FINAL
TRAFFIC OPERATIONS TECHNICAL MEMORANDUM FOR I-85, I-485, US 29-74, AND US 321 UNDER VARIOUS SCENARIOS

GASTON EAST-WEST CONNECTOR

STIP PROJECT NO. U-3321

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September 2008

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1 BACKGROUND

1.1 Proposed Action

The North Carolina Turnpike Authority proposes to improve east-west travel between I-85 west of Gastonia in Gaston County and I-485/NC 160 in Mecklenburg County. The Gaston East-West Connector is designated as STIP Project No. U-3321 in the NCDOT's draft *2009-2015 State Transportation Improvement Program* (STIP). **Figure 1** is a project location map.

1.2 Project Build Alternatives

There are twelve new location Detailed Study Alternatives (DSA) under consideration for the proposed project. The corridor segments comprising these twelve DSAs are listed in **Table 1** and shown in **Figure 2**.

Table 1. Corridor Segments Comprising Each Detailed Study Alternative

Detailed Study Alternative #	West Area - generally west of US 321	Central Area – Generally east of US 321 and west of NC 279 or the South Fork Catawba River	East Area – generally east of NC 279 or the South Fork Catawba River
	H Segments	J Segments	K Segments
4	H2A-H3	J4a-J4b-J2c-J2d-J5a-J5b	K2A-KX1-K3B-K3C
5	H2A-H3	J4a-J2b-J2c-J2d-JX4-J1e-J1f	K1A-K1B-K1C-K4A
9	H2A-H3	J4a-J2b-J2c-J2d-JX4-J1e-J1f	K1A-K3A-K3B-K3C
22	H2A-H2B-H2C	J3-J2c-J2d-J5a-J5b	K2A-KX1-K3B-K3C
23	H2A-H2B-H2C	J3-J2c-J2d-JX4-JIe-J1f	K1A-K1B-K1C-K4A
27	H2A-H2B-H2C	J3-J2c-J2d-JX4-JIe-J1f	K1A-K3A-K3B-K3C
58	H1A-H1B-H1C	J1a-JX1-J2d-J5a-J5b	K2A-KX1-K3B-K3C
64	H1A-H1B-H1C	J1a-J1b-J1c-J1d-J1e-J1f	K1A-K1B-K1C-K4A
68	H1A-H1B-H1C	J1a-J1b-J1c-J1d-J1e-J1f	K1A-K3A-K3B-K3C
76	H1A-HX2	J2a-J2b-J2c-J2d-J5a-J5b	K2A-KX1-K3B-K3C
77	H1A-HX2	J2a-J2b-J2c-J2d-JX4-J1e-J1f	K1A-K1B-K1C-K4A
81	H1A-HX2	J2a-J2b-J2c-J2d-JX4-J1e-J1f	K1A-K3A-K3B-K3C

Refer to **Figure 2** for a map of the Detailed Study Alternatives and their corridor segments

1.3 Purpose of Report

The purpose of this report is to present the traffic operations analysis for major roadways surrounding the proposed project (I-85, I-485, US 321, and US 29-74) under various build and no-build scenarios. These analyses will be used in an update to the project's Purpose and Need Statement (August 2002) and an addendum to the project's Alternatives Development and Analysis Report (February 2007).

The project's Purpose and Need Statement is being updated because, since the completion of the Purpose and Need Statement in 2002, there have been updates to much of the supporting data and information described in the document; including travel demand forecasts, demographic data, and transportation and land use plans. For traffic information, there is a new regional travel demand forecasting model adopted by the local Metropolitan Planning Organizations (Gaston Urban Area and Mecklenburg-Union). The horizon year has changed from 2025 to 2030.

Since the completion of the Alternatives Development and Analysis Report (February 2007), there have been changes in the project status. The project is now being studied solely as a toll facility. At the time the Alternatives Development and Analysis Report was prepared, the option of a non-toll facility was still under consideration. Early phases of the alternatives development process used 2025 traffic projections for scenarios that included the project as a non-toll facility.

The scenarios evaluated in this report are listed below and described in more detail in **Section 4 – Operations Analysis Methodology.**

- Base Year 2006 – Existing Conditions
- Design Year 2030 – No Build Alternative
- Design Year 2030 – Widen I-85 Alternative
- Design Year 2030 – Build Alternative as a Non-Toll Facility
- Design Year 2030 - Build Alternative as a Toll Facility

2 EXISTING TRANSPORTATION NETWORK

The primary east-west routes through Gaston County are I-85 and US 29-74 (see **Figure 1**). In the project study area, the I-85/US 29-74 travel corridor also is used by most of the traffic traveling east-west within southern Gaston County.

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 is the partially-completed outer loop of Charlotte. It intersects the I-85/US 29-74 corridor in western Mecklenburg County.

Figure 3 shows the existing characteristics of I-85, I-485, US 321, and US 29-74 in the project area. These facilities 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. It connects to I-77, I-485, and Charlotte to the north, and South Carolina to the south.

In the project area (Exit 10 to Exit 30), the interstate varies between six and eight lanes, with posted speed limits from 55 to 65 mph.

There are eleven interchanges in Gaston County between Exit 10 (US 29-74) and Exit 27 (NC 273 [Park Street]). At these interchange areas, there are 17 signalized and four unsignalized intersections formed by the I-85 on and off-ramps. Most of the interchange areas have two signalized intersections with the on and off-ramps. Exit 26 (Old NC 273 [Belmont-Mount Holly Road] (SR 2093)) includes three signalized intersections because the on and off-ramps intersect two different roadways which are connected by a third signal. Exit 13 (Edgewood Road [SR 1307]) and Exit 19 (Ozark Avenue [NC 7]) have the four unsignalized intersections.

There are two interchanges in Mecklenburg County in the project area; Exit 29 and Exit 30. Exit 29 is a diamond interchange with Sam Wilson Road (SR 1625). Exit 30 is a freeway-to-freeway interchange with I-485. The portion of I-485 to the south is constructed. The portion to the north is completed to NC 16.

I-485. I-485 is a partially-completed outer loop of Charlotte in Mecklenburg County. In the project area, it is built south of NC 16, on the west side of the Charlotte-Douglas International Airport. It is six lanes wide (three in each direction) with a posted speed limit of 65 mph. In the project area, there are interchanges at I-85, US 29-74 (half clover), and Steele Creek Parkway (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 parallels I-85 to the south, 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-lanes (at the South Fork of the Catawba River crossing and generally west of Linwood Road) to seven-lanes, 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. Access to US 29-74 is provided at numerous locations, through signalized and unsignalized intersections and residential and commercial driveways.

US 29-74 intersects I-85 west of Gastonia and crosses US 321 in Gastonia. In addition, US 29-74 is crossed by several major and minor arterials between I-85 and I-485, including the following:

- NC 274 (Bessemer City Road and Broad Street)
- NC 279 (New Hope Road [SR 2302])
- NC 7 (Main Street)
- NC 273 (Park Street)

US 321. US 321, also known as Chester Street and York Road, is the only north-south US route in Gaston County. It connects to I-40, Hickory, and Boone to the north and 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, the only east-west interstate route in the State.

In the corridor study area, US 321 varies from four lanes to six lanes, with posted speed limits between 35 and 55 mph. Access control varies from full control of access north of Gastonia, to no control of access in Gastonia, and to partial control of access south of Gastonia. Through

downtown Gastonia, US 321 is a one-way pair of streets. Chester Street is southbound US 321 and York Road is northbound US 321.

US 321 intersects both I-85 and US 29-74 in Gastonia. In addition, US 321 crosses other major and minor arterials within the project study area, including the following:

- NC 7 (Long Avenue)
- NC 274 (Garrison Boulevard)

3 TRAFFIC VOLUMES AND CHARACTERISTICS

3.1 Modeled Scenarios

Traffic forecasts were prepared by Martin/Alexiou/Bryson and described in a separate technical memorandum (April 2008). The Metrolina Regional Model (April 13, 2006) provided by the Charlotte Department of Transportation was used as the base network.

Forecasts were provided for the following scenarios:

- Base Year 2006 – Existing Conditions
- Design Year 2030 – No Build Alternative
- Design Year 2030 – Widen I-85 Alternative
- Design Year 2030 – Build Alternative as a Non-Toll Facility
- Design Year 2030 - Build Alternative as a Toll Facility

Appendix A includes the forecasts for I-85, I-485, US 29-74, and US 321 under the five scenarios listed above. The Base Year 2006 Existing Conditions scenario and the Design Year 2030 – No Build Alternative scenario will be used to update the project's Purpose and Need Statement. The remaining three scenarios will be used in the addendum to the project's Alternatives Development and Evaluation Report.

As part of the Gaston Urban Area MPO 2030 Long Range Transportation Plan (LRTP), the US 29-74 bridges over the Catawba River and South Fork River are planned to be widened to from four to six lanes. These projects were included in all the design year 2030 alternatives.

The Design Year 2030 Widen I-85 Alternative includes a widened I-85, similar to Improve Existing Roadways Alternative Scenario 4a evaluated in the Alternatives Development and Evaluation Report. For this scenario, I-85 was widened to eight lanes where it is currently six lanes wide (Exit 10 to Exit 26), and widened to ten lanes where it is currently eight lanes wide (Exit 26 to Exit 30). Also included as part of this alternative is the widening of US 29-74 from four to six lanes west of Myrtle School Road and east of the Catawba River Bridge widening project.

For the Design Year 2030 Build Alternative as a Non-Toll Facility and Design year 2030 Build Alternative as a Toll Facility, representative DSA 64 was used in the model. **Figure 2** shows DSA 64 highlighted. Based on previous modeling efforts, this alternative appeared to divert the least traffic from I-85 and US 29-74. Using this alternative provides an estimate of the lower

range of the project's ability to reduce traffic volumes on the area's major roadways. Other DSAs would be as or more effective at diverting traffic.

3.2 Traffic Forecast Results

The AADT volume plots for the five scenarios are contained in **Appendix A**. **Figures 4-8** summarize the forecasted volumes for each of the five scenarios. **Tables 2-5** summarize the forecasted volumes for I-85, I-485, US 29-74, and US 321, respectively.

