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The Steering Committee for this project included:

Terry Arellano, NCDOT-SWP
Steve Bissinger, Kannapolis
Erin Burris, Cornelius
Mike Ciriello, Huntersville
Desmond Cole, Mecklenburg County
Phil Conrad, Cabarrus-Rowan MPO
Bob Cook, MUMPO
Bill Coxe, Huntersville
Linda Dosse, NCDOT-SWP
Bill Duston, Centralina COG
Bill Finger, CDOT
Karen Floyd, Cornelius
Tim Gibbs, CDOT
Lindsey Hobbs, Davidson
Mike Holder, NCDOT Div. 12
Frank Jacobus, Huntersville
Meredith Judy, Davidson
Charles Knox, Lake Norman Chamber
Kris Krider, Davidson
Sarah LaBelle, Cabarrus Co. Chamber
Mike Legg, Kannapolis
Rodger Lentz, Cabarrus County
Jonathan Marshall, Cabarrus County
Rick Mason, NCDOT
Barry Matherly, Lincoln Economic Dev. Association
Barry McKinnon, Lincoln County
Bo Moore, Lincoln Co. Chamber
Brian Nadolny, CATS
Steve Osborne, Concord
Benton Payne, NCDOT Div. 10
Dawn Qiu, LNRPO
Bill Russell, Lake Norman Chamber
Jack Simoneau, Huntersville
Brian Sisson, Huntersville
Gary Spangler, NCDOT Div. 12
Tom Thrower, NCDOT Div. 10
Lisa Valdez, Kannapolis
David Whitley, Concord
Aldie Whitmore, NCDOT Div. 10
Anthony Wyatt, NCDOT
Rebecca Yarbrough, LNRPO
Jeff Young, Concord

The Consulting Team for this project included:

HNTB North Carolina, PC
HNTB Washington
Thomas R. Hammer, Ph.D.
S/K Transportation Consultants, Inc.
University of North Carolina at Charlotte, Center for Transportation Studies
Executive Summary

The NC 73 Transportation/Land Use Corridor Plan is a coordinated land use and multi-modal transportation plan for a 35 mile corridor sponsored by three counties, five municipalities, three chambers of commerce, two metropolitan planning organizations, one rural planning organizations, two NCDOT divisions and NCDOT’s Transportation Planning Branch. It is an innovative project, for implementation jointly by the local governments and the North Carolina DOT, integrating the local jurisdictions land use plans with strategic regional transportation needs.

The NC 73 Corridor

Not a “one size fits all plan,” the corridor is addressed in fifteen separate segments, ranging from 2 miles to 4 miles in length, that reflect the various environmental and community contexts throughout the corridor.

Population growth in the corridor is driving the need for a coordinated plan. Population increases ranging from 50% to 230% are projected for the various areas of the corridor by 2025. This will result in corresponding increases in traffic pressures for NC 73, which could reach 50,000 vehicles per day crossing the Catawba River in the middle of the corridor, and 60,000 per day at I-77.

The plan incorporates the current land use plans from the communities in the corridor: Lincoln County, Cornelius, Davidson, Catawba County, Kannapolis and Concord. Huntersville’s existing zoning was used as the indication of its future land use.

The framework for the NC 73 Transportation/Land Use Corridor Plan is set by both the communities’ future land use plans and all the future transportation projects planned. Future major transportation projects considered include the future Lincolnton Beltway, the new NC 16, the I-485 Charlotte Outer Loop, Vance Road Extension, CATS North Corridor commuter rail and express bus service, Prosperity Church Road Extension, and Kannapolis Parkway. Other projects indicated on the Thoroughfare Plans were considered, as well.

Road Typologies

A series of road typologies have been developed as part of the NC 73 Corridor Transportation/Land Use Plan. The purpose of these typologies is to allow a variety of road designs to fit the varying land use and environmental contexts along the corridor, while continuing to function as a continuous travel route. The typologies provide a range from two travel lanes to six travel lanes, in order to meet the anticipated traffic volumes in different locations throughout the corridor.

As part of the access management strategy, all of the NC 73 typologies have medians, to help control the locations of left turns from abutting properties onto NC 73, of left turns from NC 73 to cross streets, and of allowable U turns at desirable locations.

Accommodation of pedestrians and bicycles is incorporated into most of the road typologies. Trees are located between the roadway pavement and sidewalks wherever possible, to provide a safe and attractive pedestrian environment.

The typologies deliberately do not rigidly follow NCDOT design standards in all cases, although most elements will comply. Eleven foot travel lanes are proposed throughout the corridor, which will be appropriate to the proposed speed limits. NCDOT is urged to
follow emerging guidance for adapting their design standards to the intended context of the NC 73 Corridor, such as Flexibility in Highway Design, A Guide for Achieving Flexibility in Highway Design, and the NCDOT Context Sensitive Solutions Goals and Working Guidelines.

Four intersection and interchange typologies have been included. The intent of these typologies is to illustrate one way to achieve the strategic goals of managing traffic at specific locations. The actual design and application of each of these intersection/interchange typologies will be determined in the Preliminary Engineering/Environmental phase.

The typologies used are the ideally desirable roadway type. They should be followed by the counties and municipalities in reviewing development plans, to assure that adequate right-of-way is preserved for the eventual full development of the roadway. They should be used by NCDOT as the desirable configuration of the roadway to achieve the access management efficiency of roadway operations, and to be compatible with the intended land uses which will emerge in the corridor. There will undoubtedly be situations where conditions will constrain the ability to fully realize the typology. Generally, for situations where existing development or environmental conditions are narrower than the full proposed right-of-way width, the space between the curb and the right-of-way line is generous to allow the roadway designer to fit the typology to the location and situation for which it is proposed.

Access Management
The Access Management Strategy for the NC 73 Corridor is built around a number of elements which are applied consistently throughout the corridor. The intent of these is to help minimize the size of the road typologies used in each segment, as well as to realize the benefits of safety, efficiency and aesthetics. These elements are indicated on the segment plans, and should be followed when the various segments are being designed as an inherent part of the NC 73 Corridor Transportation/Land Use Plan.

There are additional techniques which should be applied to individual properties and situations and they are being planned. The NCDOT should design the roadway to incorporate these techniques, and the local jurisdictions should enforce these techniques through their development regulation and approval processes. Since these techniques should be applied on a case-by-case basis, they are incorporated into this plan as guidelines for NCDOT and the local jurisdictions in the Technical Appendix.

Segment Plans
There are fifteen segment plans for the NC 73 Corridor, from 2 to 4 miles in length. The segment plans include proposed road typologies, access management features, anticipated future land uses, and proposed road design and land use actions.

The segment plans illustrate the intent of the plan to achieve a road network that will serve the existing and planned land uses in the corridor, that will be adequate for the levels of traffic anticipated in 2025, and that will serve transit, pedestrians and bicycles, as well as cars and trucks.

The plans, with the descriptions of transportation criteria and access to adjacent land uses are strategic in nature. They are
meant to provide guidance to local communities in order to preserve adequate rights-of-way, to require managed access to existing and new development, and to coordinate other related transportation facilities. They are also meant as a guide to NCDOT to follow as a basis for engineering design.

The final features and dimensions of all of the plan elements will be determined in the Environmental, Preliminary Engineering and Final Engineering phases of project development.

Implementation

Each of thirteen participating jurisdictions and agencies were requested to approve a Memorandum of Understanding for the NC 73 Corridor Transportation/Land Use Plan, committing themselves to follow the recommendations of the Plan and to cooperate with each other in implementing the Plan. The Memorandum of Understanding is not a legal contract. Rather, it is a statement of intent by each jurisdiction. The approval of the Memorandum of Understanding is a statement of intent on behalf of the jurisdiction;

* Adopt a Council of Planning, agreeing to appoint a participant who can represent the jurisdiction’s interests in the plan, can work cooperatively with the other jurisdictions, and can oversee the implementation of the recommendations within the jurisdiction;

* Accept the recommendations within their jurisdiction as guidance for land use and other actions to implement the Plan; and

* Acknowledge that their portion of NC 73 and any related roads in their jurisdiction is an integral part of an overall Corridor, and that actions taken that affect NC 73 within their jurisdiction that affect NC 73 in other jurisdictions as well, and must be made cooperatively.

Funding, Design and Construction

The key to implementation of the roadway improvements is having the NC 73 Corridor on the NCDOT Transportation Improvement Program (TIP). The TIP is the programming document for expenditures of State and Federal transportation funds. It identifies priorities for planning, design, right-of-way, and construction of roadway projects throughout the State, through a very prescribed process.

