

FINAL
COMMUNITY IMPACT ASSESSMENT

For

**ADMINISTRATIVE ACTION
ENVIRONMENTAL IMPACT STATEMENT**

**Gaston East-West Connector
Gaston and Mecklenburg Counties**

STIP Project No. U-3321
State Project No. 8.2812501
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TABLE OF CONTENTS
 Gaston East-West Connector
 Community Impact Assessment
 NCDOT STIP Project No. U-3321 (Gaston and Mecklenburg Counties)

1	INTRODUCTION.....	1
1.1	CIA Purpose.....	1
1.2	Project Background and Description	2
1.2.1	Project Description and History	2
1.2.2	Project Purpose and need.....	3
1.2.3	Project Schedule.....	4
1.2.4	Project Alternatives.....	4
1.3	Community Impact Assessment Methodology.....	5
1.3.1	Data/Information Sources	6
1.3.2	Study Areas	6
1.3.3	Impact Assessment and Criteria.....	8
2	BASELINE CONDITIONS	9
2.1	Regional Setting	9
2.2	Project Setting	10
2.3	Population Characteristics	11
2.3.1	Population Trends	12
2.3.2	Race/Ethnicity	12
2.3.3	Age	13
2.3.4	Income	14
2.3.5	Environmental Justice Considerations	15
2.4	Housing Characteristics	17
2.5	Neighborhoods	18
2.5.1	Named Neighborhoods	18
2.5.2	Other Communities	20
2.6	Business and Employment Characteristics	20
2.7	Land Use and Growth Trends.....	22
2.7.1	Existing Land Use	22
2.7.2	Growth Trends and Issues.....	23
2.7.3	Other Activities.....	25
2.8	Notable Features	26
2.8.1	Community Resources and Services	26
2.8.2	Historic Resources	32
2.8.3	Natural Resources.....	32
3	ESTIMATED IMPACTS	33
3.1	Broad Brush Project Effects	33
3.1.1	Social and Physical.....	33
3.1.2	Transportation Network	34
3.1.3	Economic.....	35
3.1.4	Community Safety	36
3.1.5	Land Use	36
3.1.6	Farmland.....	37
3.1.7	Gaston Together and Gaston 2012 Initiatives.....	40
3.2	Neighborhood and Community Level Projects Effects.....	41
3.2.1	Community Services and Facilities.....	41
3.2.2	Relocation and Displacements.....	47
3.2.3	Neighborhood Impacts	51
3.3	Environmental Justice	58
4	CONCLUSIONS AND RECOMMENDATIONS.....	60
4.1	Conclusions	60
4.2	Recommendations	62
5	REFERENCES.....	64

LIST OF TABLES

Table 1.	Corridor Segments Comprising Each Detailed Study Alternative (DSA)	5
Table 2.	Project U-3321 Demographic Area Census Block Groups (2000)	7
Table 3.	Named Neighborhoods within the DSAs	18
Table 4.	Annual Employment Distribution – 1990 and 2006	21
Table 5.	Churches and Cemeteries within the DCIA	26
Table 6.	Voluntary Agricultural District Properties Impacts (Gaston Co.) by DSA	39
Table 7.	Farmland Impact Rating by DSA	40
Table 8.	Church and Cemetery Impacts	42
Table 9.	Recreational Facilities Impacts	46
Table 10.	Estimate of Business and Residential Relocations by DSA	47
Table 11.	Income Levels of Relocated Households by DSA	48
Table 12.	Value of Relocated Homes by DSA	48
Table 13.	Monthly Rents of Relocated Tenants by DSA	49
Table 14.	Impacts to (Named) Neighborhoods	52
Table 15.	Impacts to Rural (Unnamed) Communities	55
Table 16.	General Environmental Justice Evaluation for Toll Facility	58
Table 17.	Summary of Impacts to Community Resources	61

LIST OF FIGURES (Figures Follow Text)

Figure 1.	Project Location
Figure 2a-b.	Recommended Detailed Study Alternatives
Figure 3.	Demographic Area
Figure 4a-e.	Direct Community Impact Area
Figure 5.	Population Change (1990/2000)
Figure 6a-b.	Minority Populations
Figure 7.	2000 Percentage Below Poverty Level
Figure 8a-b.	Neighborhoods
Figure 9a-b.	Community Resources
Figure 10a-b.	Planned Greenways
Figure 11.	Historic Architectural Resources
Figure 12.	Voluntary Agricultural District Properties in the DSAs

APPENDICES

- Appendix A. Local Interviews List
- Appendix B. Community Impact Assessment/Preliminary Designs Mapping
- Appendix C. Dixie Community Flyer/History/Photo of Dixie Community Center
- Appendix D. Crowders Mountain State Park Map
- Appendix E. Berewick Regional Park Master Plan
- Appendix F. Farmland Conversion Impact Rating
- Appendix G. Relocation Reports

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EXECUTIVE SUMMARY

The purpose of the Community Impact Assessment (CIA) is to evaluate the effects of STIP Project U-3321 on the surrounding community and its quality of life. The CIA assesses potential impacts on several aspects of the human environment, including:

- social
- physical
- land use
- visual
- economic issues
- mobility/access
- displacements

As impacts to communities can be indirect in nature, a separate assessment of indirect and cumulative effects resulting from the proposed project is being conducted under a separate study. Where appropriate, information documented in the *Indirect and Cumulative Effects Assessment for the Gaston East-West Connector* (Louis Berger, 2008), hereafter referred to as the *ICEA Report*, is summarized and referenced in this CIA.

The North Carolina Turnpike Authority (NCTA) 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** shows the general project location.

The primary 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 areas of southeastern Gaston County and western Mecklenburg County. The proposed project would be a new location controlled-access toll facility.

As shown in **Figure 2a-b**, there are twelve new location Detailed Study Alternatives (DSA) under consideration. The corridor segments comprising these twelve DSAs are shown in **Figure 2a**. Generally, there are two to four corridor options in any one area. Combinations of these options add up to the twelve DSAs (see **Figure 2b**). (Since the development of the CCR, four of the DSAs were eliminated from detailed study based on new information regarding the Allen Steam Station's operations. The four DSAs eliminated since the CCR are DSAs 6, 24, 65, and 78, which were those that included Corridor Segment K1D.)

KEY COMMUNITY CHARACTERISTICS (DEMOGRAPHIC)

- The Demographic Area (DA) consists of 53 Gaston County Block Groups and seven (7) Mecklenburg County Block Groups. (**Table 2** and **Figure 3**) The DA encompasses block groups within the areas of Bessemer City, Gastonia, Cramerton, Belmont, and unincorporated areas of Gaston County. The DA also contains block groups within Mecklenburg County that include the airport, I-485, as well as adjacent block groups.
- Between 1990 and 2000, the largest percentage increases in population generally occurred south of Gastonia, along the edge of the municipal limits, followed by southeastern and southwestern Gaston County and the southern end of the DA in Mecklenburg County. The areas having the

most block groups with negative or smaller growth increases are located west of Gastonia and within and around Bessemer City. (Figure 5)

- Block Groups with higher than state and/or county black populations are generally located west of Bessemer City, west of Gastonia, and around the Charlotte-Douglas International Airport. These are generally the same locations where higher than average Hispanic/Latino populations also are located. (Figure 6a-b)
- In general, higher levels of poverty occur in the DA around Bessemer City, west of Gastonia, and around the Charlotte-Douglas International Airport. There are also some higher concentrations of poverty along US 321 at the southern end of the DA, and in a block group south of Cramerton. (Figure 7)

KEY COMMUNITY CHARACTERISTICS (LAND USE/GROWTH TRENDS)

- Land use in the DA is of mixed intensity and density. The area contains a variety of uses; including farmland, estate homes, single-family homes, manufactured/mobile homes, multi-family housing, commercial, post office and government buildings, churches, recreational, industrial, office/medical, institutional/educational, airport(s), and manufacturing warehouses.
- With the exception of the City of Gastonia, the municipalities in the DA (Bessemer City, Cramerton, and Belmont) generally serve as bedroom communities for the Charlotte-Mecklenburg area and for the City of Gastonia. These municipalities are seeing continued pressure for new (mostly residential) development.
- Outside the municipal boundaries, the land uses in southern Gaston County are predominantly rural, with residential subdivisions scattered among large tracts of undeveloped and agricultural land. The shores of the Catawba River and the South Fork Catawba River in both Gaston and Mecklenburg counties have attracted high-end residential development. The west bank of the Catawba River also is home to the Allen Steam Station, a major coal-fired power plant operated by Duke Energy. Other businesses and industries are concentrated within the City limits and outside the city along I-85, US 29-74, US 321, NC 274 (Union Road), and NC 273 (South Point Road [SR 2525]) where water and sewer services are provided.
- The most prominent land use in western Mecklenburg County is the Charlotte-Douglas International Airport. Business and commercial uses are concentrated in areas surrounding the airport and along I-85. Land between the airport and the Mecklenburg/Gaston County line is predominantly rural, with scattered residences, forest, and pasture.
- Growth and development continues to occur in the DCIA, which generally is transitioning from a rural area to one that is more suburban in nature. The transition is generally consistent with what the County and municipalities have planned in their land use plans.
- In Gaston County there are two proposed intersection sites identified by the *Gaston County Comprehensive Plan* (Gaston County, 2002) as “hot spots” with regard to current and near-future development. The intersection of the future Gaston East-West Connector and NC 279 (South New Hope Road), which is located within the DCIA, is one of the two sites. Located just north of the Daniel Stowe Botanical Garden, this area is a combination of vacant land and land developed for agricultural uses, plant nurseries, single-family housing, and a few commercial uses.

The other identified “hot spot” for development is at the intersection of the future Gaston East-West Connector and US 321 in Gastonia. This also is located within the DCIA. Existing

conditions in this area are a combination of primarily industrial and residential uses surrounded by agricultural land on roughly three sides.

- In Belmont, most future growth is anticipated to take place to the south, including undeveloped land within the DCIA along the peninsula formed by the Catawba and South Fork Rivers. This is evidenced by recent annexations, growth of subdivisions, and the recent extension of a water line to the southern end of the peninsula. Growth is anticipated to be mainly residential in nature. According to the Belmont Chamber of Commerce, the River Bend and South Point townships of eastern Gaston County are the County's fastest growing residential areas.
- Future growth in Gastonia is anticipated to be a mix of residential, commercial, and industrial uses. Gastonia's central business district is in the early stages of redevelopment, with the City investing an increasing amount of resources to see the area redevelop faster.
- With regard to growth trends in Cramerton, although limited growth is possible to the north, west, and east, the Town's greatest potential for growth is to the south, which could include undeveloped land in the DCIA. Most future growth is anticipated to be residential in nature.
- Future growth in Bessemer City is anticipated to be a mix of residential and industrial/commercial, outside of and north of the DCIA.
- According to the Charlotte-Mecklenburg Planning Commission (interview, CMPC Staff, July 30, 2007), the vision for the area around West Boulevard south of the Charlotte-Douglas International Airport is a collection of mostly office employers, flex space, businesses and retail, as the Charlotte-Douglas International Airport noise contours will limit or preclude residential development in the eastern section of the project study area.
- DSAs are located within four of Gaston County's fifteen incorporated municipalities. These municipalities; Bessemer City, Gastonia, Cramerton, and Belmont, are each distinct communities that contain neighborhoods of varying characteristics. There are approximately 60 (named) neighborhoods/communities within the DCIA, varying from small to large and newer construction to older subdivisions and mobile home parks.
- There are abundant community resources in the DA. Community resources are shown in **Figure 9a-b** and discussed in **Section 2.8.1**.

IMPACT ASSESSMENT METHOD AND CRITERIA

- Consistent with the NCDOT method for CIA, a direct community impact area (DCIA) was defined to identify the area with the most potential for project-induced community-related effects. **Figure 4 a-e** shows the DCIA, which generally includes properties that could be directly affected by the project. Generally, the DCIA boundary was drawn considering such factors as whether a neighborhood would have relocations or property acquisition as a result of the project or whether an area would experience major changes in access (new service road connection, closing of a street, etc.).
- A transportation improvement can have an effect on the social environment at a broad scale (i.e. regional level) as well as bring localized changes to communities. **Section 3** begins with a summary of social impacts at a broad level. Since the project has considerable potential to directly impact existing communities, probable impacts were then determined at the neighborhood level.
- An impact matrix (**Section 3.3**) was developed to convey potential impacts to neighborhoods/communities. The matrix method used to evaluate and summarize community-level impacts is intended to display the type of direct impact (i.e. right of way encroachment and

where relocations would occur within the neighborhood). The matrix also displays whether or not there are access changes associated with alternatives. Although there are varying degrees of access change, the type of access provided is not specified in the matrix.

- Also included in this report (**Section 3.4**) is an evaluation of the potential for the project to result in disproportionate adverse impacts to special populations. The evaluation is a general assessment with a focus on potential environmental justice impacts as they relate to a new location toll facility in the transportation system.

ESTIMATED IMPACTS (VISUAL/AESTHETIC)

- The proposed project has the potential to impact the existing views of rural areas, including open agricultural space in southern Gaston County. However, all of the DSAs for STIP Project U-3321 have the potential to offer opportunities for visually pleasing views from the highway, such as views of valleys, hills, wooded areas, streams, and cultural features.
- Portions of the STIP Project U-3321 alternatives are near existing residential developments and could have a range of visual impacts on residents. However, due to the natural change in elevation, the project's extensive cut slopes in areas outside of floodplains, and tall trees in the area, much of the roadway would not be visible from areas other than the immediate vicinity.
- Overall, the project would diminish the rural, pastoral environment that is found in most of the project area. This is particularly likely to happen in areas that have not transitioned to more developed, suburban character as a result of residential development, such as the southern portion of the study area in Gaston County south of Forest View High School. Generally, alternatives that would be least noticeable are those that are farther east in less developed areas. The western alternatives would be most noticeable due to a greater number of adjacent land uses. Visual changes would be intermittent with some residents subjected to a view of the roadway, and other views shielded by the cut/fill areas, forest, and project landscape. Some areas affected by the route are generally not as rural or scenic, so the degree of visual impact would be less. These less rural areas include more urban development that occurs around I-85 near Bessemer City and along the major roads that would be served by interchanges (i.e. US 321).
- DSAs that have a higher number of neighborhoods exposed to the roadway (i.e. impact a greater number of neighborhoods with residential relocations) will be affected greater with regard to visual impacts. Therefore, DSAs 4 and 5 would likely have greater visual impacts to residents and DSAs 27 and 81 would likely have the least.
- Generally, DSAs 58, 64, 68, 76, 77, and 81 would likely result in greater visual impacts to Crowders Mountain State Park.
- All DSAs would result in visual impacts to riverfront residents (particularly those in proximity to the Catawba River Bridge).

ESTIMATED IMPACTS (TRANSPORTATION NETWORK)

- STIP Project U-3321 will enhance the existing transportation network by improving regional connectivity and east-west transportation mobility in the area around the City of Gastonia and between Gastonia and the Charlotte metropolitan area. The project is anticipated to influence mobility and accessibility between places of residence and work, and improve travel times.

- Overall, the project will positively affect short- and long-term vehicular access to businesses, public services, and other facilities in southern Gaston County and between Gaston County and West Mecklenburg County.
- With regard to travel time savings, the *ICEA Report* concluded that the project will result in demonstrable travel time savings, with greatest travel time savings likely to be seen in those geographic areas where the transportation network is least dense. Furthermore, the document concluded that there were not, “any conspicuous differences among the proposed DSAs, although it is reasonable to assume that since DSAs 58, 64, 65, and 68 follow a more southeasterly direction than the other DSAs, that travel time savings would be slightly less than that experienced with the other DSAs”. There was no distinction of effects between the various DSA interchange options.
- The project could have a potentially positive impact to public transportation services by providing more opportunity for regional east-west transit routes. Enhancement of public transportation could be in the form of additional express bus service between Gastonia/Belmont and Uptown Charlotte, as well as opportunities for public transportation enhancements within Gaston County.