Table 2. I-85 – Forecasted Volumes

Segment		Alternative - AADT				
From	To	2006 No-Build	2030 No-Build	2030 Widen I-85	2030 Build Non-Toll Facility	2030 Build Toll Facility
Exit 10 - US 29-74 (W Franklin Blvd)	Gaston Connector	73,800	105,000	115,200	111,200	111,800
Gaston Connector	Exit 13 - SR 1307 (Edgewood Rd)	73,800	105,000	115,200	102,100	106,500
Exit 13	Exit 14 - NC 274 (Bessemer City Rd)	79,400	115,400	131,000	116,200	120,400
Exit 14	Exit 17 - US 321 (Chester St)	84,200	119,200	139,600	121,200	125,200
Exit 17	Exit 19 - NC 7 (Ozark Ave)	97,400	134,600	157,200	132,800	138,400
Exit 19	Exit 20 - NC 279 (New Hope Rd)	109,600	147,200	174,600	142,200	148,200
Exit 20	Exit 21 - Cox Rd	111,200	151,000	180,000	145,400	151,400
Exit 21	Exit 22 - Main St	118,200	153,000	185,400	144,600	149,600
Exit 22	Exit 23 - NC 7 (McAdenville Rd)	123,600	161,600	195,200	149,800	157,400
Exit 23	Exit 26 - Belmont Mount Holly Rd	125,000	169,200	202,200	155,000	162,800
Exit 26	Exit 27 - NC 273	126,800	178,600	212,400	163,000	171,000
Exit 27	Exit 29 - Sam Wilson Rd	134,000	193,600	228,200	175,800	185,200
Exit 29	Exit 30 - I-485	130,000	198,400	234,600	181,200	190,800

Table 3. I-485 – Forecasted Volumes

Segment		Alternative - AADT				
From	To	2006 No-Build	2030 No-Build	2030 Widen I-485	2030 Build Non-Toll Facility	2030 Build Toll Facility
Exit 4 - Steele Creeke Rd (NC 160)	Gaston Connector	52,000	100,000	110,200	111,000	109,000
Gaston Connector	Exit 9 - US 29-74 (Wilkinson Blvd)	52,000	100,000	110,200	97,400	98,600
Exit 9	Exit 10 - I-85	16,100[1]	41,900[1]	44,150[1]	48,450[1]	51,300[1]

Note:
[1] AADT for the mainline only (does not include AADT on the C/D roads)

Table 4. US 29-74 – Forecasted Volumes

Segment		Alternative - AADT				
From	To	2006 No-Build	2030 No-Build	2030 Widen I-85	2030 Build Non-Toll Facility	2030 Build Toll Facility
Sparrow Springs Rd	Gaston Connector	29,100	37,200	41,900	48,400	43,600
Gaston Connector	Edgewood Rd.	29,100	37,200	41,900	33,600	35,500
Edgewood Rd	Shannon Bradley Rd	28,800	35,600	37,300	32,200	36,400
Shannon Bradley Rd	Myrtle School Rd	29,100	35,400	37,200	32,100	36,300
Myrtle School Rd	Bessemer City Rd / Garrison Blvd	26,200	32,200	34,300	29,700	34,600
Bessemer City Rd / Garrison Blvd	Linwood Rd	13,400	21,500	21,300	20,000	23,100
Linwood Rd	Chester St	7,900	16,400	18,600	17,100	19,700
Chester St	Avon St	15,900	21,800	23,800	21,100	23,000
Avon St	Thomas St / Belvedere	16,100	22,700	23,800	22,400	24,700
Thomas St / Belvedere	New Hope Rd (NC 279)	20,000	27,100	28,400	26,300	32,100
New Hope Rd (NC 279)	Cox Rd / Armstrong Park Rd	15,500	24,700	23,000	22,300	26,000
Cox Rd / Armstrong Park Rd	Franklin Square	24,600	39,200	35,000	36,700	39,900
Franklin Square	Lineburger Rd	24,600	39,200	35,000	40,300	43,500
Lineburger Rd	S Main St / Redbud Dr	22,800	39,500	35,400	38,300	40,700

Table 4. US 29-74 – Forecasted Volumes

Segment		Alternative - AADT				
From	**To**	**2006 No-Build**	**2030 No-Build**	**2030 Widen I-85**	**2030 Build Non-Toll Facility**	**2030 Build Toll Facility**
S Main St / Redbud Dr.	Wesleyan Dr / Market St	33,100	42,300	39,300	38,700	40,400
Wesleyan Dr / Market St	Lakewood Rd / Peach Orchard Rd	33,900	59,700	56,800	53,000	56,100
Lakewood Rd / Peach Orchard Rd	Park St (NC 273)	33,600	60,100	58,100	47,500	51,800
Park St (NC 273)	Catawba St (NC 7)	43,700	72,700	71,200	56,100	61,500
Catawba St (NC 7)	Old Dowd Rd	45,100	70,500	69,900	58,600	63,900
Old Dowd Rd	Sam Wilson Rd	31,900	52,600	52,100	39,600	45,400
Sam Wilson Rd	I-485 SB Ramps / Fieldridge Rd	36,000	58,400	59,000	48,400	51,000
I-485 SB Ramps / Fieldridge Rd	I-485 NB Ramps / Tuckaseegee Rd	34,900	55,100	57,300	47,000	49,300
East of I-485 NB Ramps / Tuckaseegee Rd	--	29,800	45,000	48,400	38,800	40,800

Table 5. US 321 – Forecasted Volumes

Segment		Alternative - AADT				
From	**To**	**2006 No-Build**	**2030 No-Build**	**2030 Widen I-85**	**2030 Build Non-Toll Facility**	**2030 Build Toll Facility**
State Line	Gaston Connector	18,500	30,900	34,200	39,600	42,000
Gaston Connector	Forbes Rd / Superior Stainless Rd	18,500	30,900	34,200	23,300	23,200
Forbes Rd / Superior Stainless Rd	Crowders Creek Rd / Telegraph Dr	13,500	20,700	23,300	21,100	22,400
Crowders Creek Rd / Telegraph Dr	Stagecoach Rd	15,500	23,400	26,400	21,200	22,900
Stagecoach Rd	Davis Park Rd	16,100	23,000	26,000	20,300	21,400
Davis Park Rd	Hudson Blvd	15,600	23,000	26,000	20,100	21,200
Hudson Blvd	Jackson Rd	20,000	22,800	25,000	21,900	22,700
Jackson Rd	W. 3rd Ave	15,600	17,400	19,000	17,100	17,100
W. 3rd Ave	US 29-74 (W Franklin Blvd)	15,600	17,400	19,000	17,800	17,900

Table 5. US 321 – Forecasted Volumes

Segment		Alternative - AADT				
From	To	2006 No-Build	2030 No-Build	2030 Widen I-85	2030 Build Non-Toll Facility	2030 Build Toll Facility
US 29-74 (W Franklin Blvd)	W Airline Ave / W Long Ave	21,400	20,500	27,300	25,300	23,800
W Airline Ave / W Long Ave	W Rankin Ave	21,400	20,500	27,300	25,300	23,800
W Rankin Ave	Radio St	16,800	19,900	22,400	22,400	22,500
Radio St	I-85 NB Ramps	18,600	22,000	24,800	24,800	24,800
I-85 NB Ramps	I-85 SB Ramps	30,100	34,500	40,700	39,600	40,000
I-85 SB Ramps	Rankin Lake Rd	41,600	47,000	56,600	55,200	54,400

4 OPERATIONS ANALYSIS METHODOLOGY

Level of Service (LOS) is a "qualitative measure describing operational conditions within a traffic stream" (Highway Capacity Manual (HCM) 2000: Page 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.

All analysis, as applicable, was performed in accordance with the "NCDOT Congestion Management Capacity Analysis Guidelines".

A freeway capacity analysis was performed for the I-85 and I-485 mainlines using the North Carolina Level of Service (NC LOS) software, Version 1.3. The analysis did not include the ramp merge, ramp diverge, and weaving elements.

I-485, in both directions, contains a collector/distributor (C/D) road between I-85 (Exit 10) and US 29-74 (Wilkinson Boulevard)(Exit 9). A capacity analysis was performed for the mainline but not the C/D roads.

The following criteria were used for the freeway capacity analyses:

- Region: Piedmont
- Area Type: Suburban
- Terrain Type: Level
- Peak Hour Factor (PHF): 0.90
- Driver Population Factor: 1.0
- Daily Traffic: From M/A/B forecast
- Design Hourly Volume Percentage (K Factor): From M/A/B forecast
- Directional Split Percentage (D Factor): From M/A/B forecast
- Truck Percentage: From M/A/B forecast

- RV Percentage: 0%
- Lane Width: 12 feet
- Shoulder Width: 6 feet
- Number of Lanes: Field observed
- Interchange Density: Field observed and calculated per HCM methodology

In addition, an arterial capacity analysis was performed for US 29-74 and US 321 using the North Carolina Level of Service (NC LOS) software, Version 1.3.

The following criteria were used for the arterial capacity analyses:

- Functional Category (High Speed, Suburban, Intermediate, Urban): Determined based on several factors including but not limited to posted speed limit, signal spacing, driveway access, and roadside development.
- Region: Piedmont
- Terrain Type: Level
- Street Class: NC LOS default
- Peak Hour Factor (PHF): 0.90
- Arrival Type: NC LOS default
- Left Turn Percentage: NC LOS default unless observed to vary significantly
- Daily Traffic: From M/A/B forecast
- Design Hourly Volume Percentage (K Factor) and Directional Split Percentage (D Factor): Applied the known K and D factors from the M/A/B forecasts in the vicinity of I-85, the Gaston Connector for the Build alternatives, and I-485 to the rest of the corridor. Because the K and D factors vary along US 29-74, US 321was used as the transition location based on engineering judgment and is summarized below:
    - For the Existing, No-Build, and Widen I-85 Alternatives
        - K=11, D=55 for US 29-74 from I-85 to US 321
        - K=11, D=60 for US 29-74 from US 321 to I-485
    - For the Build Non-Toll Facility and Toll Facility Alternatives
        - K=11, D=55 for US 29-74 from I-85 to Gaston Connector
        - K=10, D=60 for US 29-74 from Gaston Connector to US 321
        - K=11, D=60 for US 29-74 from US 321 to I-485
- Cycle Length: NC LOS default
- g/C Ratio: NC LOS default unless observed to vary significantly
- Segment Length: Field observed
- Signals Per Mile: Field observed
- Number of Lanes: Field observed
- Free Flow Speed: Field observed (Posted speed limit)

US 321 between Jackson Road and Rankin Avenue operates as a one-way pair. The northbound and southbound directions were analyzed separately in NCLOS using the one-way volumes and the worst case LOS was reported. The one-way AADT volumes were obtained from the traffic forecasts found in **Appendix A**. The AADT volumes presented in the tables and figures for this segment of US 321 are two-way volumes in order to maintain consistency with the rest of the arterial.

US 29-74 from Franklin Commons Shopping Center to Lineburger Road has generally two eastbound travel lanes and three westbound travel lanes. Because of the different number of

travel lanes in each direction for this section of US 29-74, which is approximately 1,500 feet in length, the eastbound and westbound directions were analyzed separately in NCLOS using the one-way volumes and the worst case LOS was reported. The one-way AADT volumes were obtained from the traffic forecasts found in **Appendix A**. The AADT volumes presented in the tables and figures for this segment of US 29-74 are two-way volumes in order to maintain consistency with the rest of the arterial.