Currently, two sections of NC 73 are on the TIP, but neither is funded. The two sections are:

* TIP No. R-2236 A, from I-77 to Davidson-Concord Road in Mecklenburg County, and
* TIP No. R-2706 from SR 1356 in Lincoln County to SR 2145 in Mecklenburg County.

A project can only be recommended for inclusion on the TIP through the mutual concurrence of the Metropolitan Planning Organization (MPO) and NCDOT. Each MPO develops its own needs list which is submitted to the NCDOT. Through a series of joint meetings, a Local TIP (LTIP) is developed. Because of the equity formula and the requirement for fiscal constraint, only the highest priority needs are likely to be included in the State TIP.

There are two steps that will be necessary to have all of NC 73 added to the TIP List:

1. NCDOT Feasibility Study.
2. Add NC 73 to the Local TIP
Jurisdiction Responsibilities

Local jurisdictions will be responsible for implementing the land use portions of the Plan. The kind of commitments that will be needed include:

* Maintain their land use plans, or make changes with the concurrence of the Council of Planning that the changes would not have an adverse effect on the rest of the corridor;
* Undertake area plans at locations identified in the segment plans;
* Coordination with abutting jurisdictions to undertake area plans and to participate in the Council of Planning;
* Preserve the right-of-way necessary for the appropriate road typology;
* Follow the access guidelines as part of the land use and zoning approval process; and
* Require that some roads be funded and built as part of developments.

The local jurisdictions will likely be requested to take responsibility for implementing some aspects of the roadway projects. This could place responsibility on local jurisdictions for some of the following:

* Require some pedestrian/bike trails as part of development approvals;
* Possibly pay for landscape and urban design elements;
* Possibly pay for sidewalks and pedestrian/bike trails;
* Maybe some right of way acquisition; and
* Possibly maintenance of “amenities” in the right-of-way.

The Centralina Council of Governments commitment includes:

* Participation in the NC 73 Council of Planning; and
* “Reminding” member communities of their commitments.

The MPO and RPO commitment includes:

* Transportation Plan amendments as necessary to incorporate NC 73 elements;
* Supporting the NC 73 Corridor Plan through inclusion of the Corridor on the LTIP; and
* Working for inclusion of the NC 73 Corridor on the State TIP.

The NCDOT commitment includes:

* Making its “best effort” to include the recommendations set forth in the NC 73 Corridor Plan in its long range planning for the corridor; and
* Following the road typologies, access management strategy and segment plan recommendations as guidelines for the design of NC 73 projects.

Recommendations for the Council of Planning

* COG as Convener and Staff
* Communication Protocol among Jurisdictions
* Small Area Plan Updates
* Developing Funding Priorities
* Update of Corridor Plan

Recommended TIP Projects

State and Federal guidelines for TIP projects require that they begin and end at “logical termini,” referring generally to major roads or highways where notable changes in traffic
volumes could be expected to occur. The “logical termini” of these recommended project locations in most instances result in TIP projects that overlap jurisdictions. It is anticipated that this overlap will encourage the continued and ongoing cooperation of the various county, municipal, MPO/RPO, NCDOT division and private sector jurisdictions and agencies in order to secure funding for the projects which directly affect each of them.

1. US 321 to new NC 16, Lincoln County. This could potentially be two TIP projects:
   1a. US 321 to Airport Road, Lincoln County, and
   1b. Airport Road to new NC 16
2. New NC 16 to new Gilead Road (SR 2136), Lincoln and Mecklenburg Counties.
3. New Gilead Road (SR 2136) to Davidson-Concord Road (SR 2693), Mecklenburg County.
4. Davidson-Concord Road (SR 2693) to Odell School Road (SR 1601), Mecklenburg and Cabarrus Counties.
5. Odell School Road (SR 1601) to I-85, Cabarrus County.
6. Gilead Road (SR 2136) from NC 73 to I-77, Mecklenburg County.
7. Gilead Road (SR 2136), Huntersville-Concord Road (SR 2448) and Ramah Church Road (SR 2439) from I-77 to the proposed Prosperity Church Road Extension, Mecklenburg County.
8. Catawba Avenue (SR 5544) and Westmoreland Road (SR 2147) from NC 73 to US 21, Mecklenburg County.
9. US 21, Bailey Road and Davidson-Concord Road (SR 2693) from Westmoreland Road to NC 73, Mecklenburg County.

Recommended TIP Project Priorities

The priorities for the TIP projects are shown separately for NCDOT Division 10 and Division 12, since they are accounted separately under the equity formula.

Division 10 Priorities

Priority 1: New Gilead Road (SR 2136) to Davidson-Concord Road (SR 2693), Lincoln and Mecklenburg Counties.
Priority 2: New NC 16 to new Gilead Road (SR 2136), Lincoln and Mecklenburg Counties.
Priority 3: Davidson-Concord Road (SR 2693) to Odell School Road (SR 1601), Mecklenburg and Cabarrus Counties.
Priority 4: Odell School Road (SR 1601) to I-85, Cabarrus County.
Priority 5: Gilead Road (SR 2136) from NC 73 to I-77, Mecklenburg County
Priority 6: Catawba Avenue (SR 5544) and Westmoreland Road (SR 2147) from NC 73 to US 21, Mecklenburg County.
Priority 7: Gilead Road (SR 2136), Huntersville-Concord Road (SR 2448) and Ramah Church Road (SR 2439) from I-77 to the proposed Prosperity Church Road Extension, Mecklenburg County.
Priority 8: US 21, Bailey Road and Davidson-Concord Road (SR 2693) from Westmoreland Road to NC 73, Mecklenburg County.

Division 12 Priorities

Priority 1: New NC 16 to new Gilead Road (SR 2136), Lincoln and Mecklenburg Counties.
Priority 2: US 321 to new NC 16, Lincoln County.
Introduction

Background

In February 2003, the North Carolina Department of Transportation (NCDOT) engaged the Centralina Council of Governments (COG) to administer a grant to study the NC 73 Corridor from Interstate Highway 85 in Cabarrus County to US Highway 321 in Lincoln County. Funds for this Corridor Study came from NCDOT, as well as from the counties, the municipalities and private sector sources along the Corridor. The term generally refers to the area lying within one-half (1/2) mile of the centerline of the NC 73 right of way between the highway’s intersections with Interstate 85 in Cabarrus County, and with US 321 in Lincoln County, and within ½ mile of other roads identified in the NC 73 Transportation/Land Use Corridor Plan as being roadways directly related to the NC 73 Corridor.

The impetus for the NC 73 Transportation/Land Use Corridor Plan was the recognition that increased development pressures along the Corridor, and the resulting vehicular activity, have overwhelmed the roadway’s capacity to serve as a reliable transportation facility for its many users. Moreover, all of the funding partners recognized two key factors: 1) considerable physical improvement will be required to keep the corridor functional; and 2) the current and foreseeable land uses along the Corridor must be evaluated before undertaking any capital investment in making changes to the roadway itself.

Beginning with this broad consensus, Centralina COG and NCDOT selected a team of consultants to undertake the details of this study. The contract of these planning services was executed in April 2003, and the planning team’s analysis began shortly thereafter.

Project Overview, Purpose and Need of the Study

The NC 73 Corridor is one of two east-west highways serving the rapidly growing area around Lake Norman, in the North Carolina Piedmont. It functions as a two-lane corridor approximately 20 miles north of Charlotte that extends for 35 miles from US 321 in Lincoln County to I-85 in Cabarrus County. Although much of the development surrounding the corridor remains scattered among rural settings, significant development and suburban growth is occurring along the corridor. The corridor traverses eight different governmental jurisdictions. Increased traffic volume and uncoordinated land use patterns have created significant transportation and land use issues for residents and property owners within Cabarrus, Lincoln and Mecklenburg Counties.

A systematic plan is therefore necessary in controlling traffic volumes and access management, minimizing impacts to homes and businesses along the corridor, and most importantly, preserving the vitality of the roadway. As such, the three participating counties and five municipalities (Concord, Cornelius, Davidson, Huntersville and Kannapolis), have teamed with regional planners, business organizations, consultants, and NCDOT to design a comprehensive transportation and land use plan that will exemplify the character of each individual community, while also fusing the entire corridor.

Project Goal

The overall goal was to design a comprehensive land use, urban design, and transportation plan that incorporates existing and anticipated land use and transportation patterns for the eight local governments along the corridor. Most importantly, the plan was
tailored to meet the needs and demands of individual communities, while also promoting cohesion along the entire corridor.

Project Outcome
The key outcome of the NC 73 Corridor study was having all participating communities and Elected Officials adopt a Memorandum of Understanding indicating their intent to follow the plan’s land use and transportation recommendations. The NCDOT will then follow the strategic plan for the roadway so that roadway development over time will be coordinated with each community’s land use plan.