ESTIMATED IMPACTS (ECONOMIC, COMMUNITY SAFETY, LAND USE, FARMLAND)

- The proposed project is likely to bring with it more opportunities for economic growth. The Charlotte region’s freight distribution network links not only to local and regional markets but also to national and international ones. The region is currently served by three major interstate systems: I-77 north-south, I-85 north-south, and I-40 east-west. Construction of the proposed project could better support the established network links by providing an additional link across the Catawba River. The proposed project is expected to benefit municipalities such as Bessemer City that are actively seeking to attract commercial and industrial growth.
- Business relocations include those that are within the right-of-way limits or are denied access according to the preliminary engineering designs for the DSAs. The DSAs would relocate between 24 and 45 businesses. Most of the business relocations are concentrated around US 321, US 29-74 and I-85. None of the business relocations represent a unique type of business in the area. Accordingly, temporary disruption in their services during relocation is not anticipated to create any severe hardships to patrons in the area or impacts to the local economy.
- One of Gaston County’s bicycle routes, Route 1: High Shoals – Crowders Mountain that runs east-west through the area along Linwood Road crosses Corridor Segments H1A, H2B, and H3 (all of the DSAs). As such, the project may impede or block informal pedestrian and bicycle traffic patterns desiring to travel from one side of the highway to the other, since travel over/under the roadway will only be possible at interchanges and grade-separated crossings.
- The *ICEA Report* documents indirect and cumulative land use impacts that could be induced by STIP Project U-3321. Even without the construction of U-3321, the area within the DCIA is generally planned for continued suburban development. Much of the undeveloped land is slated for residential use. It is conceivable that STIP U-3321 could influence a transition to other types/mixes of land uses as well the accelerated timing of potential transitions. For example, the project could encourage more commercial/retail land uses around potential interchange locations within the DCIA as opposed to residential.
- The project also could change the overall character within the DCIA from rural to suburban. Interchange locations that are now mostly rural in nature could transition from rural to suburban

because of the availability of developable land coupled with a change in access. This transition is more likely to occur in areas of the DCIA that are already largely rural in character such as around the interchanges at Bud Wilson Road, Robinson Road, Lewis Road, and Linwood Road in Gaston County.

- All proposed DSAs would involve the use of prime, statewide, and local important farmland, lands within voluntary agricultural districts, and other existing agricultural lands. Overall, the southernmost DSAs impact the most farmland (DSAs 58 and 64), since they are generally farther away from the incorporated municipality limits. Conversely, DSAs with the least amount of agricultural land impacts (DSAs 4, 22, and 76) are those generally closer to the city limits.

ESTIMATED IMPACTS (COMMUNITY SERVICES AND FACILITIES)

- All project alternatives, with the exception of DSA 81, would have impacts to churches, ranging from minor right of way encroachment to structural takings.
- Most DSAs would require a minor right of way encroachment into the Sadler Elementary School site (DSAs 4, 5, 9, 22, 23, and 27 would not). DSAs that use DSA Segment J5A (DSAs 4, 22, 58, and 76) could require a small amount of land from Forest View High School for the relocation of NC 274 (Union Road). Existing access points to Forest View High School would remain, but some visitor and student parking areas could be impacted.
- The project would result in short-term impacts to fire stations within the DCIA during construction. Such impacts could include re-routing of existing service routes. Maintenance of traffic along these routes will be important during construction to minimize the potential for increased response times.
- The Dixie Community Center is an important forum that provides for interaction among existing and former Garrison/Dixie River Road residents. The construction of I-485 and expansion of the Charlotte-Douglas International Airport in this area has split and reduced the extent of this neighborhood. The proposed project would further impact this community. Corridor Segment K3C (DSAs 4, 9, 22, 27, 58, 68, 76, and 81) would result in the acquisition of several homes along Garrison Road and would be located about 150 feet east of the center. It could likely further affect community cohesion and interaction among persons/groups in this area by altering social relationships and patterns for these last remaining residents.

Corridor Segment K4A (DSAs 5, 23, 64, and 77) would not result in displacement of the community center, but an interchange at Dixie River Road would require the acquisition of several homes along Dixie River Road. This would cumulatively (due to the presence of I-485) contribute to the perceived negative impact on quality of life, affect community cohesion by further isolating Garrison Road residents, and could encourage additional loss of population in this once tight-knit community. In addition, Corridor Segment K4A (DSAs 5, 23, 64, and 77) would result in the acquisition of the Ramoth AME Zion Church and cemetery located at 6800 Dixie River Road. As this church plays an important part in the community, this could impact community cohesion of the Garrison Road/Dixie River Road Community.

- All project alternatives would impact park/recreational facilities (see **Section 3.2.1**), including visual changes to publicly-owned Crowders Mountain State Park and right-of-way encroachments to the Berewick District Park. Future greenways planned for the area likely would be publicly owned. Impacts to privately-owned facilities include Karyae Park, Linwood Springs Golf Course,

and Carolina Speedway. DSAs 9, 68, and 81 would directly impact the most facilities (four each), while DSAs 22 and 23 would impact the least (two each).

ESTIMATED IMPACTS (RELOCATION/DISPLACEMENTS, NEIGHBORHOOD IMPACTS, ENVIRONMENTAL JUSTICE, COMMUNITY COHESION)

- All DSAs would have a negative impact to some existing neighborhoods. Impacts range from minor right of way encroachments on neighborhood properties to complete acquisition of a neighborhood. The numbers of neighborhoods impacted by the DSAs range from 14 for DSA 81 to 23 for DSA 5. All DSAs would result in access changes to some existing neighborhoods.
- Overall, the project would not result in disproportionate impacts to environmental justice populations. The *Relocation Reports* discussed in **Section 3.2.2** provided information on the income level of households that would be displaced as a result of STIP U-3321. A review of these reports revealed that no disproportionate impacts to households with lower income levels would occur, as all DSAs impact a wide range of neighborhoods, from mobile home parks to high-end residential development.
- All DSAs would likely impact neighborhoods that contain low-income and/or minority populations. However, none of the alternatives would result disproportionate impacts to these special populations.
- Neighborhoods within the DCIA could contain special groups, particularly low-income and minority populations. One example is mobile home parks, which could represent low-income populations. All DSAs pass through these parts of Gaston and Mecklenburg Counties and all could have an affect on low-income populations. All DSAs also directly impact mobile home parks, with most impacts to mobile home parks occurring with DSAs 58, 64, and 68.
- The *Relocation Reports* discussed in **Section 3.2.2** also provided an estimate of minority relocations. The highest percentages of minorities would be relocated with DSA 9 (26 percent), DSA 4 (26 percent) and DSA 5 (25 percent). The higher percentages for these DSAs can be attributed to the Corridor Segments which pass through minority block groups around I-85/Bessemer City. DSAs 64, 76, and 77 displace the least minorities at approximately eight to nine percent.
- The project will result in population changes in neighborhoods due to displacements/relocations. Redistribution of population is most likely to occur with DSAs that displace a greater number of residents in a neighborhood as well as DSAs that displace residents in the midst of the neighborhood as opposed to the edge.
- DSAs that result in relocations at the edge of neighborhoods are less likely to have substantial negative impacts on community cohesion, social interaction, and/or change in neighborhood social patterns. Neighborhoods with displacement impacts in the midst are more likely to feel isolated and perceive that their quality of life is negatively impacted by the project. DSAs 4, 5, and 58 would potentially result in the most community cohesion issues and DSAs 22, 23, and 27 would have less impacts to community cohesion.
- A number of unnamed rural residential clusters exist within the DCIA. Social interconnectivity within these unnamed communities could potentially be impacted by various project alternatives.

- The project will increase overall east-west accessibility within and outside of the DCIA. The *ICEA Report* indicated that “there were not any conspicuous differences among the proposed alternatives...although it is reasonable to assume that since DSAs 58, 64, 65, and 68 follow a more southeasterly direction than the others, travel time savings would be slightly less for those DSAs than that experienced with others”.
- With regard to local access, all of the DSAs would result in access changes to existing neighborhoods, with some resulting in notable changes in travel patterns to and from neighborhoods. The degree of impact varies from minor to major access modifications. The numbers of neighborhoods that would be subject to access changes (minor or major) range from 10 for DSA 68 to 18 for DSA 5. DSAs 4, 5, and 9 would result in the most impacts to neighborhood access, while DSAs 58, 64, and 68 would have less neighborhood access impacts.
- Modifications range from closing off existing access and creating new access/service roads (i.e. corridor segment “H3” at Lakewood Forest neighborhood) to more severe impacts such as where no grade separation and access across the Gaston East-West connector would be available (i.e. corridor segment “H1A” at Rural Community “N1”). In such instances, the existing roadway would dead end into a cul-de-sac on both sides of the project.
- Results of the traffic noise study for this project are documented in the *Traffic Noise Technical Memorandum*, PBS&J, April 2008). Most of the project study area is rural or suburban in nature, with relatively low existing noise levels since there are few major noise sources in areas such as these. Communities located adjacent to the proposed project in rural and suburban areas will experience a general increase in noise levels.

In areas where significant noise impacts were predicted to occur, reasonable and feasible noise mitigation measures were developed for the project in accordance with FHWA and NCDOT noise abatement criteria. Several locations along the DSAs were recommended to have noise barriers to reduce noise levels. These barriers will be incorporated into the ultimate design for the project.

- Temporary impacts associated with construction and operation of the proposed project are anticipated for adjacent neighborhoods and businesses. These effects may include changes in traffic patterns to community services/facilities through temporary detours, access points, and increases in noise. The disruptions will be mitigated with the development of traffic control plans for the duration of construction. These plans will be developed with locally affected communities and businesses.

CONCLUSIONS

- Communities in the DCIA would benefit from the project through its enhancement of the existing transportation network by improving regional connectivity and east-west mobility in the region.
- The project could have a positive impact on public safety services within the DCIA and in the region by providing improved east-west mobility in southern Gaston County that will benefit response times.
- All DSAs would have a negative impact to some existing neighborhoods. Impacts range from minor right of way encroachments on neighborhood properties to complete acquisition of a neighborhood.

- All DSAs would result in access changes to some existing neighborhoods.
- All DSAs would likely impact neighborhoods that contain low-income and/or minority populations. However, none of the DSAs are expected to result disproportionate impacts to these special populations.
- The project would provide opportunities for aesthetically pleasing views from the highway, but could also detract from the existing views of rural areas, and views of the Catawba River and South Fork Catawba River from adjacent properties.
- All project alternatives, with the exception of DSA 81, would have impacts to churches, ranging from minor right-of-way encroachment to structural takings.
- Most DSAs would require a minor right-of-way encroachment into the Sadler Elementary School site (DSAs 4, 5, 9, 22, 23, and 27 would not). DSAs that use DSA Segment J5A (DSAs 4, 22, 58, and 76) would require land from Forest View High School for the relocation of NC 274 (Union Road). The property required could include a maximum of approximately 20 parking spaces from the visitor lot at the front of the school and 20 parking spaces in the student lot on the south side of the school. However, it is likely during final design that these impacts can be substantially minimized or avoided.
- All project alternatives would impact park/recreational facilities. Impacts include minor or moderate visual changes to public parks (Crowders Mountain State Park) and private (Allen Fishing Access) recreational areas, minor to moderate right of way encroachments (Mecklenburg County Berewick District Park), and structural takings (YMCA Karyae Park).
- All of the DSAs would subject neighborhoods adjacent to the Gaston East-West Connector to an increase in noise levels.

Table ES-1 summarizes impacts to community facilities. **Tables 7, 8 and 9** in the report provide more detail on the type and/or amount of impact.

Table ES-1. Summary of Impacts to Community Resources

Detailed Study Alternative	Churches		Cemeteries ¹	Schools ²	Fire Stations ³	Parks & Recreational Facilities ⁴	Total Impacts to Community Facilities
	# of Churches with Impacts to Main Buildings	Impact to Property and/or Outbuildings Only					
4	2	3	1	1	0	3 ^{a,c,e}	10
5	3	3	1	0	0	4 ^{a,c,d,f}	10
9	2	1	0	0	0	4 ^{a,c,d,e}	7
22	1	4	1	1	0	2 ^{a,e}	9
23	2	4	1	0	0	3 ^{a,e,f}	9
27	1	2	0	0	0	3 ^{a,d,e}	6
58	1	2	1	2	1	3 ^{a,b,e}	10
64	2	2	1	1	1	4 ^{a,b,d,f}	10
68	1	0	0	1	1	4 ^{a,b,d,e}	7
76	0	2	1	2	0	3 ^{a,b,e}	8
77	1	2	1	1	0	4 ^{a,b,e,f}	8
81	0	0	0	1	0	4 ^{a,b,d,e}	5

1. The cemeteries included are those that would require relocation.
2. DSAs 4, 22, 58, and 76 encroach on Forestview High School property fringe and some parking areas. DSAs 4, 22, 58, and 76 encroach on Sadler Elementary School property with no impact on school use or access.
3. Encroachment on property of Crowders Mountain VFD. Use of site not affected.
4. a. – Berewick District Park, minor right-of-way encroachment not affecting use and function
b. – Karyae YMCA Facility – impacts to several buildings and courtyard
c. – Linwood Springs Golf Course – access change only
d. – Carolina Speedway – right-of-way encroachment and probable impacts to parking area
e. – Duke Energy recreational fields – right-of-way encroachment at northern boundary of fields
f. – Daniel Stowe Botanical Garden (DSBG) – minor right-of-way encroachment not affecting use and function.

Based on the summary provided in **Table ES-1**:

- DSAs 27 and 81 would have the least impacts to community facilities in the DCIA. However, DSA 81 would not impact any churches, while DSA 27 would impact three churches.
- DSAs 4, 5, 58, and 64 would have the highest total number of community facilities impacted.
- DSAs 27 and 81 would have the lowest total number of community facilities impacted.
- All DSAs would require a minor amount of property from the edges of Berewick District Park, which would not affect the use of the park.
- DSAs 9, 68, and 81 would have the most impacts to recreational facilities. However, most impacts to recreational facilities are anticipated to be minor property encroachments that would not affect the uses of the sites, with the exception of impacts to Karyae Park. DSAs 58, 64, 68, 76, 77, and 81 would adversely affect this site.

RECOMMENDATIONS

- Once a Preferred Alternative is selected, the NCTA should consider additional mitigation measures for community impacts, based on final designs and comment/input from affected communities. Mitigation options for lessening neighborhood impacts were incorporated into the preliminary engineering designs, where practicable. These included bridging for access across the East-West Connector, and providing new access routes if bridging is not practical. As part of final design, construction of noise barriers will be incorporated where reasonable and feasible, and visual barriers and vegetative screens will be considered.
- The aesthetic quality of the proposed project areas could be enhanced by the following measures, which can be considered during final design:
 1. Implementation of a roadside landscaping plan.
 2. Structural design (such as drainage structures and bridges) consideration to enhance visual appearance.
 3. Bifurcated roadways (opposing lanes on roadways on different grades) to blend better with existing topographical features.
 4. Natural earth berms for mitigation of noise and visual impacts where space permits.
- If DSA 4, 22, 58, or 76 is selected as the Preferred Alternative, the NCTA should work with representatives from the Gaston County Schools to minimize/avoid encroachments onto the Forest View High School property.
- If DSA 58, 64, or 68 is selected as the Preferred Alternative, the NCTA should work with representatives from the Crowders Mountain VFD Fire Station on Bethany Road to minimize/avoid encroachments onto the fire station property and to minimize disruption of services.
- Other transportation projects (extension of I-485, Charlotte-Douglas International Airport) have cumulatively impacted and isolated the Dixie/Garrison Road community. Therefore, coordination with the Dixie Community Center president and neighborhood advocate, Ben Morrow, or his successor, should continue through project development and design.
- Project coordination should continue between Gaston County Schools and the NCTA regarding the school system's planning for a new school facility in the project vicinity.
- In later phases (Preferred Alternative) the NCTA should coordinate/initiate discussions with Gaston County Schools transportation staff regarding minimizing impacts to school bus routes.
- As all DSAs have the potential to intersect with planned future greenways, the NCTA should coordinate with the Catawba Lands Conservancy and GUAMPO on the timing of proposed greenways regarding the possible inclusion of special design features, if necessary and feasible, to accommodate these plans.
- For established and planned bicycle routes and greenways, the NCTA should work with the entities having jurisdiction over these facilities to provide appropriate and safe crossing of these facilities. For example, later phases of project design should include accommodations for the existing bicycle route (Route 1) at the Linwood Road interchange.

- In the future, the NCTA should coordinate/initiate discussions with public safety departments to ensure response times are maintained during project construction.
- If DSA 4, 9, 22, 27, 58, 76, or 81 is selected as the Preferred Alternative, redesigning the cut slope (such as steepening the cut slope or constructing retaining walls) should be investigated during final design to minimize impact to the baseball field's outfield and the north corner of the general recreational field of the Duke Energy Recreational Fields.
- Future public involvement should include small group meetings with neighborhoods and continued use of a variety of methods to notify people of workshops and offers for small group meetings (letters to churches, posting of flyers in community centers, etc.). It also is recommended that the NCTA continue to publish project workshop information in Hispanic newspapers and continue to have a staff member who can speak Spanish at the meetings.

1 INTRODUCTION

1.1 CIA PURPOSE

The National Environmental Policy Act (NEPA) requires agencies to consider how their actions may impact the human environment.

The purpose of the Community Impact Assessment (CIA) is to evaluate the effects of STIP Project U-3321 on the surrounding community and its quality of life. The CIA assesses potential impacts on several aspects of the human environment, including:

- social
- physical
- land-use
- visual
- economic issues
- mobility/access
- displacements

Another component of the CIA is to identify and assess the potential for the project to have disproportionately high adverse effects on environmental justice populations. Environmental justice populations are populations of minority and/or low-income people. These populations have, in the past, been underserved in the decision-making process.