In the vicinity of New Hope Road, westbound US 29-74 has a lane drop immediately prior to the lane add from Aberdeen Boulevard. Since this is a very short (< 200 feet) mid-block section of US 29-74 with two westbound travel lanes the segment was not accounted for in the NCLOS analysis. This methodology was consistent among all five of the analyzed scenarios.

5 OPERATIONS ANALYSIS RESULTS

All NC LOS analysis worksheets can be found in **Appendix B**.

5.1 Base Year 2006 Existing Conditions

Tables 6 through 9 present the results of the NC LOS model for the Base Year 2006 Existing Conditions for I-85, I-485, US 29-74, and US 321, respectively. **Figure 4** presents the same information graphically.

Currently, the I-85 mainline is operating at LOS D on the west end of the study area, degrading to LOS E and F from around Exit 19 to Exit 27 (NC 273). East of Exit 27, the level of service improves to D, where I-85 is eight lanes wide.

I-485 is currently operating at LOS C or better in the project area. US 29-74 and US 321 generally are operating at LOS D or better, except at the I-485/US 29-74 interchange, the I-85/US 321 interchange, and sections of US 29-74 that taper down to two travel lanes in either one direction or both directions including the bridge over the Catawba River.

Table 6. I-85 – AADT and LOS – Base Year 2006

Segment		AADT	LOS
From	To		
Exit 10 – US 29-74 (W Franklin Blvd)	Exit 13- SR 1307 (Edgewood Rd)	73,800	**D**
Exit 13	Exit 14 - NC 274 (Bessemer City Rd)	79,400	**D**
Exit 14	Exit 17 - US 321 (Chester St)	84,200	**D**
Exit 17	Exit 19 - NC 7 (Ozark Ave)	97,400	**D**
Exit 19	Exit 20 - NC 279 (New Hope Rd)	109,600	**E**
Exit 20	Exit 21 - Cox Rd	111,200	**E**
Exit 21	Exit 22 - Main St	118,200	**F**
Exit 22	Exit 23 - NC 7 (McAdenville Rd)	123,600	**F**
Exit 23	Exit 26 - Belmont Mount Holly Rd	125,000	**F**
Exit 26	Exit 27 - NC 273	126,800	**F**
Exit 27	Exit 29 - Sam Wilson Rd	134,000	**D**
Exit 29	Exit 30 - I-485	130,000	**D**

Table 7. I-485 – AADT and LOS – Base Year 2006

Segment		AADT	LOS
From	To		
Exit 4 - Steele Creek Rd (NC 160)	Exit 9 - US 29-74 (Wilkinson Blvd)	52,000	**C**
Exit 9	Exit 10 – I-85	16,100[1]	**A**

Note:
[1] AADT for the mainline only (does not include AADT on the C/D roads)

Table 8. US 29-74 – AADT and LOS – Base Year 2006

Segment		AADT	LOS
From	To		
Sparrow Springs Rd	Edgewood Rd	29,100	**B**
Edgewood Rd	Shannon Bradley Rd	28,800	**B**
Shannon Bradley Rd	Myrtle School Rd	29,100	**C**
Myrtle School Rd	Bessemer City Rd / Garrison Blvd	26,200	**E**
Bessemer City Rd / Garrison Blvd	Linwood Rd	13,400	**C**
Linwood Rd	Chester St	7,900	**C**
Chester St	Avon St	15,900	**D**
Avon St	Thomas St / Belvedere	16,100	**D**
Thomas St / Belvedere	New Hope Rd	20,000	**C**
New Hope Rd	Cox Rd / Armstrong Park Rd	15,500	**C**
Cox Rd / Armstrong Park Rd	Franklin Square	24,600	**C**
Franklin Square	Lineburger Rd	24,600[1]	**E**[2]
Lineburger Rd	S. Main St. / Redbud Dr.	22,800	**C**
S. Main St. / Redbud Dr.	Wesleyan Dr. / Market St.	33,100	**C**
Wesleyan Dr. / Market St.	Lakewood Rd / Peach Orchard Rd	33,900	**D**
Lakewood Rd / Peach Orchard Rd	Park St (NC 273)	33,600	**D**
Park St (NC 273)	Catawba St (NC 7)	43,700	**D**
Catawba St (NC 7))	Old Dowd Rd	45,100	**F**
Old Dowd Rd	Sam Wilson Rd	31,900	**D**
Sam Wilson Rd	I-485 SB Ramps / Fieldridge Rd	36,000	**E**
I-485 SB Ramps / Fieldridge Rd	I-485 NB Ramps / Tuckaseegee Rd	34,900	**F**
East of I-485 NB Ramps / Tuckaseegee Rd		29,800	**D**

Note:
[1] Two-way AADT volume
[2] Worst case LOS from the directional NCLOS analysis using one-way AADT volumes

Table 9. US 321 – AADT and LOS – Base Year 2006

Segment		AADT	LOS
From	To		
State Line	Forbes / Superior Stainless Rd	18,500	**A**
Forbes / Superior Stainless Rd	Crowders Creek Rd / Telegraph Dr	13,500	**B**
Crowders Creek Rd / Telegraph Dr	Old York Rd / Stagecoach Rd	15,500	**C**
Old York Rd / Stagecoach Rd	Davis Park Rd	16,100	**B**
Davis Park Rd	Hudson Blvd	15,600	**D**
Hudson Blvd	Jackson Rd	20,000	**D**
Jackson Rd	W 3rd Ave	15,600[1]	**C**[2]
W 3rd Ave	W Franklin Blvd	15,600[1]	**C**[2]
W Franklin Blvd	W Airline Ave / W Long Ave	21,400[1]	**C**[2]
W Airline Ave / W. Long Ave	W Rankin Ave	21,400[1]	**C**[2]
W Rankin Ave	Radio St	16,800	**C**
Radio St	I-85 NB Ramps	18,600	**C**
I-85 NB Ramps	I-85 SB Ramps	30,100	**F**
I-85 SB Ramps	Rankin Lake Rd	41,600	**E**

Note:
[1] Two-way AADT volume
[2] Worst case LOS from the directional NCLOS analysis using one-way AADT volumes

5.2 Design Year 2030 No Build Alternative

Tables 10 through 13 present the results of the NC LOS model for the Design Year 2030 No Build Alternative for I-85, I-485, US 29-74, and US 321, respectively. **Figure 5** presents the same information graphically.

By 2030, under the No-Build Alternative, the I-85 and I-485 mainlines are operating at LOS E-F throughout the study area except for the section of I-485 between US 29-74 and I-85 which contains the C/D roads.

Except for the sections between Shannon Bradley Road and Bessemer City Road/Garrison Bolevard and the Fraklin Square Shopping Center and Lineburger Road, US 29-74 would operate at LOS D or better west of Wesleyan Drive (McAdenville) and LOS F east of Wesleyan Drive / Market Street. US 321 would operate at LOS D or better, except at the interchange with I-85.

Table 10. I-85 – AADT and LOS – Design Year 2030 No Build Alternative

Segment		AADT	LOS
From	To		
Exit 10 – US 29-74 (W Franklin Blvd)	Exit 13- SR 1307 (Edgewood Rd)	105,000	**E**
Exit 13	Exit 14 - NC 274 (Bessemer City Rd)	115,400	**F**
Exit 14	Exit 17 - US 321 (Chester St)	119,200	**F**
Exit 17	Exit 19 - NC 7 (Ozark Ave)	134,600	**F**
Exit 19	Exit 20 - NC 279 (New Hope Rd)	147,200	**F**
Exit 20	Exit 21 - Cox Rd	151,000	**F**
Exit 21	Exit 22 - Main St	153,000	**F**
Exit 22	Exit 23 - NC 7 (McAdenville Rd)	161,600	**F**
Exit 23	Exit 26 - Belmont Mount Holly Rd	169,200	**F**
Exit 26	Exit 27 - NC 273	178,600	**F**
Exit 27	Exit 29 - Sam Wilson Rd	193,600	**F**
Exit 29	Exit 30 - I-485	198,400	**F**

Table 11. I-485 – AADT and LOS – Design Year 2030 No Build Alternative

Segment		AADT	LOS
From	To		
Exit 4 - Steele Creek Rd (NC 160)	Exit 9 - US 29-74 (Wilkinson Blvd)	100,000	**E**
Exit 9	Exit 10 – I-85	41,900[1]	**B**

Note:
[1] AADT for the mainline only (does not include AADT on the C/D roads)

Table 12. US 29-74 – AADT and LOS – Design Year 2030 No Build Alternative

Segment		AADT	LOS
From	To		
Sparrow Springs Rd	Edgewood Rd	37,200	**D**
Edgewood Rd	Shannon Bradley Rd	35,600	**C**
Shannon Bradley Rd	Myrtle School Rd	35,400	**E**
Myrtle School Rd	Bessemer City Rd / Garrison Blvd	32,200	**F**
Bessemer City Rd / Garrison Blvd	Linwood Rd	21,500	**D**
Linwood Rd	Chester St	16,400	**D**
Chester St	Avon St	21,800	**D**
Avon St	Thomas St / Belvedere	22,700	**D**
Thomas St / Belvedere	New Hope Rd	27,100	**C**
New Hope Rd	Cox Rd / Armstrong Park Rd	24,700	**C**
Cox Rd / Armstrong Park Rd	Franklin Square	39,200	**D**
Franklin Square	Lineburger Rd	39,200[1]	**F**[2]
Lineburger Rd	S. Main St. / Redbud Dr.	39,500	**D**
S. Main St. / Redbud Dr.	Wesleyan Dr. / Market St.	42,300	**D**
Wesleyan Dr. / Market St.	Lakewood Rd / Peach Orchard Rd	59,700	**F**
Lakewood Rd / Peach Orchard Rd	Park St (NC 273)	60,100	**F**
Park St (NC 273)	Catawba St (NC 7)	72,700	**F**
Catawba St (NC 7)	Old Dowd Rd	70,500	**F**
Old Dowd Rd	Sam Wilson Rd	52,600	**F**
Sam Wilson Rd	I-485 SB Ramps / Fieldridge Rd	58,400	**F**
I-485 SB Ramps / Fieldridge Rd	I-485 NB Ramps / Tuckaseegee Rd	55,100	**F**
East of I-485 NB Ramps / Tuckaseegee Rd		45,000	**F**

Note:
[1] Two-way AADT volume
[2] Worst case LOS from the directional NCLOS analysis using one-way AADT volumes

Table 13. US 321 – AADT and LOS – Design Year 2030 No Build Alternative

Segment		AADT	LOS
From	To		
State Line	Forbes / Superior Stainless Rd	30,900	**A**
Forbes / Superior Stainless Rd	Crowders Creek Rd / Telegraph Dr	20,700	**B**
Crowders Creek Rd / Telegraph Dr	Old York Rd / Stagecoach Rd	23,400	**C**
Old York Rd / Stagecoach Rd	Davis Park Rd	23,000	**C**
Davis Park Rd	Hudson Blvd	23,000	**D**
Hudson Blvd	Jackson Rd	22,800	**D**
Jackson Rd	W 3rd Ave	17,400[1]	**C**[2]
W 3rd Ave	W Franklin Blvd	17,400[1]	**C**[2]
W Franklin Blvd	W Airline Ave / W Long Ave	20,500[1]	**C**[2]
W Airline Ave / W. Long Ave	W Rankin Ave	20,500[1]	**C**[2]
W Rankin Ave	Radio St	19,900	**D**
Radio St	I-85 NB Ramps	22,000	**D**
I-85 NB Ramps	I-85 SB Ramps	34,500	**F**
I-85 SB Ramps	Rankin Lake Rd	47,000	**E**

Note:
[1] Two-way AADT volume
[2] Worst case LOS from the directional NCLOS analysis using one-way AADT volumes

5.3 Design Year 2030 Widen I-85 Alternative

Tables 14 through 17 present the results of the NC LOS model for the Design Year 2030 Widen I-85 Alternative for I-85, I-485, US 29-74, and US 321, respectively. **Figure 6** presents the same information graphically.

