Use the rezoning and subdivision processes as well as other development opportunities to increase street capacity in the Rocky River Road Area by addressing the need for a denser thoroughfare and collector network. (*CDOT*)

Include local, state and regional transportation agencies in long range transportation planning projects. (*CDOT, Metropolitan-Union Planning Organization (MUMPO) and NCDOT*)

## ***Pedestrian and Bicycle Facilities***

- Identify areas with high levels of pedestrian activity, develop and implement a plan to build sidewalks. (*CDOT and City Engineering and Property Management*).
  - This will be accomplished through a variety of efforts including the City of Charlotte Pedestrian Master Plan which will be completed by December 2007.
  - CDOT will use the Sidewalk Prioritization Process to identify areas with high pedestrian activity.
- Determine appropriate locations and install pedestrian and bicycle connections to greenways at areas throughout the study area. (*CDOT, Park and Recreation, property owners and developers*)
  - This will be accomplished through a variety of efforts including the City of Charlotte Bicycle Plan which will be completed by December 2007.
- Install design elements such as pedestrian countdown signals, special crosswalk treatments, pedestrian-level lighting for sections where feasible and if funding permits, at future signalized intersections and at the following existing signalized intersections: (*CDOT*)
  - Back Creek Church Road and Pavilion Boulevard.
  - McLean Road and Old Concord Road
  - Grier Road and Rocky River Road
- Construct bicycle facilities with the highest priority given to all new thoroughfare and non-residential collector roadways as recommended in the *Rocky River Road Plan*. (*CDOT and NCDOT*)
- All new/widened thoroughfare and non-residential collector roadways will be required to include bicycle lanes. In addition, the Rocky River Future Bicycle Facilities Map in the *Concept Plan* details a

future bicycle facility network for the Rocky River Road area.

- Utilize the proposed *Urban Street Design Guidelines* to ensure that new and reconstructed streets include appropriate sidewalks and pedestrian features consistent with the guidelines. (*Planning, CDOT and NCDOT*)
- Utilize the development review process to ensure that new developments reserve and / or dedicate right-of-way as identified in the *Mecklenburg-Union Thoroughfare Plan* and *City Collector Street Plan*. (*CDOT and CMPC*)

### ***Specific Design Considerations***

(See Appendix for more detail)

- During the planning process, Rocky River residents expressed significant concern about the design elements that will be considered for the proposed road improvements and the additional streets that are built as development occurs. Specific questions were raised about the potential street elements for the Eastern Circumferential and the Rocky River Road corridors. Both staff and the residents recognize the desire to create neighborhood-friendly streets for Rocky River Area residents. The following are recommended design elements that will be considered as road improvements are planned.

- **Eastern Circumferential (Boulevard)**  
Prior to this plan, the design elements for the Eastern Circumferential included four travels with a median and bike lanes. To help improve the pedestrian environment and create a multi-modal corridor the following elements should be considered:

**Posted Speed:** 35-40 mph

**Design Speed:** 40-45 mph

**Travel Lanes:** Two (2) lanes in each direction

**Lane Width:** 11 feet, in addition to the concrete gutter where gutter is present.

**Bicycle Lanes:** 4 feet wide minimum, 5 feet preferred

**Median:** Preferably 17 feet with landscaping

**Sidewalks:** 6 feet minimum with no obstructions

**Planting Strips:** 8 feet between curb and sidewalk

**Block Length:** 1000 feet between signalized intersections

Other elements to consider where appropriate are pedestrian refuge islands, on-street parking, street lighting, bus stops/bus zones and traffic calming.

- **Rocky River Road (Avenue)**  
The near-term improvements for Rocky River Road include the realignment of two existing curves, road widening and resurfacing, and constructing left-turn lanes where needed. Although these improvements will address some existing congestions problems, the improvements do not address the residents' vision for a safe, walkable, multi-modal roadway that could potentially change the rural character of the Rocky River Area. Longer-term improvements may require Rocky River Road to be widened and upgraded to multi-modal standards.

When this improvement takes place, the following design elements should be considered:

**Posted Speed:** 25-35 mph

**Design Speed:** 30-40 mph

**Travel Lanes:** One (1) or two (2) lanes in each direction

**Lane Width:** 11 feet in addition to the gutter, where curb and gutter is present.

**Bicycle Lanes:** 4 feet wide minimum

**Sidewalks:** 6 feet minimum with no obstructions

**Planting Strips:** 8 feet between curb and sidewalk

**Block Length:** 600 feet between signalized intersections

Other elements to consider where appropriate are pedestrian refuge islands, on-street parking, street lighting, bus stops/bus zones and traffic calming.

