

# CH. 1 PURPOSE AND NEED FOR ACTION



*Chapter 1 summarizes the Purpose and Need Statement for the project and why the proposed action is needed. Supporting information includes the project history; a description of the existing roadway network and how it operates now and in the future; and data on population and employment, southern Gaston County attractions, other transportation modes, and area transportation and land use plans. The purpose and need drive the process for alternatives consideration and in-depth analysis.*

## 1.1 PROPOSED ACTION

The North Carolina Turnpike Authority (NCTA) proposes to construct a project known as the Gaston East-West Connector, which would be a controlled-access toll road extending from I-85 west of Gastonia in Gaston County to I-485 near the Charlotte-Douglas International Airport in Mecklenburg County. The purpose of the project is to improve east-west transportation mobility in the area around the City of Gastonia and other municipalities in southern Gaston County (between Gastonia and the Charlotte metropolitan area), with special emphasis on establishing direct access between the rapidly growing areas of southeast Gaston County and west Mecklenburg County. **Figure 1-1** shows the general project location.

The project is included in the North Carolina Department of Transportation (NCDOT) *2009-2015 State Transportation Improvement Program (STIP)* as STIP Project U-3321. The project is known as the “Gaston East-West Connector” and as the “Garden Parkway.” This study refers to the project as the Gaston East-West Connector.

North Carolina roads traditionally have been built with taxpayer funds, either through the state transportation budget or federal-aid highway funds allocated to the state. There are many other priority projects statewide and, due to funding constraints, there is not enough funding available from traditional sources in the foreseeable future to construct all priority projects. The current NCDOT *2009–2015 STIP* includes the project as a toll facility, and traditional (non-toll) transportation funding for this project is not likely in the foreseeable future (as acknowledged in the May 21, 2007, letter from the NCTA to the NCDOT [**Appendix A-5**]). **Section 2.2.7.3** includes additional discussion of financial feasibility.

The purpose and need for the project are documented in detail in the *Updated Purpose and Need Statement for the Gaston East-West Connector* (PBS&J, October 2008), incorporated by reference, and available on the NCTA Web site ([www.ncturnpike.org/projects/gaston](http://www.ncturnpike.org/projects/gaston)).

## 1.2 NEED FOR PROJECT

The primary needs for the proposed action are summarized below. Detailed discussions of existing and projected conditions within the Project Study Area are presented in **Sections 1.5** through **1.8**.

***Poor Transportation Connectivity Between Gaston County and Mecklenburg County and Within Southern Gaston County.***

- Limited crossings of the Catawba River are constraining travel between Gaston and Mecklenburg Counties. The Catawba River separates Gaston and Mecklenburg Counties. Presently, there are only four crossings of the river, with none of them located in the southern half of Gaston County (**Section 1.5.1.3**).
- Projected growth in southern Gaston County and western Mecklenburg County will continue to increase demands for accessibility and connectivity between the two counties. A review of tax parcel data shows that from 2000 to 2008, the number of residences in southern Gaston County and western Mecklenburg County has increased approximately 24 percent (**Sections 1.6.1 and 1.7.1**).
- South of I-85 in Gaston County, a lack of connecting east-west roadways makes travel circuitous and limits mobility for travel in southern Gaston County. Currently, there are no continuous east-west routes in southern Gaston County. The roads in southern Gaston County generally run north-south (**Section 1.6.1**).
- Planned growth in southern Gaston County will result in an increased need for east-west mobility. Between 1990 and 2000, southeastern Gaston County was the fastest growing part of the county. This part of the county is expected to continue to experience high residential growth through 2020 (*Gaston County Comprehensive Plan*, Gaston County, July 2002) (**Sections 1.6.1, 1.7.1, and 1.8.3.1**).
- The Gaston Urban Area Metropolitan Planning Organization (GUAMPO) and the Mecklenburg-Union MPO (MUMPO) show in their plans a new location roadway running through southern Gaston County and connecting over the Catawba River to Mecklenburg County (**Section 1.8.2**).
- The Gaston East-West Connector is a Strategic Highway Corridor (SHC). The Gaston East-West Connector is designated as a new freeway facility within the *Strategic Highway Corridors Vision Plan* (SHCVP) (**Section 1.8.1.2**).

***Existing and Projected Poor Levels of Service on the Project Area's Major Roadways.***

- Traffic volumes are projected to increase on I-85, I-485, US 29-74, and US 321 in the Project Study Area through 2030. On I-85, traffic volumes are projected to increase 29-50 percent between 2006 and 2030, to 105,000-198,400 vehicles per day (**Section 1.6.2**).
- There are existing poor levels of service (LOS) on segments of I-85 in the Project Study Area. Based on 2006 traffic volumes, I-85 is operating at an LOS E or F from Exit 19 (NC 7 [Ozark Avenue]) through Exit 27 (NC 273 [Park Street]) in Gaston County (**Section 1.6.2.3**).
- Levels of service on I-85, US 29-74, and US 321 are projected to worsen in the future (**Section 1.6.2**).
- Congestion and frequent incidents on I-85 inhibit regional travel and diminish the ability of I-85 to function as a Strategic Highway Corridor and Intrastate Corridor (**Section 1.6.2.3**).

## 1.3 PROJECT PURPOSE

The purpose of the proposed action is to improve east-west transportation mobility in the area around the City of Gastonia, between Gastonia and the Charlotte metropolitan area, and particularly to establish direct access between the rapidly growing area of southeast Gaston County and western Mecklenburg County. This project purpose is based on the following needs:

- Need to improve mobility, access, and connectivity within southern Gaston County and between southern Gaston County and western Mecklenburg County.
- Need to improve traffic flow on the sections of I-85, US 29-74 and US 321 in the Project Study Area and improve high-speed, safe, reliable regional travel service along the I-85 corridor.

Several performance measures were used in the first screening of various alternative concepts to evaluate their ability to meet the project's purpose, including the east-west mobility and direct access components as stated above. The evaluation methods and results are discussed in **Section 2.2**. To evaluate their ability to meet the purpose and need, alternative concepts were evaluated to determine whether they would:

- Reduce travel distances and/or travel times between representative origin/destination points within southern Gaston County and between southern Gaston County and Mecklenburg County.
- Provide a transportation facility with a mainline that would operate at acceptable levels of service (generally LOS D or better on the mainline) in the design year (2030) for travel between Gaston County and Mecklenburg County.
- Reduce congested vehicle miles traveled and/or congested vehicle hours traveled in Gaston County compared to the No-Build Alternative in 2030.

To meet the purpose and need, an alternative must provide more than a minor improvement. An improvement would be considered minor if it is localized, temporary, and/or largely unnoticeable to the typical user of the transportation system. Alternatives that provide only a minor improvement do not meet the purpose and need, and therefore are not reasonable alternatives.

## 1.4 BACKGROUND INFORMATION

### 1.4.1 PROJECT SETTING

As shown in **Figure 1-1**, the Project Study Area is located in southern Gaston County and western Mecklenburg County, within the unincorporated areas of these counties and within the municipalities of Gastonia, Bessemer City, McAdenville, Cramerton, Belmont, and Charlotte. The nearest major city is Charlotte, which is approximately 20 miles to the east in Mecklenburg County.

#### **Project Setting**

*The topography in the study area is gently rolling to hilly, with Crowders Mountain State Park on the west and the Catawba River on the east. Land uses are primarily suburban and rural.*

The Project Study Area consists of the following general boundaries: I-85 to the north, the South Carolina state line to the south, Charlotte-Douglas International Airport to the east, and the I-85 and US 29-74 junction and Crowders Mountain State Park to the west.

The Mecklenburg-Gaston County area has a temperate climate. The topography of the project area is gently rolling to hilly, with several pronounced ridges. The most prominent natural features in the project area are Crowders Mountain to the west in Crowders Mountain State Park and the Catawba River to the east. The Catawba River is the boundary between Gaston County and Mecklenburg County. In the Project Study Area, the Catawba River is dammed, creating Lake Wylie.

Outside the municipal boundaries, the land uses in southern Gaston County are suburban and rural, with residential subdivisions scattered among large tracts of undeveloped property and agricultural land. The Mecklenburg County portion of the Project Study Area is one of the few remaining relatively undeveloped areas near Charlotte, and it is rapidly being developed. The major feature nearby is the Charlotte-Douglas International Airport, located on the east side of I-485. There are business and commercial uses surrounding this facility.

## 1.4.2 HISTORY OF PROJECT

### 1.4.2.1 Local Project Planning Efforts

Plans to improve east-west mobility in southern Gaston County through construction of a new location roadway have been discussed by the GUAMPO since the late 1980s. A timeline is provided below.