In 2030, under the Widen I-85 Alternative, I-85 would continue to operate at LOS F east of US 321. The widening would improve LOS west of US 321 to LOS D-E. I-485 would operate at LOS F except for the section of I-485 between US 29-74 and I-85 which contains the C/D roads, as more vehicles that are using I-85 due to the widening would also use I-485.

Except for the sections between Myrtle School Road and Bessemer City Road / Garrison Boulevard, Chester Street and Avon Street, and the Franklin Square Shopping Center and Lineburger Road, US 29-74 would operate at LOS D or better west of Wesleyan Drive (McAdenville) and LOS E-F east of Wesleyan Drive / Market Street. US 321 would operate at LOS D or better, except at the interchange with I-85 and from Davis Park Road to Jackson Road.

Table 14. I-85 – AADT and LOS – Design Year 2030 Widen I-85 Alternative

Segment		AADT	LOS
From	To		
Exit 10 – US 29-74 (W Franklin Blvd)	Exit 13- SR 1307 (Edgewood Rd)	115,200	**D**
Exit 13	Exit 14 - NC 274 (Bessemer City Rd)	131,000	**E**
Exit 14	Exit 17 - US 321 (Chester St)	139,600	**E**
Exit 17	Exit 19 - NC 7 (Ozark Ave)	157,200	**F**
Exit 19	Exit 20 - NC 279 (New Hope Rd)	174,600	**F**
Exit 20	Exit 21 - Cox Rd	180,000	**F**
Exit 21	Exit 22 - Main St	185,400	**F**
Exit 22	Exit 23 - NC 7 (McAdenville Rd)	195,200	**F**
Exit 23	Exit 26 - Belmont Mount Holly Rd	202,200	**F**
Exit 26	Exit 27 - NC 273	212,400	**F**
Exit 27	Exit 29 - Sam Wilson Rd	228,200	**F**
Exit 29	Exit 30 - I-485	234,600	**F**

Table 15. I-485 – AADT and LOS – Design Year 2030 Widen I-85 Alternative

Segment		AADT	LOS
From	To		
Exit 4 - Steele Creek Rd (NC 160)	Exit 9 - US 29-74 (Wilkinson Blvd)	110,200	**F**
Exit 9	Exit 10 – I-85	44,150[1]	**B**

Note:
[1] AADT for the mainline only (does not include AADT on the C/D roads)

Table 16. US 29-74 – AADT and LOS – Design Year 2030 Widen I-85 Alternative

Segment		AADT	LOS
From	To		
Sparrow Springs Rd	Edgewood Rd	41,900	**B**
Edgewood Rd	Shannon Bradley Rd	37,300	**B**
Shannon Bradley Rd	Myrtle School Rd	37,200	**C**
Myrtle School Rd	Bessemer City Rd / Garrison Blvd	34,300	**F**
Bessemer City Rd / Garrison Blvd	Linwood Rd	21,300	**D**
Linwood Rd	Chester St	18,600	**D**
Chester St	Avon St	23,800	**E**
Avon St	Thomas St / Belvedere	23,800	**D**
Thomas St / Belvedere	New Hope Rd	28,400	**C**
New Hope Rd	Cox Rd / Armstrong Park Rd	23,000	**C**
Cox Rd / Armstrong Park Rd	Franklin Square	35,000	**D**
Franklin Square	Lineburger Rd	35,000[1]	**E**[2]
Lineburger Rd	S. Main St. / Redbud Dr.	35,400	**D**
S. Main St. / Redbud Dr.	Wesleyan Dr. / Market St.	39,300	**D**
Wesleyan Dr. / Market St.	Lakewood Rd / Peach Orchard Rd	56,800	**F**
Lakewood Rd / Peach Orchard Rd	Park St (NC 273)	58,100	**F**
Park St (NC 273)	Catawba St (NC 7)	71,200	**F**
Catawba St (NC 7)	Old Dowd Rd	69,900	**F**
Old Dowd Rd	Sam Wilson Rd	52,100	**E**
Sam Wilson Rd	I-485 SB Ramps / Fieldridge Rd	59,000	**F**
I-485 SB Ramps / Fieldridge Rd	I-485 NB Ramps / Tuckaseegee Rd	57,300	**F**
East of I-485 NB Ramps / Tuckaseegee Rd		48,400	**E**

Note:
[1] Two-way AADT volume
[2] Worst case LOS from the directional NCLOS analysis using one-way AADT volumes

Table 17. US 321 – AADT and LOS – Design Year 2030 Widen I-85 Alternative

Segment		AADT	LOS
From	To		
State Line	Forbes / Superior Stainless Rd	34,200	**A**
Forbes / Superior Stainless Rd	Crowders Creek Rd / Telegraph Dr	23,300	**B**
Crowders Creek Rd / Telegraph Dr	Old York Rd / Stagecoach Rd	26,400	**D**
Old York Rd / Stagecoach Rd	Davis Park Rd	26,000	**C**
Davis Park Rd	Hudson Blvd	26,000	**E**
Hudson Blvd	Jackson Rd	25,000	**E**
Jackson Rd	W 3rd Ave	19,000[1]	**D**[2]
W 3rd Ave	W Franklin Blvd	19,000[1]	**C**[2]
W Franklin Blvd	W Airline Ave / W Long Ave	27,300[1]	**C**[2]
W Airline Ave / W. Long Ave	W Rankin Ave	27,300[1]	**C**[2]
W Rankin Ave	Radio St	22,400	**D**
Radio St	I-85 NB Ramps	24,800	**D**
I-85 NB Ramps	I-85 SB Ramps	40,700	**F**
I-85 SB Ramps	Rankin Lake Rd	56,600	**F**

Note:
[1] Two-way AADT volume
[2] Worst case LOS from the directional NCLOS analysis using one-way AADT volumes

5.4 Design Year 2030 Build Non-Toll Facility Alternative

Tables 18 through 21 present the results of the NC LOS model for the Design Year 2030 Build Non-Toll Facility Alternative for I-85, I-485, US 29-74, and US 321, respectively. **Figure 7** presents the same information graphically.

In 2030, under the Build Non-Toll Facility Alternative, I-85 would operate at LOS E west of Exit 13 (SR 1307[Edgewood Road]) and LOS F east of Exit 13. I-485 would operate at LOS F south of the Gaston Connector, LOS E between the Gaston Connector and Exit 9 (US 29-74[Wilkinson Boulevard]), and LOS B on the I-485 mainline between US 29-74 and I-85.

US 29-74 would operate at LOS D or better except for west of SR 1307 (Edgewood Road), between Myrtle School Road and Bessemer City Road / Garrison Boulevard, between the Franklin Square Shopping Center and Lineburger Road, between Market Street / Wesleyan Drive and Lakewood Road, and east of NC 273 (Park Street). US 321 would operate at LOS D or better, except at the interchange with I-85.

Table 18. I-85 – AADT and LOS – Design Year 2030 Build Non-Toll Facility Alternative

Segment		AADT	LOS
From	To		
Exit 10 – US 29-74 (W Franklin Blvd)	Gaston Connector	111,200	**E**
Gaston Connector	Exit 13 - SR 1307 (Edgewood Rd)	102,100	**E**
Exit 13	Exit 14 - NC 274 (Bessemer City Rd)	116,200	**F**
Exit 14	Exit 17 - US 321 (Chester St)	121,200	**F**
Exit 17	Exit 19 - NC 7 (Ozark Ave)	132,800	**F**
Exit 19	Exit 20 - NC 279 (New Hope Rd)	142,200	**F**
Exit 20	Exit 21 - Cox Rd	145,400	**F**
Exit 21	Exit 22 - Main St	144,600	**F**
Exit 22	Exit 23 - NC 7 (McAdenville Rd)	149,800	**F**
Exit 23	Exit 26 - Belmont Mount Holly Rd	155,000	**F**
Exit 26	Exit 27 - NC 273	163,000	**F**
Exit 27	Exit 29 - Sam Wilson Rd	175,800	**F**
Exit 29	Exit 30 - I-485	181,200	**F**

Table 19. I-485 – AADT and LOS – Design Year 2030 Build Non-Toll Facility Alternative

Segment		AADT	LOS
From	To		
Exit 4 - Steele Creek Rd (NC 160)	Gaston Connector	111,000	**F**
Gaston Connector	Exit 9 - US 29-74 (Wilkinson Blvd)	97,400	**E**
Exit 9	Exit 10 – I-85	48,450[1]	**B**

Note:
[1] AADT for the mainline only (does not include AADT on the C/D roads)

Table 20. US 29-74 – AADT and LOS – Design Year 2030 Build Non-Toll Facility Alternative