## Transit

Include Rocky River Road area residents in the public involvement process of the CATS' Countywide Transit Services Plan and Rapid Transit Expansion. (*CATS*)

As development occurs, involve appropriate CATS staff in the rezoning and subdivision processes to incorporate transit stop infrastructure along major and minor thoroughfares. (*Planning and CATS*)

Evaluate the suitability for investments in community transit center facilities, park and ride facilities and access to future rapid transit stations within the Rocky River Road Area community as development occurs. (*CATS*)

## Public Facilities

Public facility agencies should coordinate their short term and long range plans in order to consider opportunities for joint use of future public facilities in the Rocky River Road Area. (*Public and Private Sector*)

### *Utilities*

Develop a schedule for completion of the Reedy Creek Basin Sanitary Sewer Project and Reedy Creek Interceptor. (*Charlotte-Mecklenburg Utilities (CMU)*)

Identify areas with inadequate storm draining systems, develop and implement a plan to improve these systems while using the natural storm water drainage systems to preserve and enhance the natural features of sites. (*CMU and developers*)

### *Schools*

Utilize the rezoning and subdivision processes to reserve land for school sites and coordinate potential school sites with residential developments. (*Charlotte-Mecklenburg Schools (CMS), City Staff, Developers and Area Residents*)

### *Police, Fire and Libraries*

Review current and planned service levels and consider locating additional facilities in the area based on current needs and growth projections. (*Charlotte Fire Department, Charlotte-Mecklenburg Police and Public Library of Charlotte and Mecklenburg County*)

### *Parks and Open Space*

Hold public meetings with area residents to receive input on the design and development of Back Creek District Park. (*Mecklenburg County Park and Recreation and Area Residents*)

Investigate expanding Reedy Creek Park and Nature Preserve to include property on the easterly side of the park (see Figure 23 and

Table 3, #3c). (*Mecklenburg County Park and Recreation*)

Coordinate development of the greenway system along area creeks. (*Mecklenburg County Park and Recreation, Developers and Area Residents*)

Identify location and provide additional pedestrian and bicycle access to Reedy Creek Park and Nature Preserve from Plaza Road Extension. (*Mecklenburg County Park and Recreation and Area Residents*)

Investigate providing vehicular access into Reedy Creek Park off of The Plaza Road Extension. (*Mecklenburg County Park and Recreation and Area Residents*)

## **Environment**

Charlotte-Mecklenburg Planning Commission, City Engineering and Property Management, and Mecklenburg County Land Use and Environmental Services staffs should work together to implement the following strategies:

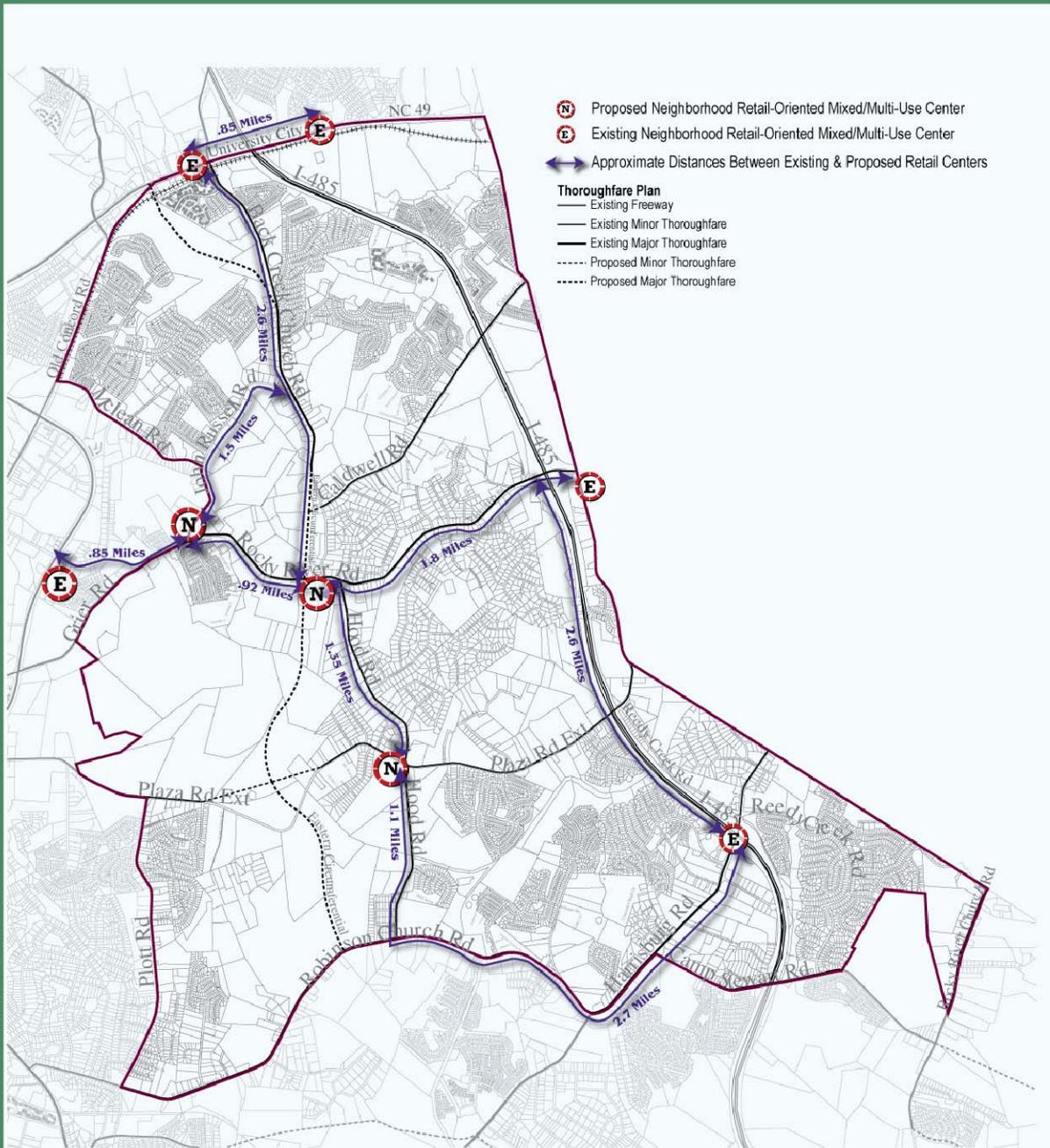
- To help improve the pedestrian environment and create a multi-modal corridor the following elements should be considered:
- Support infill and redevelopment of vacant and underutilized parcels.