#### **Local Planning**

*Local planning efforts for the project have been underway since the late 1980s.*

- 1989: Need for improved east-west mobility and a southern bypass first identified with update of the Gaston Urban Area Thoroughfare Plan. GUAMPO held eleven workshops/meetings and thirteen formal public hearings.
- 1991: The “US 321/74 Bypass” included on Thoroughfare Plan.
- 1992: The GUAMPO Transportation Advisory Committee (TAC) requested MUMPO place the US 321/74 Bypass on the MUMPO Thoroughfare Plan.
- 1994: MUMPO adopts a Thoroughfare Plan that includes the US 321/74 Bypass.
- 1996: A citizens’ advisory council was formed to serve as an advisory board to GUAMPO TAC. This group, later called the US 321/74 Bypass Citizens’ Committee, met from 1997 to 1998 and recommended a corridor for the US 321/74 Bypass.
- 1998: The GUAMPO holds a public hearing regarding the US 321/74 Bypass location.
- 1999: The proposed US 321/74 Bypass location appears on the GUAMPO Thoroughfare Plan.
- 2000: GUAMPO TAC passed a resolution stating its support of the use of “alternative funding methods to accelerate construction of the US 321/74 Bypass, including methods that would require the payment of a toll by motorists” (GUAMPO, 2030 LRTP, May 2005, p. 74).

- 2001: GUAMPO TAC approved a motion to use the name “Garden Parkway” in reference to the US 321/74 Bypass.
- 2004: GUAMPO TAC adopts a corridor for the Garden Parkway, shown in **Figure 1-2**.
- 2005: The GUAMPO 2030 Long Range Transportation Plan recognizes the Garden Parkway as two projects: The Gaston East-West Connector (STIP Project U-3321, from I-85 east to I-485) and the US 321 Bypass (STIP Project R-2608, from US 321 south to I-85) (GUAMPO, 2030 LRTP, May 2005, p. 71). Each project has independent utility and logical termini. Both would connect controlled-access facilities with another controlled-access facility. Each would serve separate purposes and would function even if the other project was not constructed (*Memorandum – Gaston County East-West Connector – TIP Project U-3321 – Logical Termini*, PBS&J, May 2008, incorporated by reference).
- 2001-2008: GUAMPO and MUMPO representatives participate on the Agency Coordination Team involved in the preparation of the Gaston East-West Connector Draft EIS.

**NCTA**

*NCTA selected the Gaston East-West Connector as a candidate toll facility in February 2005.*

#### 1.4.2.2 Planning by NCDOT and NCTA

The NCDOT began planning for the Gaston East-West Connector in 2001. NCTA’s involvement began in 2005. A timeline is outlined below.

- 2001: NCDOT began studies of STIP Project U-3321 to comply with the National Environmental Policy Act (NEPA).
- 2001-2005: While under the administration of NCDOT, the project followed the NEPA/404 Merger 01 Process for concurrence and coordination with environmental resource and regulatory agencies. This process is described in **Section 9.2.3**.
- October 2002: The NC General Assembly established a law creating the NCTA. The law authorized the NCTA to study, plan, develop, and undertake preliminary design work on up to nine Turnpike projects, with the Gaston East-West Connector specifically mentioned as one of the projects (NCGS 136-89.183).
- 2004: the NCDOT Board of Transportation established a system of Strategic Highway Corridors for the state. The Gaston East-West Connector is part of this Strategic Highway Corridor program (**Section 1.8.1.2**).
- February 2005: The NCTA Board of Directors selected the Gaston East-West Connector as a candidate toll facility.
- 2005-2008: The NCTA continued to meet with the environmental resource and regulatory agencies through Turnpike-Environmental Agency Coordination (TEAC) meetings, in accordance with a Coordination Plan developed for this project pursuant to 23 USC 139, also know as Section 6002 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) (**Sections 9.2.3.2 and 9.2.3.3**). The Coordination Plan for this project is modeled on the NCDOT NEPA/404 Merger 01 Process.

- April 2006: The Notice of Intent to prepare a Draft Environmental Impact Statement (EIS) for the project was issued by the Federal Highway Administration (FHWA) (**Section 9.2.2** provides more details).
- May 2007: The NCDOT and the NCTA agree that NCDOT would not likely implement the project as a non-toll facility and only toll alternatives should be evaluated (Letter from NCTA to NCDOT dated May 21, 2007, included in **Appendix A-5**).
- 2006-2008: Numerous field studies and analyses were conducted to aid in developing alternatives, preparing engineering designs, and evaluating alternatives.

### 1.4.2.3 Public and Agency Involvement in Development of the Purpose and Need

Public and agency coordination for the project is discussed in **Chapter 9**. This section briefly summarizes the coordination and involvement activities relating to the project's purpose and need.

The purpose and need for the project was first developed in 2002, when the project was being planned by NCDOT. The purpose and need for the project was updated by NCTA in 2008 to include the 2030 travel demand forecasts (**Section 1.4.2.4**) and recent updates to transportation and land use plans. The environmental resource and regulatory agencies concurred on the original purpose and need in July 2002 and on the updated purpose and need in October 2008 (**Section 9.2.3.3**).

Public comment on the purpose and need was solicited at the first series of Citizens Informational Workshops held September 30 and December 9 and 10, 2003 (**Section 9.1.1.1**). A majority of the citizens providing written comments on the project supported a new location roadway and the purpose of the project.

The *Updated Purpose and Need Statement for the Gaston East-West Connector* (PBS&J, October 2008) was presented to the public at the third series of Citizens Informational Workshops held August 6, 7, and 11, 2008. The document also was available for download on the project Web site. Written comments were submitted both supporting and disagreeing with the need for the project. No substantive comments regarding the specifics of the purpose and need were received.

### 1.4.2.4 Traffic Forecasting for the Purpose and Need

When the purpose and need for the project was first developed in 2002, the planning horizon year was 2025. The 2002 version of the project's purpose and need was based on traffic forecasts for 2025 using the two travel demand models that covered the Project Study Area, one for Gaston County and one for Mecklenburg County (forecasts later compiled in *Gaston County East-West Connector Study – Transportation Demand Modeling Technical Memorandum*, (Martin/Alexiou/Bryson, February 2005), incorporated by reference.

The current travel demand model used for the 2008 update to the project's purpose and need (the Metrolina travel demand model) has a planning horizon of 2030. It covers a thirteen-county region that includes both Gaston County and Mecklenburg County. The 2030 traffic forecasts for the No-Build Alternative are included in the *Gaston East-West Connector (U-3321) Traffic*

*Forecasts for Toll Alternatives* (Martin/Alexiou/Bryson, August 2008), incorporated by reference and available on the NCTA Web site ([www.nctturnpike.org/projects/gaston](http://www.nctturnpike.org/projects/gaston)). The 2030 forecasts are discussed in more detail in **Section 1.6.2**.

Both the 2025 forecasts and the 2030 forecasts predict increasing traffic volumes on the Project Study Area's major roadway network over existing conditions. The updated 2030 forecasts reaffirmed the need for the project.

## 1.5 EXISTING TRANSPORTATION SYSTEM

### 1.5.1 EXISTING ROAD NETWORK

#### 1.5.1.1 Major Roadways and their Characteristics

The primary east-west routes through Gaston County are I-85 and US 29-74. The I-85/US 29-74 travel corridor is used by most of the traffic traveling east to west within the Project Study Area, and there are no other crossings of the Catawba River in Gaston County south of these two roadways.

#### ***Interstate 85***

*I-85 is the only controlled access east-west highway through Gaston County.*

The major arterials that connect to the I-85/US 29-74 travel corridor in Gaston County are, from west to east: US 321, NC 274 (Union New Hope Road), NC 279 (South New Hope Road), and NC 273 (Southpoint Road).

US 321 is the primary north-south route through the county. It intersects the I-85/US 29-74 corridor in the center of Gastonia. I-485 provides north-south travel in the Mecklenburg County portion of the Project Study Area.

NC 279 and NC 273 provide north-south connections to southeastern Gaston County parallel to either side of the South Fork Catawba River. Minor arterials that intersect NC 273 and NC 279 generally traverse in a northeast-southwest direction. South of I-85 and US 29-74, east-west travel in southern Gaston County is circuitous, as there are no direct east-west routes across southern Gaston County.