Segment		AADT	LOS
From	To		
Sparrow Springs Rd	Gaston Connector	48,400	**F**
Gaston Connector	Edgewood Rd	33,600	**E**
Edgewood Rd	Shannon Bradley Rd	32,200	**C**
Shannon Bradley Rd	Myrtle School Rd	32,100	**D**
Myrtle School Rd	Bessemer City Rd / Garrison Blvd	29,700	**F**
Bessemer City Rd / Garrison Blvd	Linwood Rd	20,000	**D**
Linwood Rd	Chester St	17,100	**D**
Chester St	Avon St	21,100	**D**
Avon St	Thomas St / Belvedere	22,400	**D**
Thomas St / Belvedere	New Hope Rd	26,300	**C**
New Hope Rd	Cox Rd / Armstrong Park Rd	22,300	**C**
Cox Rd / Armstrong Park Rd	Franklin Square	36,700	**D**
Franklin Square	Lineburger Rd	40,300[1]	**F**[2]
Lineburger Rd	S. Main St. / Redbud Dr.	38,300	**D**
S. Main St. / Redbud Dr.	Wesleyan Dr. / Market St.	38,700	**D**
Wesleyan Dr. / Market St.	Lakewood Rd / Peach Orchard Rd	53,000	**F**
Lakewood Rd / Peach Orchard Rd	Park St (NC 273)	47,500	**D**
Park St (NC 273)	Catawba St (NC 7)	56,100	**F**
Catawba St (NC 7)	Old Dowd Rd	58,600	**F**
Old Dowd Rd	Sam Wilson Rd	39,600	**F**
Sam Wilson Rd	I-485 SB Ramps / Fieldridge Rd	48,400	**F**
I-485 SB Ramps / Fieldridge Rd	I-485 NB Ramps / Tuckaseegee Rd	47,000	**F**
East of I-485 NB Ramps / Tuckaseegee Rd		38,800	**F**

Note:
[1] Two-way AADT volume
[2] Worst case LOS from the directional NCLOS analysis using one-way AADT volumes

Table 21. US 321 – AADT and LOS – Design Year 2030 Build Non-Toll Facility Alternative

Segment		AADT	LOS
From	To		
State Line	Gaston Connector	39,600	**C**
Gaston Connector	Forbes / Superior Stainless Rd	23,300	**D**
Forbes / Superior Stainless Rd	Crowders Creek Rd / Telegraph Dr	21,100	**B**
Crowders Creek Rd / Telegraph Dr	Old York Rd / Stagecoach Rd	21,200	**C**
Old York Rd / Stagecoach Rd	Davis Park Rd	20,300	**C**
Davis Park Rd	Hudson Blvd	20,100	**D**
Hudson Blvd	Jackson Rd	21,900	**D**
Jackson Rd	W 3rd Ave	17,100[1]	**C**[2]
W 3rd Ave	W Franklin Blvd	17,800[1]	**C**[2]
W Franklin Blvd	W Airline Ave / W Long Ave	25,300[1]	**C**[2]
W Airline Ave / W. Long Ave	W Rankin Ave	25,300[1]	**C**[2]
W Rankin Ave	Radio St	22,400	**D**
Radio St	I-85 NB Ramps	24,800	**D**
I-85 NB Ramps	I-85 SB Ramps	39,600	**F**
I-85 SB Ramps	Rankin Lake Rd	55,200	**F**

Note:
[1] Two-way AADT volume
[2] Worst case LOS from the directional NCLOS analysis using one-way AADT volumes

5.5 Design Year 2030 Build Toll Facility Alternative

Tables 22 through 25 present the results of the NC LOS model for the Design Year 2030 Build Toll Facility Alternative for I-85, I-485, US 29-74, and US 321, respectively. **Figure 8** presents the same information graphically.

In 2030, under the Build Toll Facility Alternative, I-85 would operate at LOS E west of Exit 13 (SR 1307[Edgewood Road]) and LOS F east of Exit 13. I-485 would operate at LOS F south of the Gaston Connector, LOS E between the Gaston Connector and Exit 9 (US 29-74[Wilkinson Boulevard]), and LOS B on the I-485 mainline between US 29-74 and I-85.

US 29-74 would operate at LOS D or better except for west of SR 1307 (Edgewood Road), between Shannon Bradley Road and Bessemer City Road / Garrison Boulevard, between the Franklin Square Shopping Center and Lineburger Road, between Market Street / Wesleyan Drive and Lakewood Road, and east of NC 273 (Park Street). US 321 would operate at LOS D or better, except at the interchange with I-85.

Table 22. I-85 – AADT and LOS – Design Year 2030 Build Toll Facility Alternative

Segment		AADT	LOS
From	To		
Exit 10 – US 29-74 (W Franklin Blvd)	Gaston Connector	111,800	**E**
Gaston Connector	Exit 13- SR 1307 (Edgewood Rd)	106,500	**E**
Exit 13	Exit 14 - NC 274 (Bessemer City Rd)	120,400	**F**
Exit 14	Exit 17 - US 321 (Chester St)	125,200	**F**
Exit 17	Exit 19 - NC 7 (Ozark Ave)	138,400	**F**
Exit 19	Exit 20 - NC 279 (New Hope Rd)	148,200	**F**
Exit 20	Exit 21 - Cox Rd	151,400	**F**
Exit 21	Exit 22 - Main St	149,600	**F**
Exit 22	Exit 23 - NC 7 (McAdenville Rd)	157,400	**F**
Exit 23	Exit 26 - Belmont Mount Holly Rd	162,800	**F**
Exit 26	Exit 27 - NC 273	171,000	**F**
Exit 27	Exit 29 - Sam Wilson Rd	185,200	**F**
Exit 29	Exit 30 - I-485	190,800	**F**

Table 23. I-485 – AADT and LOS – Design Year 2030 Build Toll Facility Alternative

Segment		AADT	LOS
From	To		
Exit 4 - Steele Creek Rd (NC 160)	Exit 9 - US 29-74 (Wilkinson Blvd)	109,000	**F**
Gaston Connector	Exit 9 - US 29-74 (Wilkinson Blvd)	98,600	**E**
Exit 9	Exit 10 – I-85	51,300[1]	**B**

Note:
[1] AADT for the mainline only (does not include AADT on the C/D roads)

Table 24. US 29-74 – AADT and LOS – Design Year 2030 Build Toll Facility Alternative

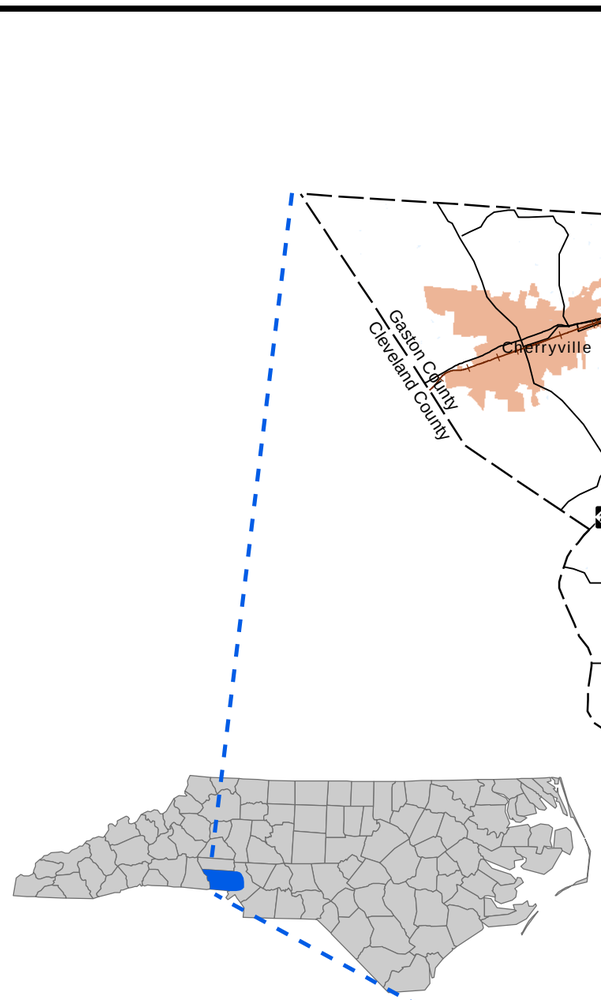
Segment		AADT	LOS
From	To		
Sparrow Springs Rd	Gaston Connector	43,600	**F**
Gaston Connector	Edgewood Rd	35,500	**E**
Edgewood Rd	Shannon Bradley Rd	36,400	**C**
Shannon Bradley Rd	Myrtle School Rd	36,300	**F**
Myrtle School Rd	Bessemer City Rd / Garrison Blvd	34,600	**F**
Bessemer City Rd / Garrison Blvd	Linwood Rd	23,100	**D**
Linwood Rd	Chester St	19,700	**D**
Chester St	Avon St	23,000	**D**
Avon St	Thomas St / Belvedere	24,700	**D**
Thomas St / Belvedere	New Hope Rd	32,100	**D**
New Hope Rd	Cox Rd / Armstrong Park Rd	26,000	**C**
Cox Rd / Armstrong Park Rd	Franklin Square	39,900	**D**
Franklin Square	Lineburger Rd	43,500[1]	**F**[2]
Lineburger Rd	S. Main St. / Redbud Dr.	40,700	**D**
S. Main St. / Redbud Dr.	Wesleyan Dr. / Market St.	40,400	**D**
Wesleyan Dr. / Market St.	Lakewood Rd / Peach Orchard Rd	56,100	**F**
Lakewood Rd / Peach Orchard Rd	Park St (NC 273)	51,800	**F**
Park St (NC 273)	Catawba St (NC 7)	61,500	**F**
Catawba St (NC 7)	Old Dowd Rd	63,900	**F**
Old Dowd Rd	Sam Wilson Rd	45,400	**F**
Sam Wilson Rd	I-485 SB Ramps / Fieldridge Rd	51,000	**F**
I-485 SB Ramps / Fieldridge Rd	I-485 NB Ramps / Tuckaseegee Rd	49,300	**F**
East of I-485 NB Ramps / Tuckaseegee Rd		40,800	**F**

Note:
[1] Two-way AADT volume
[2] Worst case LOS from the directional NCLOS analysis using one-way AADT volumes

Table 25. US 321 – AADT and LOS – Design Year 2030 Build Toll Facility Alternative

Segment		AADT	LOS
From	To		
State Line	Gaston Connector	42,000	**D**
Gaston Connector	Forbes / Superior Stainless Rd	23,200	**D**
Forbes / Superior Stainless Rd	Crowders Creek Rd / Telegraph Dr	22,400	**B**
Crowders Creek Rd / Telegraph Dr	Old York Rd / Stagecoach Rd	22,900	**C**
Old York Rd / Stagecoach Rd	Davis Park Rd	21,400	**C**
Davis Park Rd	Hudson Blvd	21,200	**D**
Hudson Blvd	Jackson Rd	22,700	**D**
Jackson Rd	W 3rd Ave	17,100[1]	**C**[2]
W 3rd Ave	W Franklin Blvd	17,900[1]	**C**[2]
W Franklin Blvd	W Airline Ave / W Long Ave	23,800[1]	**C**[2]
W Airline Ave / W. Long Ave	W Rankin Ave	23,800[1]	**C**[2]
W Rankin Ave	Radio St	22,500	**D**
Radio St	I-85 NB Ramps	24,800	**D**
I-85 NB Ramps	I-85 SB Ramps	40,000	**F**
I-85 SB Ramps	Rankin Lake Rd	54,400	**F**

Note:
[1] Two-way AADT volume
[2] Worst case LOS from the directional NCLOS analysis using one-way AADT volumes



Legend

- Study Area Boundary
- Railroads
- Proposed Airport Expansion
- Major Roads
- County Lines
- Hydrology
- Parks

Source: Gaston County and Mecklenburg Counties GIS. Map Printed On 4-28-08.