Project Objectives
The objectives established at the outset of the project by the funding partners were:

* To support local land use and transportation plans;
* To promote functional access management tools along the roadway;
* To improve and preserve the function of the roadway while supporting economic development along the corridor; and
* To develop a comprehensive transportation plan that serves existing and projected future land uses along the corridor.

Corridor Study Area
The study area included the portion of NC 73 from I-85 in Concord and Kannapolis to US 321 in Lincolnton. It is one of two east-west highways serving rapidly growing communities in the North Carolina Piedmont. It spans Cabarrus, Lincoln, and Mecklenburg Counties.
NC 73 Corridor
Public Involvement

The goals of the Public Involvement process for the NC 73 Corridor included: 1) involving key groups (i.e. steering committee members, local governments, NCDOT, and the general public, etc.) in order to learn the desires of each community along the corridor, 2) informing key groups about the study process and results, and 3) integrating public feedback into the draft plan. The following groups were included as key stakeholders for this study:

* Consultant Team;
* Corridor Steering Committee (comprised of local governments, regional planners, community representatives, and business organizations);
* Elected Officials; and
* General Public

The Corridor Steering Committee met on a monthly basis, and meetings with Elected Officials were held from December 2003 through February 2004. The first round of public meetings was held in each participating county in November 2003. They served to inform the public of the purpose of and need for the study, as well as to gain insight into the needs of the individual communities and local residents along the corridor. The second round of public meetings was held in March 2004. These meetings served to get comments on the draft comprehensive land use and transportation plan for the corridor.

The following materials were also used to promote effective Public Involvement:

* Monthly Corridor Newsletter emailed to residents, Home Owner’s Associations, Elected Officials, and Corridor Steering Committee along the corridor, and also posted on city/county websites for general public review;
* Media Releases sent to print, television, radio organizations surrounding the communities along the corridor; and
* Corridor Flyer and Postcard announcing the public meetings held in November, 2003 and March, 2004

Memorandum of Understanding

A Memorandum of Understanding (MOU), asked local communities to commit to the study’s land use and transportation recommendations. The MOU was presented to participating jurisdictions for adoption in May and June 2004.

The Parties asked to adopt the Memorandum of Understanding were:

* The municipalities and the counties having jurisdiction over land use ordinances and the determinations whether land uses along the NC 73 Corridor are in compliance with such ordinances.
* The inter-governmental planning organizations having jurisdiction for transportation planning along the NC 73 Corridor.
* Centralina COG
* NCDOT

Each Party was asked to commit to adopt and abide by the component of the Plan that falls within that Party’s land use jurisdiction (including its extra-territorial jurisdiction) along the Corridor.

Each Party was asked to understand that its commitment to its respective component of the Plan will induce other Parties to make similar commitments for their respective segments of the Plan insofar as that Party has jurisdiction over the land uses within its Plan segment. Based on this understanding, each Party was asked to commit its best efforts to maintain its land use designations as shown in its
respective segment of the Plan and to follow recommendations of the Plan as they relate to land development along the Corridor.

The Plan designates certain areas along the Corridor where further planning is needed. In most cases, those areas require collaboration among various Parties where their land use jurisdiction boundaries abut. In such cases, each Party was asked to commit its best efforts to undertake that collaborative planning, including providing direction to its planning staff and/or consultants engaged for such planning purposes. At the conclusion of any such collaborative planning process, each Party is asked to commit to adopt and abide by the land use ordinances determined appropriate and consistent with the Corridor Plan.

The transportation planning organizations were asked to support the NC 73 Corridor Plan through inclusion on the local Transportation Improvement Program (TIP), and to work for its inclusion on the State TIP. The NCDOT was asked to include the Plan’s recommendations in long range planning for the corridor and to follow it as a guideline for final design. The Centralina COG was asked to participate in ongoing planning for the corridor and to “remind” its member communities of their commitments.

All parties were asked to recognize that future governmental entities may not be contractually bound by the adoption of this Memorandum of Understanding. In recognition of this limitation, the Parties were asked to commit to review the status of land use decisions along the Corridor periodically. Furthermore, all Parties, in good faith, were asked to commit to meet regularly with other Parties with whom they share adjacent land use jurisdiction along the Corridor. The intent of this commitment is to promote periodic discussions of municipal and/or county goals, plans and strategies for maintaining effective development patterns and transportation flow along NC 73.
Existing Context

Land Use

**Existing Land Use West of Catawba River**

1. Agricultural, Vacant, and Residential Uses

Lincoln County remains mostly rural with large tracts of vacant land. Numerous working farms are designated as an agricultural land use category. These parcels are receiving tax breaks under the present use value system for Lincoln County because they create a commercial agriculture product. The City of Lincolnton has the highest density of housing. Along the NC 73 corridor, there are multi-family developments, subdivisions, and scattered single family home sites. Between NC 16 and Lake Norman, a large number of subdivisions have been built in part because the supply of land on the eastern side of Lake Norman has been decreasing. Most of these subdivisions are medium density.

Residential land uses are shown in five categories:

- **Rural** – 2 acres or greater per parcel
- **Low Single Family** – 1 acre to less than 2 acres per parcel
- **Medium Single Family** – ¼ acre to less than 1 acre per parcel
- **High Single Family** – less than ¼ acre per parcel
Multi-Family – multi-family developments such as townhomes, apartments, and condominiums

2. Industrial and Commercial developments
Within the City of Lincolnton, there is a mixture of commercial and industrial uses along NC 73. There are a few industrial developments along NC 73 that are closer to Lincolnton, and just east of the Lincolnton airport (IPJ Regional Airport), which is just north of NC 73. Along NC 27, just north of the proposed NC 73 Connector are a number of commercial parcels, and to the south is a large industrial property, the Timken Plant.

The land between NC 27 and NC 16 is largely rural and remains mostly undeveloped.

To the southwest of NC 16 and NC 73 are two large industrial parcels. The first parcel is the Duke Power Plant and the other is the Lake Norman Quarry. The north side of NC 73 along NC 16 has experienced a significant amount of growth over the last ten years. Commercial development has occurred along NC 16 following the subdivisions that have developed around the west side of Lake Norman.

3. Institutional Uses
A large number of institutional uses, which include schools, churches, and government buildings, are within the City of Lincolnton. There are a few schools and churches that are along NC 73, and there are several churches along NC 16.

4. Parks and Open Space
There are several golf courses on the eastern side of Lincoln County, two of which are along Lake Norman. Tuckers Grove Campground is on the north side of NC 73 at Beth Haven Church Road. On the west side of the Catawba River is a large preserved area of open space.
Existing Land Use West of Catawba River
**Existing Land Use East of Catawba River**

1. **Agricultural, Vacant, and Residential Uses**  
   The NC 73 Corridor on the eastern side of the Catawba River, through Mecklenburg and Cabarrus Counties, is much more developed than the western side of the river. However, there are still large vacant tracts of land mainly within unincorporated areas of the counties and some working farms. Higher density residential developments are within the Towns of Davidson, Cornelius, Huntersville (especially around the NC 73, NC 115, and I-77 interchanges), Charlotte, and Concord. Most of Kannapolis that is within the study area is still vacant, with some low to medium density residential developments.

   Residential land uses are shown in five categories:

   - **Rural** – 2 acres or greater per parcel
   - **Low Single Family** – 1 acre to less than 2 acres per parcel
   - **Medium Single Family** – ¼ acre to less than 1 acre per parcel
   - **High Single Family** – less than ¼ acre per parcel
   - **Multi-Family** – multi-family developments such as townhomes, apartments, and condominiums

2. **Industrial, Commercial, and Office Developments**  
   At the western edge of Mecklenburg County on the north side of NC 73 is the McGuire Nuclear Power Plant. Along I-77 at Gilead Road is the Huntersville Business Park, and at NC 115 and Stumptown Road is the North Charlotte Business Park. Along NC 73 at I-77 in Huntersville, there are several commercial and office developments including Birkdale Village and Northcross Shopping Center. There are numerous commercial, office, and some industrial developments along West Catawba Avenue at I-77 in Cornelius. Also in Cornelius there are scattered smaller scale commercial and office developments along Main Street, which continue into the Town of Davidson along Main Street. The City of Concord has a regional airport on the west side of I-85 with several business parks and industrial developments surrounding it. To the southeast of I-85 are several large industrial developments within Concord as well. At the interchange of I-85 and NC 73 in the southeast corner within Concord is an International Business Park, and to the northwest within Kannapolis is the Dogwood Industrial Park.