- Encourage development to be efficient in using land through a compact development pattern.
- As development occurs, require tree save areas and preservation of trees, native plants and open space amenities.
- Encourage new development to minimize clearing, grading and soil compaction to lessen impacts to environmentally sensitive areas and decrease erosion and sedimentation.
- Utilize floodplains and greenways to link park and recreation resources and environmentally sensitive areas
- Enforce the Surface Water Improvement Management System (SWIM) program buffers, greenway dedication and stormwater management. Encourage the use of native plants in landscaping requirements and erosion control measures.
- Minimize the amount of impervious coverage.
- Adhere to regulations in the post construction ordinances, currently being developed.

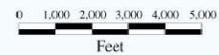
# Rocky River Road Area Plan

## *Appendix*

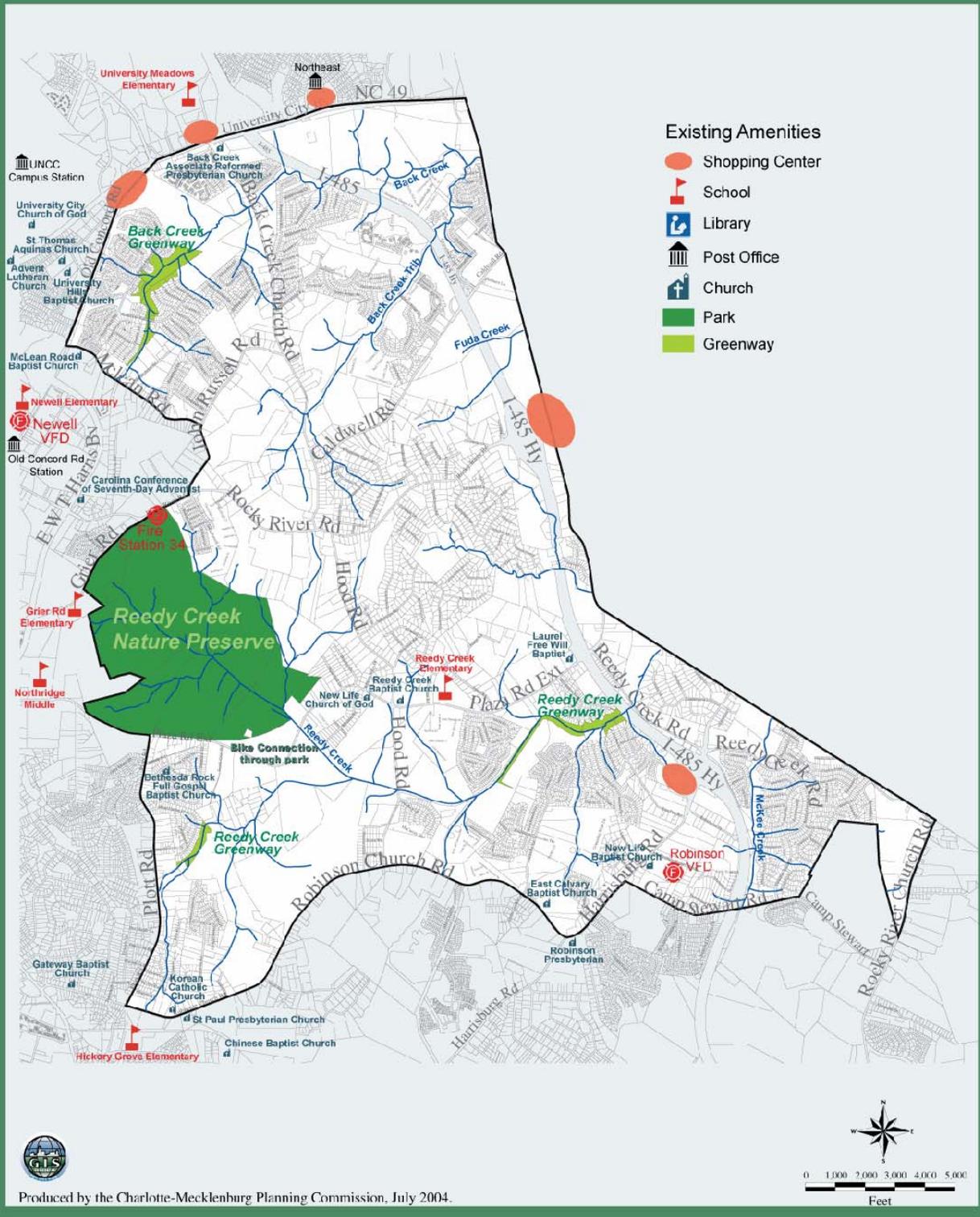
# Figure 33: Existing & Proposed Retail Centers



Produced by the Charlotte-Mecklenburg Planning Commission, March 2006.