N

0 7,500 15,000

Feet

NORTH CAROLINA Turnpike Authority

STIP PROJECT NO. U-3321

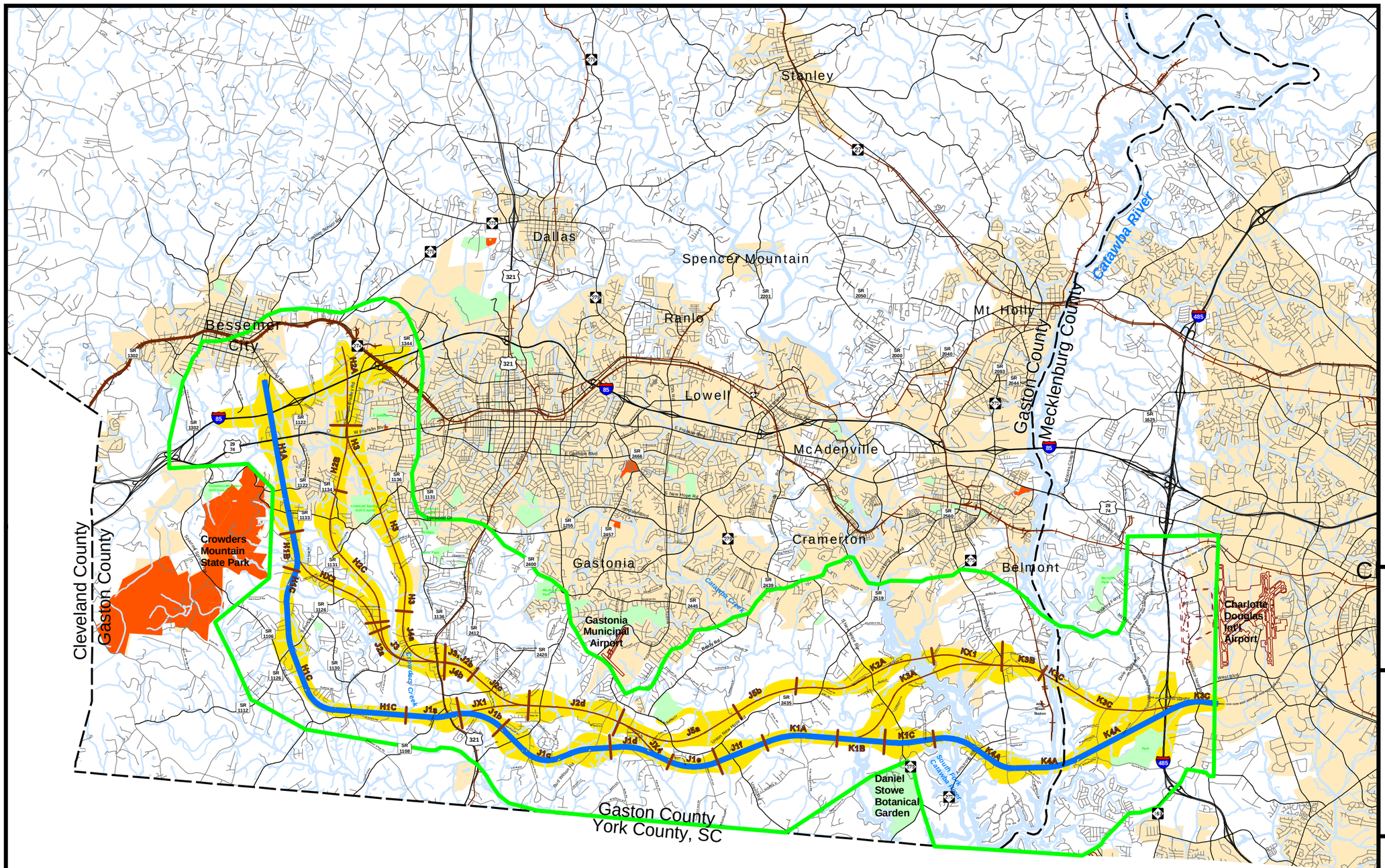
Gaston County and Mecklenburg County

GASTON EAST-WEST CONNECTOR

PROJECT LOCATION MAP

Figure 1

Traffic_Proj_Loc.mxd 4-28-08



Legend

- Refined Study Area Boundary for New Location Alternatives
- Alternative 64
- Centerline of Corridors
- Corridor Segment Break Lines
- County Lines
- Hydrology
- Other Roads
- Interstates
- Railroads
- Parks/Recreation Areas
- Detailed Study Corridors
- State Complexes

Source: Gaston County and Mecklenburg Counties GIS. Map Printed On 5-02-08.

N

0 5,000 10,000
Feet

NORTH CAROLINA Turnpike Authority

STIP PROJECT NO. U-3321

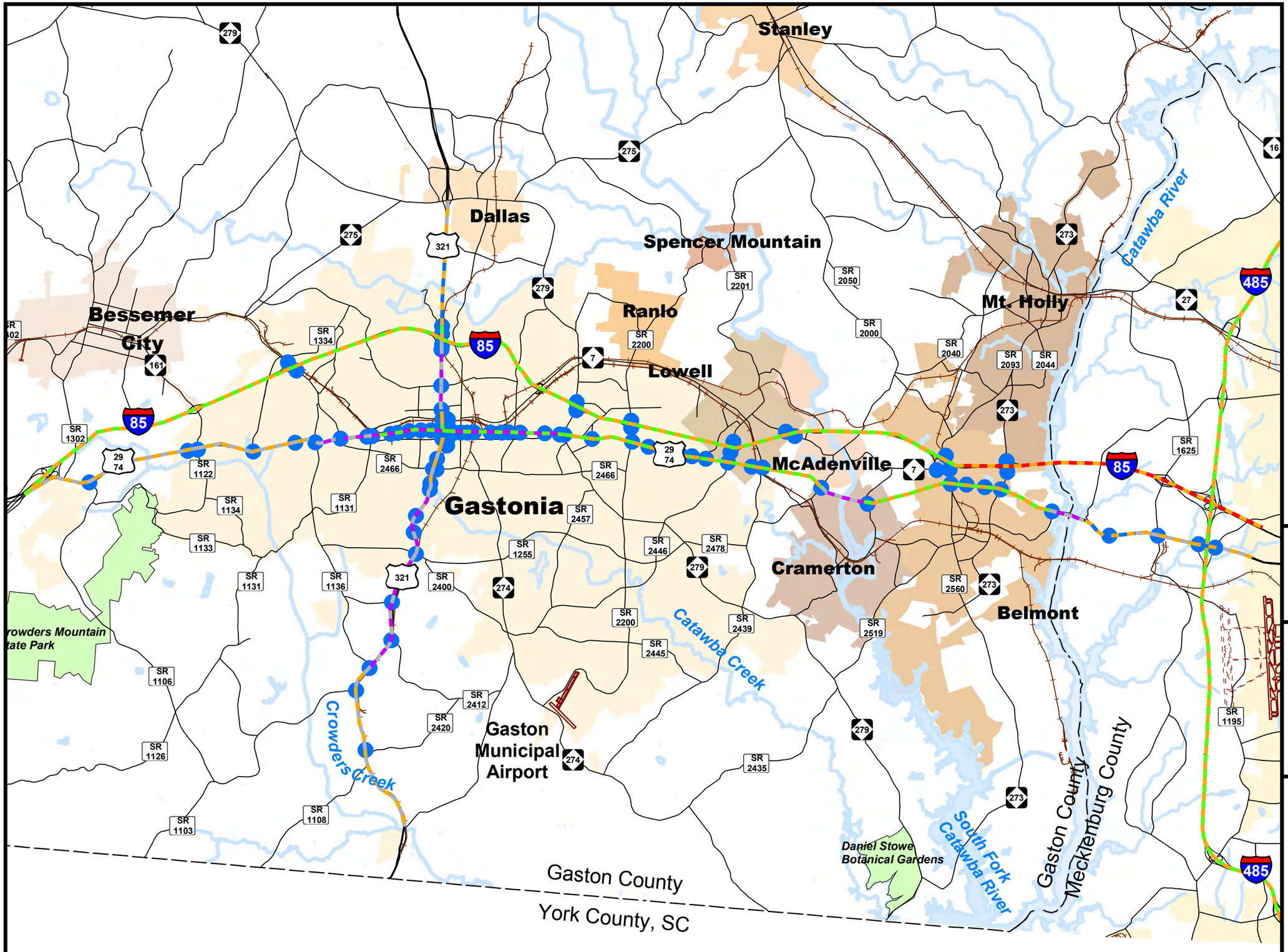
Gaston County and Mecklenburg County

GASTON EAST-WEST CONNECTOR

ALTERNATIVE 64 AND DETAILED STUDY ALTERNATIVES

Figure 2

Traff_DSA_Alt64.mxd 5/02/08



Legend

- 4 Lanes Divided
- 5, Divided
- 6 Lanes Divided
- 8 Lanes Divided
- 4 Lanes Undivided
- 5 Lanes Undivided
- 6 Lanes Undivided
- Signalized Intersection
- Railroads
- Proposed Airport Expansion
- Major Roads
- County Lines
- Hydrology
- Major Parks

Source: Gaston County and Mecklenburg Counties GIS. Map Printed On 5-29-08.