A *Community Characteristics Report*, hereafter referred to as the *CCR*, was developed for STIP Project No. U-3321 in November 2007. The purpose of the *CCR* was to:

- Summarize baseline conditions and trends
- Identify opportunities to tailor the public involvement/outreach program throughout the project development process
- Assist in early identification of minority and low-income populations
- Assist in the scoping of the project

This CIA report supplements the *CCR*, and documents the analysis of potential project impacts on surrounding communities.

As impacts to communities can be indirect in nature, a separate assessment of indirect and cumulative effects resulting from the proposed project is being conducted under a separate study. Where appropriate, information documented in the *Indirect and Cumulative Effects Assessment* (Louis Berger, May 2008), hereafter referred to as the *ICEA Report*, is summarized and referenced in this CIA.

1.2 PROJECT BACKGROUND AND DESCRIPTION

1.2.1 Project Description and History

The proposed project, the Gaston East-West Connector, is generally located in southern Gaston County and western Mecklenburg County, and near or partly within the municipalities of Bessemer City, Gastonia, Cramerton, and Belmont. In this area, the North Carolina Turnpike Authority (NCTA) proposes to improve east-west travel between I-85 west of the City 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)*.

The primary 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 areas of southeast Gaston County and west Mecklenburg County. The proposed project would be a new location controlled-access toll facility. **Figure 1** shows the general project location.

Plans to improve east-west mobility in southern Gaston County through construction of a new location roadway have been under discussion since the late 1980's by the Gaston Urban Area Metropolitan Planning Organization (GUAMPO). The need for improved east-west mobility and the bypass concept was first identified in 1989 during the citizen participation process associated with the update of the Gaston Urban Area Thoroughfare Plan. The GUAMPO held five citizen workshops, six public meetings, and 13 formal public hearings before adopting the locally named US 321/74 Bypass on their 1991 Plan.

The GUAMPO's Transportation Advisory Committee (TAC) oversees state and federal road projects within the Gaston Urbanized Area. In 1992, the TAC requested the Mecklenburg-Union MPO (MUMPO) TAC to place the US 321/74 Bypass on their thoroughfare plan since the project's eastern terminus was in Mecklenburg County. In 1994, the MUMPO TAC adopted a conceptual regional thoroughfare plan proposed by the Charlotte Committee of 100, which included the US 321/74 Bypass.

The North Carolina Department of Transportation (NCDOT) began environmental studies for the Gaston East-West Connector in 2001. The project was placed in the NEPA/404 Merger Process, which is NCDOT's process for projects that require an individual permit from the US Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act. The NEPA/404 merger process requires concurrence from the NEPA/404 merger team at major project milestones such as purpose and need, alternatives to be studied in detail, the selection of the Least Environmentally Damaging Practicable Alternative, and other milestones. The NEPA/404 merger team for this project included the Federal Highway Administration (FHWA), NCDOT, GUAMPO, MUMPO, USACE, US Environmental Protection Agency, US Fish and Wildlife Service, NC Department of Environment and Natural Resources - Division of Water Quality, State Historic Preservation Office, and the NC Wildlife Resources Commission.

In July 2002, concurrence on the Purpose and Need for this project was reached. In February 2005, the NCTA Board selected the Gaston East-West Connector as a candidate toll facility and the project is now being studied by the NCTA. In September 2005, concurrence on DSAs was reached.

The project has an extensive history of public involvement and outreach, including numerous workshops and small group meetings. Prior to the project's inception as a candidate toll facility, the NCDOT hosted a series of Citizens Informational Workshops (CIWs) to present the purpose and need for the project and the preliminary alternatives being considered. Approximately 734 citizens signed in at the first series of workshops:

- September 30, 2003 at Ashbrook High School, Gastonia
- December 9, 2003 at Southpoint High School, Belmont
- December 10, 2003 at Hunter Huss High School, Gastonia

For additional information and summaries of the comments received at the first series of workshops, refer to the *Citizens Informational Workshop Summaries* (March 2004).

Since its inception as a candidate toll project, the NCTA, with the assistance of the NCDOT, hosted a second series of Citizens Informational Workshops. The purpose was to present the recommended Detailed Study Alternatives for input and comment. Approximately 813 citizens signed in at the second series of workshops:

- January 31, 2006 at Hunter Huss High School, Gastonia
- February 1, 2006 at Olympic High School, Charlotte
- February 2, 2006 at Southpoint High School, Belmont

For additional information and summaries of the comments received at the second series of workshops, refer to the *Citizens Informational Workshop Summaries* (June 2006).

In addition to public forums noted above, the project team has been available to meet with local organizations and citizens groups to discuss the project throughout the study process. Numerous small group meetings have been held prior to and since the project's inception as a toll project. These meetings were held at the request of interested parties, and include various neighborhood associations, Crowders Mountain State Park, Charlotte-Douglas International Airport, etc.

Originally there were sixteen Detailed Study Alternatives. At the September 27, 2007 Turnpike Environmental Agency Coordination meeting, new information was presented regarding Corridor Segment K1D. A fly ash basin associated with the Allen Steam Station owned by Duke Energy is within this corridor segment. Duke Energy is planning to construct a landfill on this fly ash basin that could reach up to 150 feet in height. The NCTA, FHWA, NCDOT, GUAMPO, MUMPO, and the resource agencies concurred that an alternative through this fly ash basin would not be feasible due to the landfill and interference with the Steam Station's operations. Therefore, the four Detailed Study Alternatives that included this corridor segment (DSAs 6, 24, 65, and 78) were eliminated from consideration.

1.2.2 Project Purpose and Need

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 southeastern Gaston County and western Mecklenburg County. The proposed project would be a new location controlled-access toll facility. The primary east-west routes through Gaston County are I-85 and US 29-74 (see **Figure 1**). These routes are centrally located in the County. These two high volume roadways provide the nearest

accessible crossings of the Catawba River into Mecklenburg County for motorists in the southern half of 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.

Arterials and other roadways that traverse southern Gaston County are not continuous, largely due to the topography of the area. Consequently, travel in this area can be circuitous.

1.2.3 Project Schedule

The proposed schedule for U-3321 is currently as follows:

- Draft Environmental Impact Statement (Winter 2009)
- Final Environmental Impact Statement (Summer 2010)
- Construction Contract Awarded (2010)
- Project Open to Traffic (2015)

1.2.4 Project Alternatives

As noted in **Section 1.2.1**, there are twelve new location Detailed Study Alternatives (DSA) under consideration or evaluation as toll facilities only. The corridor segments comprising these twelve DSAs are shown in **Table 1** and **Figure 2a-b**. Generally, there are two to four corridor options in any one area. Combinations of these options add up to the twelve DSAs. Total lengths of each DSA range from 21.4 to 25.6 miles.

The preliminary engineering designs for the DSAs are for a six-lane, median-divided, controlled-access highway. The proposed design speed is 70 mph for the main lines of the DSAs. Three 12-foot lanes are proposed for each direction of travel, separated by a 46-foot median. The median would be 70 feet wide if the project was designed as a four-lane facility. Under either the four-lane cross-section or the six-lane cross-section, the outside footprint of the facility would be the same. The actual number of lanes to be included in the project will be determined during final design. The total right-of-way is proposed to be a minimum of 350 feet, with right-of-way requirements greater around interchanges.

Interchanges currently are proposed at eleven to twelve locations along the DSAs (depending on the DSA), as listed below from west to east. The interchanges at the project termini at I-85 and I-485 would be freeway to freeway interchanges. The other interchanges would be service interchanges, meaning that there would be a traffic signal or stop sign where the ramps would connect to the cross-street. The proposed interchanges include:

- I-85
- US 29-74
- Linwood Road
- Lewis Road (for DSAs using Corridor Segment H1C – DSAs 58, 64, 65, and 68)
- US 321
- Robinson Road
- Bud Wilson Road
- Union Road (NC 274)
- South New Hope Road (NC 279)
- Southpoint Road (NC 273)

- Dixie River Road
- I-485

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-J1e-J1f	K1A-K1B-K1C-K4A
27	H2A-H2B-H2C	J3-J2c-J2d-JX4-J1e-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

See **Figure 2a** for a map of the Detailed Study Alternatives and their corridor segments.

The NCTA is evaluating different options available for toll collection, but none include cash lanes. An open road (highway speed) transponder-based system will likely be used as the primary means of collection. This would allow drivers to open an account and drive unobstructed through the toll collection points at highway speeds.

1.3 COMMUNITY IMPACT ASSESSMENT METHODOLOGY

In the development of the CCR, an appropriate demographic area (DA) was defined in order to describe the affected environment. Following the identification of the DA, a community characteristics profile was developed to describe the basic population and characteristics of the area.

Demographic information from the US Census, North Carolina Employment Security Commission, and other resources were combined to provide a general overview of the community characteristics of Gaston County, municipalities in the project area, and Mecklenburg County. Demographic characteristics such as age, race, and median income, which are quantitative and easily measured, were compared and displayed in tables and figures in the CCR (PBS&J, November 2007). Qualitative information gathered through field visits and one-on-one interviews is also discussed.

This information was gathered to serve as a basis for identifying potential community issues in areas surrounding the project, and to reach conclusions about what effects the proposed project would have on surrounding communities.

The CIA is based on preliminary engineering designs dated January 2008.

1.3.1 Data/Information Sources

Information on population and demographic characteristics was gathered from US Census data, in-person interviews, and project site visits. A complete list of documents referenced for this report is included in **Section 5**. The following data sources provided useful information in understanding existing conditions and likely trends:

- 1990 and 2000 US Census data (American FactFinder Website, <http://factfinder.census.gov>, and NC State Data Center Website, <http://www.sdc.state.nc.us>).
- North Carolina Employment Security Commission (ESC) (North Carolina ESC Website, <http://www.ncesc.com>).
- Interviews with Gaston County and Mecklenburg County and municipal staff (see **Appendix A**).
- Field Visits on July 11, 17, and 18, 2007.
- ADC Map Books for Gaston County and Mecklenburg County.

Since considerable growth and development has occurred in the study area since the 2000 decennial census, and because the census data may not be reliable in identifying “clusters” of special populations (i.e. environmental justice) and/or communities that have a common characteristic or interest (i.e. religion, ethnicity, income, etc.), local staff, elected officials, and community representatives were interviewed to help uncover information not identifiable through the census data.

The interviewees were deemed likely to have extensive knowledge about their respective areas and able to provide information on local concerns, community interests, opinions, and issues of targeted groups. In addition, these interviews uncovered information about plans for the area and how the project might influence these plans. The list of interviewees and questions posed during these interviews are included in the *CCR* (November 2007).

During the CIA development, organizations/individuals were contacted to provide follow-up information and/or to obtain updated information. These organizations/individuals included the Dixie Community Center, Crowders Mountain State Park, and Gaston County Schools.

1.3.2 Study Areas

Demographic Area (DA). Consistent with the NCDOT method for CIA, a demographic area (DA) was defined to describe existing baseline conditions. The DA was developed for and is documented in the *CCR*.

As documented in the *CCR*, the DA consists of 53 Gaston County Block Groups and seven (7) Mecklenburg County Block Groups (see **Table 2** and **Figure 3**).

Table 2. Project U-3321 Demographic Area Census Block Groups (2000)

Census Tract	Block Group	As Shown on Figure 3		Census Tract	Block Group	As Shown on Figure 3
Gaston County				Gaston County		
308	4	308004		331	1	331001
308	5	308005		331	2	331002
308	6	308006		331	3	331003
308	7	308007		332.01	1	332011
315	1	315001		332.01	2	332012
316	1	316001		332.01	4	332014
316	2	316002		332.01	5	332015
316	3	316003		332.01	6	332016
316	4	316004		332.02	1	332021
317.01	1	317011		332.02	2	332022
317.01	2	317012		333.01	1	333011
317.02	1	317021		333.01	2	333012
317.02	2	317022		333.01	3	333013
317.02	3	317023		333.01	4	333014
317.02	4	317024		333.02	1	333021
318	1	318001		333.02	2	333022
318	2	318002		333.02	3	333023
318	3	318003		333.02	4	333024
318	4	318004		333.02	5	333025
318	5	318005		334	1	334001
324	2	324002		334	2	334002
324	3	324003		334	3	334003
324	4	324004		Mecklenburg County		
324	5	324005				
324	6	324006		39.01	1	39011
325.02	1	325021		59.01	2	59012
325.02	2	325022		59.01	3	59013
325.04	1	325041		59.01	4	59014
325.04	3	325043		59.01	5	59015
327.02	1	327021		59.04	1	59041
328	6	328006		59.04	2	59042
Source: US Census (2000)						
Note: As documented in the <i>Community Characteristics Report</i> (PBS&J, November 2007)						

This broad area was established to identify and analyze population growth, household, and other demographic characteristics. This information serves as part of the foundation for determining potential project-related impacts to the human environment.

Figure 3 shows the DA. The DA includes block groups traversed by the Detailed Study Alternatives as well as additional block groups that are wholly or partially within the study area (Refined Study Area) used to develop the Detailed Study Alternatives (for example - Census Tract 317.01 Block Group 1). Since this project is regional in scale, a broad, inclusive DA was selected to describe the baseline conditions of the communities, neighborhoods, and resources present in the area.

The DA encompasses block groups within the areas of Bessemer City, Gastonia, Cramerton, Belmont, and unincorporated areas of Gaston County. The DA also contains block groups within Mecklenburg County, including the airport, I-485, and adjacent block groups. The general DA boundaries are roughly: Crowders Mountain State Park and Bessemer City to the west and northwest; I-485 and the Charlotte-Douglas International Airport to the east; the Gaston/York County, SC line to the south; and

the downtowns of Gastonia, Cramerton and Belmont to the north. The densely developed areas directly south of I-85 were not included in the DA boundary. Travel patterns and development in these areas would be less influenced by the presence of a new location east-west road because of their proximity to the existing east-west primary travel corridor; I-85 and US 29-74.

The DA was examined at the block group level and overall demographic study area level. Population, housing, and economic characteristics were compared to county(ies) and state census statistics. Demographic trends were identified to provide insight into impacts to baseline conditions from the build alternative. In addition, the information was used to identify environmental justice populations.

Direct Community Impact Area (DCIA). Consistent with the NCDOT method for CIA, a direct community impact area was defined to identify the area with the most potential for project-induced community-related effects. **Figure 4a-e** shows the DCIA, which generally includes properties that could be directly affected by the project. For description purposes the DCIA has been divided into three sections. General descriptions of the boundaries of the three sections are included below. In most cases, if some parcels in a neighborhood could be potentially impacted, the entire neighborhood was drawn considering such factors as whether a neighborhood would have relocations or property acquisitions as a result of the project or whether an area would experience major changes in access (new service road connections, closing of a street, etc.). In some cases other types of potential impacts were taken into consideration when defining the DCIA boundary (i.e. visual/aesthetic, community cohesion, economic, quality of life, etc.).

Section 1 – I-85 to US 321. The DCIA boundary in this section includes parcels adjacent to I-85 where the proposed project would tie in. It also includes suburban neighborhoods farther south that may be impacted through direct relocation impacts or major access changes. South of Linwood Road, the DCIA reflects that there are fewer subdivisions with the potential to be directly impacted, but more “rural communities” (small, unnamed neighborhoods) likely to be impacted.

Section 2 – US 321 to NC 279. The DCIA boundary in this section narrows as the project passes through more rural land uses such as large agricultural parcels. However, there are still some subdivisions (i.e. Brittany Woods, Saddlewood, and Wesley Acres) that may be impacted by project alternatives as well as several rural communities with clusters of homes on larger lots.

Section 3 – NC 279 to I-485. The boundary through this section includes residents along the Catawba River who may be relocated by alternatives and/or whose viewshed would be modified by the proposed project. Neighborhoods such as Brook Forest, Forest Bay, Misty Waters, and Southpoint Landing are included due to potential relocations and access modifications.

1.3.3 Impact Assessment and Criteria

A transportation improvement can have an effect on the social environment at a broad scale (i.e. regional level) as well as bring localized changes to communities. **Section 3** begins with a summary of social impacts at a broad level. Since the project has considerable potential to directly impact existing communities, probable impacts were then determined at the neighborhood level. Impacts to neighborhoods/communities are based on preliminary engineering designs dated January 2008 (see **Appendix B**).

An impact matrix (see **Section 3.3**) was developed to convey potential impacts to neighborhoods/communities. The matrix method used to evaluate and summarize community-level

impacts is intended to display the type of direct impact (i.e. right of way encroachment and where relocations would occur within the neighborhood).

The matrix also displays whether or not there are access changes associated with alternatives. Although there are varying degrees of access change, the type of access provided is not specified in the matrix.

As impacts to the community can be direct, indirect, or cumulative in nature, all three were considered when assessing probable project effects to the social environment. Since indirect and cumulative impacts address the longer term, the *ICEA Report* is referenced, where appropriate.