**Figure 1-3** shows the characteristics of the major roadways in the Project Study Area. These roads are described below:

**I-85.** I-85 is a controlled-access north-south interstate route that traverses Gaston County in an east-west direction. I-85 extends from Richmond, Virginia, through Atlanta, Georgia. I-85 connects Gaston County with Charlotte to the northeast and Greenville-Spartanburg, South Carolina, to the southwest.

In the Project Study Area, I-85 (Exit 10 [US 29-74] to Exit 30 [I-485]) varies between six and eight lanes, with posted speed limits from 55 to 65 miles per hour (mph). There are thirteen interchanges along this segment, eleven in Gaston County and two in Mecklenburg County.

**I-485.** I-485 is a partially-completed outer loop of Charlotte in Mecklenburg County. Within the Project Study Area, it is located on the west side of Charlotte-Douglas International Airport, and extends just north of I-85 to NC 16. It is six lanes wide (three in each direction) with a posted

speed limit of 65 mph. Within the Project Study Area, there are interchanges at I-85, US 29-74 (half clover), and Steele Creek Road (NC 160) (partial clover).

**US 29-74.** US 29 and US 74 are coinciding routes through most of Gaston County and part of Mecklenburg County. The road is also called Franklin Boulevard (west of Redbud Drive in Gaston County) and Wilkinson Boulevard (east of Redbud Drive). US 29-74 is south of and parallel to I-85, and travelers driving between Gaston or Cleveland Counties and Mecklenburg County can use US 29-74 as an alternative to using I-85, especially in the event of congestion or incident delays.

The number of lanes varies from four (at the South Fork Catawba River crossing and west of Myrtle School Road [SR 1136]) to seven, with posted speed limits between 35 and 50 mph. Access control along US 29-74 varies from partial control of access to no control of access, with numerous signalized and unsignalized intersections and residential and commercial driveways.

**US 321.** US 321 is the only north-south US route in Gaston County. It connects to I-40, Hickory, and Boone to the north and with South Carolina to the south. US 321 from Dallas, North Carolina, to Hickory is mostly a full-control-of-access, four-lane divided facility. Consequently, US 321 serves as an alternative north-south route to I-77 that connects to I-40. Within the Project Study Area, US 321 varies from four to six lanes, with posted speed limits ranging from 35 to 55 mph. There is no control of access on US 321 within the Project Study Area. Through downtown Gastonia, US 321 is a one-way pair of streets (Chester Street is southbound and York Road is northbound).

**NC Routes.** Segments of four NC routes are located in southern Gaston County. These NC routes are NC 7, NC 273, NC 274, and NC 279. Segments of one NC route, NC 160, are located within the western Mecklenburg County portion of the Project Study Area.

### 1.5.1.2 Types of Travel on Existing Roadways

Local travel statistics are available for the project area. The *Greater Charlotte Region Household Travel Survey* (NCDOT, SCDOT, City of Charlotte DOT, September 2002), collected travel information from a sample population of 3,333 households (including 7,418 people) from ten counties. In this study, the Greater Charlotte Region includes Mecklenburg County, Gaston County, Lincoln County, Cabarrus County, Rowan County, Stanly County, Union County, portions of Iredell and Cleveland Counties, and York County, South Carolina. For the region, there were 1.99 vehicles per household, and each vehicle traveled an average of 24.2 miles per day.

#### **Commuters**

*Approximately 37 percent of workers living in Gaston County work outside the county. Of these, 70 percent work in Mecklenburg County.*

The predominant transportation type for the region is car, van, or truck (92.6 percent), followed by school bus (3.8 percent), and walking (2.2 percent). Transit bus, bicycle, and motorcycle are used for only 1 percent of the trips in the region, according to the survey. Overall, each household made 7.93 vehicle trips per day, distributed mainly among trips to home (33.5 percent), work (16.8 percent), personal business (10.9 percent), and shopping (9.4 percent).

Data on commuting patterns is available from the US Census. **Table 1-1** shows commuting patterns within the Charlotte Metropolitan Statistical Area (MSA) based on 2000 Census data.

**TABLE 1-1: Commuting Patterns in Charlotte Metropolitan Statistical Area based on 2000 Census Data**

County of Residence	County of Work								Total # Workers Living in County
	Cabarrus	Gaston	Lincoln	Mecklenburg	Rowan	Union	York, SC	Elsewhere	
Cabarrus	35,032	400	92	22,693	4,025	525	282	2,933	65,982
Gaston	423	56,321	1,868	<b>23,101</b>	1,046	226	1,602	4,754	89,341
Lincoln	195	3,166	15,249	6,545	320	93	99	6,136	31,803
Mecklenburg	6,694	<b>3,948</b>	748	329,498	1,284	4,853	4,217	11,654	362,932
Rowan	8,155	232	99	4,942	40,721	181	122	5,847	60,299
Union	551	184	7	24,892	87	32,613	608	2,275	61,217
York, SC	279	2,526	155	23,907	228	439	47,898	4,490	79,922
Elsewhere	5,626	8,339	2,991	40,131	10,665	6,646	8,726	N/A	N/A
<b>Total # Working in County</b>	<b>56,955</b>	<b>75,116</b>	<b>21,209</b>	<b>475,709</b>	<b>58,376</b>	<b>45,576</b>	<b>63,554</b>	<b>N/A</b>	<b>--</b>

Source: 2000 US Census

As shown in **Table 1-1**, Mecklenburg County attracts the majority of commuters in the region. In 2000, more than 33,000 people left Gaston County daily to go to work, with the overwhelming majority (23,101 commuters, or 70 percent) traveling to Charlotte or elsewhere in Mecklenburg County. Conversely, nearly 4,000 people commuted from Mecklenburg County to Gaston County each workday. Altogether, there are more than 27,000 workers commuting between Gaston and Mecklenburg Counties, which demonstrates a need for connectivity between the counties.

### 1.5.1.3 Roadway Connections between Gaston and Mecklenburg Counties

Gaston County is separated from Mecklenburg County, the region’s largest employment and destination generator, by the Catawba River. There are only four roadway connections between Gaston and Mecklenburg Counties over the Catawba River. Two of these crossings, NC 16 and NC 27, are both four-lane roadways located in the northern half of Gaston County. In the center of Gaston County, the two adjacent parallel connections across the river are I-85 and US 29-74. The next crossing of the Catawba River is outside Gaston County on NC 49, connecting to York County, South Carolina, approximately 11 miles to the south.

**Catawba River Crossings**

*There are only four bridges over the Catawba River between Gaston and Mecklenburg Counties. None are in southern Gaston County.*

According to 2006 annual average daily traffic (AADT) maps from NCDOT, there were approximately 17,000 vehicles per day (vpd) using the NC 16 crossing and 12,000 vpd using the NC 27 crossing. The 2006 AADT volumes for the I-85 and US 29-74 crossings were approximately 121,000 vpd and 19,000 vpd, respectively. Based on the AADT information, the I-85/US 29-74 corridor carries approximately 82 percent of the traffic volume traveling between Gaston and Mecklenburg Counties.

## 1.5.2 OTHER TRANSPORTATION MODES

### 1.5.2.1 Railways

There is one major rail line in the Project Study Area. It runs east-west near I-85 (**Figure 1-1**). This Norfolk-Southern and CSX rail line carries freight traffic and Amtrak passenger rail service. There is also a freight rail line running north-south parallel to the east side of US 321, and a spur route serving Duke Energy Corporation's Allen Steam Station running north-south along the west side of the Catawba River.

### 1.5.2.2 Airports

The Gastonia Municipal Airport is in the Project Study Area in Gaston County, and Charlotte-Douglas International Airport is the closest airport in Mecklenburg County.

The Gaston Municipal Airport is a general aviation airport adjacent to the east side of NC 274 (Union Road), south of downtown Gastonia. Access to the airport is from NC 274 (Union Road) via Gaston Day School Road (SR 2444) and Airport Road (SR 1903).

**Charlotte-Douglas International Airport**

*This major employer in west Mecklenburg County is expanding with the addition of a third runway. A freight intermodal facility is also planned.*

Charlotte-Douglas International Airport is located on approximately 5,000 acres in west Charlotte (**Figure 1-1**). More than 100,000 jobs in the region are directly or indirectly related to the airport and its services (Charlotte-Douglas International Airport Web site: [www.charmeck.org/Departments/Airport/About+CLT/Economic+Asset.htm](http://www.charmeck.org/Departments/Airport/About+CLT/Economic+Asset.htm)).

Access to the airport is possible from multiple directions. From uptown Charlotte or Gaston County, access is along US 29-74 (Wilkinson Boulevard). From southern Charlotte, the airport is accessed via US 521 (Billy Graham Parkway) or I-485. Regional access occurs primarily from I-85.