N

0 4,000 8,000

Feet

NORTH CAROLINA Turnpike Authority

STIP PROJECT NO. U-3321

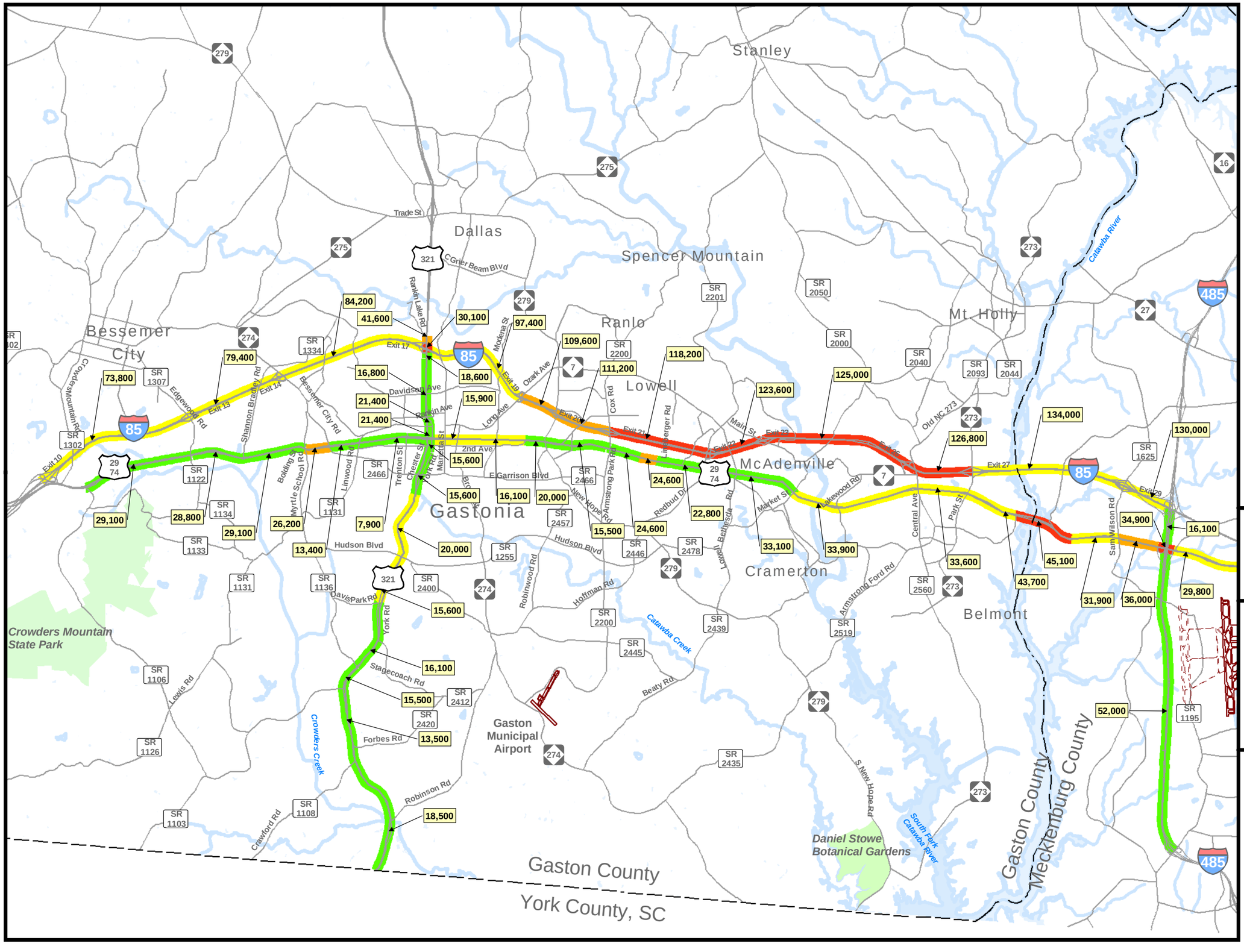
Gaston County and Mecklenburg County

GASTON EAST-WEST CONNECTOR

EXISTING FACILITY CHARACTERISTICS

Figure 3

Traffic_Ex_Character.pdf.ai 7-10-08



Legend

Level of Service

- A-C
- D
- E
- F

xx,xxx Average Annual Daily Traffic

- Major Roads
- Proposed Airport Expansion
- County Lines
- Hydrology

Source: Gaston County and Mecklenburg Counties GIS. Map Printed On 7-10-08.

N

0 4,000 8,000

Feet

NORTH CAROLINA Turnpike Authority

STIP PROJECT NO. U-3321

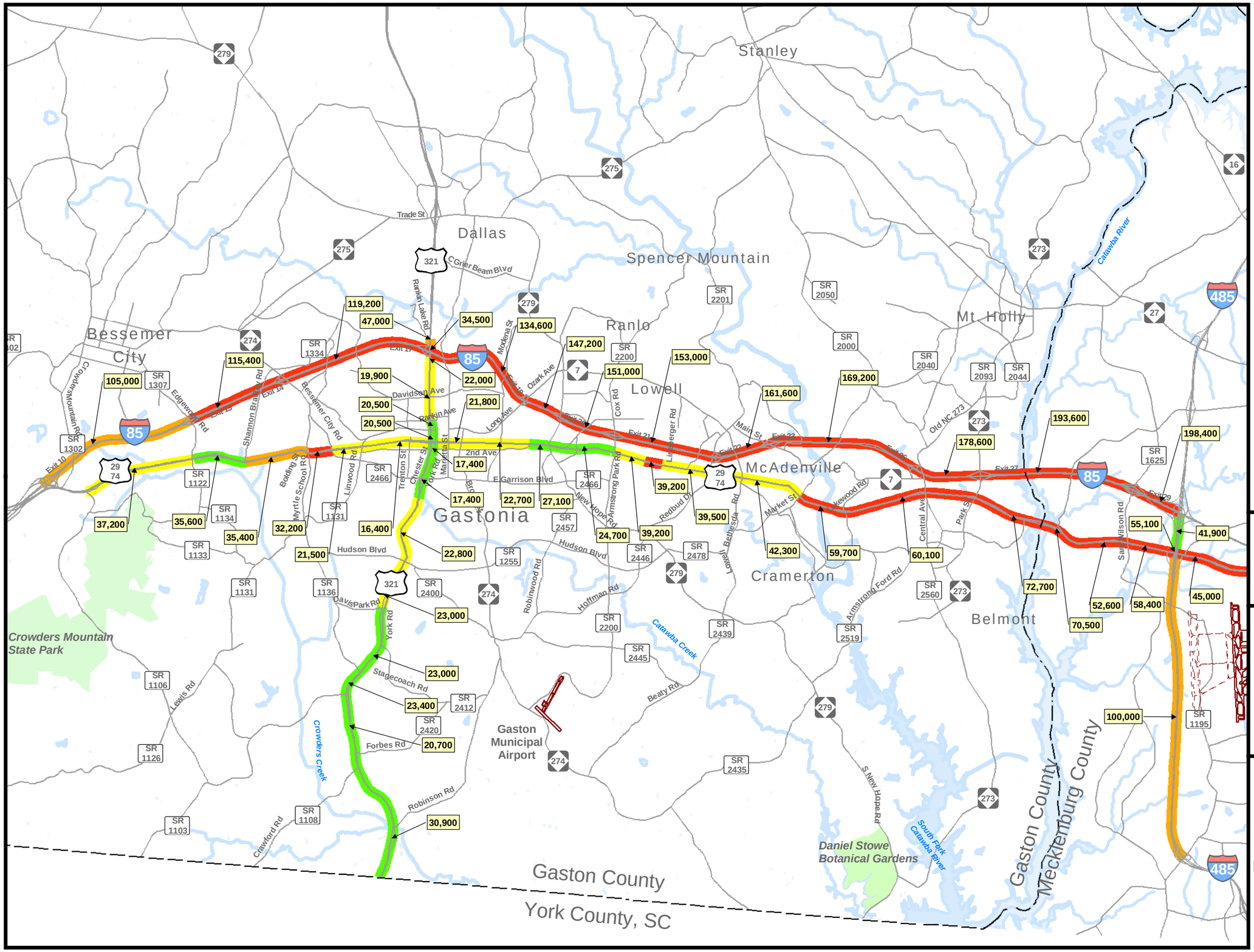
Gaston County and Mecklenburg County

GASTON EAST-WEST CONNECTOR

BASE YEAR 2006 - EXISTING CONDITIONS AADT & LOS

Figure 4

Traffic_ADT_Basemap.mxd 7-10-08



Legend

Level of Service

- A-C
- D
- E
- F

xx,xxx Average Annual Daily Traffic

- Major Roads
- Proposed Airport Expansion
- County Lines
- Hydrology

Source: Gaston County and Mecklenburg Counties GIS. Map Printed On 7-10-08.

N

0 4,000 8,000

Feet

NORTH CAROLINA Turnpike Authority

STIP PROJECT NO. U-3321

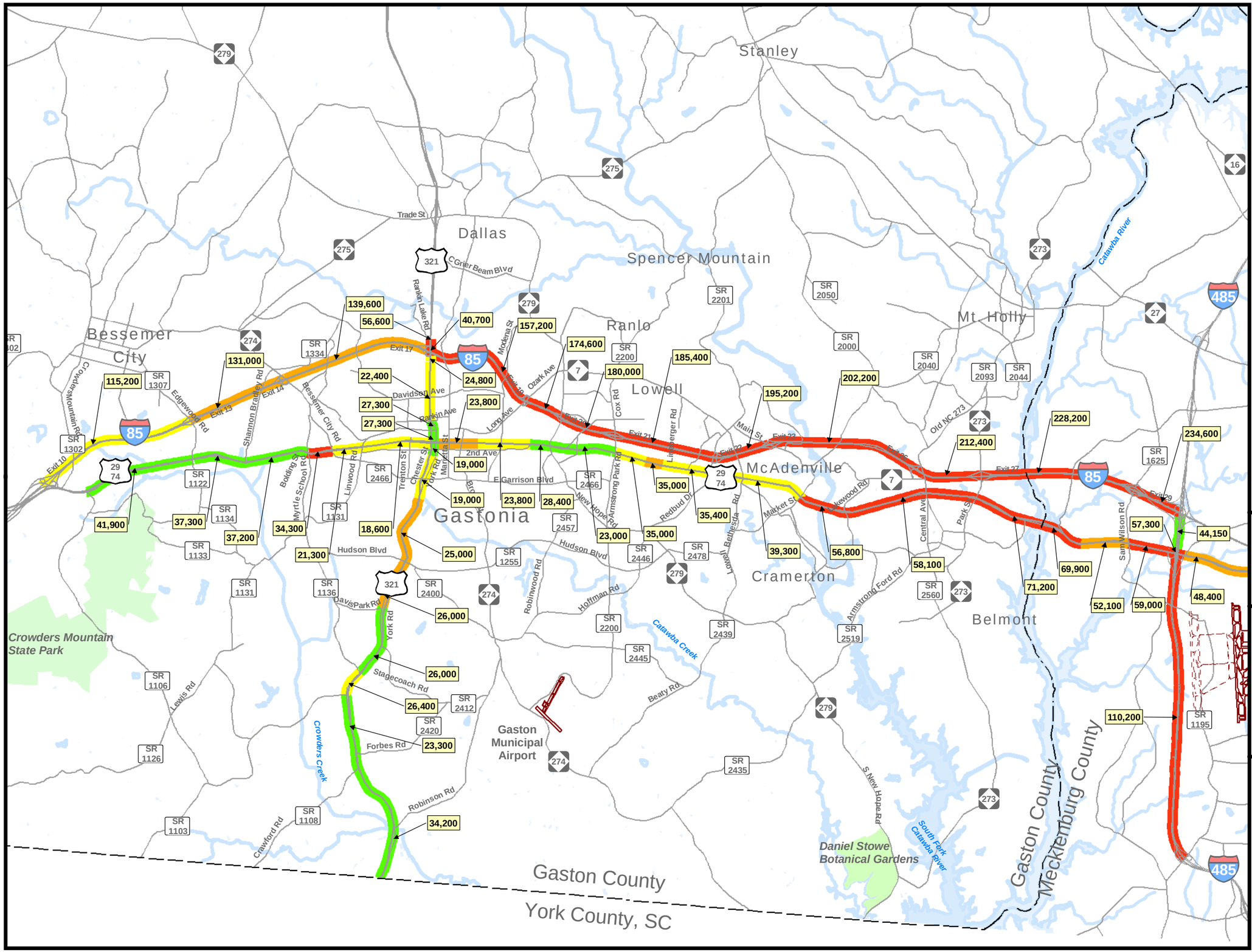
Gaston County and Mecklenburg County

GASTON EAST-WEST CONNECTOR

DESIGN YEAR 2030 - NO-BUILD AADT & LOS

Figure 5

Traffic_ADT_No_Build.mxd 7-10-08



Legend

Level of Service

- A-C
- D
- E
- F

xx,xxx Average Annual Daily Traffic

- Major Roads
- Proposed Airport Expansion
- County Lines
- Hydrology

Source: Gaston County and Mecklenburg Counties GIS. Map Printed On 7-10-08.