Also included in this report (**Section 3.4**) is an evaluation of the potential for the project to result in disproportionate adverse impacts to special populations. The evaluation is a general assessment with a focus on potential environmental justice impacts as they relate to a new location toll facility in the transportation system.

2 BASELINE CONDITIONS

2.1 REGIONAL SETTING

As shown in **Figure 1**, the proposed project study area is located in southern Gaston County and western Mecklenburg County, and partly within or near the municipalities of Bessemer City, Gastonia, Cramerton, and Belmont. The project study area consists of the following general boundaries: I-85 to the north, the South Carolina State line to the south, the Charlotte-Douglas International Airport to the east, and the I-85 and US 29-74 junction to the west.

The project is located in the South-Central Piedmont region of North Carolina. The topography of the project area is gently rolling to hilly, with several pronounced ridges, including Kings Mountain Pinnacle, Spencer Mountain, Jackson's Knob, Paysour Mountain and Crowders Mountain.

Gaston County has a total area of approximately 363.5 square miles and Mecklenburg County has a total area of approximately 546.2 square miles (Census 2000: <http://factfinder.census.gov>, Table GCT-PH1 – Population, Housing Units, Area, and Density, accessed May 27, 2008). Elevations above sea level in Gaston County range from 587 feet in the southeast corner to 1,705 feet at the Pinnacle of the Kings Mountain ridge in the southwest. The average elevation is estimated at 825 feet (Gaston County Economic Development Commission Website, <http://www.gaston.org/PDF/LocationGeog.pdf>). The average elevation of Mecklenburg County is 751 feet, with the highest elevation of 890 feet located in the western portion of the County (NC Geological Survey Website, http://www.geology.enr.state.nc.us/county/county_high_points.html).

The most prominent natural features in the project area are Crowders Mountain to the west and the Catawba River to the east. The Catawba River is the boundary between Gaston County and Mecklenburg County. The Catawba River and its lakes are a regional water supply. They also provide boating, fishing and other recreational opportunities, as well as provide cooling waters for Duke Energy's Allen Steam Station and the Catawba Nuclear Station.

The Mecklenburg-Gaston County area has a temperate climate characterized by moderate temperature variations and moderate humidity. The average annual high temperature is about 71-72 degrees

Fahrenheit, and the average annual low temperature is 47-49 degrees. The average annual precipitation is 48-54 inches (NC Department of Commerce Website, <http://www.nccommerce.com/en/AboutNorthCarolina/Location/>).

2.2 PROJECT SETTING

The following was obtained from the *Gaston County 2030 Long Range Transportation Plan* (May 24, 2005):

Gaston County has seen a steady population growth over the last forty years, but not as explosively as other Charlotte-area counties. This slower rate of growth is due, in part, to the maturity of the area and the Catawba River, which serves as a barrier to growth from the east. However, during the early 2000s, residential building permits more than doubled since the 1990s. Gaston County is beginning to see a sharp increase in growth due to the relatively easy commute into downtown Charlotte, the less expensive land cost, and one of the last areas available for significant growth within the region.

DSAs are located within four of Gaston County's fifteen incorporated municipalities. These municipalities, Bessemer City, Gastonia, Cramerton, and Belmont, are each distinct communities that contain neighborhoods of varying characteristics.

As documented in the *CCR* (PBS&J, November 2007), Gaston County (Gaston County Website, <http://www.co.gaston.nc.us/municipalities.htm>) provided the following broad brush description of the four municipalities in the project study area. Information also was obtained through one-on-one interviews with municipal staff.

Bessemer City – Bessemer City is located in the western section of the County, at the foot of Whetstone Mountain. Prior to the War Between the States, the mining of ore was a profitable enterprise for Bessemer City. The City acquired its name from the process by which steel is made from pig iron. The process, pioneered by Sir Henry Bessemer, is known as the Bessemer Process. Now, over one hundred years later, the City is again a mining center. The Lithium Corporation of America has a large, \$7,000,000 plant to process the rich vein of spodumene found in abundance in this area. In addition, Bessemer City is the location of two mills and has a considerable retail trade from farming. (Gaston County Website, <http://www.co.gaston.nc.us/municipalities.htm>). According to the City (Telephone interview with City Planning Director, September 30, 2008), the type of retail trade from farming is dairy farming, but the presence of this industry in the City is declining).

Until about ten years ago, Bessemer City was known overall as a “mill town”. According to City staff, Bessemer City residents enjoy a stable and high quality of life environment. The City has seen an increase in population overall, as well as a noticeable increase in the Hispanic population in recent years.

As with other areas of the state, the economic base has transitioned to other industries such as Dole, which opened its first food plant in North Carolina in Spring 2007. Bessemer City has the largest industrial area in the County.

Gastonia – Gastonia is the County Seat and the largest of the fifteen incorporated cities and towns in the County, and has the largest downtown area. It is located roughly in the geographical center of the County and is the third oldest incorporated city in the County.

According to the City of Gastonia Planning Director, Gastonia is not the bedroom community it once was for the Charlotte-Mecklenburg area. Gastonia has become more self-sufficient, with people working all over the region. The City is moving away from an industrial economy and shifting to service jobs, information related jobs, and healthcare.

Cramerton – Cramerton derives its name from its founder, Stuart W. Cramer, who established a mill village in 1915 to house workers at two textile plants, the Mays and Mayflower Mills. The entire property was sold to Burlington Industries in the mid forties. Burlington sold the homes to individuals and continued to operate the textile plants until the late eighties. Rapid residential growth has occurred over the past twenty years and Cramerton serves primarily as a residential community. Mastercraft Fabrics continues operation of two textile plants in Cramerton. (Gaston County Website, <http://www.co.gaston.nc.us/municipalities.htm>).

The Cramerton Town Manager noted that Cramerton residents enjoy an overall high quality of life, have a high median income, and reside in overall stable yet diverse neighborhoods. The Town has high end residential, some low-income households, and retirement communities.

The Town estimates that at least half of its residents commute to Charlotte or outside of Gaston County for work. As with other areas of the state, the Town has lost textile industry jobs and has seen an increase in other types of industry such as service, government, education, steel specialty, and auto distribution. The Town recently lost a large employer, Joanne Fabrics, which filed for bankruptcy.

Belmont – “Once known as Garibaldi, Belmont was named in honor of August Belmont, a New York banker. Incorporated in 1895, Belmont is the fourth largest city in Gaston County. Textiles and hosiery manufacturers are the basis of Belmont's industry; however, there is also a well-established retail center. Belmont Abbey College establishes this community as the higher education center of the County. Also located near Belmont is the North Carolina Textile School, which offers several tuition-free courses in textile manufacturing.” (Gaston County Website, <http://www.co.gaston.nc.us/municipalities.htm>).

Belmont serves as a bedroom community to Charlotte and Gastonia, with most of the City's residents commuting outward. Belmont still has a mill presence, but it is very small. Those residents that live closer to town are generally mill workers. The largest employers in Belmont include Stowe Mills and Belmont Abbey College.

Belmont residents enjoy a high quality of life. Belmont is expanding its planning jurisdiction, particularly to the Peninsula and Garden areas, which are south of Belmont's downtown.

Communities/neighborhoods within these municipalities and in Gaston County and Mecklenburg County are identified in **Section 2**.

2.3 POPULATION CHARACTERISTICS

The following sections provide an overview of the demographic characteristics of the project demographic area (DA), based on Census 2000 data unless otherwise noted. This information was tabulated and documented for specific block groups and other geographic areas in the *Community Characteristics Report for the Gaston East-West Connector* (PBS&J, November 2007). Comparisons were made to the State, County, and municipalities (where available) demographic data to uncover notable trends and to draw general conclusions about the area.

2.3.1 Population Trends

Figure 5 presents a summary of the population changes between 1990 and 2000 in the region and in the project's demographic area. As previously noted, the demographic area is the area comprised of US Census tract block groups within and immediately around the DSAs. Gaston and Mecklenburg Counties, the demographic area, and all municipalities in the demographic area experienced population growth between 1990 and 2000. Mecklenburg County, Charlotte, and Cramerton grew at a rate higher than that of the State (21.4 percent). The City of Gastonia grew at a rate about equal to the state. The project's demographic area experienced less growth than the State's, but still a notable 13 percent. Gaston County and Belmont grew the slowest, at about a 9 percent increase and a 3 percent increase, respectively.

Block Groups with the Highest and Lowest Growth Rates. Approximately two thirds of the Block Groups within the demographic area experienced population growth. Census Tract 59.04 Block Group 2 in Mecklenburg County had the highest growth at 232 percent. This block group includes subdivisions constructed in the formerly undeveloped land around Steele Creek Road. Approximately 79 percent of the homes within the block group were built between 1990 and 2000, and 59 percent built between 1995 and 1998.

Census Tract 59.01 Block Group 5, also in Mecklenburg County, had a 42 percent increase. Census Tract 316 Block Group 1, located southwest of Bessemer City near the Cleveland/Gaston County line, experienced 63 percent growth in population between 1990 and 2000.

Other Block Groups in the demographic area lost population between 1990 and 2000. The largest decreases in population occurred in two block groups in Mecklenburg County. Census Tract 59.04 Block Group 1 (directly south of the Charlotte-Douglas International Airport) and Census Tract 59.01 Block Group 2 (north of the airport) lost about one third of their populations. The population losses in these block groups may be partially due to right of way acquired for the construction of I-485 and the airport's third runway. In Gaston County, Census Tract 316 Block Group 2 (near Bessemer City), Census Tract 328 Block Group 6 (just east of US 321 at the northern edge of the demographic), and Census Tract 317.02 Block Group 1 (between I-85 and US 29-74) each lost about one quarter of their populations between 1990 and 2000.

General Trends. Between 1990 and 2000, the largest percent increases in population generally occurred south of Gastonia, along the edge of the municipal limits, followed by southeast and southwest Gaston County and the southern end of the demographic area in Mecklenburg County. The areas having the most block groups with negative or smaller growth increases are located west of Gastonia and within and around Bessemer City.

2.3.2 Race/Ethnicity

Whites, blacks, and Hispanics are the three largest racial/ethnic groups within the demographic area. Gaston County is about 83 percent white, 14 percent black, 3 percent Hispanic/Latino, 1 percent Asian, and less than 1 percent other. Mecklenburg County is about 64 percent white, 28 percent black, 6 percent Hispanic/Latino, 3 percent Asian, and less than 1 percent other.

In comparison, the demographic area is similar to Gaston County at about 81 percent white, 16 percent black, 3 percent Hispanic/Latino, 1 percent Asian, and less than 1 percent other. The portion of the demographic area located just inside Mecklenburg County has slightly higher percentages of

Hispanics/Latinos and Asians than Mecklenburg County, having 68 percent white, 22 percent black, 6 percent Hispanic/Latino, 4 percent Asian, and less than 1 percent other.

Block groups with Substantially Higher than Average Populations of Racial/Ethnic Groups.

Figures 6a and 6b show the percentages of black and Hispanic/Latino populations in block groups in the demographic area. The highest concentrations of black population occur in Census Tract 318 Block Group 3 (89.9 percent), with adjacent Census Tract 318 Block Groups 1 and 2 at about 65 percent black. These block groups are located in the western end of the demographic area between I-85 and US 29-74.

The highest concentrations of Hispanic/Latino population occur in Census Tract 332.01 Block Groups 2 (36 percent) and 5 (10 percent), located between the DSAs and US 321, south of US 29-74. In Mecklenburg County, Census Tract 39.01 Block Group 1 (centered around the Charlotte-Douglas International Airport) is 40 percent Hispanic/Latino.

There is just one block group, Census Tract 59.01 Block Group 2, with a higher than average Asian population. This block group is centered around the interchange of I-85 and I-485. According to the local planner knowledgeable about the area and about the City of Charlotte, this does not represent an unusually high concentration of this minority group compared to other areas, and there is no defined Asian cultural center in this area. (Telephone interview, Charlotte Mecklenburg Planning Commission staff, October 3, 2007).

In Mecklenburg County, the highest concentrations of white population occur in Census Tract 59.01 Block Group 5 (97 percent), which is in the southwest portion of the demographic area in Mecklenburg County. In Gaston County, the highest concentrations of white population occur in Census Tract 308 Block Group 6 (98 percent), located north of Bessemer City and Census Tract 325.02 Block Group 2 (97 percent), located west of the South Fork Catawba River.

General Trends. Block Groups with black populations that are high in comparison to County and State percentages are generally located west of Bessemer City, west of Gastonia, and around the Charlotte-Douglas International Airport. These are generally the same locations where higher than average Hispanic/Latino populations also are located.

Locations with higher than average white population are scattered throughout the demographic area and include the areas north of Bessemer City, areas south of the DSAs on either side of US 321, the residential developments north of the Gastonia Municipal Airport, along the west side of the South Fork Catawba River, and the southwestern portion of the demographic area in Mecklenburg County.

2.3.3 Age

The median age for the State is 35.3 years. The median ages for Belmont (34.9), Bessemer City (33.6), Mecklenburg County (33.1), and Charlotte (32.7) are slightly lower than that of the State, while the median ages for Cramerton (37.1), Gaston County (36.2), and Gastonia (35.6) are slightly higher. The median ages for the block groups within the demographic area range between 24.9 (Block Group 3 of Census Tract 318), which is substantially younger than the typical median ages in the region, and 46.9 (Block Group 3 of Census Tract 331), which is substantially older.

When looking at the percentages of population within various age groups, generally Gaston and Mecklenburg counties and the municipalities in the demographic area have about 27 percent of the population aged 19 years or less, about 40 percent aged 20-44 years, about 22 percent aged 45-64, and

about 11 percent aged 65+ years. The demographic area has a similar age distribution at about 28 percent aged 19 year or less, 37 percent aged 20-44 years, 24 percent aged 45-64, and 10 percent aged 65+ years.

Block Groups with Substantially Higher than Average Young and Old Populations. Census Tract 331 Block Group 3, which is the same block group with the highest median age (46.9 years), contains the highest senior population with 28.3 percent of the population aged 65 or older. This block group is located between the DSAs and US 321, south of US 29-74 and also has a higher than average black population (26 percent). Census Tract 39.01 Block Group 1 has the lowest senior population, with 1.8 percent of the population aged 65 or older. This block group is located in Mecklenburg County around the Charlotte-Douglas International Airport and also has a higher than average black and Hispanic/Latino population.

Census Tract 318 Block Group 3 and Census Tract 332.01 Block Group 6 contain the highest percentage of people aged 19 or less, with 40.6 percent and 38.5 percent, respectively. Census Tract 318 Block Group 3 is located between I-85 and US 29-74 in the northwestern part of the demographic area. Census Tract 332.01 Block Group 6 is located just west of US 321. These block groups have higher than average black populations (89.9 percent and 56.7 percent).

Census Tract 331 Block Group 3, located east of Corridor Segment H3 in Gastonia, contains the lowest population of people aged 19 or less with 17.7 percent, and also the highest senior population and highest median age.

General Trends. There do not appear to be any general areas where the population composition has higher than average senior or youth populations. Block groups with higher than average values for these populations are scattered throughout the demographic area.

2.3.4 Income

Data on median family income and median household incomes within the region was reviewed. The median family incomes for Mecklenburg County (\$60,608), Charlotte (\$56,517), and Cramerton (\$56,071) are substantially higher than the State (\$46,335). Gaston County (\$46,271), Belmont (\$46,765), and Gastonia (\$44,873) have about the same median family income (\$46,271) compared to the State. The median family income for Bessemer City is lowest at \$39,759.

Block Groups with Median Incomes Substantially Higher or Lower than the Average. Within Mecklenburg County, all the block groups in the DA except for Census Tract 59.01 Block Group 5 have median family incomes lower than Mecklenburg County's (\$60,608), ranging from about \$34,000 to \$47,000. Census Tract 59.01 Block Group 5, located in the southwest corner of the demographic area in Mecklenburg County, has a noticeably higher median family income at \$91,014. This block group includes high-end residential development along the Catawba River.

Within Gaston County, the lowest incomes are reported in Census Tract 318 Block Group 3, with a median family income of \$14,000 and a median household income of \$13,333. This block group is located between I-85 and US 29-74 in the northwestern portion of the demographic area. The highest incomes are reported in Census Tract 333.01 Block Group 1, with a median family income of \$89,919 and a median household income of \$85,071. This block group is located north of the Gastonia Municipal Airport.

General Trends. The lowest reported median incomes are generally located in block groups concentrated north and west of Bessemer City, west of Gastonia, and around the Charlotte-Douglas International Airport. These are the same locations where there are higher than average black and/or Hispanic/Latino populations. The highest reported median incomes generally are located in block groups around the Catawba River and South Fork Catawba River and the southern boundaries of Gastonia and Cramerton.