The airport is currently constructing a third parallel runway, with a scheduled completion date of January 2010 (Charlotte-Douglas International Airport Web site: [www.charmeck.org/Departments/Airport/Construction+Update+.htm](http://www.charmeck.org/Departments/Airport/Construction+Update+.htm)). The runway expansion project requires the relocation of two area roads, Old Dowd Road (SR 1191) and Wallace Neel Road (SR 1195), which will be reconstructed to maintain road connections to the airport. In addition, West Boulevard (NC 160) is being relocated to the south of the present road to accommodate the runway construction. As funding becomes available, the roadway will be expanded to a four-lane highway. (Charlotte-Douglas International Airport Web site: [www.charmeck.org/Departments/Airport/Runway+Road+Relocations.htm](http://www.charmeck.org/Departments/Airport/Runway+Road+Relocations.htm)).

Charlotte-Douglas International Airport has plans for an "intermodal zone" that would combine direct rail and truck access with incoming air cargo. The intermodal facility would be located between the new runway and the existing runways and is expected to have a 10-track rail yard and approximately 2,500 trailer parking spaces. Additional truck traffic generated from the site would use the relocated NC 160 (West Boulevard) to access I-485 (Charlotte-Douglas International Airport Web site: [www.charmeck.org/Departments/Airport/Runway+Road+Relocations.htm](http://www.charmeck.org/Departments/Airport/Runway+Road+Relocations.htm)). According to the *Airport 2007 Annual Report to the Community*, planning for this facility is underway, but no

opening date was provided. However, it is likely it would open after the runway project is complete in January 2010.

### 1.5.2.3 Mass Transit

There is limited mass transit service in the Project Study Area. Gastonia Transit provides bus service in Gastonia. All bus routes begin and end at Bradley Station at the corner of Oakland Street (SR 1001) and Main Avenue in Gastonia. There is a total of nine bus routes, of which three serve US 29-74 and three serve US 321 (Gastonia Transit, Route Map Web site: [www.cityofgastonia.com/city\\_serv/general/pdf%20files/NC%20Gastonia%20Int%20%2005.pdf](http://www.cityofgastonia.com/city_serv/general/pdf%20files/NC%20Gastonia%20Int%20%2005.pdf)).

The Charlotte Area Transit System (CATS), in partnership with Gastonia, has established Express Bus service between Bradley Station and uptown Charlotte. Route 85x, the Gastonia Express, runs four times in the morning and twice in the evening. In western Mecklenburg County, CATS' Route 2 runs along US 29-74 (Wilkinson Boulevard) to Old Dowd Road at Distribution and Marketing Services, Inc. on weekdays only (CATS Web site: [www.charmeck.org/Departments/CATS/Home.htm](http://www.charmeck.org/Departments/CATS/Home.htm)).

## 1.6 PERFORMANCE OF THE EXISTING ROADWAY SYSTEM

### 1.6.1 MOBILITY AND CONNECTIVITY ISSUES

Within southern Gaston County (south of I-85), a lack of connecting east-west roadways makes travel circuitous and limits mobility. In addition, mobility is inhibited between southern Gaston County and Mecklenburg County by the limited number of bridges over the Catawba River, which acts as natural barrier between the two counties.

#### ***Mobility in Southern Gaston County***

*A lack of connecting east-west roadways in southern Gaston County makes travel circuitous and limits mobility.*

**Travel Within Southern Gaston County.** Currently, there are no continuous east-west routes in southern Gaston County. The roads in southern Gaston County generally run north-south. As can be seen in **Figure 1-3**, a person wishing to travel from the residential subdivisions on the Belmont peninsula (the land between the South Fork Catawba River and Catawba River) to businesses and industries along US 321 in southern Gaston County cannot do so directly. They must first travel north to use westbound I-85 or US 29-74 to US 321, then south on US 321 or travel a circuitous route that might include NC 273 (Armstrong Road), NC 279 (South New Hope Road), Union New Hope Road (SR 2435), NC 274 (Union Road), Robinson Road (SR 2416), Little Mountain Road (SR 2412), or Forbes Road (SR 2420) to US 321.

The need for improved connectivity and east-west mobility within southern Gaston County will continue to increase as the population in this area grows. Between 1990 and 2000, southeastern Gaston County had the largest population increase in the county. The Project Study Area has continued to grow since then. A review of tax parcel data for southern Gaston County and western Mecklenburg County show that, overall, there has been an approximately 24 percent increase in the numbers of residences in this area from 2000 to 2008. New subdivisions are located throughout southern Gaston County and western Mecklenburg County. The

southeastern part of the County is expected to continue experiencing high residential growth through 2020 (*Gaston County Comprehensive Plan*, Gaston County, July 2002).

**Travel Between Southern Gaston County and Western Mecklenburg County.**

Mecklenburg County is the hub of the thirteen-county Charlotte region and is the primary center for employment, shopping, and other economic activities. The linkage between Gaston County and Mecklenburg County, and the need for connectivity between the counties, is demonstrated by commuting patterns described in **Section 1.5.1.2.**

There is demand for regional accessibility through Gaston County. The Charlotte region is a major trucking center, and destinations to the southwest (e.g., Greenville-Spartanburg, South Carolina, and Atlanta, Georgia), west (e.g., Asheville, North Carolina), and northwest (e.g., Hickory, North Carolina) are reached by traveling on I-85 and US 321 through Gaston County. Tourists from the Charlotte metropolitan area traveling to the mountains of western North Carolina and Tennessee also use I-85 and US 321 through Gaston County.

Accessibility and regional travel between southern Gaston County and Mecklenburg County is inhibited because existing connections across the Catawba River are limited, as discussed in **Section 1.5.1.3.**

Many segments of I-85 in the Project Study Area (Exit 19 (NC 7 [Ozark Avenue]) through Exit 27 (NC 273 [Park Street])) are currently operating at or above capacity, and congestion is projected to worsen through the design year 2030. In addition, there are frequent incidents (events that slow traffic or close a lane, such as vehicle breakdowns) on I-85, contributing to unexpected delays. US 29-74 is not access-controlled and has numerous closely-spaced signalized intersections, so speeds are limited.

Residential growth projected in southern Gaston County and residential and employment growth in western Mecklenburg County will continue to increase demand for accessibility and connectivity between the two counties. Gaston County expects future residential growth to be focused in southeastern Gaston County due to its proximity to Mecklenburg County (the economic center of the region) and distance away from the watershed area of Mountain Island Lake to the northeast.

Charlotte-Douglas International Airport (in western Mecklenburg County) employs more than 16,000 people and is in the process of expanding through construction of a new runway. The airport has future plans for an intermodal facility (combining rail, truck, and air cargo transport) that would generate employment opportunities and substantial numbers of regional truck trips.

The *Dixie-Berryhill Strategic Plan* (Charlotte-Mecklenburg Planning Department, April 2004) calls for mixed-use and transit-oriented development in the sparsely developed part of western Mecklenburg County, directly across the Catawba River from southeastern Gaston County. This mixed-use area will create more employment opportunities in proximity to Gaston County, in addition to existing office and industrial parks and Charlotte-Douglas International Airport.

## 1.6.2 TRAFFIC VOLUMES AND OPERATIONS ON EXISTING ROADWAYS

### 1.6.2.1 Travel Demand Modeling

Travel demand is a function of socioeconomic conditions such as residential densities, locations of jobs and services, and trip lengths and distributions for the various types of trip purposes. Travel demand models are used for simulating current travel conditions and forecasting future travel patterns and conditions.

#### **Traffic Volumes**

*Traffic volumes are projected to increase substantially from 2006 to 2030 on the Project Study Area's major roadways.*

Traffic forecasts prepared for the project are described in a separate technical memorandum (*Gaston East-West Connector (U-3321) Traffic Forecast for Toll Alternatives*, Martin/Alexiou/Bryson, August 2008). The Metrolina Regional Model was used to forecast traffic for the 2006 base year and the 2030 design year No-Build Alternative. This model, provided by the Charlotte Department of Transportation, covers a thirteen-county region including Gaston County and Mecklenburg County. The April 13, 2006 version of the 2030 Metrolina travel demand model was used as the base model because this was the current version at the time the updated forecasting activities began, and all scenarios were able to be forecasted from the same base model.