3. **Institutional Uses**  
   Institutional uses that include schools, churches, and government buildings, can be found scattered throughout both Mecklenburg and Cabarrus Counties. However, the government and school buildings are more concentrated within the incorporated municipalities.

4. **Parks and Open Spaces**  
   The western portion of Mecklenburg County along the Catawba River has several nature preserves and wildlife refuges. Mecklenburg County also has a number of golf courses from Lake Norman in Davidson to both north and south of NC 73. Throughout the study area in Mecklenburg County, there are several areas that are preserved for open space with a conservation easement. For the portion of Cabarrus County that is within this study area, there are a few parks and some open spaces that are mixed among subdivisions.
Existing Land Use East of Catawba River

LEGEND

- NC 73
- MUNICIPALITIES
- WATER BODIES
- EXISTING LAND USE
  - RURAL
  - LOW SINGLE FAMILY
  - MEDIUM SINGLE FAMILY
  - HIGH SINGLE FAMILY
  - MULTI-FAMILY
  - COMMERCIAL
  - INDUSTRIAL
  - OFFICE
  - INSTITUTIONAL
  - PARK/OPEN SPACE
  - VACANT
  - AIRPORT
Public Facilities West of Catawba River
A large portion of the public facilities in Lincoln County are within the City of Lincolnton. Historically, this is where the larger and denser population has resided within the County. As growth has started to extend and concentrate on the eastern portion of Lincoln County along NC 16 and Lake Norman, new public facilities have followed.

1. Fire Stations
There are several fire stations within the City of Lincolnton, along with one to the south and to the north of the City. To service the growth occurring on the eastern side of Lincoln County, a fire station is also located just east of NC 16 on the south side of NC 73.

2. Schools
A number of the schools within Lincoln County are inside the city limits of Lincolnton, but schools have been built to serve the rural areas of the County as well. The more recent growth within the eastern portion of Lincoln County has made the addition of new schools to the area necessary. Iron Station Elementary is located just south of NC 73 on the northern side of NC 27 to service the Iron Station area. Just east of NC 150 to the north of NC 73 are Pumpkin Center Elementary and Middle Schools to serve the Pumpkin Center vicinity. Along NC 73 to the west of Beth Haven Church Road is East Lincoln Middle School. Also along NC 73 to the west of NC 16, are East Lincoln High School and Catawba Springs Elementary School to help serve the growing eastern portion of Lincoln County. On the west side of NC 16 north of NC 73 is Rock Springs Elementary School for the Denver community. Finally, just west of the future NC 16 alignment is the location for the new St. James Elementary school to further help with the growing eastern population.

3. Churches
Numerous churches are scattered throughout Lincoln County. There are several churches that are located on NC 73, and a growing number of churches along and to the east of NC 16 to support the growing residential population.

4. Historic Properties
There are several historic properties along or near NC 73 within Lincoln County. The Rehobeth Iron Furnace is just north of NC 73 on the western side of the large curve in NC 73. Tuckers Grove Campground is also on the north side of NC 73 at Beth Haven Church Road. Tuckers Grove is a Civil War era religious campground for the African Methodist Episcopal Church and is still utilized today. Just south of the campground on the south side of NC 73 is the Machpelah Church and Cemetery. To the north of the campground along Beth Haven Church Road is the William A. Graham Jr. Round Barn. To the east along NC 73 at Ingleside Farm Road is the Ingleside Farm that includes a historic mansion from the 1800’s.

5. Parks and Open Space
Within the City of Lincolnton there are a few smaller urban parks. Growth and interest within the eastern portion of Lincoln County has spurred the development of several golf course communities. West of NC 16 on the north side of NC 73 is an Optimist club, and a future East Lincoln Park that will consist of 35 acres and a recreation center. On the southeastern edge of Lincoln County is the Mountain Island Property Park consisting of over 240 acres of open space that has been preserved as a permanent conservation easement and is owned by Lincoln County.

6. Greenways and Bikeways
The Marcia H. Clonginger Rail Trail is an existing greenway, which runs north-south to the east of the courthouse in downtown Lincolnton. There are plans for this greenway to continue further to the north and south. In the eastern portion of Lincoln County there are no existing greenways or bikeways. Currently, there are plans for a greenway loop to follow along Killian Creek and circle around following Forney Creek. Plans also indicate a future bikeway that will follow the new alignment for NC 16.
Public Facilities West of Catawba River
Public Facilities

Public Facilities East of Catawba River

1. Fire Stations
Fire stations are located within the incorporated municipalities. Within Davidson and Cornelius, the fire stations are along Main Street. In Huntersville, the station is on NC 115. There is a fire station along NC 73 at Odell School Road within the City of Concord. In Charlotte and Kannapolis, the fire stations are located outside of the study area.

2. Schools
Almost all of the schools within the study area are within a municipality. On the west side of Beatties Ford Road in Huntersville is Bradley Middle School. Huntersville Elementary is located along Gilead Road, between I-77 and NC 115. South of Gilead Road on NC 115 is the Central Piedmont Community College North Campus. Further south along NC 115 are Alexander Middle School and Blythe Elementary School. Along Stumptown Road between I-77 and NC 115 is a private school. In Cornelius on West Catawba Avenue is Cornelius Elementary. Within Davidson are several schools including Davidson Elementary, Davidson I. B. Middle School, a private school, and Davidson College,
which encompasses a large piece of property north of Davidson Concord Road and east of Main Street. Within the City of Concord is Odell Elementary School at NC 73 and Odell School Road, Harris Road Middle School on Harris Road, and Cannon School on Poplar Tent Road. Cox Mill Elementary is located west of I-85 in the unincorporated area of Cabarrus County. Rowan-Cabarrus Community College South Campus is within Kannapolis at the northwest corner of NC 73 and I-85. Also within Kannapolis are Northwest Cabarrus Middle and High School off of Trinity Church Road.

3. Churches
Churches are scattered throughout Mecklenburg and Cabarrus Counties within the municipalities and the unincorporated areas.

4. Historic Properties
Within Huntersville, there are several historic properties including Sunnyside (Ingleside) east of Beatties Ford Road, Rural Hill Plantation and the Holly Bend house west of Beatties Ford Road, and the Benjamin W. Davidson House. West of I-77 at Gilead Road, also within Huntersville, are the historic properties of Cedar Grove, Hugh Torrance House and Store, and the James G. Torrance Mill. On Gilead Road east of I-77 is the Agriculture Education Building at Huntersville Elementary School, and along Main Street in Huntersville are the former Band of Huntersville and the Charles and Laura Alexander House. East of Main Street on Huntersville Concord Road is the historic John F. Ewart Farm property. Downtown Davidson contains several historic properties including the Chairman Blake House, Helper Hotel (Carolina Inn), Oak Row and Elm Row at Davidson College, Eumenean and Philanthropic Halls at Davidson College, and a proposed Davidson Historic District. Along Davidson Concord Road there are several historic properties, one of which is Beaver Dam. The Robert Potts, Jr. House is just east of Cornelius. Along Ramah Church Road, just south of NC 73 is the historic Ramah Presbyterian Church and Cemetery. On both sides of NC 73 just west of the Mecklenburg and Cabarrus County line are two historic properties, the Old Store (Mary Bost) and the North Register House (Milsaps). Within Cabarrus County, just north of NC 73 is the John E. Presley House. Just south of NC 73 is the historic house Mint Hill.

5. Parks and Open Space
Along the eastern side of the Catawba River are several preservation areas including the Cowans Ford Waterfowl Refuge, Stephens Road Nature Preserve, Rural Hill Nature Preserve, and Auten Nature Preserve. Within Huntersville, there is Blythe Park, Huntersville Athletic Park, North Mecklenburg Park, Birkdale Golf Course, and Northstone Park and Golf Course. In the Town of Cornelius are the Peninsula Club Golf Course, Jetton Park, Ramsey Creek Park, Smithville Park, and several boat launch areas. Within Davidson, there is the River Run Country Club and Golf Course and Fisher Park. Just west of the Mecklenburg and Cabarrus County line is a Catawba Lands Conservancy property called Brackett Bluff, and also west of the County line is the White Property that is on the north side of NC 73. Just south on NC 73 is the Cornelius-Davidson-Huntersville District Park, along with several other properties that have conservation easements. Within Charlotte is the Highland Creek Golf Course. In the City of Kannapolis, there is a campground called Camp Cabarrus.