2.3.5 Environmental Justice Considerations

Environmental Justice Regulations. Federal laws and regulations require the evaluation of effects of transportation actions on minority and low-income populations, which in the past have been underserved in the decision-making process.

The need to identify low-income and minority populations and incorporate their input in the project's decision-making process gained greater emphasis as a result of Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low-income Populations* (February 11, 1994). This Order directs all Federal agencies to determine whether a proposed action would have a disproportionately high and adverse impact on minority and/or low-income populations.

In April 1997, the US Department of Transportation (USDOT) issued the *USDOT Order on Environmental Justice to Address Environmental Justice in Minority Populations and Low-Income Populations (DOT Order 5610.2)* to summarize and expand upon the requirements of Executive Order 12898 on environmental justice. The Order generally describes the process for incorporating environmental justice principles into all USDOT existing programs, policies, and activities that are undertaken, funded, or approved by the FHWA, the FTA, or other USDOT entities.

The three fundamental environmental justice principles are:

- 1) To avoid, minimize, or mitigate disproportionately high and adverse human health or environmental effects, including social and economic effects, on minority and low-income populations.
- 2) To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
- 3) To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

The USDOT Order 5610.2 defines "minority" in the definition section of its appendix and provides definitions of four minority groups addressed by Executive Order 12898. These groups are:

- 1) Black – a person having origins in any of the black racial groups of Africa.
- 2) Hispanic – a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin regardless of race.
- 3) Asian – a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands.
- 4) American Indian and Alaskan Native – a person having origins in any of the original people of North America and who maintains tribal affiliation or community attachment.

It also defines 'low-income' as a person (of any race) whose household income (or in the case of a community or group, whose median household income) is at or below the US Department of Health and Human Services poverty guidelines.

Minority Populations. As discussed in **Section 2.3.2**, whites, blacks, and Hispanics are the three largest racial/ethnic groups within the study area.

Figures 6a-b shows the general concentrations of black and Hispanic/Latino populations.

The black population tends to be concentrated in the eastern portion of the study area around the airport in Mecklenburg County and in Gaston County around Bessemer City and in west Gastonia. Concentrations of Hispanics tend toward the eastern portion of the study area around the airport as well.

Interviews with local representatives revealed that the census data indicates current locations of minority populations.

Low-Income Populations. Low-income block groups were determined based on a review of the Census 2000 poverty status data set. As shown in **Figure 7**, there are some block groups that contain low-income populations. Those block groups that had relatively high percentages of minority or low-income populations generally contained neighborhoods that may contain low-income groups. However, not all of the low-income areas contain higher than average minority populations.

Interviews with municipal staff and field visits to areas within these block groups confirmed that the census data indicates current locations of low-income populations.

The highest percentage of those living below poverty level in the DCIA are located in Census Tract 59.01 Block Group 4 (26.7 percent) (around the Charlotte-Douglas International Airport), and Census Tract 318 Block Groups 2 and 3 (37 percent and 42.8 percent, respectively). All of these block groups also had higher than average minority populations.

In general, higher levels of poverty occur in the DCIA around Bessemer City, west of Gastonia, and around the Charlotte-Douglas International Airport. There are also some higher concentrations of poverty along US 321 at the southern end of the DCIA.

Environmental Justice Considerations. Public involvement and outreach to special groups has been made throughout the study process, including the use of consultant for assistance in identifying Hispanic leaders and techniques/forums to optimize outreach to Hispanic communities. Information on the series of workshops held in January/February 2006 and in August 2008 was advertised in Hispanic newspapers, a news article was published in La Noticia, and public meeting materials were printed in Spanish.

Meetings were held with the predominantly Black Dixie River/Garrison Road community and the Dixie Community Center president to provide information and to solicit input on the project (see **Section 2.5.2**). At these meetings, residents and the community center president expressed concerns about potential impacts to the community center.

2.4 HOUSING CHARACTERISTICS

A review of census data reveals that the demographic area consists of a widespread mix of new and older housing stock. New home construction in the DA has occurred in the last five years and still continues, particularly in the eastern portion of the demographic area.

The percentage of renter-occupied housing units is about 38 percent in Mecklenburg County and 31 percent in Gaston County, and 31 percent statewide. The percentage of the renter-occupied housing units in Cramerton (27.7) is lower than the State, while the other municipalities contain a higher percentage of renter-occupied housing units. The percentage of owner-occupied housing units within the State is 69.4 percent. The percentage of the owner-occupied housing units in Cramerton (72.3) is higher than the State, while the other municipalities contain a lower percentage of owner-occupied housing units.

The median value of owner-occupied housing units for the State is \$108,300. The median value of owner-occupied housing units for Mecklenburg County (\$141,800) and Charlotte (\$134,300) is higher than the State, while the value is less for Gaston County (\$90,300), Belmont (\$94,400), Bessemer City (\$71,900) and Gastonia (\$93,000). Median home values in Cramerton (\$104,000) were about the same as the state.

Block Groups with Highest and Lowest Percent of Renter-Occupied Units. With regard to the block groups within the demographic area, Census Tract 39.01 Block Group 1 contains the highest percentage (89.3) of renter-occupied housing units. This block group is located around the Charlotte-Douglas International Airport. Census Tract 332.01 Block Group 4 and Census Tract 328 Block Group 6 contain the lowest percentages (2.8-2.9) of renter-occupied housing units. These block groups are located just south of Gastonia on either side of US 321. Compared with the State percentage of renter-occupied housing units (30.6 percent), 38 of the 60 reported block groups contain a lower percentage of renter-occupied housing units. Compared with the State percentage of owner-occupied housing units (69.4), 22 of the 60 reported block groups contain a higher percentage of owner-occupied housing units.

Block Groups with the Highest and Lowest Median Home Values. With regard to the block groups within the demographic area, Census Tract 59.01 Block Group 5 has the highest median value of owner-occupied housing units (\$207,400). This block group is located in the southwestern portion of the demographic area in Mecklenburg County, along the Catawba River. Census Tract 39.01 Block Group 1 has the lowest value (\$37,500). This block group is located around the Charlotte-Douglas International Airport. When comparing the housing characteristics of the DA, it is important to note that Census Tract 39.01 Block Group 1 shares the economic characteristic of having the highest percentage of renter-occupied housing units, the lowest percentage of owner-occupied housing units, and the lowest median value of owner-occupied units.

General Trends. Block groups having about half or more of their units renter-occupied are located around the Charlotte-Douglas International Airport, in central Belmont, just south and west of Gastonia, and northeast of Bessemer City. About half of all block groups in the demographic area have 80 percent or more of their units owner-occupied. These are generally located in the unincorporated areas of Gaston County, north of the Gaston Municipal Airport, south of Cramerton, and most of the block groups in the Mecklenburg County portion of the demographic area.

2.5 NEIGHBORHOODS

An inventory of neighborhoods in the U-3321 demographic area was undertaken in the development of the *Community Characteristics Report for the Gaston East-West Connector* (PBS&J, November 2007).

There are approximately 60 (named) existing neighborhoods/communities within the DCIA, varying from small to large, and newer construction to older subdivisions and mobile home parks. Approximately three quarters of these are single-family home subdivisions, and one quarter are mobile home parks. New subdivisions are continually being developed.

2.5.1 Named Neighborhoods

A qualitative overview of several neighborhoods located wholly or partially within the DSAs was undertaken for this study. Neighborhood information was derived from County GIS layers, ADC map books, local interviews, and field reviews.

Figure 8a-b depicts the general location of existing neighborhoods. **Figure 4a-e** shows the neighborhoods in more detail in relation to the DCIA and DSAs.

Table 3. Named Neighborhoods within the DSAs

Neighborhood	Segment	Municipal Location
Section 1 – Neighborhoods from I-85 to US 321		
Berkley Oaks Mobile Home Park	H1C	Gaston County
Brentwood Mobile Home Park	H1A	Gaston County
Brookhaven	H2A	Gastonia
Crowders Woods	H2B	Gastonia
Crowders View	H2B	Gastonia
Delta Park	H2A	Gastonia
ED's #1 Mobile Home Park	H1A	Gastonia
ED's #2 Mobile Home Park	H1A	Gastonia
Edgewood Acres	I-85 I/C	Gastonia
Erskine Woods	I-85 I/C	Gastonia
Fall Estates	J4a	Gaston County
Fallscrest	H2C; HX2	Gaston County
Ferguson Acres	H1C	Gaston County
Ferguson/Forest Estates	H2C; HX2	Gaston County
Hannaford Place	H1C	Gaston County
Jack A. Shell Mobile Home Park	H1C	Gaston County
Lakewood Forest	H3	Gastonia
Laurel Woods	H2B	Gastonia
Levi's Mobile Home Park	J4A	Gaston County
Mt. Brooke	H2C	Gaston County
Matthews Acres	H2A	Gastonia
Myrtle Mill	H2A	Gastonia
Oakley Park	H1C	Gaston County
Old Providence	HX2	Gaston County
Orion Oaks Mobile Home Park # 1	J4A	Gaston County
Orion Oaks Mobile Home Park # 2	J4A	Gaston County
Orion Oaks Mobile Home Park # 3	J4A	Gaston County
Orion Oaks Mobile Home Park # 4	J4A	Gaston County
Silverstone	H1A	Gastonia

Table 3. Named Neighborhoods within the DSAs

Neighborhood	Segment	Municipal Location
Sparrow Mobile Home Park	H1C	Gastonia
Spring Valley	H2A	Gastonia
Stablegate Farms	H3	Gaston County
Stoney Oaks	H1C	Gaston County
Suburban Heights	H2C	Gastonia
West Palm Acres	H1C	Gaston County
Section 2 – Named Neighborhoods from US 321 to NC 279		
Bridgestone Estates	J1d	Gaston County
Brittany Woods	J2C; JX1; J1B	Gaston County
Cameron Pointe	K2a	Gaston County
Cedar Grove	J1c	Gaston County
Charleston	J3; J2b; J4b	Gaston County
Farmwood	K2a	Gaston County
Forbes Cove	J2C	Gaston County
Forest Pointe	J1E	Gaston County
Keltic Meadows	J5a	Gaston County
Oak Hollow	J1C	Gaston County
Poplar Downs Mobile Home Park	J1C	Gaston County
Saddlewood	J1c; J2c; J2d	Gaston County
Wesley Acres	J2c	Gaston County
White Oak	JX4; J1d; J5a	Gaston County
Section 3 – Named Neighborhoods from NC 279 to I-485		
Belle Meade	KX1	Belmont
Brook Forest/South Forest	KX1; K3A	Belmont
Ellington Mobile Home Park	K4A	Gaston County
Forest Bay	K4A	Gaston County
Joye Mobile Home Park	K3B	Gaston County
Minnie Queen Estates	K1c	Gaston County
Misty Waters	K4a	Gaston County
Southpoint Landing	K4A	Gaston County
Woodland Bay	K1C	Gaston County

Examples of subdivisions with site plans approved by local jurisdictions that are partially within the DSAs include Presley, The Peninsula at Bayshore, and the Bowman development. These planned future developments are shown in **Figure 8a-b**.

Presley is located in near the intersection of Union Road (NC 274) and Union New Hope Road in Gastonia, partially within Corridor Segments J5a, J1e, and J1f. It is proposed to be a mixed use development totaling about 313 acres. The development proposes 619 single-family residential lots, 133 townhouse units, and 750,000 square feet of commercial uses.

The Peninsula at Bayshore is located between NC 279 (South New Hope Road) and the South Fork Catawba River, south of Lakefront Drive, partially within Corridor Segment K1C. The overall development consists of approximately 144 acres, with 105 high-end residential lots. Phase 2 of the development has been approved, and will consist of homes along Bayshore Drive and Lakefront Drive. Phase 2 is approximately 60 acres total, with 43 residential lots averaging in size of about 1.2-acre sites.

The Bowman development is a newly approved development in Belmont located west of the intersection of South Point Road (NC 273) and Armstrong Road, on the south side of Armstrong

Road, just north of the Misty Waters subdivision. This is proposed to be a 150+-lot residential development. The Bowman development is partially within Corridor Segment K4A.

2.5.2 Other Communities

Dixie River Community. The Dixie River Community (also known as the Garrison Road Community) is defined roughly by Mt. Olive Church Road on the north, Dixie River Road on the west/south, Sadler Road on the north/west, and I-485 on the east (Interview, Dixie River Community Association President, December 7, 2007). Garrison Road essentially serves as the center of the community. The Dixie Community Center is located at 9814 Garrison Road in Charlotte.

About 25 members of the Dixie River Community attended a small group meeting held on November 17, 2007 to discuss the project. As a follow-up to this meeting, an interview with the president of the community center (December 7, 2007) uncovered great detail about the history of this community, the importance of the community center for the area, and concerns related to the proposed project.

According to the community center president, the construction of I-485 has essentially split and isolated the existing neighborhood, with I-485 reducing the extent of the overall community. The president stressed the importance of the community center (see photo in Appendix C), which provides a forum for interaction among existing and former Dixie River Community residents.

Other Rural Communities. There are pockets within the DCIA with housing “clusters” that are not identified as named communities in available GIS layers. However, because these could represent rural communities in which there are social interconnections, they are identified in **Figure 8a-b** (and location described later in **Table 15**) and were evaluated for impacts.

2.6 BUSINESS AND EMPLOYMENT CHARACTERISTICS

According to the Gaston County *2030 Long Range Transportation Plan (2005)*, Gaston County is the pre-eminent manufacturing area of the Charlotte region. Historically a textile manufacturing center with an emphasis on yarn and thread mills, Gaston County’s manufacturing base has diversified over the past twenty years to include machinery, transportation equipment, precision equipment, and other industries.

Table 4 provides employment information by supersector or domain for industries in North Carolina, Gaston and Mecklenburg Counties, and the Charlotte-Gastonia-Concord Metropolitan Statistical Area (MSA).

Between 1990 and 2006, the percentage of manufacturing for each of the reported municipalities decreased. However, the other two Goods-Producing Domains (natural resources/mining and construction) slightly increased during the sixteen-year period. Between 1990 and 2006, the percentage of Service-Producing Domains varied. However, the percentage of financial activities, leisure and hospitality, and public administration increased slightly, whereas the percentage of education and health services increased dramatically.

Table 4. Annual Employment Distribution – 1990 and 2006

Employment Industry	1990 – Percent of Workforce				2006 – Percent of Workforce			
	North Carolina	Gaston County	Meck County	Charlotte - Gastonia - Concord MSA ¹	North Carolina	Gaston County	Meck County	Charlotte-Gastonia-Concord MSA
Goods-Producing Domain								
Natural Resources/Mining	0.8	0.1	0.1	0.4	0.8	0.1	0.2	0.4
Construction	5.4	3.4	6.1	6.0	6.1	5.0	6.4	7.0
Manufacturing	26.6	46.8	13.2	22.8	14.0	22.9	6.5	9.8
Service-Providing Domain								
Trade/Transportation/Utilities	21.1	18.9	27.8	24.8	19.8	20.1	22.7	22.0
Information	1.9	1.1	3.9	3.0	1.9	0.8	3.6	2.8
Financial Activities	4.4	2.5	8.7	6.8	5.1	3.1	12.0	9.4
Professional/Business	7.7	4.1	14.1	10.7	12.1	9.1	18.5	15.9
Education and Health	16.1	11.3	12.0	12.3	21.7	22.4	14.6	16.5
Leisure and Hospitality	7.7	5.7	7.7	7.0	9.6	8.5	9.6	9.5
Other Services	2.6	2.6	3.1	2.9	2.5	2.7	2.9	2.8
Public Administration	5.6	3.5	3.2	3.3	5.6	5.0	2.8	3.4
Unclassified	0	0	0	0	0.6	0.4	0.4	0.4
Total Government Sector	15.5	9.5	10.1	10.7	16.7	12.9	10.9	12.5
Total Private Sector	84.5	90.5	89.9	89.3	83.3	87.1	89.1	87.5

Source: North Carolina Employment Security Commission (ESC) (North Carolina ESC Website, www.ncesc.com)

Notes: Employment numbers are Annual Average Employment for aggregate of all types by Super sector or Domain. Year 2006 most recent year in which annual data available.

1. MSA – Metropolitan Statistical Area

Major employers in Gaston County include Gaston County Schools, Caromount Health, Freightliner Corporation (manufacturing), Wix Filtration Corporation (manufacturing), and Gaston County, all of which employ over 1,000 people (based on September 2006 employment figures from the North Carolina Employment Security Commission Website, www.ncesc.com). The average annual unemployment rate in Gaston County for 2007 was 5.5 percent, which was higher than the statewide rate of 4.7 percent (North Carolina Employment Security Commission Website, www.ncesc.com).