The 2030 No-Build Alternative model assumed that the proposed action is not constructed. Other projects included in the *2009-2015 STIP* and the MPOs' fiscally constrained long range transportation plans (GUAMPO, 2030 LRTP and MUMPO, 2030 LRTP) were assumed to be constructed (**Section 1.8.1**), with the exception of the US 321 Bypass, which is shown in the GUAMPO 2030 LRTP. The US 321 Bypass project is shown in the GUAMPO 2030 LRTP as a new location freeway from I-85 (at the western terminus of the Gaston East-West Connector) north to US 321. The US 321 Bypass was not included in the transportation network for purposes of the 2030 No-Build Alternative forecasts because no funding sources have been identified for the project, there are no plans to begin studies for that project at this time, and it is uncertain whether or when that project will be constructed.

### 1.6.2.2 Traffic Operations Analysis Methodology

The level of service (LOS) is a "qualitative measure describing operational conditions within a traffic stream" (Transportation Research Board 2000:2-2). The LOS is defined with letter designations from A to F that can be applied to both roadway segments and intersections. LOS A represents the best operating conditions and LOS F the worst. In urban areas, LOS D and better is generally considered acceptable, while in rural areas LOS C and better is considered acceptable.

All analyses, as applicable, were performed in accordance with "NCDOT Congestion Management Capacity Analysis Guidelines" using the North Carolina Level of Service (NCLOS) software, Version 1.3. The NCLOS software provides an overall level of service, representative of general peak hour conditions. NCLOS software uses field data collected from North Carolina roadways to estimate LOS along NC facilities for a given AADT volume. Roadway capacity is based on inputted existing or projected traffic and roadway design criteria. The LOS thresholds (density/speed) for each facility type are based on *Highway Capacity Manual 2000*

(Transportation Research Board Special Report 209) methodology. A freeway capacity analysis was performed for the I-85 and I-485 mainlines and an arterial capacity analysis was performed for US 29-74 and US 321. The analysis is documented in *Final Traffic Operations Technical Memorandum for I-85, I-485, US 29-74, and US 321 Under Various Scenarios – Gaston East-West Connector* (PBS&J, September 2008), incorporated by reference and available on the NCTA Web site ([www.ncturnpike.org/projects/gaston](http://www.ncturnpike.org/projects/gaston)).

### 1.6.2.3 Traffic Volumes and Operations on I-85

**Table 1-2** presents existing (2006) and projected (design year 2030) traffic volumes and levels of service for I-85. **Figures 1-4 and 1-5** present the same information graphically.

In the Project Study Area, base year (2006) annual average daily traffic volumes (AADT) on I-85 ranged from 73,800 to 134,000 vpd, with the highest traffic volumes closest to Charlotte. By 2030, traffic volumes are projected to increase 29–50 percent (to 105,000–198,400 vpd), with an average increase of 40 percent. The highest percent increase is expected between Exit 29 (Sam Wilson Road) and Exit 30 (I-485) in Mecklenburg County.

Currently, the I-85 mainline is operating at LOS D on the west end of the Project Study Area, degrading to LOS E and F from around Exit 19 (NC 7 [Ozark Avenue]) to Exit 27 (NC 273 [Park Street]). East of Exit 27, the level of service improves to D, where I-85 is an eight-lane facility. By 2030, the LOS on I-85 is projected to degrade to LOS E or F, indicating congestion on I-85 throughout the Project Study Area.

**TABLE 1-2: I-85 – Existing and Projected Traffic Volumes and Levels of Service**

I-85 Segment		2006 AADT <sup>1</sup>	2006 LOS <sup>2</sup>	2030 AADT <sup>1</sup>	2030 LOS <sup>2</sup>
From	To				
Exit 10 – US 29-74 (W Franklin Blvd)	Exit 13– Edgewood Rd (SR 1307)	73,800	D	105,000	E
Exit 13	Exit 14 – NC 274 (Bessemer City Rd)	79,400	D	115,400	F
Exit 14	Exit 17 – US 321 (Chester St)	84,200	D	119,200	F
Exit 17	Exit 19 – NC 7 (Ozark Ave)	97,400	D	134,600	F
Exit 19	Exit 20 – NC 279 (New Hope Rd)	109,600	E	147,200	F
Exit 20	Exit 21 – Cox Rd (SR 2200)	111,200	E	151,000	F
Exit 21	Exit 22 – Main St (SR 2201)	118,200	F	153,000	F
Exit 22	Exit 23 – NC 7 (McAdenville Rd)	123,600	F	161,600	F
Exit 23	Exit 26 – Belmont Mount Holly Rd (SR 2093)	125,000	F	169,200	F
Exit 26	Exit 27 – NC 273 (Park Street)	126,800	F	178,600	F
Exit 27	Exit 29 – Sam Wilson Rd (SR 1625)	134,000	D	193,600	F
Exit 29	Exit 30 – I-485	130,000	D	198,400	F

1. AADT – Annual Average Daily Traffic Volumes (vehicles per day). Source: *Gaston East-West Connector (U-3321) Traffic Forecast for Toll Alternatives* (Martin/Alexiou/Bryson, August 2008).

2. LOS (Level of Service) – A measure of congestion. Source: *Final Traffic Operations Technical Memorandum for I-85, I-485, US 29-74, and US 321 Under Various Scenarios – Gaston East-West Connector* (PBS&J, September 2008).

In addition to high traffic volumes creating congestion, incidents such as vehicle breakdowns or accidents occur on I-85. These incidents frequently affect travel on I-85 by causing traffic slowdowns and occasional lane closures and temporary detours onto US 29-74 (a roadway with no access control and numerous commercial driveways).

### 1.6.2.4 Traffic Volumes and Operations on US 29-74

Table 1-3 presents existing (2006) and projected (design year 2030) traffic volumes and levels of service for US 29-74. Figures 1-4 and 1-5 present the same information graphically.

Along US 29-74, the highest base year (2006) AADT volume (45,100 vpd) was reported between Catawba Street and Old Dowd Road. Volumes are projected to increase by 22 to 107 percent by 2030, with the highest percent increase (107 percent) expected between Linwood Road and Chester Street.

All segments of US 29-74 are currently operating at acceptable levels of service (LOS D or better), with the exception of the following segments that operate at LOS E–F: Between Myrtle School Road and NC 274 (Bessemer City Road/Garrison Boulevard), between Franklin Square Shopping Center and Lineburger Road, between NC 7 (Catawba Street) and Old Dowd Road, and between Sam Wilson Road and the I-485 ramps.

By 2030, all segments from Wesleyan Drive/Market Street in McAdenville to east of the I-485 ramps (a distance of approximately six miles) are expected to operate at LOS F. Most other segments within the Project Study Area are projected to operate at LOS C or D.

**TABLE 1-3: US 29-74 – Existing and Projected Traffic Volumes and Levels of Service**

Segment		2006 AADT <sup>1</sup>	2006 LOS <sup>2</sup>	2030 AADT <sup>1</sup>	2030 LOS <sup>2</sup>
From	To				
Sparrow Springs Rd (SR 1125)	Edgewood Rd (SR 1307)	29,100	B	37,200	D
Edgewood Rd (SR 1307)	Shannon Bradley Rd (SR 1135)	28,800	B	35,600	C
Shannon Bradley Rd (SR 1135)	Myrtle School Rd (SR 1136)	29,100	C	35,400	E
Myrtle School Rd (SR 1136)	NC 274 (Bessemer City Rd/Garrison Blvd)	26,200	E	32,200	F
NC 274 (Bessemer City Rd/Garrison Blvd)	Linwood Rd (SR 1131)	13,400	C	21,500	D
Linwood Rd (SR 1131)	US 321 (Chester St)	7,900	C	16,400	D
US 321 (Chester St)	Avon St	15,900	D	21,800	D
Avon St	Thomas St/Belvedere Ave	16,100	D	22,700	D
Thomas St/Belvedere Ave	NC 279 (New Hope Rd)	20,000	C	27,100	C
NC 279 (New Hope Rd)	Cox Rd/Armstrong Park Rd	15,500	C	24,700	C
Cox Rd/Armstrong Park Rd (SR 2200)	Franklin Square Shopping Ctr	24,600	C	39,200	D
Franklin Square Shopping Ctr	Lineburger Rd	24,600	E	39,200	F
Lineburger Rd	S Main St/Redbud Dr (SR 2329)	22,800	C	39,500	D
S Main St/Redbud Dr (SR 2329)	Wesleyan Dr/Market St	33,100	C	42,300	D
Wesleyan Dr/Market St	Lakewood Rd	33,900	D	59,700	F
Lakewood Rd	NC 273 (Park St)	33,600	D	60,100	F

**TABLE 1-3: US 29-74 – Existing and Projected Traffic Volumes and Levels of Service**

Segment		2006 AADT <sup>1</sup>	2006 LOS <sup>2</sup>	2030 AADT <sup>1</sup>	2030 LOS <sup>2</sup>
From	To				
NC 273 (Park St)	NC 7 (Catawba St)	43,700	D	72,700	F
NC 7 (Catawba St)	Old Dowd Rd (SR 1191)	45,100	F	70,500	F
Old Dowd Rd (SR 1191)	Sam Wilson Rd (SR 1625)	31,900	D	52,600	F
Sam Wilson Rd (SR 1625)	I-485 SB Ramps	36,000	E	58,400	F
I-485 SB Ramps	I-485 NB Ramps	34,900	F	55,100	F
East of I-485 NB Ramps		29,800	D	45,000	F

1. AADT – Annual Average Daily Traffic Volumes (vehicles per day). Source: *Gaston East-West Connector (U-3321) Traffic Forecast for Toll Alternatives* (Martin/Alexiou/Bryson, August 2008).