6. Greenways and Bikeways
Although most roads do not have striped bike lanes, there are several designated on-road bike routes that are considered to be routes where bicycles and automobiles can share the roads included in these routes. Roads included in these routes within Huntersville are Beatties Ford Road, Bud Henderson Road, Gilead Road, Hambright Road, McCoy Road, Mt. Holly Huntersville Road, Statesville Road, McCord Road, Ramah Church Road, Huntersville-Concord Road, and NC 73 from the Catawba
River to just east of the Huntersville Town limits. Existing striped bike lanes within Huntersville are in two places, along Winfield Creek Parkway running from Gilead Road and on NC 73 just in front of Birkdale Village to McDowell Creek. An off-road bikeway in Davidson that runs along Davidson Concord Road from Kimberly Road to Beaver Dam is not built at this time but is funded through NCDOT Enhancement Funds. On-road bike routes in Cabarrus County include Davidson Road, Mooresville Road, Archer Road, Plum Road, Tuckaseegee Road, Rainbow Drive, Poplar Tent Road, and Pitts School Road within Concord. The second bicycle category is a result of the Liveable Community Blueprints for Cabarrus County that shows potential bikeways for the future. Routes included for potential bikeways are the Rocky River on the western portion of the county that connects to Clarke Creek, the Rocky River Spur to connect Harris Middle School to Odell Elementary School, Odell School Road bikeway, Coddle Creek to connect to Cannon School, Afton Run, Irish Buffalo Creek, and Don Howell Lake Spur to connect the Coddle Creek Reservoir to Afton Run and Irish Buffalo Creek along Rowan-Cabarrus Community College.

There is an existing greenway within the Town of Huntersville called the Torrence Creek Greenway that is just south of Gilead Road. An addition to the greenway is under construction, and future potential extensions of the greenway are planned. Also within the Town of Huntersville are plans for a potential greenway along McDowell Creek, to run from the southwest portion of Huntersville to Cornelius. A second planned greenway would start on the eastern side of Huntersville along the South Prong Clarke Creek to connect to the future Ramah Creek Greenway. A potential greenway in the Town of Davidson will run along the South Prong River connecting to the future greenway along the Rocky River. The Southeast Davidson Greenway, which will run along Avinger Lane to the South Prong of the Rocky River, is not built at this time but is funded through NCDOT Enhancement Funds. Also within the Davidson vicinity are potential greenways along the West Branch Rocky River and along the shoreline of Lake Norman.
Public Facilities East of Catawba River
1. Wetlands and Floodplains
Most of the wetlands in the area, as identified from the National Wetland Inventory GIS shapefile, are along the rivers, creeks, lake, and ponds, or fall within the 100 year floodplain. There are five floodplains that follow creeks and a river, and that cross NC 73, including Leepers/Reed Creek, Anderson Creek, Killian Creek, Forney Creek, and the Catawba River. The floodplain that follows Hoyle Creek will cross the future NC 73 Connector as currently planned.

2. Water Supply Watersheds
Within Lincoln County east of the City of Lincolnton, there are five different class IV Water Supply Watersheds. These watersheds include the South Fork Catawba River (East Schoals), South Fork Catawba River (Dal./Gas./Ranlo), and Hoyle Creek that are to the west of NC 27. To the east of NC 16 are Mountain Island Lake and Lake Norman watersheds, which both contain critical areas that are along Lake Norman and the Catawba River. The area between NC 27 and NC 16 does not include a water supply watershed.
Water Resources West of Catawba River
Water Resources East of Catawba River

1. Wetlands and Floodplains
   Most wetlands are found within rivers, creeks, lakes, and the 100 year flood plain. There are five floodplains that cross NC 73 within the study area that follow McDowell Creek, Ramah Creek, Rocky River, Coddle Creek, and Afton Run.

2. Water Supply Watersheds
   The western portion of Mecklenburg County is within the Mountain Island Lake Water Supply IV Watershed. This watershed includes a critical area all along the shore of Lake Norman and the Catawba River. A portion of Cabarrus County is within the Coddle Creek Water Supply II Watershed, with a critical area all around the Coddle Creek Reservoir.
Water Resources East of Catawba River
Utilities

Utilities West of Catawba River

1. Wastewater System
Lincoln County has two wastewater treatment districts. The first district is the City of Lincolnton Sewer District, which is owned and operated by the City to serve the area in and around Lincolnton. The other sewer district is the East Lincoln Sewer District to provide service to the eastern portion of Lincoln County, and is owned and operated by the County. The wastewater treatment plant for Lincolnton is located just south of the City along the South Fork Catawba River, while the plant for East Lincoln Sewer District is located along Forney Creek at NC 73. A connection to the City of Lincolnton sewer system was provided to the Timken Plant, which is southwest of NC 27 to replace its package treatment plant.

2. Water System
Lincoln County is also served by two water districts. One is for the City of Lincolnton and its vicinity. The other is for the East Lincoln District and is owned and operated by the County. The water source for the City is the South Fork River, and the source for Lincoln County is Lake Norman.
Utilities West of Catawba River
Utilities East of Catawba River

1. Wastewater System
Mecklenburg County’s wastewater system is owned and operated by Charlotte-Mecklenburg Utilities District (CMUD) and provides service to Charlotte, Cornelius, Davidson, Huntersville, and portions of unincorporated Mecklenburg County. Both the City of Concord and Kannapolis provide a wastewater system for their residents. The Water and Sewer Authority of Cabarrus County provide a wastewater system for Cabarrus County.

2. Water System
CMUD also operates the water system for Charlotte, Cornelius, Davidson, Huntersville, and some of the unincorporated areas of Mecklenburg County. The water source for CMUD is Mountain Island Lake and Lake Norman. The Water and Sewer Authority of Cabarrus County operates the Coddle Creek Reservoir and the Cities of Concord and Kannapolis provide their own treatment and billing. Kannapolis also provides its own water from the Kannapolis Lake, but with drought conditions over the last several years, the Coddle Creek Reservoir has been used as a secondary source. Emergency water can also be accessed through an agreement with Charlotte that provides a pipeline through Concord to Kannapolis. Kannapolis also provides water for most of the northwestern portion of Cabarrus County.
Utilities East of Catawba River
Zoning

Zoning West of Catawba River
Zoning districts were simplified into four basic categories for analysis and comparison purposes.

1. Agriculture
Most of the land between NC 27 and NC 16 is zoned as agriculture.

2. Residential
Residential land uses have been divided into five categories:

- Residential – 1 to 2 acre parcels
- Residential – ½ acre to less than 1 acre parcels
- Residential – ¼ acre to less than ½ acre parcels
- Residential – less than ¼ acre parcels
- Multi-family – multi-family developments, such as townhomes, apartments, and condominiums

The downtown area of the City of Lincolnton has the highest density zoning of parcels less than ¼ acre and some multi-family zoning. The southeast portion of Lincolnton’s zoning ranges from ¼ acre to less than ½ acre per parcel. Just outside of Lincolnton, the area is zoned at a lower density of ½ acre to less than 1 acre per parcel. The area even further out is zoned for 1 to 2 acre parcels, and this zoning is scattered throughout the more rural parts of the County.

Areas along NC 16 and Lake Norman are also zoned mainly for 1 to 2 acre parcels, except for the neighborhood around the Westport Golf Course, which is zoned for ¼ acre to less than ½ acre parcels and a few multi-family zoned areas along the lake.

3. Business
Business zoning is focused in two areas of Lincoln County. The first focus area of business zoning is within the City of Lincolnton, and the second area is along NC 16. These are the two areas that have the largest concentration of population and the highest amount of traffic.

4. Industrial
Industrial zoning is concentrated around three different areas. The first concentration of industrial zoning is within the City of Lincolnton, the second is where NC 73 and NC 27 merge near the Lincolnton/Lincoln County Regional Airport, and the third is along the CSX Railroad line and NC 16. All three of these areas have easy access to transportation and/or employees.
Zoning West of Catawba River
Zoning East of Catawba River
Zoning districts were simplified into six basic categories for analysis and comparison purposes.

1. Agriculture
A good portion of the City of Kannapolis that is within the study area is zoned as agriculture. No other areas east of the Catawba River are zoned as agriculture.