Mecklenburg County is the hub of the 13-county Charlotte region and is the primary center for employment, shopping, and other economic activities. Major employers in Mecklenburg County include International Business Machines, Lance Manufacturing Corporation, Microsoft Corporation, Carolinas Health Care Systems, Wachovia Bank and Bank of America (based on 2nd Quarter 2007 employment figures from the North Carolina Employment Security Commission Website, www.ncesc.com). The average annual unemployment rate in Mecklenburg County for 2007 was 4.5 percent, which was slightly lower than the statewide rate of 4.7 percent (North Carolina Employment Security Commission Website, www.ncesc.com).

The Charlotte-Douglas International Airport, which is located northeast of the DCIA's eastern boundary, employs over 16,000 people and is expanding through construction of a third runway. In the future, the airport also is planned to have an intermodal facility combining rail, truck and air cargo transport that would generate employment opportunities and substantial numbers of regional truck trips.

The linkage between Gaston County and Mecklenburg County is demonstrated by commuting patterns. In 2000, over 33,000 people left Gaston County daily to go to work, with the overwhelming majority (23,101 commuters, or 70 percent) going to Charlotte or elsewhere in Mecklenburg County. Data on year 2000 commuting patterns is available from the US Census. Nearly 4,000 people commuted from Mecklenburg County to Gaston County every day. Altogether, there are over 27,000 people commuting between Gaston and Mecklenburg Counties.

According to 2006 annual average daily traffic (ADT) maps from NCDOT, approximately 82 percent of the existing traffic volumes between Gaston and Mecklenburg counties are provided by the I-85 and US 29-74 parallel corridors. The next closest crossings are 2 ½ miles to the north on NC 27 and 11 miles to the south on NC 49, neither of which are practical for access to/from southern Gaston County.

2.7 LAND USE AND GROWTH TRENDS

2.7.1 Existing Land Use

Land use in the DCIA is of mixed intensity and density, and includes farmland, estate homes, single family neighborhoods, rural housing clusters, manufactured/mobile homes, and multi-family housing. Pockets of commercial, office, and industrial uses in the vicinity are concentrated generally in the cities and towns, and along major transportation routes such as I-85, US 321, US 29-74, NC 274 (Union Road), NC 279, and NC 273. Other land uses include places of worship and public and private recreational areas.

The project area's proximity to Charlotte has resulted in much of it transforming from a traditionally agricultural area to one of a suburban nature. With the exception of the City of Gastonia, the municipalities in the vicinity of the DCIA (Bessemer City, Cramerton, and Belmont) generally serve as bedroom communities for the Charlotte-Mecklenburg area and for the City of Gastonia. These municipalities are seeing continued pressure for new (mostly residential) development.

Outside the municipal boundaries, the land uses in southern Gaston County are predominantly rural, with residential subdivisions scattered among large tracts of undeveloped and agricultural land. The shores of the Catawba River and the South Fork Catawba River in both Gaston and Mecklenburg counties have attracted high-end residential development. The west bank of the Catawba River also is home to the Allen Steam Station, a major coal-fired power plant operated by Duke Energy. Other businesses and industries are concentrated within municipal limits and outside the cities along I-85, US 29-74, US 321, NC 274 (Union Road), and NC 273 (South Point Road [SR 2525]), particularly where water and sewer services are provided.

The most prominent land use in western Mecklenburg County is the Charlotte-Douglas International Airport just northeast of the eastern DCIA boundary. Business and commercial uses are concentrated in areas surrounding the airport and along I-85. Land between the airport and the Mecklenburg County/Gaston County line is mainly rural, with scattered residences, forest, and pasture.

There are numerous neighborhoods within the study area, varying from small to large, and from newer construction to older subdivisions and mobile home parks. As expected, the concentration of neighborhoods decreases farther out from the urban areas, particularly near the North Carolina/South Carolina border. There are nearly 60 (named) neighborhood communities within the DCIA, varying from small to large, and newer construction to older subdivisions and mobile home parks. Approximately three quarters of these are single-family home subdivisions, and one quarter are mobile home parks.

2.7.2 Growth Trends and Issues

The study area is growing. The transition from rural to more of a suburban nature is generally consistent with what the County and municipalities have envisioned in their land use plans.

Gaston County. There are two proposed intersection sites identified by the *Gaston County Comprehensive Plan* (Gaston County, 2002) as “hot spots” with regard to current and near-future development. The intersection of the future Gaston East-West Connector and NC 279 (South New Hope Road), which is located within the DCIA, is one of the two sites. Located just north of the Daniel Stowe Botanical Garden, this area is a combination of vacant land and land developed for agricultural uses, plant nurseries, single-family housing, and a few commercial uses. The other identified “hot spot” for development is at the intersection of the future Gaston East-West Connector and US 321 in Gastonia. This also is located within the DCIA. Existing conditions in this area are a combination of primarily industrial and residential uses surrounded by agricultural land on roughly three sides.

A majority of proposed land development projects are scheduled for the unincorporated area and southern portion of Gaston County, including undeveloped land within and surrounding the DCIA. These areas are primarily underdeveloped, with the existing development patterns being residential and open space. The area presently contains no water and sewer infrastructure. However, this area is projected to see a higher percentage of Gaston’s growth over the next 10-20 years.

Belmont. Belmont is bordered by Mecklenburg County and the Catawba River to the east, the City of Mount Holly to the north and McAdenville to the west. Most future growth is anticipated to take place to the south, including undeveloped land within the DCIA along the peninsula formed by the Catawba and South Fork Rivers. This is evidenced by recent annexations, growth of subdivisions, and the recent extension of a water line to the southern end of the peninsula. Growth is anticipated to be mainly residential in nature.

Future growth is anticipated with the proposed Gaston East-West Connector. In August of 2007, Belmont City Council members approved the City's land use plan, *The Belmont Comprehensive Land Use Plan*, which is its guide to manage growth. The plan includes where future residential, business, recreational facilities, roads, schools, and other land uses should be planned. The plan also contains alternate scenarios with and without the STIP U-3321 project. The plan indicates that the project is being studied as a limited access toll road.

According to the Belmont Chamber of Commerce, the River Bend and South Point townships of eastern Gaston County are the County’s fastest growing residential areas. There are no major employment centers in Belmont within or near the DSAs. Large subdivisions with one-acre or larger lots are being developed, and most of these developments do not have public water and sewer services.

Gastonia. The project is included in Gastonia's *2010 Comprehensive Plan* and is consistent with land use strategies to manage existing and anticipated new growth in Gastonia. Future growth in Gastonia is anticipated to be a mix of residential, commercial, and industrial uses. Land use in downtown Gastonia is characterized as mixed use with modern retail and civic uses. Gastonia's central business district is in the early stages of redevelopment, with the City investing an increasing amount of resources to see the area redevelop faster. Outside of the downtown area, non-residential development transitions into strip commercial along major arterial roads, with single-family residential neighborhoods behind. Areas around the outskirts of Gastonia are relatively rural and characterized by low-density residential and agricultural areas. Areas in or adjacent to the city limits of Gastonia are characterized by moderate-to-high-density residential areas or areas of small businesses.

Cramerton. The Town has a 5-year land use plan, last adopted in 2002, but town staff have noted that an updated is needed. An update is planned for FY 2010 (Telephone interview with Town of Cramerton planning staff, October 6, 2008). Although limited growth is possible to the north, west, and east, the Town's greatest potential for growth is to the south, which could include undeveloped land in the DCIA. Most future growth is anticipated to be residential in nature.

Bessemer City. The City does not have a recent land use plan. According to the City, the *1995 Land Use Plan* is obsolete and outdated (Interview with Planning Director, July 12, 2007). The City is working on an update to its plan, which is scheduled to be completed in late 2009 (Telephone interview with Planning Director, October 2, 2008). Although there is room for some expansion by annexation in most directions, a large portion of Bessemer City is currently undeveloped. Bessemer City is the largest industrial area in the County. In the spring of 2007, Dole opened a fruit/salad plant south of downtown. Future growth is anticipated to be a mix of residential and industrial/commercial, outside of and north of the DCIA.

City of Charlotte and Mecklenburg County. The *I-485/Dixie-Berryhill Strategic Plan* was recommended as part of the Westside Strategic Plan, which has been superseded with the creation of the *Dixie-Berryhill Area Plan*.

The Dixie-Berryhill planning area is an approximately 5,000-acre planning area in western Mecklenburg County, across the river from southern Gaston County. The area is bounded by I-485 to the east, the Catawba River to the west, I-85 to the north, and Dixie River Road to the south. In the *I-485/Dixie-Berryhill Strategic Plan*, (Charlotte Mecklenburg Planning Commission, October 2000), this area is designated for mixed-use development and transit-oriented development in planned communities.

This plan encourages the use of transit oriented development around US 29-74 (Wilkinson Boulevard), as this area was once considered by the Charlotte Area Transit System (CATS) for expanded mass transit in western Mecklenburg County. Those plans have been put on hold due to funding issues. According to the Charlotte-Mecklenburg Planning Commission (interview, CMPC Staff, July 30, 2007), the vision for the area around West Boulevard south of the Charlotte-Douglas International Airport is a collection of mostly office employers, flex space, businesses and retail, as the Charlotte-Douglas International Airport noise contours will limit or preclude residential development in the eastern section of the project study area.

2.7.3 Other Activities

Proposed projects that may affect the area are described below. These projects are in various stages of planning and development. A more extensive data collection effort and review of area projects is included in the *ICEA Report*.

Below is a list of funded projects included in the *NCDOT's Draft 2009-2015 Statewide Transportation Improvement Program (STIP)*.

Project U-2408 is on NC 274 (Bessemer City Road/North of US 29-74) from NC 275 to US 29-74 in Gaston County. Project U-2408 is proposed to widen existing NC 274 (Bessemer City Road/North of US 29-74) to a multi-lane facility. The total project length is 2.8 miles. The project is currently under construction.

Project U-3405 is on NC 274 (Gastonia Highway) from SR 1484 (Maine Avenue) to NC 275 in Bessemer City. Project U-3405 is proposed to widen existing NC 274 (Gastonia Highway) to a five-lane curb and gutter facility. The total project length is 1.4 miles. Planning/design and right-of-way acquisition are currently underway and construction is scheduled to begin in FY 2009.

Project U-3411 is on NC 160 (West Boulevard) from east of I-485 (Charlotte Outer Loop) to Horseshoe Lane. U-3411 is proposed to relocate West Boulevard and improve to multi-lanes on new location. The total project length is 2.3 miles. Right-of-way acquisition and construction are scheduled to begin in FY 2008 and the schedule is to be coordinated with Project R-2248H.

The following list of projects in the DA was identified as noteworthy by local staff during the interview process conducted in the development of the *CCR*.

- **Charlotte-Douglas International Airport Expansion** – Construction is underway for a new 4,300-foot runway west of Runway 18R/36L parallel to I-485. The scheduled runway completion date is January 2010 (Charlotte-Douglas International Airport Website, www.charmeck.org/Departments/Airport/Construction+Update+.htm).
- **Residential Development Annexation/Mixed Use Development** – Various small and large residential developments are planned and/or underway within the DA. There is a large mixed-used development planned for the vacant property in the area of Wilson Farm Road/New Hope Union Road. The Town of Cramerton foresees expanding its municipal boundaries east of New Hope Road, as there are residential developments planned for that area. The City of Belmont noted the potential for its ETJ to expand towards the river.
- **New Middle/High School (Gaston County)** – Two preliminary sites (both located within DSAs) are being considered for a future middle/high school campus. The sites being considered are located in DSA segments K2A and K3A. The process to determine the actual location has been delayed, and there is no final decision on where the new school will be located (*Gaston County Schools Physical Facilities, Telecommunication, April 11, 2008*).

More information on these projects, as well as information on other projects that may influence future conditions within the area is documented in the *ICEA Report* and the *Gaston East-West Connector Updated Purpose and Need Statement* (May 29, 2008).

2.8 NOTABLE FEATURES

2.8.1 Community Resources and Services

Community resources discussed in this section are shown in **Figure 9a-b**. Community resources in the project vicinity are concentrated generally in the urban areas. As expected, the number of community facilities decreases outward from the city and town centers. Community resources described below include churches and cemeteries, schools, police/fire/emergency services, post offices, parks, recreation areas, libraries, medical centers and hospitals, bicycle routes, and public transit routes.

Churches and Cemeteries. The majority of the churches within the demographic area are located outside of the DSA corridors. **Table 5** summarizes the churches and cemeteries located within the DCIA. Generally, cemeteries are located on church properties. There are seventeen churches and eight cemeteries in the DCIA. Most of the cemeteries are located on church properties, but five are located on separate properties.

Table 5. Churches and Cemeteries within the DCIA

ID#	Resource Name	Resource Location	Segment
C1	Broomfield Methodist Church	909 Shannon Bradley Road, Gastonia	H2A
C2	Holy Jerusalem	800 Shannon Bradley Road, Gastonia	H2A
C3	St. Titus AME Zion Church	507 Shannon Bradley Road, Gastonia	H2A; H3
C4	Landmark Baptist Church	311 Archie Whitesides Road, Gastonia	H1A; H2B
C5-7	Souls Harbor Tabernacle Inc	271 Camp Rotary Road, Gastonia	HX2; H1A; H1B
C8	Pisgah Associate Reform Pres.	3600 Linwood Road, Gastonia	H2C
C9	Chapel Grove Baptist Church	716 Camp Rotary Road, Gastonia	HX2
C10	Charity Independent Baptist	2425 Hillmont Street, Gastonia	H3
C11	True Vine Church of God	5348 Lewis Road, Gastonia	H1C
C12	Carolina Conference Assoc. 7th Day	5300 Lewis Road, Gastonia	H1C
C13	Bethel Freewill Baptist Church	329 Telegraph Drive, Gastonia	J4A; J3; J2B; J4B
C14	Union Presbyterian Church of Gastonia	5615 Union Road, Gastonia	J5A
C15	Open Door Ministries/Southpoint Pres.	783 Union New Hope Road, Gastonia	K2A
C16	Gaston Christian Church	5339 S. New Hope Road, Belmont	K2A
C17	Grace Wesleyan Church	6014 S. New Hope Road	K1C
C18	Holy Angels Inc.	165 River Run Road, Belmont	K3A; K4A
C19	Ramoth AME Zion Church and Cemetery	6800 Dixie River Road, Charlotte	K4A
CM1	Gamble-Ratteree Cemetery	124 Gamble Loop Road, Gastonia	H1A
CM2	Pisgah ARP Cemetery at Pisgah ARP Church	3600 Linwood Road, Gastonia	H2C
CM3	Falls Farm Cemetery	227 Crowders Creek Road, Gastonia	J4A
CM4	Mt. Pleasant Zion Church Cemetery	4945 York Road, Gastonia	J1A
CM5	Union Presbyterian Church Cemetery	5615 Union Road, Gastonia	J5A
CM6	Glenn-Ragan Cemetery	Union Road, Gastonia	J5A

Table 5. Churches and Cemeteries within the DCIA

ID#	Resource Name	Resource Location	Segment
CM7	Wells Family Cemetery	Gaither Road, Belmont	K2A
CM8	Mt. Pleasant Cemetery	Tucker Road west of Southpoint Road	KX1; K3A

Schools. There are several educational institutions located within the demographic area. These schools serve students residing within the municipal areas of Bessemer City, Gastonia, Cramerton, and Belmont.

As seen on **Figure 9a-b**, there are four public schools located within or immediately adjacent to the DSAs in the DCIA:

- Edward D. Sadler Jr. Elementary - 3940 Kings Mountain Highway (US 29-74), Kings Mountain (Corridor Segment H1A)
- Forest Heights Elementary - 2500 Sedgefield Drive, Gastonia (Corridor Segment J5a)
- Forestview High School and WA Bess Elementary (next to each other) - 5545 Union Road, Gastonia (Corridor Segment J5a)

According to Gaston County Schools (GCS), schools in the area are over capacity, including Belmont Middle School. GCS is in the process of determining where growth is anticipated and where new schools should be considered. According to Gaston County Schools Physical Facilities Director, there are two preliminary sites (both located within DSAs) being considered for a future middle/high school campus. These are located in Corridor Segments K2A and K3A. The process to determine the actual location has been delayed, and there is no final decision on where the new school will be located (Telephone interview, Gaston County Schools Physical Facilities, April 11, 2008).

Police/Fire/EMS. There are no police stations within or near the DSAs. Police stations in the region are located in the downtowns of Bessemer City, Gastonia, Cramerton, and Belmont. There is a police station also at the Charlotte-Douglas International Airport. The NC Highway Patrol has a facility on US 29/74 just west of Myrtle School Road.

Fire stations and emergency medical services (EMS) stations typically are co-located. There are several scattered throughout the demographic, as shown on **Figure 9a-b**. Stations within or near the DSAs are listed below:

- F1 – Crowders Mountain Central VFD (or Chapel Grove) – 4416 Linwood Road Gastonia (Corridor Segment H1A)
- F2 – #2 Crowders Mountain VFD and Rescue – 480 Bethany Road Gastonia (Corridor Segment H1C)
- F3 – Crowders Mountain South VFD – 4802 York Highway (between Corridor Segments J1a and J2a)

Post Offices. There are no post offices located within or near the DCIA. Post offices are located near the centers of the municipalities outside of the DCIA.