2. LOS (Level of Service) – A measure of congestion. Source: *Final Traffic Operations Technical Memorandum for I-85, I-485, US 29-74, and US 321 Under Various Scenarios – Gaston East-West Connector* (PBS&J, September 2008).

Along US 29-74, traffic flow is significantly influenced by traffic signals since most of the signalized intersections are within two miles of each other. In Gastonia, signalized intersections control the capacity and govern the LOS provided to the motoring public on existing US 29-74.

### 1.6.2.5 Traffic Volumes and Operations on US 321

**Table 1-4** presents existing (2006) and projected (design year 2030) traffic volumes and levels of service for US 321. **Figures 1-4** and **1-5** present the same information graphically.

On US 321, base year (2006) AADT volumes ranged from 13,500–41,600 vpd, with the highest traffic volumes (41,600 vpd) occurring between the I-85 northbound ramp and Rankin Lake Road. By 2030, US 321 is expected to see changes in volumes ranging from -4 to +67 percent. The 4 percent decrease in volume is projected between West Franklin Boulevard and West Rankin Avenue (just north of downtown), and is likely due to the limitations of the travel demand model, not an indication of an actual trend downward. The highest percent increase (67 percent) is projected between the North Carolina/South Carolina state line and Forbes Road/Superior Stainless Road.

The majority of segments along US 321 are operating at LOS D or better and are expected to continue operating at LOS D or better through 2030. The exceptions are the segments near the I-85 ramps, which are operating at LOS E and F, and are expected to remain congested through 2030.

**TABLE 1-4: US 321 – Existing and Projected Traffic Volumes and Levels of Service**

Segment		2006 AADT <sup>1</sup>	2006 LOS <sup>2</sup>	2030 AADT <sup>1</sup>	2030 LOS <sup>2</sup>
From	To				
NC/SC State Line	Forbes Rd (SR 2420)	18,500	A	30,900	A
Forbes Rd (SR 2420)	Crowders Creek Rd (SR 1103)	13,500	B	20,700	B
Crowders Creek Rd (SR 1103)	Stagecoach Rd (SR 1136)	15,500	C	23,400	C
Stagecoach Rd (SR 1136)	Davis Park Rd (SR 1153)	16,100	B	23,000	C
Davis Park Rd (SR 1153)	Hudson Blvd (SR 1255)	15,600	D	23,000	D
Hudson Blvd (SR 1255)	Jackson Rd	20,000	D	22,800	D
Jackson Rd	W 3rd Ave	15,600	C	17,400	C

**TABLE 1-4: US 321 – Existing and Projected Traffic Volumes and Levels of Service**

Segment		2006 AADT <sup>1</sup>	2006 LOS <sup>2</sup>	2030 AADT <sup>1</sup>	2030 LOS <sup>2</sup>
From	To				
W 3rd Ave	US 29-74 (W Franklin Blvd)	15,600	C	17,400	C
US 29-74 (W Franklin Blvd)	W Airline Ave/W Long Ave	21,400	C	20,500	C
W Airline Ave/W Long Ave	W Rankin Ave	21,400	C	20,500	C
W Rankin Ave	Radio St	16,800	C	19,900	D
Radio St	I-85 NB Ramps	18,600	C	22,000	D
I-85 NB Ramps	I-85 SB Ramps	30,100	F	34,500	F
I-85 SB Ramps	Rankin Lake Rd	41,600	E	47,000	E

1. AADT – Annual Average Daily Traffic Volumes (vehicles per day). Source: *Gaston East-West Connector (U-3321) Traffic Forecast for Toll Alternatives* (Martin/Alexiou/Bryson, August 2008).
2. LOS (Level of Service) – A measure of congestion. Source: *Final Traffic Operations Technical Memorandum for I-85, I-485, US 29-74, and US 321 Under Various Scenarios – Gaston East-West Connector* (PBS&J, September 2008).

### 1.6.2.6 Traffic Volumes and Operations on I-485

Table 1-5 presents existing (2006) and projected (design year 2030) traffic volumes and levels of service for I-485. Figures 1-4 and 1-5 present the same information graphically.

**TABLE 1-5: I-485 – Existing and Projected Traffic Volumes and Levels of Service**

Segment		2006 AADT <sup>1</sup>	2006 LOS <sup>2</sup>	2030 AADT <sup>1</sup>	2030 LOS <sup>2</sup>
From	To				
Exit 4 – Steele Creek Rd (NC 160)	Exit 9 – US 29-74 (Wilkinson Blvd)	52,000	C	100,000	E
Exit 9	Exit 10 – I-85	16,100 <sup>3</sup>	A	41,900 <sup>3</sup>	B

1. AADT – Annual Average Daily Traffic Volumes (vehicles per day). Source: *Gaston East-West Connector (U-3321) Traffic Forecasts for Toll Alternatives* (Martin/Alexiou/Bryson, August 2008).
2. LOS (Level of Service) – A measure of congestion. Source: *Final Traffic Operations Technical Memorandum for I-85, I-485, US 29-74, and US 321 Under Various Scenarios – Gaston East West Connector* (PBS&J, September 2008).
3. AADT is for the mainline and does not include AADT on the collector/distributor roads between the two interchanges. Source: *Gaston East-West Connector(U-3321) Traffic Forecasts for Toll Alternatives* (Martin/Alexiou/Bryson, August 2008).

In the Project Study Area, base year (2006) AADT volumes on I-485 were approximately 52,000 vpd. By 2030, traffic volumes were projected to double to approximately 100,000 vpd.

I-485 mainline in the Project Study Area is currently operating at acceptable levels of service (LOS D or better). By 2030, I-485 is projected to continue to operate with an acceptable LOS between Exit 9 (US 29-74 [Wilkinson Blvd]) and Exit 10 (I-85), but south of Exit 9, I-485 is projected to degrade to LOS E.

## 1.7 SOCIAL AND ECONOMIC CONDITIONS

### 1.7.1 POPULATION CHARACTERISTICS

Gaston County has 15 municipalities entirely within the county. Gastonia, centrally located in the county, is the county’s largest city and its seat. Most of the population

**Population Growth**

*Gaston County’s population is expected to increase 12.8 percent from 2006 to 2030, with most growth occurring in southeast Gaston County. Mecklenburg County’s population is projected to increase 68.2 percent between 2006 and 2030.*

growth in Gaston County between 1980 and 2000 occurred in the county's eastern towns (near the Mecklenburg County border), including Mount Holly, Belmont, and Cramerton (*Gaston County Comprehensive Plan*, Gaston County, July 2002). Mecklenburg County has seven municipalities, with the largest being Charlotte, the county seat.

Gaston County has been growing at an average rate of approximately 1 percent per year since 1990. In 1990, the population of Gaston County was 175,093, rising to 190,365 in 2000 and 199,397 in 2006. The percent change in Gaston County's population between 2000 and 2006 was 4.8 percent, compared to a 10.1 percent change for the state of North Carolina and a 19 percent change for Mecklenburg County during the same period. From 1990 to 2000, Mecklenburg County's population increased 36 percent, from 511,433 to 695,454. The population grew to 827,445 in 2006 (US Census Bureau Web site: [www.census.gov](http://www.census.gov)).

In an effort to focus on the unique qualities of the County's various communities, the *Gaston County Comprehensive Plan* divided the County into five "Small Areas." The Project Study Area is included in the Southwest and Southeast Small Areas. Among the five Small Areas within Gaston County, the population grew fastest between 1990 and 2000 in the Southeast Small Area, accounting for approximately 58 percent (8,947 persons) of the population growth in Gaston County from 1990 to 2000. **Figure 1-6** displays the population growth between 1990 and 2000 for the five Small Areas.