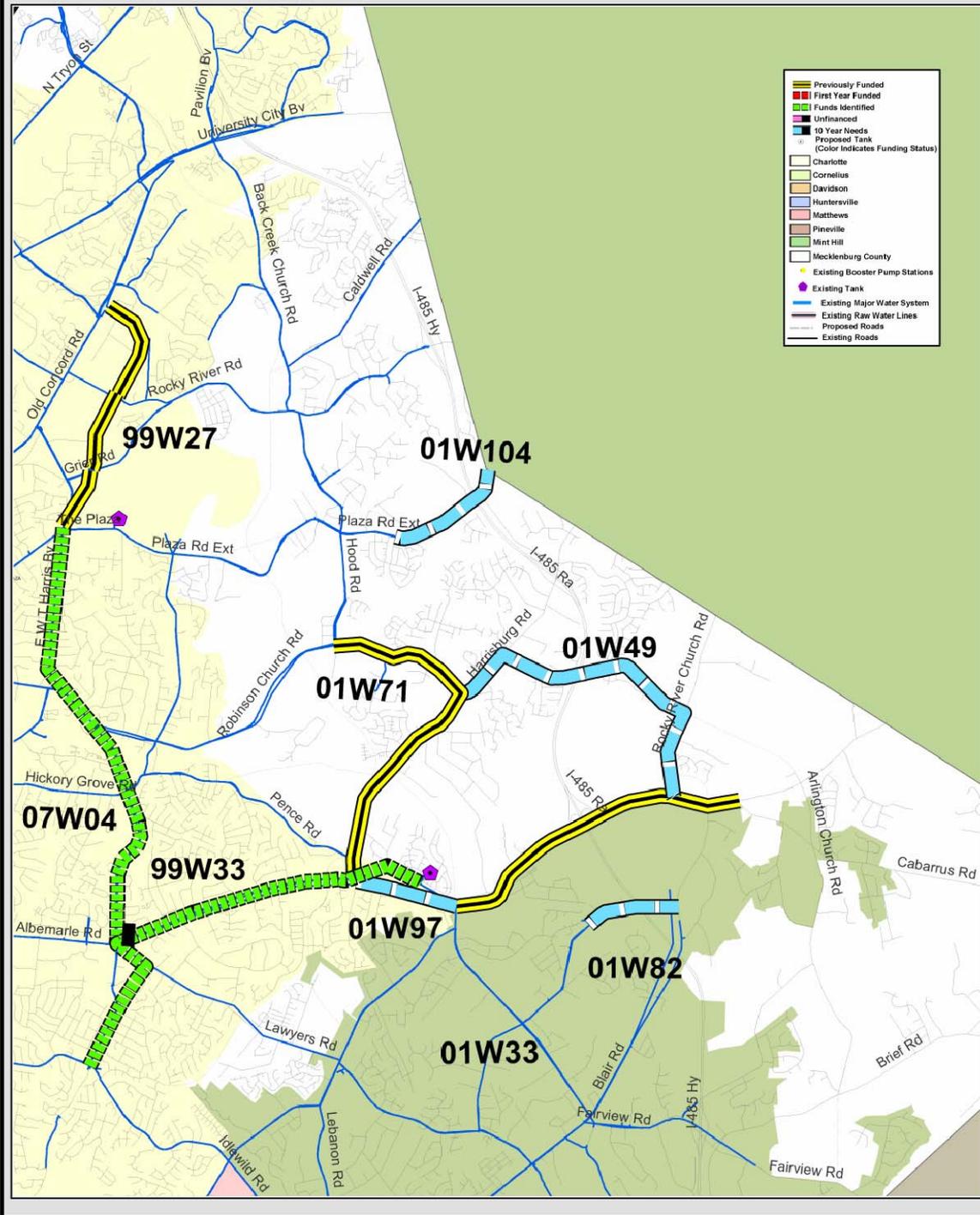


# Figure 34: Public Facilities & Amenities



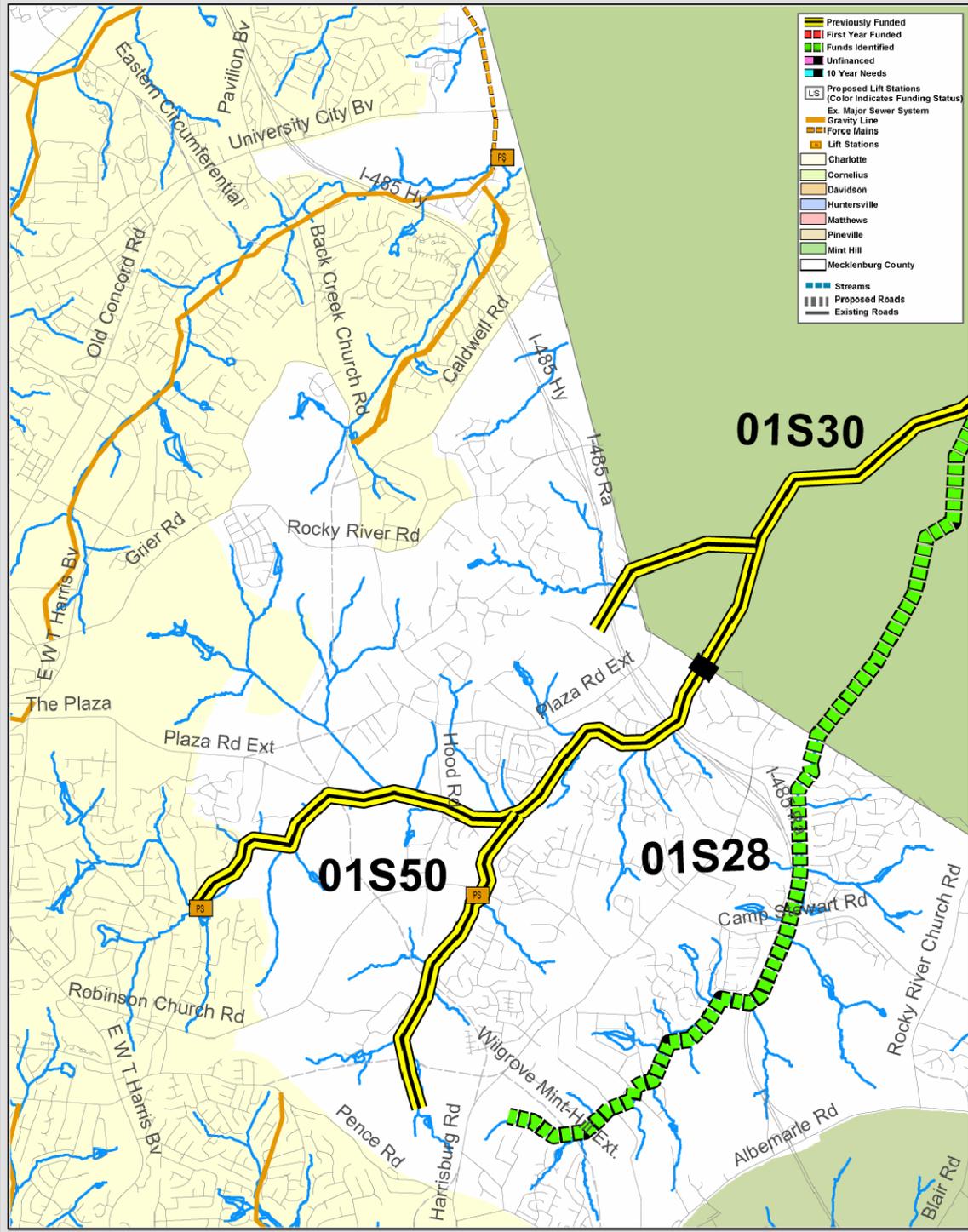
Produced by the Charlotte-Mecklenburg Planning Commission, July 2004.

**Figure 35: Proposed FY 07-11 Capital Improvements & 10 Year Needs Water Projects**



Source: Charlotte-Mecklenburg Utilities Department. February 2006.

**Figure 36: Proposed FY 07-11 Capital Improvements & 10 Year Needs Sewer Projects**



Source: Charlotte-Mecklenburg Utilities Department, February 2006.

# Transportation

## Recommended Street Design Elements

The City of Charlotte and Rocky River Road Area Stakeholders understand that the Rocky River Road Area will undergo significant growth in the next several decades. This growth will require a substantial increase in street capacity in the Rocky River Road Area including the need for a denser thoroughfare, collector and local street network. In order to meet the increased demand for capacity and the desire to have streets that compliment the livability of the area, the following recommendations have been developed to help achieve the community vision. The vision calls for ensuring that the Rocky River Area thoroughfares are designed in a multi-modal fashion with design elements that join the neighborhoods instead of divide them. The recommended design elements are not plans for immediate improvements, but will be considered as road improvements are designed and as additional streets are built as part of new developments.

## Basic Design Considerations

Most design elements for future streets and intersections within the City of Charlotte and its ETJ will be governed by the newly adopted Urban Street Design Guidelines. The Urban Street Design Guidelines will guide the City in creating create “complete streets” by accommodating a variety of travel modes that reflect the appropriate street function for the surrounding land uses.

The City of Charlotte’s comprehensive new Street Design Guidelines are intended to:

- support the City’s adopted Smart Growth Principles,
- respond to Charlotteans’ expressed desire for “better” streets, and
- create streets that are multi-modal, context sensitive, and that recognize the tradeoffs inherent in street design, particularly in retrofit situations.

Among the City’s adopted principles is the desire to “Expand Transportation Choices” through integrated transportation and land use planning. By providing more choices, it is anticipated that Charlotteans will be able to make more trips by walking, cycling, or using transit.

Charlotte’s streets will be classified according to the following typologies:

- Main Streets
- Avenues
- Boulevards
- Parkways
- Local Streets

Each typology includes expectations about its function, the land use context, and the modal emphasis that should be met by its design. For example, a Main Street typology assumes that the surrounding land uses and design will be pedestrian-oriented. Therefore, the modal emphasis in designing the street will be to support pedestrians.