N

0 4,000 8,000

Feet

NORTH CAROLINA Turnpike Authority

STIP PROJECT NO. U-3321

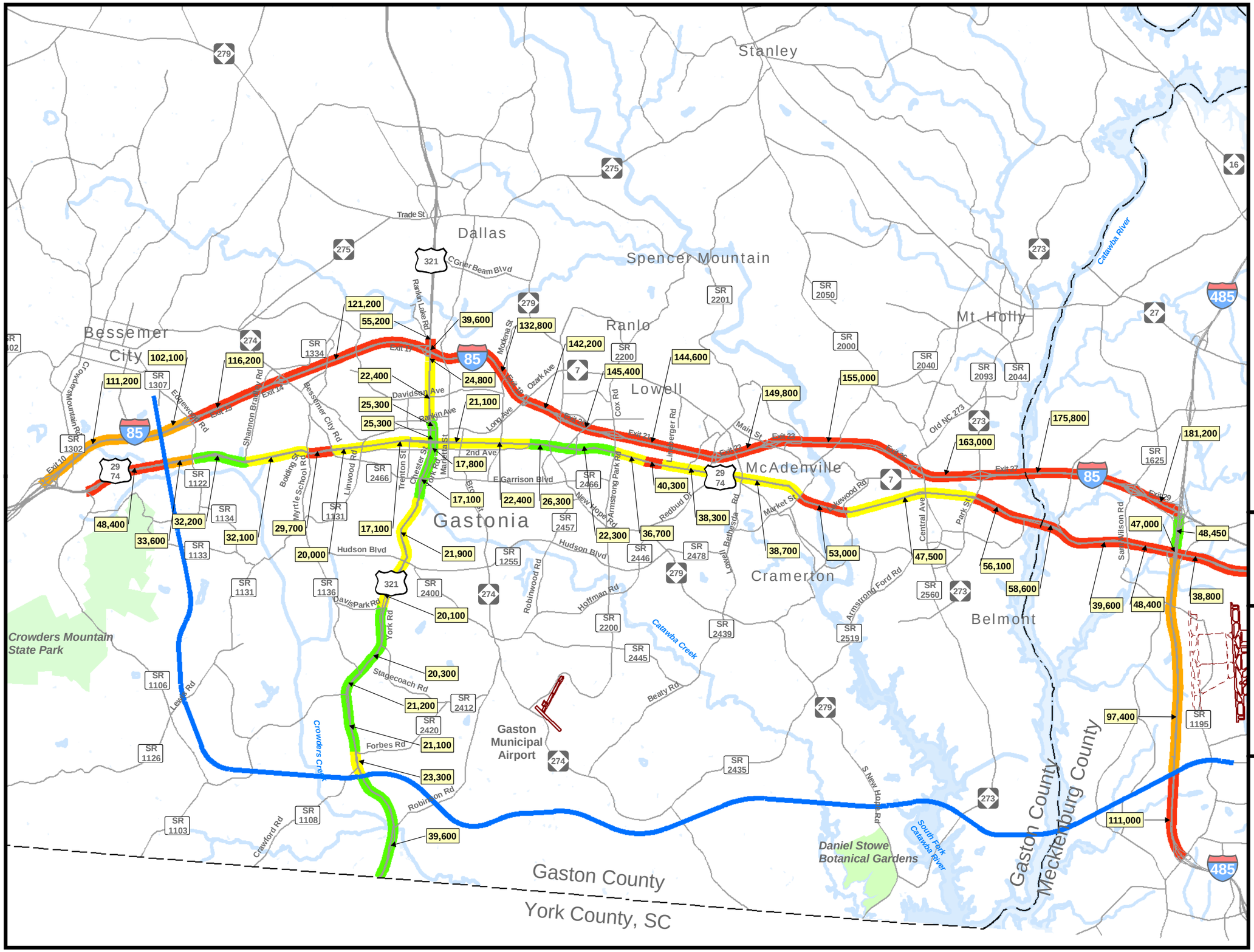
Gaston County and Mecklenburg County

GASTON EAST-WEST CONNECTOR

DESIGN YEAR 2030 - WIDEN I-85 AADT & LOS

Figure 6

Traffic_ADT_Widened.mxd 7-10-08



Legend

Level of Service

- A-C
- D
- E
- F

xx,xxx Average Annual Daily Traffic

- Gaston East-West Connector
- Major Roads
- Proposed Airport Expansion
- County Lines
- Hydrology

Source: Gaston County and Mecklenburg Counties GIS. Map Printed On 7-10-08.

N

0 4,000 8,000

Feet

NORTH CAROLINA Turnpike Authority

STIP PROJECT NO. U-3321

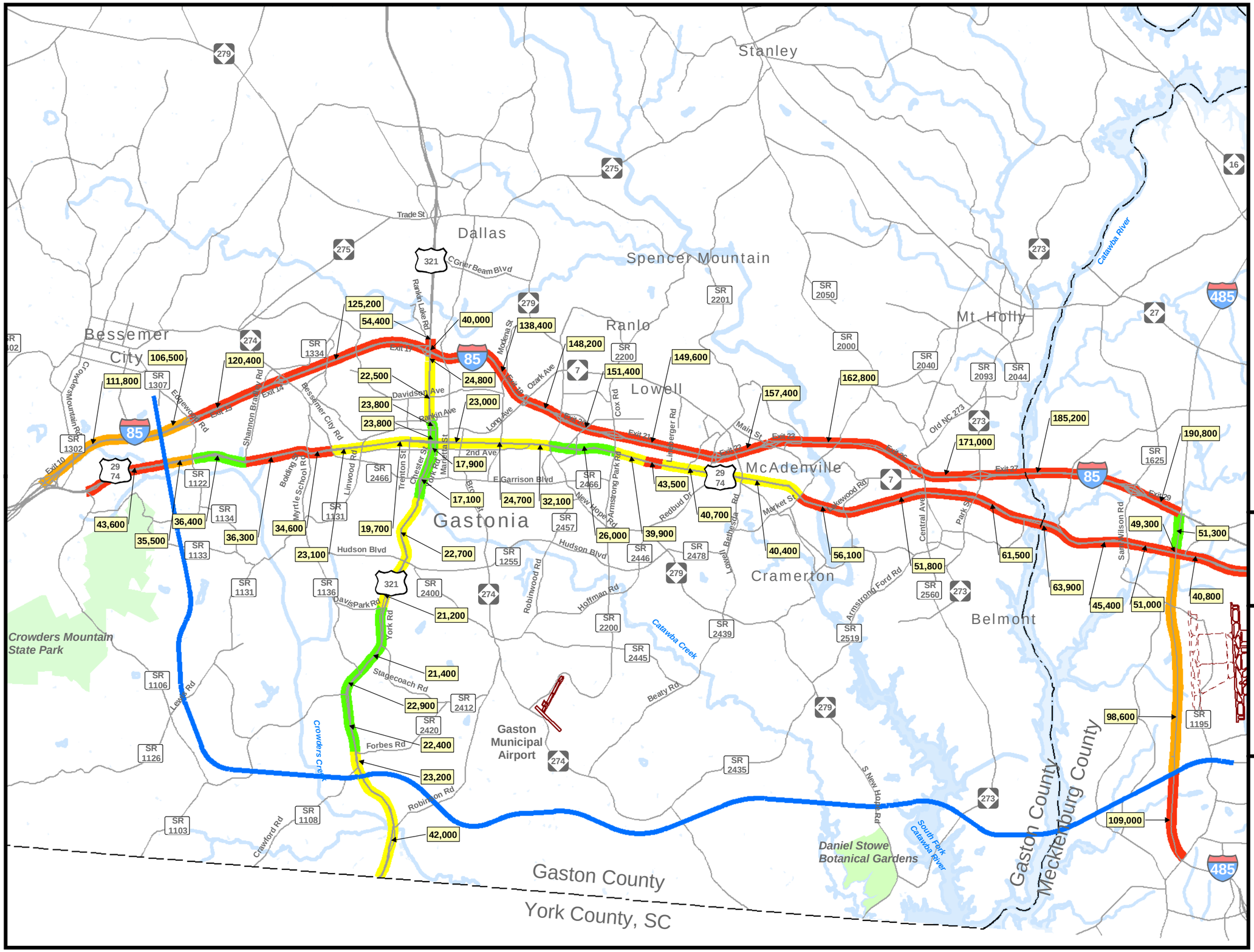
Gaston County and Mecklenburg County

GASTON EAST-WEST CONNECTOR

DESIGN YEAR 2030 - BUILD NON-TOLL FACILITY AADT & LOS

Figure 7

Traffic_ADT_Free.mxd 7-10-08



Source: Gaston County and Mecklenburg Counties GIS. Map Printed On 7-10-08.

NORTH CAROLINA Turnpike Authority

STIP PROJECT NO. U-3321

Gaston County and Mecklenburg County

GASTON EAST-WEST CONNECTOR

DESIGN YEAR 2030 - BUILD TOLL FACILITY AADT & LOS

Figure 8

Traffic_ADT_Toll.mxd 7-10-08

NORTH CAROLINA Turnpike Authority

PBS&J

Appendix A
Traffic Forecasts

Appendix B
NC LOS Worksheets