The populations of both Gaston and Mecklenburg Counties are expected to increase through 2030, although Mecklenburg County is projected to grow more rapidly. The population of Gaston County is projected to grow 12.8 percent from 2006 to 2030, while Mecklenburg County's population is expected to grow 68.2 percent (to 1,391,703 people) during the same period (NC State Demographics Web site: [www.demog.state.nc.us](http://www.demog.state.nc.us)).

As part of the development of its 2030 LRTP, GUAMPO developed population projections for 2010, 2020, and 2030 for the Gaston Urban Area (**Section 1.8.4.2**). These population projection maps are included as **Appendix B**. GUAMPO projects that the largest increases in population will occur on the eastern side of Gaston County, particularly south of I-85.

As discussed above, current and future growth in Gaston and Mecklenburg Counties will require improvements to area infrastructure to support the needs of a growing population.

### 1.7.2 ECONOMIC DATA

Gaston County's reputation as an industrial center began more than a century ago with the advent of textile industries. Today, Gaston County is home to a diverse set of industries, including health services, transportation equipment manufacturing, retail, restaurants, business services, food stores, industrial machinery and equipment manufacturing, as well as the government sector (Gaston County Economic Development Commission Web site: [www.gaston.org](http://www.gaston.org)).

#### **Employment**

*The manufacturing sector employs the most workers in Gaston County. The government sector employs the most workers in Mecklenburg County.*

The manufacturing sector employs the largest number of people in Gaston County, and accounts for 21.8 percent of the county's total employment (NC Department of Commerce Web site: [www.nccommerce.com/NCDOCWEBAPP/Resources/CountyProfiles/pdf/Gaston\\_2007Q4.pdf](http://www.nccommerce.com/NCDOCWEBAPP/Resources/CountyProfiles/pdf/Gaston_2007Q4.pdf)).

The health care and social assistance sector is second to manufacturing in total employment, accounting for 15.2 percent of total employment in the county, followed closely by retail trade with 13.6 percent and government with 12.8 percent. While approximately 65 percent of the total acreage of Gaston County is classified as farmland, agricultural employment is minimal. Only 0.1 percent of total county employment is in the agricultural sector (NC Department of Commerce Web site:

[www.nccommerce.com/NCDOCWEBAPP/Resources/CountyProfiles/pdf/Gaston\\_2007Q4.pdf](http://www.nccommerce.com/NCDOCWEBAPP/Resources/CountyProfiles/pdf/Gaston_2007Q4.pdf)).

Most of the employment growth in Gaston County will occur in the services industry, which is forecasted to represent 26.7 percent of total employment in 2010 (*Gaston County Comprehensive Plan*, Gaston County, July 2002).

The government sector employs the largest number of people in Mecklenburg County, accounting for 10.8 percent of total employment within the county. The retail trade sector is second in total employment, accounting for 10.4 percent, followed by finance and insurance at 9.6 percent, and accommodation and food services at 8.4 percent (NC Department of Commerce Web site: [www.nccommerce.com/NCDOCWEBAPP/Resources/CountyProfiles/pdf/Mecklenburg\\_2007Q4.pdf](http://www.nccommerce.com/NCDOCWEBAPP/Resources/CountyProfiles/pdf/Mecklenburg_2007Q4.pdf)).

### 1.7.3 MAJOR ATTRACTIONS IN SOUTHERN GASTON COUNTY

#### 1.7.3.1 Daniel Stowe Botanical Garden

Daniel Stowe Botanical Garden (DSBG), in the southeastern portion of Gaston County (**Figure 1-1**), is a privately-owned major tourist attraction in Gaston County.

In 2006, the 450-acre botanical garden attracted approximately 84,000 visitors. With planned improvements to the DSBG, visitor attendance is expected to reach 250,000 by 2011 (DSBG, Annual Report, 2006).

The botanical garden employs about 40 people (Telephone interview, DSBG Human Resources, April 22, 2008).

#### **Attractions**

*The DSBG attracted 84,000 visitors in 2006.*

*Crowders Mountain State Park had more than 400,000 visitors in 2007.*

The only visitor entrance to the DSBG is off NC 279 (New Hope Road). Vehicles entering and leaving the botanical garden often experience delays on NC 279 (New Hope Road), particularly during major events hosted throughout the year. Traffic entering the DSBG during the Fourth of July holiday has queued on NC 279 (New Hope Road) for about 1.5 miles north of the visitor entrance (Telephone interview, DSBG staff, November 13, 2001).

#### 1.7.3.2 Crowders Mountain State Park

Crowders Mountain State Park is located near the North Carolina/South Carolina state line in southwest Gaston County (**Figure 1-1**). Crowders Mountain State Park is publicly-owned and is administered by the NC Department of Environment and Natural Resources (NCDENR), Division of Parks and Recreation. The state park currently has twelve full-time employees and five part-time employees (Telephone interview, Crowders Mountain State Park superintendent, April 11, 2008).

Crowders Mountain State Park contains 5,096 acres, including the peaks of Crowders Mountain and Kings Pinnacle, which is approximately 800 feet above the surrounding countryside. The significant scenic resources of the park include the contrast between rolling Piedmont hills and the sheer rock outcrops of the Kings Mountain Range. Numerous opportunities exist to view the panoramic Piedmont plateau from the park's cliffs.

Crowders Mountain State Park had more than 400,000 visitors in 2007, compared to less than 300,000 visitors in 2001 (Telephone interview, Crowders Mountain State Park staff, April 11, 2008). The Park experiences its largest crowds of visitors from early spring through mid-summer.

Regional access to Crowders Mountain is provided primarily by I-85. The main park entrance is located off of Sparrow Springs Road, which is accessed from Franklin Boulevard (US 29-74) to the north or Lake Montonia Road/Pinnacle Road to the south. There is also an access point on the northern end of the park off Linwood Road.

## 1.8 TRANSPORTATION PLANS AND LAND USE PLANS

As discussed in this section, the proposed project is included in state and local transportation plans as a controlled-access facility. Land use plans in both Gaston and Mecklenburg Counties show that the Project Study Area is being planned for intensified development and increases in population and employment.

### 1.8.1 STATE TRANSPORTATION PLANS

#### 1.8.1.1 NCDOT State Transportation Improvement Program

The proposed action is included as Project U-3321 in the NCDOT 2009–2015 STIP. Project U-3321 is programmed as a toll road for a planning and environmental study. Fifteen other projects in the 2009–2015 STIP are in the general vicinity of the proposed action. Two of these projects are rural projects (R-2608 and R-2248). Seven projects are urban projects (U-2408, U-2713, U-3405, U-3411, U-3425, U-3806, and U-2325). Five projects are bridge replacement projects (B-4517, B-4752, B-4753, B-4860, and B-4344). There is one interstate project (I-5000). These proposed projects are described in the *Updated Purpose and Need Statement for the Gaston East-West Connector* (PBS&J, October 2008). **Figure 1-7** shows the general locations of these projects in relation to STIP Project U-3321.

#### **NCDOT STIP**

*The STIP is the State's 7-year plan for funding transportation projects statewide, including roads, ferries, public transportation, aviation, and passenger rail projects. It is updated every 2 years.*

#### 1.8.1.2 NCDOT Strategic Highway Corridors Initiative

On September 2, 2004, the North Carolina Board of Transportation established a system of Strategic Highway Corridors (SHC) for North Carolina as part of the State's *Long-Range Statewide Multimodal Transportation Plan*.

#### **Strategic Highway Corridors**

*I-85, I-485, US 321, STIP Project U-3321 (Gaston East-West Connector) and STIP Project R-2608 (US 321 Bypass) are included in the Strategic Highway Corridors program.*

The primary purpose of the SHC Concept is to provide “a safe, reliable, and high-speed network of highways that connect to travel destinations throughout and just outside of North Carolina.” (*SHC Concept Development Report*, NCDOT, October 2005) A related goal is to use the SHC Concept as a tool to influence and affect ongoing planning and project-related decisions in order to realize the stated vision for each route.

For each SHC corridor, a Vision Plan was established by NCDOT that identified the minimum preferred type of roadway for the corridor. The proposed facility types are primarily based upon the function of the roadway, level of mobility and access, and whether the facility has (or will have) traffic signals, driveways, and/or medians. The facility types on the SHC system are: Freeway, Expressway, Boulevard, and Thoroughfare.