The street types serve as overlays to the existing street classification system and may vary over the length of a street. A thoroughfare might be classified as a higher-volume, higher-speed Boulevard in one section and a lower-speed, commercial Avenue in another section. The overlay concept recognizes that the land uses and street function may vary over the length of any given street and, therefore, the street's design should reflect that variation.

Once a street (or portion of a street) is classified, not only should the street design reflect that classification, but future land use decisions along the street should also reflect that classification. In this sense, street design decisions and land use decisions are to be mutually reinforcing (thereby supporting other integrated planning initiatives).

### **Local Streets**

Local streets will represent the majority of the new streets in the Rocky River Area. Local streets provide access from the larger street network to residential, industrial, or commercial districts, as well as to mixed-use areas. Speeds and motor vehicle traffic volumes are low, which provides a comfortable environment for pedestrians and bicyclists. Local streets are designed to accommodate moderate levels of pedestrian, bicycle, and motor vehicle activity. Ensuring that the local street network is highly connected, combined with key thoroughfare improvements, will be critical to accommodating the travel demand within the Rocky River Area.

### **Main Street**

Main Streets are destination locations that provide access to and function as centers of civic, social, and commercial activity. As the Rocky River Area continues to grow, there will more opportunities to identify locations for Main Streets. Main Streets are designed to provide the highest level of comfort, security and access to pedestrian traffic and activity. Along the street, sidewalks are generous, with street trees provided for shade and to permit a sense of enclosure. Development along Main Streets is dense and focuses on the pedestrian realm. Buildings are placed close to the street, with windows and doors fronting onto the sidewalk. Land uses on Main Streets are typically mixed and are generators and attractors of pedestrian activity. On-street parking is encouraged to provide traffic calming, as well as convenient parking for Main Street land uses. Main Streets will represent a relatively small portion of the overall street network.

### **Avenue**

The expected growth in the Rocky River Area will require a denser street network to accommodate the transportation needs of the residents in that area. Avenues will be the most prevalent classification for thoroughfares, and the most flexible street type. They are the workhorse streets in the street network, providing access from neighborhoods to commercial areas and major intra-city destinations. Avenues are designed to provide a balance of service for all transportation modes and access to major destinations. Land uses along Avenues will vary. Development could include a dense mix of uses in some locations and more low-density and single uses in others. To provide the best access for pedestrians and transit users, buildings need to be placed close to the street, with windows and doors fronting directly onto the sidewalk and parking located to the rear or sides of buildings.

## **Boulevard**

A significant number of the streets in the Rocky River Area are designed to move larger numbers of vehicles, especially through traffic, from one part of the neighborhood to another and to other lower level streets in the network. Boulevards typically have at least 2 lanes in each direction, separated by a wide landscaped median. The Boulevard cross section includes sidewalks, planting strips with street trees, bike lanes, and transit stops along both sides of the street. Development along boulevards will usually be set back away from the street, located directly on a parallel frontage street, or oriented to less highly traveled side streets.

## **Parkway**

Parkways are the most auto-oriented of the street types and will most likely be the least recommended street type in the Rocky River Area. Parkway's primary function is to move motor vehicle traffic efficiently from one part of the metropolitan area to another and to provide access to major destinations. Wide landscaped medians and shoulders are key elements for these roadways. Pedestrian and bicycle facilities are preferably accommodated on separate parallel facilities, ideally on parallel local streets within developments adjacent to the Parkway. Parkways are not designed to have front facing land uses. Instead, development along parkways should have deep setbacks from the right-of-way and buildings should orient towards intersecting or parallel roadways, away from the Parkway.

## **Specific Design Considerations**

During the planning process, Rocky River residents expressed significant concern about the design elements that will be considered for the proposed road improvements and the additional streets that will be built as development occurs. Specific questions were raised about the potential street elements for the Eastern Circumferential and the Rocky River Road corridors. Both staff and the residents recognize the desire to create neighborhood-friendly streets for Rocky River Area residents. The following are recommended design elements that will be considered as road improvements are planned.

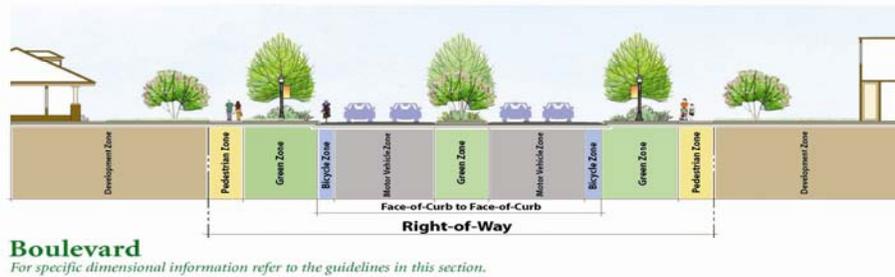
### **Eastern Circumferential (Boulevard)**

Prior to this plan, the design elements for the Eastern Circumferential included four travels with a median and bike lanes. To help improve the pedestrian environment and create a multi-modal corridor the following elements should be considered:

- Posted Speed: 35-40 mph
- Design Speed: 40-45 mph
- Travel Lanes: Two (2) lanes in each direction
- Lane Width: 11 feet, in addition to the concrete gutter where gutter is present.
- Bicycle Lanes: 4 feet wide minimum, 5 feet preferred
- Median: Preferably 17 feet with landscaping
- Sidewalks: 6 feet minimum with no obstructions
- Planting Strips: 8 feet between curb and sidewalk
- Block Length: 1000 feet between signalized intersections

Other elements to consider and where appropriate, are pedestrian refuge islands, on-street parking, street lighting, bus stops/bus zones and traffic calming.