2. Residential
Residential land uses have been divided into seven categories:

- **Residential/Open Space** – residential subdivision requiring dedications of open space within their developments
- **Residential** – 1 to 2 acre parcels
- **Residential** – ½ acre to less than 1 acre parcels
- **Residential** – ¼ acre to less than ½ acre parcels
- **Residential** – less than ¼ acre parcels
- **Single family/Multi-family** – allow for a mixture of single family and multi-family housing
- **Multi-family** – multi-family developments, such as townhomes, apartments, and condominiums

The residential/open space zoning category is found within the Towns of Davidson and Huntersville. This zoning category requires that a specified amount of open space be preserved when creating a residential subdivision. For residential zoning of 1 to 2 acres, the only two areas with this zoning are within the City of Kannapolis just to the north of NC 73, and the City of Concord just south of NC 73. The areas zoned as ½ acre to less than 1 acre are within Cornelius along the critical area of Mountain Island Lake, the eastern portion of Davidson, the Coddle Creek Watershed in Cabarrus County, and a few areas within the Cities of Charlotte and Concord. Areas that are zoned as ¼ acre to less than ½ acre are within Huntersville just outside of I-77 and NC 115, beyond the single family/multi-family zoning. Within Cabarrus County along the Mecklenburg County line is also zoned as ¼ acre to less than 1 acre, along with an area in the northern portion of the study area within Kannapolis. A good portion of Cornelius and Davidson are zoned as less than ¼ acre parcels. The single family/multi-family zoning category is within Huntersville along I-77, NC 115, and NC 73. Multi-family zoning is located within the City of Concord, southeast of I-85.

3. Mixed Use
Mixed use zoning allows for several different types of land uses together including single family residential, multi-family residential, commercial, and office. This type of zoning also allows for a more walkable environment. This zoning is utilized in several areas in Cornelius including the area along NC 115 and West Catawba Avenue. The Town of Davidson and the City of Charlotte also have areas that utilize this type of zoning.

4. Business
Concentrations of business zoning are found in Mecklenburg County along I-77 at its interchanges, along NC 115 in Huntersville and Davidson, along NC 73 in Huntersville, and along West Catawba Avenue in Cornelius. Business zoning within Cabarrus County is concentrated at NC 73 and Odell School Road, and I-85 and its interchanges.

5. Industrial
Industrial zoning concentrations are found within Mecklenburg County along NC 73 at the Catawba River, and along NC 115 in Huntersville and Cornelius. Within Cabarrus County, industrial zoning is concentrated around the Concord airport, along I-85, and where I-85 and NC 73 intersect.

6. Institutional
There are a few properties zoned as institutional that are for government purposes.
Demographic Projections

Very rapid growth is anticipated for the entire Charlotte region. Based on national prospects and extrapolated regional-national relationships, the regional population is expected to increase from 1,986,903 persons in 2002 to 3,474,000 persons in 2030, with employment rising from 1,081,764 jobs to 1,890,000 jobs over the same period.

It happens that the NC 73 corridor spans the region’s hottest growth area. The future expansion of the metropolis will have a somewhat northward tilt, with a growth epicenter located somewhere around Harris Boulevard rather than downtown Charlotte. This will put the NC 73 corridor under perhaps more growth pressure than any other comparably sized district in North Carolina.

Along with the existing growth momentum in Cabarrus, north Mecklenburg and south Iredell counties, the reasons for this expected northward tilt include a favorable mix of economic activity and a relative concentration of upper-income households. The income situation is shown below. The share of households in the NC 73 corridor occupying the upper third of the regional income distribution rose from 40% to 46% during the 1990s, and is projected to rise even higher over the next two decades. (The presence of Lake Norman is of course a factor.) A widely observed pattern is that jobs of all kinds tend to follow upper-income households – because they contain the people who decide where jobs will go – which in turn yields still more residential and economic development.

Both population and employment in the Route 73 corridor expanded by around 5% per year during the 1990’s. Future percentage rates of increase are expected to be lower, but in absolute terms the corridor will keep gaining progressively larger growth increments until sometime in the late 2020s. The gains so far have been heavily concentrated in area 3 (along I-77), but growth will progressively spread east and west over time.

The projected population for the NC 73 Corridor, by analysis area based on census tracts, is shown in the following two diagrams.

The full detailed demographic analysis is included in the Technical Appendix of this report.

<table>
<thead>
<tr>
<th>HOUSEHOLDS BY POSITION IN REGIONAL INCOME DISTRIBUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Third</td>
</tr>
<tr>
<td>Middle Third</td>
</tr>
<tr>
<td>Upper Third</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>Upper Share</td>
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## Demographic Summary - Population Estimates

<table>
<thead>
<tr>
<th></th>
<th>Number of Persons</th>
<th></th>
<th>Annual Compound Rate of Change</th>
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<tbody>
<tr>
<td><strong>Lincoln</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8,340</td>
<td>8,827</td>
<td>8,902</td>
</tr>
<tr>
<td>Eastern Lincoln Co.</td>
<td>19,601</td>
<td>24,405</td>
<td>25,275</td>
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<tr>
<td>West Lake Norman</td>
<td>6,855</td>
<td>10,416</td>
<td>11,029</td>
</tr>
<tr>
<td>Catawba River</td>
<td>1,857</td>
<td>3,523</td>
<td>3,864</td>
</tr>
<tr>
<td>East Lake Norman</td>
<td>14,629</td>
<td>36,464</td>
<td>40,913</td>
</tr>
<tr>
<td>Mecklenburg/ Cabarrus</td>
<td>9,136</td>
<td>14,141</td>
<td>15,215</td>
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<tr>
<td>Kannapolis/ Concord</td>
<td>5,323</td>
<td>7,463</td>
<td>7,977</td>
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<tr>
<td>Corridor</td>
<td>65,741</td>
<td>105,239</td>
<td>113,175</td>
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Demographic Areas of NC 73 Corridor

<table>
<thead>
<tr>
<th></th>
<th>2002</th>
<th>2025</th>
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<tbody>
<tr>
<td>Lincolnton</td>
<td>9,000</td>
<td>14,000</td>
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<tr>
<td>Eastern Lincoln County</td>
<td>26,000</td>
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<tr>
<td>West Lake Norman</td>
<td>12,000</td>
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<tr>
<td>Catawba River</td>
<td>4,500</td>
<td>12,000</td>
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<tr>
<td>East Lake Norman</td>
<td>47,500</td>
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<td>Mecklenburg/Cabarrus</td>
<td>18,000</td>
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<tr>
<td>Kannapolis/Concord</td>
<td>8,700</td>
<td>13,000</td>
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Future Land Use

West of Catawba River
Future land use plans for the counties and municipalities along the NC 73 corridor are in varying stages. Lincoln County has a Comprehensive Land Use Plan that was adopted on October 15, 2001. In this Comprehensive Plan is a description of projected growth in terms of land consumption, and the physical form or shape of new development. The plan distinguishes those areas that are most suitable for future development, and describes the types of land uses that will be most appropriate in the future.

The Infrastructure Initiatives for East Lincoln County includes areas within ½-mile of a water and sewer line. One goal included in the Comprehensive Plan is that higher density development should be located where excess capacity exists, within an area where systems can be upgraded for additional capacity or within a specified distance of existing facilities (½-mile from water and sewer, ½-mile from a principal road, and near other community facilities). The Infrastructure Initiatives also indicates that several improvements should be made to the road network, including (but not limited to) the upgrade of roads linking areas on either side of future and existing NC 16, extending airport access to the proposed thoroughfare or bypass that will connect US 321/NC 150 and NC 73, and reservation of land for the proposed Loop Road around Lincolnton.

The Composite Plan for Central Lincoln County and East Lincoln County provides for commercial and employment centers along the proposed NC 73 Bypass, around the Lincolnton-Lincoln County Airport, and along existing and proposed NC 16 south of NC 73. The commercial and employment centers have potential for a high concentration of commercial, office, industrial and business uses. These centers would typically be part of planned developments designed to include regional employers and retailers, in locations close to major arterial roads and major transportation centers (such as railroad and airports). These areas should be located where land is suitable for more intense development, where soil conditions and topography allow, and where water and sewer exist.

The Composite Plan also identifies several neighborhood centers, which could accommodate a mix of uses, predominantly commercial, to serve the local community. These neighborhood centers may also accommodate other community facilities. The Comprehensive Plan also indicates that commercial development should be concentrated around existing commercial uses, with linkage of parking lots and driveways, emphasis on streetscape design, and introduction of residential mixed-use projects.

The lower density rural areas in between Lincolnton and Ingleside Farm Road are not specifically identified in the Comprehensive Plan; however, these areas appear to call for primarily lower density residential uses. Lincoln County does not have density restrictions at the time of this study.
Future Land Use West of Catawba River
East of Catawba River
The Cornelius Land Use Plan dated July 24, 2002 identifies the area along NC 73 and West Catawba Avenue as a pedestrian-friendly, livable corridor. The intent is to preserve any environmentally sensitive or visually important areas, and to protect the distinctly rural nature of Westmoreland Road by using access management techniques.