**Figure 1-8** shows the SHC Vision Plan for NCDOT Division 12, which includes the Project Study Area. Strategic Highway Corridors in the Project Study Area include US 321 (north of I-85), I-85, I-485, the Gaston East-West Connector (STIP Project U-3321), and STIP Project R-2608. They are all designated as Freeways within the SHC Vision Plan.

### 1.8.1.3 North Carolina Intrastate System

The Intrastate System has been established by statute in North Carolina (NCGS 136-178). The purpose of the Intrastate System is to provide “high-speed, safe travel service throughout the State.” The statute governing the development of the Intrastate System requires a route on the system be a four-lane, access-controlled roadway if such a facility is warranted by traffic volumes and is not precluded by environmental constraints.

In the Project Study Area, I-85 and I-485 are designated as existing multi-lane intrastate corridors.

## 1.8.2 LOCAL TRANSPORTATION PLANS

### 1.8.2.1 Gaston Urban Area Thoroughfare Plan

A Thoroughfare Plan identifies a roadway system that is expected to serve the area’s future travel demand. It shows the conceptual alignments of major roadways, and provides a starting point for MPOs to determine which roadways will require upgrades in 10 to 20 years.

**Thoroughfare Plans**

*Thoroughfare plans identify roadway projects needed to serve an area’s future travel demand in 10 to 20 years. Thoroughfare plans are used as a starting point to prioritize projects.*

**Figure 1-9** shows the currently approved *Gaston Urban Area Thoroughfare Plan* (last revised in May 2006) and *Mecklenburg-Union Thoroughfare Plan*. These thoroughfare plans show the Gaston East-West Connector (STIP Project U-3321) and the US 321 Bypass (STIP Project R-2608) as proposed four-lane freeways. Please note that the alignments shown in **Figure 1-9** for the Gaston East-West Connector at the Catawba River do not line up. The *Gaston Urban Area Thoroughfare Plan* and *Mecklenburg-Union Thoroughfare Plan* show the corridors in slightly different locations at the Catawba River.

### 1.8.2.2 Gaston Urban Area MPO 2030 Long Range Transportation Plan

Long Range Transportation Plans (LRTP) are developed by MPOs to guide long-range transportation investments in their areas. The LRTP “is a comprehensive Transportation Plan that defines a transportation network that will serve both the present and future volumes of vehicular traffic and transit use in and around an urban area” (GUAMPO, *2030 LRTP*, p. 2). MPOs are required by federal law (23 USC 134) to develop LRTPs as a condition of receiving federal transportation funding.

#### Long Range Transportation Plans

*An LRTP guides a region’s transportation investments over a 20-year period. Federal law requires that the plan shall “include both long-range and short-range program strategies/ actions that lead to the development of an integrated multimodal transportation system to facilitate the safe and efficient movement of people and goods.” (23 CFR 450C, Sec. 450.322).*

The GUAMPO *2030 LRTP* was last updated on May 24, 2005. **Figure 1-10** shows the *2030 LRTP* project map. One of the main objectives of the plan is to require transportation improvements to better connect Gaston County to other geographic entities within the region, particularly Mecklenburg County and Charlotte. Specifically, the plan promotes additional bridge crossings over the Catawba River (Gaston East-West Connector, Mount Holly North Loop, and widen existing roadways) to handle increases in traffic on I-85 and US 29-74, and to strengthen connections to the regional network (GUAMPO, *2030 LRTP*, p. 8).

GUAMPO is in the process of preparing an update to the 2030 LRTP. For additional information regarding the plan update, refer to **Section 4.2.2**.

The GUAMPO TAC considers the Garden Parkway “the most significant project of all the facilities proposed for Gaston County,” and has ranked the project #1 on its Unmet Needs List. GUAMPO acknowledges that the Garden Parkway is two separate projects. “The MPO initially proposed the Garden Parkway to be one contiguous project; however the project was split into two portions in the STIP. One portion is STIP Project R-2608 (321 Bypass) which constitutes the segment from I-85 to US 321 north of Gastonia. The other portion is STIP Project U-3321 (Gaston East-West Connector) and is the segment that begins in Mecklenburg County at NC 160 (West Boulevard) and extends across southern Gaston County terminating at I-85.” (GUAMPO, *2030 LRTP*, p. 71). FHWA has determined that the Gaston East-West Connector and the US 321 Bypass meet the regulatory requirements for being considered as separate projects for purposes of compliance with NEPA. The basis for this determination is documented in the project file (*Memorandum – Gaston County East-West Connector – TIP Project U-3321 – Logical Termini*, PBS&J, May 2008).

### 1.8.2.3 Mecklenburg-Union Thoroughfare Plan

**Figure 1-9** shows the western section of the currently adopted *Mecklenburg-Union Thoroughfare Plan* (last revised in March 2007). The *Thoroughfare Plan* shows the West Boulevard Extension (STIP Project U-3411) as a major thoroughfare between NC 160 and I-485. The portion of the Gaston East-West Connector (STIP Project U-3321) from I-485/NC 160 to the Gaston County line is shown as a freeway.

#### 1.8.2.4 Mecklenburg-Union MPO 2030 Long Range Transportation Plan

The Mecklenburg-Union MPO (MUMPO) *2030 LRTP* was adopted April 20, 2005 and amended in September 2005 and May 2007. **Figure 1-10** shows the portion of the Mecklenburg-Union *2030 LRTP* in western Mecklenburg County. The 2010 planning horizon includes the West Boulevard Extension (STIP Project U-3411) from NC 160 to I-485 as a new four-lane facility. This project is not currently ranked in the *2030 LRTP*. The 2020 planning horizon includes the 1.89-mile portion of STIP Project U-3321 from I-485 to the Gaston County line. This project is ranked No. 81 in the MUMPO *2030 LRTP*. MUMPO is in the process of preparing an update to the 2030 LRTP. For additional information regarding the plan update, refer to **Section 4.2.2**.

### 1.8.3 LOCAL LAND USE PLANS

#### 1.8.3.1 Gaston County Comprehensive Plan

The *Gaston County Comprehensive Plan*, dated July 2002, was formally adopted in November 2002. The *Gaston County Comprehensive Plan* is intended to serve as a guide for managing growth in the county, as well as to inform the planning processes of the county's fifteen municipalities. The plan serves as a common framework to help guide municipalities as they develop and update their own plans.

**Figure 1-11** is the future land use map developed in conjunction with the *Gaston County Comprehensive Plan*. Gaston County refers to this map as the Composite Initiatives Map (Gaston County Web site: [www.co.gaston.nc.us/CompPlan/maps.htm](http://www.co.gaston.nc.us/CompPlan/maps.htm)). It generally shows recommended future land uses for various areas of the county. The south and southeastern portions of the map are shown to have primarily residential and mixed use potential.

#### 1.8.3.2 Mecklenburg County Southwest District Future Land Use Map

The Charlotte-Mecklenburg Planning Department divides Mecklenburg County into six districts for planning purposes. The Project Study Area is in the Southwest District.

The current Future Land Use Map for the Southwest District was last revised on July 9, 2007, and is presented as **Figure 1-12**. The area is planned for mixed-use development, including multi-family, office and retail uses just west of I-485 and more single-family uses closer to the Catawba River.

#### 1.8.3.3 Mecklenburg County Dixie-Berryhill Strategic Plan

The *Dixie-Berryhill Strategic Plan*, adopted in April 2003, is a subset of the Southwest District that encompasses approximately 7,594 acres west of the Charlotte-Douglas International Airport. As of 2000, approximately 80 percent of the land in the Dixie-Berryhill area consisted of vacant land or very large parcels with single dwellings.

**Figure 1-13** is the Proposed Land Use map from the *Dixie-Berryhill Strategic Plan*. On the map, Mixed-Use Communities B and C are in the vicinity of the proposed project, with more non-residential uses near Charlotte-Douglas International Airport, and more residential uses in the western portions of these communities.

Regarding transportation, the *Dixie-Berryhill Strategic Plan* refers to a West Boulevard Extension from I-485 through the Dixie-Berryhill area and across the Catawba River in the same general location as the Gaston East-West Connector. However, the *Plan* recommends that this extension should be a “major thoroughfare”.

It should be noted that the *Mecklenburg-Union Thoroughfare Plan*, which was last updated by MUMPO in March 2007 (four years after adoption of the *Dixie-Berryhill Strategic Plan*), recommends the Gaston East-West Connector as a freeway facility with a service interchange at the proposed major thoroughfare (Dixie River Road), as well as a freeway-to-freeway interchange at I-485.