### Boulevard Cross-Section



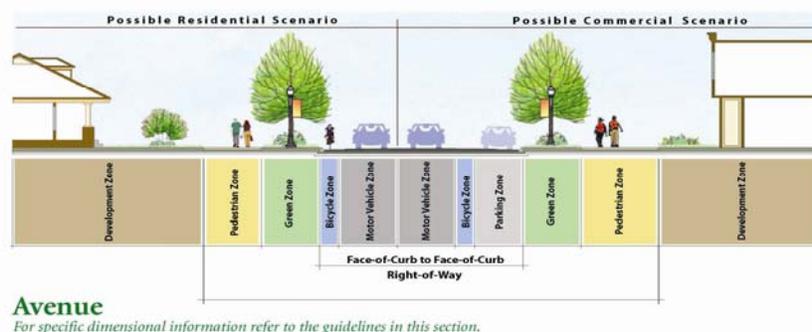
### Rocky River Road (Avenue)

The near-term improvements for Rocky River Road include the realignment of two existing curves, road widening and resurfacing, and constructing left-turn lanes where needed. Although these improvements will address some existing congestions problems, the improvements do not address the residents’ vision for a safe, walkable, multi-modal roadway that could potentially change the rural character of the Rocky River Area. Longer-term improvements may require Rocky River Road to be widened and upgraded to multi-modal standards. When this improvement takes place, the following design elements should be considered:

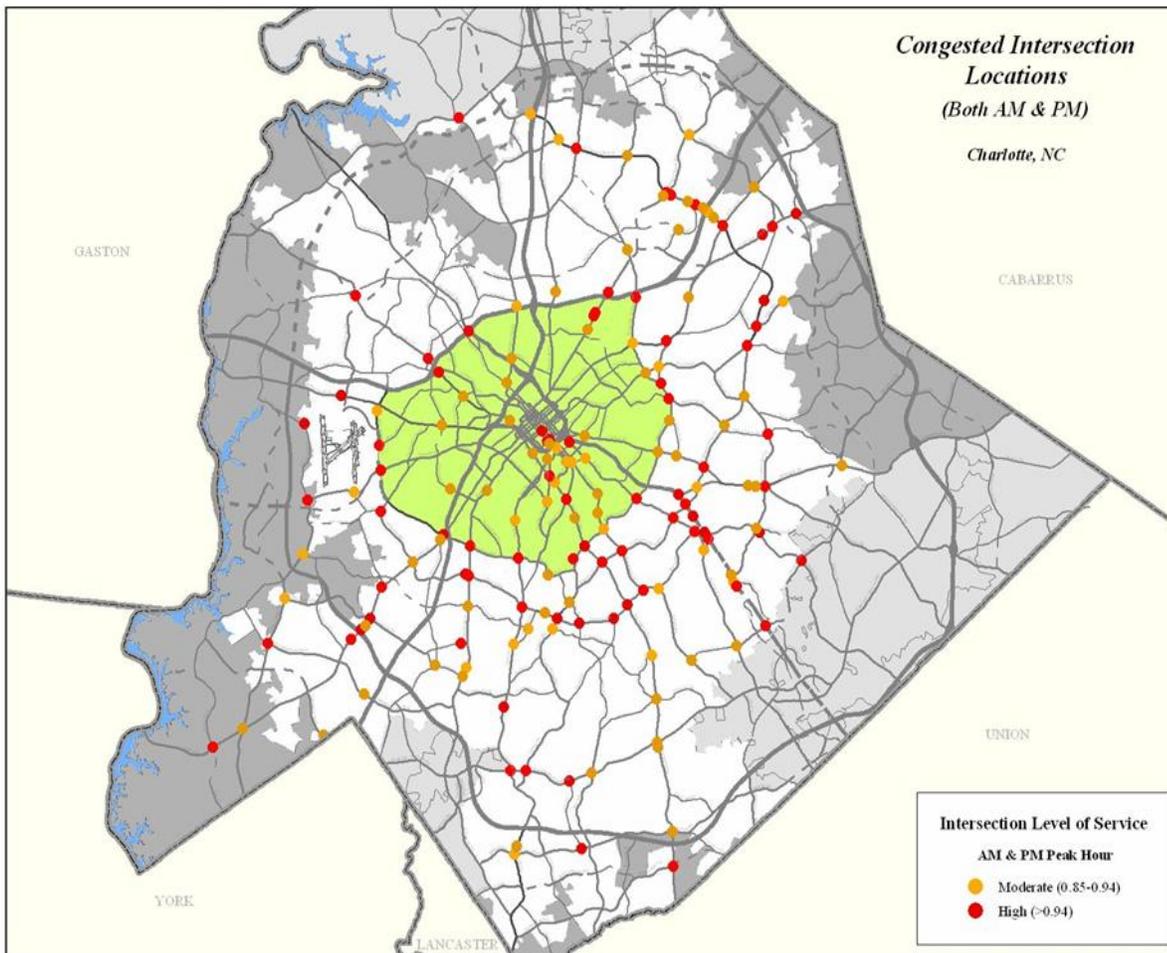
- Posted Speed: 25-35 mph
- Design Speed: 30-40 mph
- Travel Lanes: One (1) or two (2) lanes in each direction
- Lane Width: 11 feet, in addition to the concrete gutter where gutter is present.
- Bicycle Lanes: 4 feet wide minimum
- Sidewalks: 6 feet minimum with no obstructions
- Planting Strips: 8 feet between curb and sidewalk
- Block Length: 600 feet between signalized intersections