Libraries. There is one library near the DSAs, located south of Forestview High School on NC 274 (Union Road), just north of Corridor Segment J5a.

Parks/Recreation. As seen in **Figure 9a-b** and described below, there are two publicly-owned parks and several privately-owned recreational facilities in the DCIA. Publicly-owned parks include Crowders Mountain State Park and land owned by Mecklenburg County northwest of the crossing of Dixie River Road and I-485 (proposed as Berewick District Park). There are also planned greenways in the region.

Privately-owned recreational facilities include Camp Rotary Girl Scout Camp, Karyae Park, Linwood Springs Golf Course, Carolina Speedway, Daniel Stowe Botanical Gardens, Allen Fishing Access Area (owned by Duke Energy), and another area owned by Duke Energy that has a baseball field and a general recreational field.

Crowders Mountain State Park. Crowders Mountain State Park is located just west of the DSAs, near the Gaston County/Cleveland County line and the North Carolina/South Carolina state line in southwest Gaston County (see **Figure 2**). Regional access to Crowders Mountain State Park is provided primarily by I-85, which is approximately three miles north. As seen on the map in **Appendix D**, the main park entrance is located on Sparrow Springs Road (SR 1125) at the south end of the park. US 29-74, US 321, and NC 161 (York Road) surround the park to the north, east and west, respectively.

Crowders Mountain State Park is administered by the NC Department of Environment and Natural Resources (DENR) - Division of Parks and Recreation. Crowders Mountain State Park contains 2,591 acres, including the peaks of Crowders Mountain and Kings Pinnacle. These peaks rise 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 offers a variety of hiking trails, ranging from the more rugged trails leading to the summits of Crowders Mountain and Kings Pinnacle, to the flat, easy trail circling the nine-acre park lake. The lake is the only public lake in Gaston County.

According to park officials (Telephone interview, Park Superintendent, March 31, 2008) park attendance in 2007 was 404,143, which represents a 19 percent increase from attendance in 2005 and a nearly 10 percent increase from 2006. The park currently is completing construction on a new facility called the "Boulders Access Area" that will provide access to the park's Ridgeline trail. This area will have a 2,200 square foot contact station and restroom facility, and approximately 80 parking spaces.

Future Mecklenburg County Park (Berewick District Park). Mecklenburg County owns approximately 203 acres off of Dixie River Road just west of I-485 that is designated for the future Berewick District Park (see **Appendix E**). The park is just south of Corridor Segments K3C and K4A, which include all of the DSAs.

In a meeting on April 28, 2008, Mecklenburg County Park and Recreation Department (MCPR) stated that Berewick District Park is envisioned to be a multi-use park with tournament quality soccer and baseball fields, passive uses, and a dog park. The MCPR also has joined with the Charlotte-

Mecklenburg Schools to co-locate an elementary school on the site. The school's recreational facilities, such as their gym, will be sized so that they can be used after school hours for park activities.

Phase 1 of the park development will include the elementary school and three adjacent baseball fields. Phase 1 construction is expected to begin in December 2008 and end in December 2009. There is currently no funding for any additional phases of park construction.

Camp Rotary (Girl Scouts). Camp Rotary is situated in the forest at the foot of Crowders Mountain, off of Camp Rotary Road. It is west of Corridor Segment H1A. The camp is accessed from Linwood Road and Camp Rotary Road. Facilities include the Connie Gibbons Program Center, Glenn Sisters Lodge, two outdoor cabin units, two indoor dorms, a craft house, a challenge course, a lake, swimming pool, nature center and trails, boats a science hut, and the new Community Pavilion. (Girl Scouts of the Pioneer Council Website, http://www.girlscoutspc.org/camp/camp_rotary/index.php).

Karyae Park. The Karyae Park YMCA Outdoor Family Center is located east of Camp Rotary off the south side of Linwood Road, within Corridor Segment H1A. The park, which is run by the Adelphotis Arahovitan Karyae fraternal order of the Carolinas Greek organization, is designed to host family reunions, corporate functions, and other events. The center has a conference room, ball fields, playground, pond, Chapel, large shelter, full kitchen, gymnasium/pavilion, outdoor basketball and volleyball courts, hiking trails, horseshoes, bocce ball court, picnic areas, and a low ropes teambuilding course (Gaston County YMCA Website, www.gastonymca.org/karyae).

Linwood Springs Golf Course. Linwood Springs is an 18-hole privately-owned (but open to the public) golf course at the Linwood Springs Golf Club facility (located at 2900 Linwood Road) in Gastonia. It is located between Corridor Segments H2C and H3 at the western end of the project.

Carolina Speedway. Carolina Speedway is a 0.4-mile clay oval built in 1962. The speedway hosts many large super late model races. On a weekly basis, Late Models, GM Performance Late Models, Renegades, Street Stocks, Stock 4's and Pure Stock 4's are raced. Victory Spectator gates open at 4:00 p.m. The speedway provides family-friendly recreational activities every Friday night. It is located on Union Road in Gastonia in Corridor Segment J1f. (Carolina Speedway Website, <http://www.carolinaspeedway.net/trackinfo.php>).

Daniel Stowe Botanical Gardens (DSBG). In 1991, retired Belmont textile executive, Daniel Jonathan Stowe, set aside 450 acres of rolling meadows, woodlands and lakefront property as well as a \$14 million endowment for the development of a world class botanical garden (DSBG Website, www.dsbg.org/visitsdbg_masterplan.php). The DSBG is in southeast Gaston County, on the east bank of Catawba Creek, off of NC 279 (South New Hope Road) and south of Corridor Segment K1C. The main entrance is located off NC 279 (South New Hope Road), about 2,700 feet north of Armstrong Road. There is also a truck entrance at the northern end of the property.

The DSBG is a major tourist attraction in Gaston County. In 2006, the 450-acre botanical garden attracted approximately 84,000 visitors. With planned improvements to the Daniel Stowe Botanical Garden, visitor attendance is expected to reach 250,000 by 2011 (Daniel Stowe Botanical Garden Annual Report, 2006). The botanical garden employs about 40 people (Telephone interview, DSBG Human Resources, April 22, 2006).

DSBG's 40-year Master Plan includes a walled English garden, conservatory complex, Asian garden, rose pergola, natural wetland, waterfall, Piedmont garden, library and reading garden, home

demonstration complex, auditorium and full-service restaurant (DSBG Website, www.dsbg.org/visitsdsbg_masterplan.php).

Allen Fishing Access Area. The Allen Fishing Access Area is located on the east bank of the South Fork Catawba at the end of Canal Road and The Hot Hole Lane. It is between Corridor Segments K3A and K4A on land owned by Duke Energy where the Allen Steam Station's water discharge canal flows into the South Fork Catawba River. This public-access area has a parking lot, picnic sites, and fishing access.

Duke Energy Recreational Fields. These recreational fields, owned by Duke Energy, are located northwest of Allen Steam Station on Boat Club Road in Corridor Segment K3B.

Dixie Community Center. As discussed in **Section 2.5.2** the Dixie Community Center is an important forum that provides for interaction among existing and former Garrison/Dixie River Road residents.

Greenways. There are no existing greenways in the DCIA. Planned greenways are shown in **Figure 10a-b**. Along with greenways proposed by the GUAMPO, the Carolina Thread Trail is a proposed interconnected regional network of greenways and trails that is expected to reach fifteen counties and 2.3 million citizens. The trail is planned to help preserve natural areas and provide a place for exploration of nature, culture, science and history (Carolina Thread Trail Website, <http://www.carolinathreadtrail.org>).

The plan is to develop over time as communities build trails that will eventually link parks, green spaces and attractions throughout the region. The Carolina Thread Trail will develop as a "green interstate" focused on linking local trails and regionally significant attractions. The Catawba Lands Conservancy and Trust for Public Land partner in this initiative, with the Catawba Lands Conservancy serving as the lead agency (Carolina Thread Trail Website, <http://www.carolinathreadtrail.org>).

Medical Centers and Hospitals. As seen in **Figure 9a-b**, there is one social service medical clinic located in the DA, outside the DCIA. This clinic, operated by Gaston Family Health Services (GFHS) is located west of US 321 near Hudson Boulevard. Gaston Family Health Services (GFHS) operates three medical and two dental clinics to serve Gaston County residents. GFHS accepts patients with Medicaid, Medicare, or private insurance.

The regional hospital in the area is Gaston Memorial Hospital, located just outside the DA north of I-85 in north Gastonia. It is one of the largest employers in Gaston County.

Bicycle Routes. There are five NC Department of Transportation Bicycle Routes in Gaston County (NCDOT Website, <http://www.ncdot.org/it/gis/DataDistribution/BikeMaps/default.html>). One of these bicycle routes, Route 1: High Shoals – Crowders Mountain, crosses all the DSAs. It crosses east-west through the area along Linwood Road. This route begins in the southwestern corner of Gaston County, goes through Crowders Mountain State Park, along Linwood Road, through downtown Gastonia, then northward east of US 321 to High Shoals.

Public Transit Routes. The following information on transit routes was obtained from the *2030 Long Range Transportation Plan* (May 22, 2005) and the Gastonia Transit website.

Gastonia Transit offers fixed route and complementary ADA para-transit services. The fixed route system follows the same schedule on each trip, arriving at set locations at pre-determined times. The para-transit system is designed to be flexible and serves disabled members of the community who lack

access to the fixed route system. The service area is confined to the city limits of Gastonia, serving a population of approximately 66,000 people.

Transit service is generally limited to the City of Gastonia and is not available within the STIP U-3321 DA at this time. Three routes, Routes 1, 2, and 3, have portions of their routes within the northern portion of the DA. Route 1 provides service to an industrial park via Bessemer City Road. Routes 2 and 3 use US 29-74 to Shannon Bradley Road and Crescent Lane in the DA.

Gaston County “ACCESS” Central Transportation is a community transportation system operated as service to the citizens of Gaston County. ACCESS is used by human service agency clients and the general public on a daily basis to get to work, school, and other destinations through direct service or via agreements with other local transportation providers. Among the human service agencies served are the Gaston County Health Department, the Gaston County Department of Social Services, Gaston Skills (Vocational Rehabilitation), Pathways, and Gaston County Schools. Additional trips can be arranged outside of Gaston County as well, including to Charlotte. Service to non-agency customers is provided with assistance from the NCDOT’s Rural Operators Assistance Program (ROAP) grant, which provides funding for the Elderly and Disabled Transportation Assistance Program, (EDTAP) Rural General Public (RGP) program, and WorkFirst. These demand-response passengers are incorporated into existing routes when possible (Gaston County Website, <http://www.co.gaston.nc.us/DSS/ACCESS.HTM>).

The Charlotte Area Transit System (CATS) provides Express Bus Service from Gaston County to Uptown Charlotte (Gastonia Express 85X). This service is a combined effort of the CATS and City of Gastonia. The Gastonia Express provides commuters pick-up times on weekday mornings and afternoons, making stops at Gastonia Transit Center/Park and Ride and Belmont Abbey Plaza. The route travels along I-85 to Freedom Drive and also makes several stops in Uptown Charlotte.

Utilities and Infrastructure. These resources are generally concentrated in the municipal areas, but serve communities throughout the DCIA. Since some of these resources (such as electric power transmission lines) are found in the DCIA and within the path of the DSA segments (see **Figure 4a-e**), it is likely that they will be directly impacted by the project.

Allen Steam Station provides power to the region. The Allen Steam Station is a regional coal-fired power plant owned and operated by Duke Energy located on the Belmont Peninsula between the Catawba River and South Fork Catawba River. It began operations in 1957 and currently serves over one million homes. Facilities associated with the power plant include a water discharge canal, an air pollution control facility and associated future landfill, fly ash basins, a rail line, and numerous major power line easements radiating outward from the facility.

There are various providers of water and sewer and other infrastructure needs within the DCIA. The following discussion offers a cursory description of utilities/infrastructure:

Bessemer City - The City of Bessemer City provides water, sewer, garbage collection and natural gas to its citizens (City of Bessemer City Website, <http://www.bessemercity.com/cspo.html>).

Gastonia - The *Gastonia 2020 Comprehensive Plan* provided information on City services. The City provides and maintains public services and facilities such as sewer, water, electric, solid waste collection and disposal, fire, and police. It is also a regional provider of water and sewer services to other Gaston County municipalities. These facilities and services have expanded as the population has increased from both new construction and annexation.

The City of Gastonia owns, operates and maintains a potable water system that provides connections to portions of Gaston County, Lowell, Cramerton, Ranlo, and McAdenville, and Clover (South Carolina). The City also provides emergency connections to Dallas, Belmont, and Bessemer City.

Belmont - The City of Belmont Water and Sewer Department is charged with the maintenance and construction of approximately 95 miles of water distribution facilities, including over 5,000 water taps. The City is currently providing water service to areas inside and outside the City limits. The Water and Sewer Department is responsible for the maintenance and construction of approximately 75 miles of sewer collections systems, including over 3,900 sewer taps. The City currently provides sewer service to areas inside the City limits (City of Belmont Website, <http://www.cityofbelmont.org/webroot/departments/show/8Belmont>).

Cramerton - The Town does not provide its own drinking water supply, but rather purchases from the City of Gastonia. The Town owns and operates a four million gallon per day wastewater treatment facility located on Eagle Road (Town of Cramerton Website, <http://www.cramerton.org/>).

Gaston County - Public utilities serving the Gaston County area include Duke Energy, Plantation Pipe Line Company, Public Service Company of North Carolina, and Bell South (Gaston County Website, <http://www.co.gaston.nc.us/CountyProfile.htm>).

2.8.2 Historic Resources

Historic architectural resources also can be considered community facilities. These resources, which are subject to additional regulatory requirements, are identified in this report, but addressed in detail in separate technical memoranda, the “Phase II Architectural Resources Survey Report” (Mattson, Alexander and Associates, February 2008) and “Addendum” (May 2008). **Figure 11** shows locations of the nineteen known historic architectural resources on or determined eligible for the National Register of Historic Places in the Area of Potential Effect (APE) for the DSAs (Mattson, Alexander and Associates, May 2008).

The potential effects of the proposed project on historic architectural resources were evaluated in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended. According to the criteria for effect and adverse effect developed by the Advisory Council on Historic Preservation (36 CFR 800.9), potential effect is determined based on the following:

- **No Effect:** There would be no effect, neither adverse or beneficial, on potential cultural resources.
- **No Adverse Effect:** There would be an effect, but it is determined that the effect would not compromise those characteristics that qualify the property for listing on the National Register.
- **Adverse Effect:** There would be an effect that would compromise the integrity of the property.

Effects of the DSAs on the nineteen historic properties shown in **Figure 11** were determined by FHWA, NCTA, NCDOT, and the State Historic Preservation Office, in a meeting on April 21, 2008. None of the DSAs would have an Adverse Effect on any of the nineteen historic properties.

2.8.3 Natural Resources

There are numerous natural resources that define the physical and aesthetic character of the area. The following information was obtained from the *Natural Resources Technical Report* (Earth Tech, February 2008) for the Gaston East-West Connector project. Twelve named streams cross the DSAs.

The largest water resource in the study area is the Catawba River/Lake Wylie, which divides Gaston and Mecklenburg Counties. There also are numerous unnamed perennial and intermittent tributaries present within the DSA corridor boundaries and the DCIA. None of the water resources are classified as High Quality Water, Water Supplies (WS-I or WS-II), or Outstanding Resource Waters are located within one mile of the DSAs.

Biotic resources identified within the DSA corridor boundaries include nine terrestrial communities: agricultural, clearcut, hardwood forest, Mesic Mixed Hardwood Forest, mixed pine-hardwood forest, pine forest, pine plantation, successional, and disturbed. These are likely the communities present within the remainder of the DCIA.

Numerous perennial streams, intermittent streams, and ponds present within the DSA corridor boundaries are considered jurisdictional surface waters under Section 404 of the Clean Water Act. There also are numerous jurisdictional wetlands within the DSA corridor boundaries. These types of resources are also present throughout the DCIA.

The *Natural Resources Technical Report* concludes that the project “May Affect/Not Likely Adversely Affect” the Endangered Schweinitz’s sunflower and that no other federally protected species under protection in Gaston and Mecklenburg County will be impacted by this project.

3 ESTIMATED IMPACTS

The discussion of potential project impacts to the social environment is at both a “broad brush” level and at the neighborhood level. The broad brush level discussion considers project effects at the DCIA level or greater. The broad brush impacts generally apply equally to all the DSAs, except where noted. Impacts also are discussed at the DSA and/or neighborhood level, where appropriate, for project impacts that are more local in nature, which is where there is more differentiation between DSAs.