Huntersville has no future land use map or plan, but the Town’s vision is shown graphically on a Factors Influencing Growth Map and a Zoning District Map. Huntersville designates that area around the interchange of NC 73 and I-77 as an Area of Special Interest. The Zoning District Map indicates that most of the area around this interchange is zoned Highway Commercial, and allows for auto-dependant uses that serve the local community and those traveling on the interstate. The Zoning District Map also indicates a Corporate Business District, which provides for large businesses and light industrial uses, in the southwest quadrant of the interchange.

There are three Transit-Oriented Development nodes along NC 115. There is one at Caldwell Station, one at Sam Furr Road and one at Anchor Mills. The Charlotte Area Transit System (CATS) has identified these three areas as potential stations for the commuter rail line that will eventually be constructed between the City of Charlotte and Iredell County. CATS is currently preparing station area plans for each of these locations.

The Town of Davidson has designated most of the land north of NC 73 and east of the Town Limits as a rural planning area. Because of the concern for loss of farmland, compact neighborhoods with substantial open space are required. By preserving open space and restricting the proliferation of segregated single-use developments, the rural character should be maintained. The base density allowed for TND-Os and residential subdivisions is 2 dwelling units per acre (DU/AC), 1 DU/2 AC in low-impact subdivisions and farmhouse clusters, 1 DU/20 AC in conservation easement subdivisions, and 1 DU/5 AC in rural subdivisions. Density bonuses are available if more than the required open space (land equal to 50% of the gross area of development) is protected.

The draft of Cabarrus County’s Northwestern Plan Area Future Land Use indicates that the area from the Mecklenburg County line eastward to Odell School Road is predominantly residential, with densities of 1-3 DU/AC. The area around the Coddle Creek Reservoir is primarily reserved for residential uses of 1 DU/2 AC. A Neighborhood Center is to be located at Poplar Tent Road, and Mixed-Use Centers are to be located at NC 73/Odell School Road, I-85/NC 73 and at the Kannapolis Parkway and I-85. In addition, an Employment Center is identified along the Kannapolis Parkway, mostly north of NC 73. This area is also identified in the Coddle Creek District Plan (September 1999) as one of the prime locations for manufacturing, warehousing, distribution, office and limited retail uses. Access to the Kannapolis Parkway, NC 73 and I-85 make it a significant potential development area.

According to the City of Concord draft Land Use Map (January 2003), a Village Node will be located in the area around Moss Creek, in the southwest quadrant of the intersection at NC 73 and Odell School Road. This area surrounding Moss Creek is designated as single-family related uses. The Village Nodes are to be relatively small mixed-use centers located at major intersections of more minor roadways. These centers may include commercial uses surrounded by residential uses, and could contain single-family houses, town homes, patio homes, or office uses. The single-family residential areas have densities of less than 4 DU/AC.
Future Land Use East of Catawba River

- Pedestrian-friendly livable corridor
- Area of Special Interest
- Rural Planning Area
- 1-3 Units per acre
- 1 Unit per 2 acre
- Employment
- Transit-Oriented Development
- Neighborhood Center
- Village Node
- Mixed Use Nodes
- Mixed Use
- Area of Special Interest
- Transit-Oriented Development
- Neighborhood Center
- Village Node
- Mixed Use Nodes
Existing and Future Traffic

Existing traffic data on NC 73 and connecting roads was obtained from NCDOT and information provided by the participating agencies. Some gaps in the count information located along NC 73 was caused by the fact that the I-77 interchange was not built until 1997. Therefore, there have not been any counts completed in those sections before 1997.

Future traffic on the study-area transportation network was estimated in a Transportation Needs Workshop, to determine anticipated capacity needs. Future-year “base” condition traffic volumes were based on future land use assumptions, for a base year consistent with the land use assumptions and the demographic projections for the project (see Technical Appendix), in order to produce assumed daily traffic volumes for NC 73. The scope of the project did not include creation of a new travel demand model or adaptation either of the MPO models. Traffic was represented by assumed daily traffic volumes on major roadway segments.

Participants in the Transportation Needs Workshop included: Anna Brigman (City of Charlotte Department of Transportation), Bill Finger (CDOT), Bill Coxe (Huntersville), Linda Dosse (NCDOT-Transportation Planning Branch), Bob Binford (Mecklenburg County), Danny Rogers (MUMPO), Dawn Qiu (LNRPO), Tom Thrower (NCDOT-Division 10), Mike Holder (NCDOT-Division 12), and Rodger Lentz (Cabarrus County).

A linear regression analysis was used to create the 2003 and 2025 traffic forecasts. The linear regression data was for comparison purposes only. Following the Workshop, a higher short-term compound growth rate was used, and then a lower long-term compound growth percentage was applied for the study segments. A spreadsheet was created with 1991 and 2000/2001 counts, the respective compound annual growth rates, and the 2025 AADT projections using this methodology.

Some parameters and limitations of the forecasting methodology included:

* The analysis segments 4, 5, and 6 exhibited a constraint, because the traffic traveling in these sections are generally passing through to get to and from the neighboring counties or “cutting around the lake”, and are not traveling from one end of the project study area to the other. The key constraint is the Catawba River Bridge.

* It was determined that, for the future 2025 ADT assumptions, there will be a traffic increase along NC 73 due to transit usage in the Huntersville area, but specific projections were attempted for this study.

* The growth of traffic on NC 150 is likely to continue, because it is the only facility providing cross-connectivity over Lake Norman near the study area.

* For use in determining high growth area possibilities in the area around Odell School Road, the sewer line boundaries should be checked, and possibly extended.

* Two unfunded TIP projects are located in study area segments 3 and 4. The unfunded TIP projects may realign NC 73 from Reinhardt Circle to the Old Plank Road area to the east, and widen NC 73 to at least 4-lanes to the Mecklenburg county line.

* There will also be a new 4-lane divided facility in Huntersville which will connect to NC 73. This project, known as Vance Road, will not be completed until after 2025.

* The workshop group collectively wrote out “expert judgment” traffic projections using above methodologies for the 2025 design year scenario. Specific topics of interest for each study segment are listed on the next page.
<table>
<thead>
<tr>
<th>Segment</th>
<th>Key Issues</th>
</tr>
</thead>
</table>
| 1       | NC 150 traffic volumes will likely be quite heavy in the future, also.  
Assume traffic volumes to be in the range of 26,000 – 45,000.  
2-lane segment of NC 27 from NC 150 to NC 73 should be upgraded to four lanes.  
Assume a four-lane new Bypass facility  
Assume a 60%/40% split of traffic between NC 27 and NC 150  
Assume an even split of remaining NC 27 traffic onto new NC 73 Bypass  
Assume that subtracting this traffic from Segment 2 NC 73 traffic estimates in the vicinity will result in equating to NC 27 traffic south of the new NC 73 crossing. |
| 2       | Assume a "low" volume point in the middle of this segment  
Assume traffic volumes to be in the range of 16,000 – 18,000.  
Assume the potential of a relocated facility (Unfunded TIP Project), especially if a thruway concept is favored in this area or Segment 3 |
| 3       | Assume traffic volumes to be in the range of 20,000 – 24,000, as was forecast by the compound traffic volume growth estimates. However, the east end of segment 3 was adjusted to match segment 4 (30,000).  
Assume completion of an unfunded TIP project to widen facility to at least four travel lanes from this segment to Mecklenburg County Line. |
| 4       | Compound traffic growth projections from past growth figures begin to deviate from acceptable future year results. This occurs for Segments 5 through 9, and many results aren’t available for those segments due to a lack of past year data. An agreed upon “mixed” compound growth rate was used from this point forward – usually representing a high short-term percentage and a lower long-term percentage.  
Assuming traffic volumes to be grown 9% for the first 10 years, and then 2% for the remaining years results in a 30,000 ADT in this segment.  
The effects of realigned NC 16 and potential high growth in this segment need to be accounted, as well as the 50,000 ADT estimate at the Catawba River Bridge.  
Therefore, traffic was estimated to be 29,000 west of NC 16; 36,000 between old and new NC 16; 43,000 east of Pilot Knob Road; and 45,000 in the vicinity of Club Drive. |
| 5       | Assume traffic volumes to be grown 8% for the first 10 years, and then 3% for the remaining 14 years equates to approximately 50,000 ADT.  
Assume the critical "highest point" to be inflexible at the Catawba River Bridge.  
Noted that the MUMPO 2025 LRTP model’s ADT to be 43,000 at the Lincoln County Line. |
| 6       | Assume 50,000 ADT continues from Segment 5  
Assume a new 4-lane divided facility in Huntersville which will connect to NC 73 and down to the I-485 Loop. This project, known as Vance Road, will not be completed until after 2025, but is forecast to carry an ADT of 27,000 – 30,000.  
Assume traffic volume reduces to 42,000 because of Vance Road. |
| 7       | Assume the ADT critical high point to be 56,000 at the I-77 interchange (2 percent compound growth per year to 2025).  
Assume that additional traffic added to 42,000 ADT from Segment 6 results in 45,000 ADT just west of Birkdale development and about 50,000 at the Birkdale development.  
Assume a significant reduction of NC 73 traffic at US 21 – reduce forecast to 43,000 on NC 73.  
Assuming traffic volumes to be grown 9% for the first 4 years, and then 2% for the remaining years results in a 40,000 ADT just west of NC 115 (Old Statesville Rd).  
Assume a volume reduction to 32,000 east of NC 115.  
A possible future sewer line extension to the east of this segment will likely favorably impact growth. |
| 8       | Continue a 32,000 ADT to Davidson-Concord Road.  
Increase projection to 38,000 ADT with additional Davidson-Concord Road traffic.  
Assume an ADT drop of 8,000 at Poplar Tent Road as traffic uses it to access areas to the south and east.  
Assume traffic volumes to be grown 5.8% for the first 10 years, and then 2% for the remaining years resulting in an ADT of 30,000 near Poplar Tent Road.  
Assume a "low point" volume of 28,000 just west of Odell School Road and increase traffic to 30,000 to the east of Odell School Road, as it will slowly build to I-85 interchange.  
Assume watershed conservation district will limit development to the north of NC 73. |
| 9       | Assume an increase to 39,000 between the West Side Bypass and I-85, and assume volumes remain consistent to the vicinity of I-85.  
Assume highest traffic volume on NC 73 nearest I-85 interchange to be 44,000 vehicles per day. |
Forecasted volumes were based on a number of assumptions, including the assumption that Vance Road would be constructed and that no restriction on roadway type or capacity was made when estimating the volumes along NC 73.