Other elements to consider and where appropriate, are pedestrian refuge islands, on-street parking, street lighting, bus stops/bus zones and traffic calming.

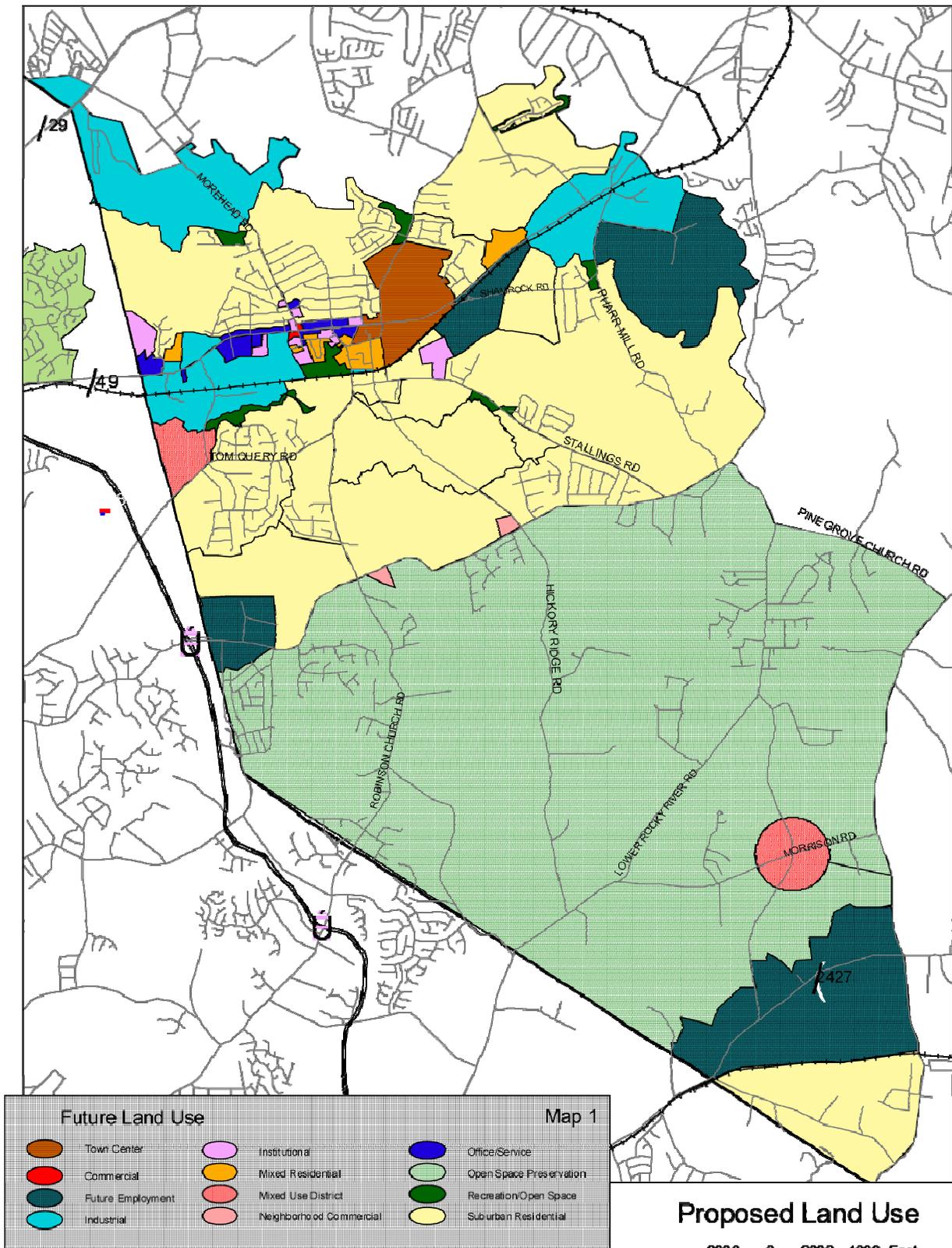
### Avenue Cross-Section



**Figure 37**



# Figure 38: Town of Harrisburg Proposed Land Use



Source: *Harrisburg Area Plan*  
Adopted February 1, 2001