Some of the key conclusions and observations of the Transportation Needs Workshop and the Steering Committee were:

* Based on forecasted traffic volumes, the major areas of concern appeared to be in the Huntersville “downtown area” near I-77 and near NC 16 in Lincoln County. The question will be how much congestion people are willing to tolerate in these areas.

* Forecasted “thruway” volumes were the same as forecasted “linked center” volumes; however, the “thruway” concept was based on the assumption of greater access-control, higher speeds and future development occurring off of the roadway. These assumptions result in higher capacities for the “thruway” sections in many segments.

* The forecasted numbers in the “network” concept through Huntersville represent the complexity of anticipating traffic in this area without the benefit of a regional model. There will likely not be an equal distribution of traffic on all parallel routes, and half of the new traffic could stay on NC 73, perhaps a quarter of the traffic could go to Westmoreland Road and a quarter to Stumptown Road.

* The Steering Committee agreed that congestion is more tolerable if there are options, and there should be a balance between the tolerance for more lanes and the tolerance for more congestion.

The existing and anticipated traffic volumes through the corridor are indicated in the following diagrams, and in more detail in the Technical Appendix. Traffic volumes are indicated in Average Annual Daily Traffic (AADT) estimates.
### Future Traffic West of Catawba River

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Lincolnton

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NC 73 Transportation / Land Use Corridor Plan
Future Traffic East of Catawba River

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Major Transportation Plans

West of Catawba River
Northeast and Northwest Loop
The 1998 Lincolnton Thoroughfare Plan Study and Report, prepared by the Transportation Planning Branch of the North Carolina Department of Transportation for the City of Lincolnton, was adopted in 1996. Included in this document is the Lincolnton Urban Area Transportation Plan map (dated July 11, 1996), which shows a proposed major thoroughfare or loop that will encircle Lincolnton. The Northeast Loop will begin at the proposed NC 73 Extension/Bypass near Hill Road, and will become the Northwest Loop, which will merge with NC 150 at Confederate Road. This loop facility is ultimately expected to be a four-lane, divided, controlled-access freeway, but only two lanes will be constructed initially.

NC 150 Relocation
The Lincolnton Urban Area Transportation Plan map also shows a proposed relocation of NC 150 from Laboratory Road to US 321 (where it will merge with the proposed NC 73 Extension/Bypass). This new facility is expected to be a four-lane, divided, controlled-access freeway, and it will serve as part of the Northeast Loop.

NC 150 Relocation and Widening
Another NCDOT project(s) is the proposed relocation and/or widening of NC 16 between the community of Lucia in Gaston County, through the eastern portion of Lincoln County, to the Newton-Conover Loop in Catawba County. Through Lincoln County, NC 16 will be relocated, and the proposed cross section is a four-lane divided, limited access expressway. The portion of this new roadway from Gaston County to NC 73 was under construction at the time of this study, and is scheduled for completion in 2004, while the portion of the new route from NC 73 to existing NC 16 just north of NC 150 is expected to be let for construction in 2004. An interchange is being constructed at the intersection of relocated NC 16 and NC 73.

Transportation Improvement Program (TIP). TIP R-617 is the partial relocation and widening of NC 150 from NC 279 at Cherryville to relocated US 321. The section of this roadway between existing US 321 Business (Gastonia Highway) and US 321 Bypass (Lincolnton Bypass) will include an interchange at Smith Farm Road/US 321. This section is scheduled to be let for construction in 2004.
Major Transportation Plans West of Catawba River
East of Catawba River
Vance Road Extension
The Mecklenburg-Union Metropolitan Planning Organization’s (MUMPO) Transportation Plan, dated November 16, 1994, includes an extension of Vance Road from its current end point at Mt. Holly-Huntersville Road to Gilead Road. The southern half of this proposed major thoroughfare on new location is a Horizon Year 2020 project.

Ervin Cook Road Extension
The Thoroughfare Plan includes an extension of Ervin Cook Road from the proposed extension of Stumptown Road (see below) to Birkdale Commons Parkway, and southward from Gilead Road to the Vance Road extension. This proposed minor thoroughfare is not included on either the Horizon Year 2010 or 2020 map.

Stumptown Road (Hugh Torance Parkway) Extension
The Transportation Plan also includes a relocation and extension of Stumptown Road from a point just west of I-77 to a location near NC 73 and Beatties Ford Road. Only a small portion of this proposed minor thoroughfare is on the Horizon Year 2010 map.

Prosperity Church Road Extension
The Transportation Plan shows an extension of Prosperity Church Road from its current end point at Eastfield Road to a location near NC 73 and Davidson-Concord Road. This proposed major thoroughfare is not included on either the Horizon Year 2010 or 2020 map. The Town of Huntersville plans to initiate a feasibility study for this extension in 2004.

I-485
The MUMPO Horizon Year 2010 map includes the I-485 loop on the north side of the City of Charlotte. This proposed six-lane freeway between I-85 and points west of I-77 is also included in the NCDOT’s TIP (R-2248). It is complete in some locations and under construction in others. The segment from I-77 east to I-85 is scheduled for completion in 2009.

Westside Bypass (Kannapolis Parkway)
The Westside Bypass is a proposed four-lane thoroughfare (except for a five-lane section at Crisco Road) from NC 49 to NC 152. This new roadway is included in the Long Range Transportation Plan 2000-2025 for the Cabarrus/Rowan Urban Area Metropolitan Planning Organization, and is also part of the TIP Program (U-2009 and R-2246). TIP U-2009 is that portion of the Westside Bypass from south of I-85 to SR 1616 (Tuckaseegee Road) near the Rowan County border. The Westside Bypass south of NC 73 to I-85 has been completed. TIP R-2246 is the continuation of the Westside Bypass from a point south of I-85 to NC 49. Part of this project is currently under construction.

Charlotte Area Transit System (CATS) North Corridor Commuter Rail and Enhanced Bus Service
The System Plan, adopted by the Metropolitan Transit Commission in 2003, recommended commuter rail service for the North corridor to take advantage of the little-used Norfolk Southern “O” line. This recommendation supports the adopted land use regulations and policies of Charlotte, Huntersville, Cornelius, and Davidson that focus new development east of I-77 at stations located along the “O” line.

The System Plan also recommended enhanced bus services along I-77 to take advantage of High Occupancy Vehicle (HOV) lanes presently being constructed by NCDOT as part of the I-77 widening project. CATS will construct new Park ‘N Ride lots near I-77 interchanges.

Under NCDOT’s current schedule for I-77 widening, the North Corridor HOV lanes will be completed to I-485 by 2004. North Corridor commuter rail service would be implemented within the next 10 years.
Major Transportation Plans East of Catawba River

- Kannapolis Parkway
- North Corridor Commuter Rail
- I-77 Enhanced Bus
- I-485

Mecklenburg County