3.1 BROAD BRUSH PROJECT EFFECTS

3.1.1 *Social and Physical*

Visual and Aesthetic. Assessment of visual and aesthetic impacts was limited to addressing publicly accessible views of the landscape, which are confined primarily to roadways and public lands. Viewer groups include those with views from the project and those with views of the project. Visually pleasing aspects of the highway and views from the highway will be further studied and developed in the final design phase.

The STIP Project U-3321 general study area is characterized by gently rolling to steep hills with fairly interstream divides. The land uses surrounding and within the project study area are of mixed use, ranging from agricultural and pasture land to residential, recreational, industrial, and commercial development. Commercial and retail development is limited in the area, primarily located near I-85, US 29-74, and US 321. The study area is experiencing growth, including the development of several new housing developments with much of the area slowly shifting toward a more suburban environment.

All of the DSAs for Project U-3321 have the potential to offer visually pleasing views from the highway, such as views of valleys, hills, wooded areas, streams, and cultural features.

Conversely, the DSAs have the potential to detract from the existing views of rural and other areas. Groups with a view of the road would include users of adjacent property (rural and suburban residents, commercial and industrial workers, etc.), some recreational area users in Crowders Mountain State Park, and boaters along the Catawba River and South Fork Catawba River. A discussion of changes to recreational viewsheds is included in **Section 3.2.1**.

Portions of the STIP Project U-3321 Detailed Study Alternatives are near existing residential developments and could have a range of visual impacts on residents. However, due to the natural change in elevation, the project's extensive cut slopes in areas outside of floodplains, and tall trees in the area, much of the roadway would not be visible from areas other than the immediate vicinity.

Overall, the project would diminish the rural, pastoral environment that is found in most of the project area. This is particularly likely to happen in areas that have not transitioned to more developed, suburban character as a result of residential development, such as the southern portion of the study area in Gaston County south of Forest View High School. Generally, alternatives that would be least noticeable are those that are farther from development, and those most noticeable would be the ones passing through more existing development.

Overall, visual changes would be intermittent, with some residents subjected to a view of the roadway, and other views shielded by the cut/fill areas, forest, and project landscape. Some areas affected by the route are generally not as rural or scenic, so the degree of visual impact would be less. These less rural areas include more urban development that occurs around I-85 near Bessemer City and along the major roads that would be served by interchanges (i.e. US 29-74 and US 321).

As visual impacts can be subjective, a distinction was not made among alternatives with regard to the most or least visually impacting alternative. However, the following conclusions can be made regarding visual/aesthetic changes:

- DSAs that have a higher number of neighborhoods exposed to the roadway (i.e. impact a greater number of neighborhoods with residential relocations) were estimated to have a greater amount of visual impacts. Therefore, DSAs 4 and 5 would have the most visual impacts and DSAs 27 and 81 would have the least.
- Generally, DSAs 58, 64, 68, 76, 77, and 81 would likely result in greater visual impacts to Crowders Mountain State Park since these are the DSAs closest to the park.
- All DSAs would result in visual impacts to riverfront residents (particularly those in proximity to the Catawba River bridge).

3.1.2 Transportation Network

STIP Project U-3321 will enhance the existing transportation network by improving regional connectivity and east-west transportation mobility in the area around the City of Gastonia, between Gastonia and the Charlotte metropolitan area in general. The project is anticipated to influence mobility, accessibility between places of residence and work, and travel time.

Mobility, Accessibility, Travel Time. As documented in the STIP Project U-3321 *ICEA Report*, there was a rapid increase in the percentage of residents that work outside of Gaston County between 1990 and 2000. This trend is anticipated to continue, with Gaston County continuing to export its work force, particularly to Mecklenburg County.

Overall the project will positively affect short- and long-term vehicular access to businesses, public services, and other facilities in southern Gaston County and between Gaston County and west Mecklenburg County.

With regard to travel time savings, the *ICEA Report* includes an analysis of changes in accessibility against a set of assumptions for the older and newer Metrolina Regional Travel Demand Model (MRTDM). It is concluded that the project will result in demonstrable travel time savings, with greatest travel time savings likely to be seen in those geographic areas where the transportation network is least dense. Furthermore, the document concluded that there were not, “any conspicuous differences among the proposed DSAs, although it is reasonable to assume that since DSAs 58, 64, 65, and 68 follow a more southeasterly direction than the other DSAs, that travel time savings would be slightly less than that experienced with the other DSAs”. There was no distinction of effects between the various DSA interchange options.

Transit. As previously discussed, transit service in Gaston County is generally limited to the City of Gastonia and is not presently available within the U-3321 DCIA. The Charlotte Area Transit System (CATS) provides Express Bus Service from Gaston County to Uptown Charlotte (Gastonia Express 85X). This service is a combined effort of the CATS and City of Gastonia. The Gastonia Express provides commuters departure times on weekday mornings and afternoons, making stops at Gastonia Transit Center/Park and Ride and Belmont Abbey Plaza. The route travels along I-85 to Freedom Drive and makes several stops in Uptown Charlotte.

STIP Project U-3321 could have a potentially positive impact to public transportation services by providing more opportunity for regional east-west transit routes. Enhancement of public transportation could be in the form of additional express bus service between Gastonia/Belmont and Uptown Charlotte, as well as opportunities for public transportation enhancements within Gaston County.

3.1.3 Economic

Potential project-induced effects on the local and regional economy were evaluated and documented in the *Indirect and Cumulative Effects Assessment for the Gaston East-West Connector* (Louis Berger Group, 2008). Potential economic impacts were assessed for the indirect and cumulative effect (ICE) study area and apply to a broad level. Potential indirect economic impacts identified in that report are summarized below.

Indirect economic impacts include the economic impacts of potential land use changes, the potential economic gains of various communities, and the economic travel time savings of residential and business users in the study area (as defined for the ICEA).

The proposed project is likely to bring with it more opportunities for economic growth. The Charlotte Region’s freight distribution network links not only to local and regional markets, but also to national and international ones. The region is currently served by three major interstate systems: I-77 north-south, I-85 north-south, and I-40 east-west. Construction of the proposed project could better support the established network links by providing an additional link across the Catawba River. The proposed

project is expected to benefit municipalities such as Bessemer City that are actively seeking to attract commercial and industrial growth.

Business relocations are discussed in detail in **Section 3.2.2** of this report. Business relocations include those that are within the right-of-way limits or are denied access based on the preliminary engineering designs for the DSAs. The DSAs would relocate between 24 and 45 businesses. Most of the business relocations are concentrated around US 321, US 29-74 and I-85. None of the business relocations represent a unique type of business in the area. Accordingly, temporary disruption in their services during relocation is not anticipated to create any severe hardships to patrons in the area or impacts to the local economy.

3.1.4 Community Safety

Emergency Response. The Gaston East-West Connector would have a long-term positive impact on emergency response times in the DCIA. The project is likely to quicken some response times for services by decreasing travel times for public services within as well as outside of the DCIA, and by providing improved east-west connectivity in southern Gaston County. There are not likely to be considerable differences among the DSAs with regard to response times.

Pedestrian and Bicycle. The proposed project does not include pedestrian and bicycle provisions since it is a controlled-access freeway.

As noted in **Section 2.8.1**, one of Gaston County's bicycle routes, Route 1: High Shoals – Crowders Mountain that runs east-west through the area along Linwood Road, and crosses Corridor Segments H1A, H2B, and H3 (all of the DSAs). As such, the project may impede or block pedestrian and bicycle traffic patterns desiring to travel from one side of the highway to the other, since travel over/under the roadway would only be possible at interchanges and grade-separated crossings. For established and planned bicycle routes and existing and funded greenways, the NCTA will work with the entities having jurisdiction over these facilities during final design to provide appropriate and safe crossing of these facilities.

3.1.5 Land Use

Since the DSAs are on new location, direct land use changes from any of the DSAs include converting the land needed for right of way from its existing use to a transportation use. This land includes a wide variety of uses, such as industrial, commercial, residential, recreational, agricultural, and undeveloped.

The *Indirect and Cumulative Effects Assessment for the Gaston East-West Connector* documents indirect and cumulative land use impacts that could be induced by the proposed project DSAs. The study included a spatial grid analysis, which considered the sensitivity of the human and natural environment in the area to change, and the potential for future growth as a result of the proposed project. A complete description of the methodology involved and assumptions can be found in the above referenced report.

The *ICEA* concluded that the project may induce residential, industrial, and commercial growth in the southern and western portions of Gaston County and southwestern portions of Mecklenburg County, particularly at proposed interchange locations.

Even without the construction of the Gaston East-West Connector, the area within the DCIA is generally planned for continued suburban development. Much of the undeveloped land is slated for residential use. It is conceivable that the Gaston East-West Connector could influence a transition to other types/mixes of land uses as well the accelerated timing of potential transitions. For example, the project could encourage more commercial/retail land uses around potential interchange locations within the DCIA as opposed to residential uses.

The project also could change the overall character within the DCIA from rural to suburban, which is consistent with the *Gaston County Comprehensive Plan* (2002). Interchange locations that are now mostly rural in nature could transition from rural to suburban because of the availability of developable land coupled with a change in access. This transition is more likely to occur in areas of the DCIA that are already largely rural in character such as around the interchanges at Bud Wilson Road, Robinson Road, Lewis Road, and Linwood Road in Gaston County.

3.1.6 Farmland

Census Information. A small percentage of Gaston County's employment is agricultural based (approximately 0.1 percent) (NC ESC by Sector, 2nd Quarter 2007). For Mecklenburg County this percentage is slightly higher at 0.2 percent.

According to the 2002 Census of Agriculture (USDA Natural Agricultural Statistics Service), the number of farms between 1997 and 2002 increased from 420 to 450, and the average farm size increased from 88 to 93 acres in Gaston County. For Mecklenburg County, the number of farms between 1997 and 2002 decreased from 377 to 300, while the average farm size decreased by one acre from 86 to 85 acres.

Local Farmland Programs. In July 2004, Gaston County adopted a voluntary agricultural district ordinance with the purpose of, "promoting agricultural values and the general welfare of the County and more specifically, increase identity and pride in the agricultural community and its way of life; encourage the economic and financial health of agriculture; and increase protection from non-farm development and other negative impacts on properly-managed farms."

"Gaston County farmers who enroll their farms in the Gaston County Voluntary Agricultural District program agree to keep their lands in agricultural uses for 10 years. In return for protecting farmlands, they receive recognition with roadside signs and listing on [Gaston County's] GIS website. Farmers will also have the right to public hearings in their communities if there are ever land condemnation proceedings against lands in the districts." (Gaston County GIS Website, www.co.gaston.nc.us).

Parcels participating in the voluntary agricultural district program are generally located in the unincorporated areas both north and south of I-85, including several parcels within the DCIA. These parcels are shown in **Figure 12**. There are 21 parcels currently participating in the Voluntary Agricultural District program that would be impacted by various DSAs. These parcels have a total area of approximately 1,109 acres and are mainly concentrated in the area surrounding the intersection of Union Road and Union New Hope Road. There are additional parcels along Robinson Road near York Road and north of Lewis Road near Camp Rotary Road.

Notwithstanding the presence of these voluntary agricultural district properties, discussion with Gaston County staff and reviews of planning documents conducted during development of the *CCR* and *ICEA* reports indicate that the area surrounding the proposed project is slated for suburban development. The *Gaston County Comprehensive Plan* (2002) includes development scenarios for

various portions of the County, called Small Areas. The development scenario for the Southwest Small Area that includes the intersection of the Gaston East-West Connector and existing US 321 south of Gastonia is described below:

Existing conditions in that area can be described as “a combination of primarily industrial and residential uses, the area is surrounded by agricultural land on roughly three sides. Development potential for this area is suitable for infill development and redevelopment that enhances existing industrial uses...The trendline is conversion of agricultural land into single-family residential subdivisions.

Mecklenburg County does not have a voluntary agricultural district program. The Charlotte-Mecklenburg area has experienced significant growth and development in the last decade, with much of the growth occurring in west Mecklenburg County. Eastern portions of the DCIA consist primarily of rural and suburban development and land uses, many associated with the Charlotte-Douglas International Airport.

Existing Agricultural Land Uses in the Project Detailed Study Alternatives. Currently, most DSAs have approximately 8-11 percent of the land within the DSAs considered to be agricultural uses and pine plantation, with the exception of DSA 68, which has approximately 16 percent of its land within agricultural use and pine plantation (*Gaston East-West Connector Natural Resources Technical Report, February 2008*). These categories are based on existing use, regardless of whether the use is in a voluntary agricultural district.

Farmland Protection Policy Act. In accordance with the Farmland Protection Policy Act (FPPA) of 1981 (7 CFR Part 658) and State Executive Order Number 96, an assessment was conducted for the potential impacts of land acquisition and construction activities in prime, unique, and local or statewide important farmland soils, as defined by the US Natural Resource Conservation Service (NRCS).

The FPPA defines “farmland” as either “prime”, “state and locally important”, or other. All three types of farmland are defined by Section 1540(c)(1) of the Act. These definitions refer to areas where the soils are conducive to agricultural production, not just areas currently or historically used as farmland. According to the Act, prime farmland does not include land already in or committed to urban development or water storage.

The NRCS assigns ratings to potential farmland impacts in order to determine the level of significance of impacts. The ratings are comprised of two parts. The Land Evaluation Criterion Value represents the relative value of the farmland to be converted and is determined by the NRCS on a scale from 0 to 100 points. The Corridor Assessment, which is rated on a scale of 0 to 160 points, evaluates farmland soil based on its use in relation to the other land uses and resources in the immediate area. The two ratings are added together for a possible total rating of 260 points. Sites receiving a total score of 160 points or more are given increasingly higher levels of consideration for protection (7 CFR Section 658.4).

Farmland Impacts. All proposed DSAs would involve the use of prime, statewide, and locally important farmland, lands within voluntary agricultural districts, and other existing agricultural lands.

As shown in **Table 6**, DSAs 64 and 68 would impact the most number of voluntary agricultural district properties, as these DSAs are located in more rural areas of the DCIA. DSAs 4 and 22 would

impact the least number of voluntary agricultural district properties, but a relatively high percentage of total voluntary agricultural district acreage.

Table 6: Voluntary Agricultural District Properties Impacts by DSA

DSA	# of VAD Parcels Impacted	Impacted ROW Acreage	Total VAD Parcel Acreage	Impacted acreage as % of Total VAD Parcel Acreage
4	8	44.7	301.9	15%
5	10	49.2	449.1	11%
9	10	49.2	449.1	11%
22	8	44.7	301.9	15%
23	10	49.2	449.1	11%
27	10	49.2	449.1	11%
58	10	68.8	586.3	12%
64	14	138.4	924.3	15%
68	14	138.4	924.3	15%
76	9	64.0	555.4	12%
77	11	68.5	702.6	10%
81	11	68.5	702.6	10%

Note: VAD = Voluntary Agricultural District

Although all DSAs would impact agricultural lands in Gaston County, these impacts would not exceed the thresholds established in the Farmland Protection Policy Act. The project is consistent with the County’s land use plans, which designate southern Gaston County as an area targeted for more suburban development.

In accordance with the Federal Highway Administration’s *Guidelines for Implementing the Final Rule of the Farmland Protection Policy Act for Highway Projects*, a Farmland Conversion Impact Rating for Corridor Type Projects form was prepared and submitted to the US Department of Agriculture Natural Resources Conservation Service. The relative value of farmland for each DSA per County (Gaston and Mecklenburg) was provided by the NRCS (Part V, Form CPA-106), and is provided in **Appendix F**. In addition, corridor assessment points were calculated (Part VI, Form CPA-106) for each project alternative. **Table 7** includes the total points allocated for each project alternative.

The total point value for each project alternative is less than 160 points, the value at which the United States Department of Agriculture (USDA) recommends that a proposed alternative be considered for farmland protection. Based on these scores, the proposed DSAs for this project require a minimal level of farmland protection, and no mitigation for farmland loss is required for this project.

The *Relocation Reports* for STIP U-3321 noted that two farms would require relocating with most DSAs. These are the Duck Cross Farm (associated with Corridor Segment J1C, DSAs 64 and 68) and the White Rock Horse Farm (associated with Corridor Segment K1A, DSAs 5, 9, 23, 27, 64, 68, 77 and 81).

Table 7: Farmland Impact Rating by DSA

DSA	Farmland Value		Total Points	
	Gaston	Mecklenburg.	Gaston	Mecklenburg
4	62	62	125	122
5	60	56	121	115
9	62	62	124	122
22	61	62	124	122
23	59	56	120	115
27	61	62	123	122
58	63	62	123	120
64	59	56	121	115
68	62	62	122	120
76	62	62	124	122
77	60	56	121	115
81	62	62	124	122

3.1.7 Gaston Together and Gaston 2012 Initiatives

TIP Project U-3321 is anticipated to enhance the ability for Gaston County to provide community services for its residents, particularly health services. One of these service providers is Gaston Together, which is a division of the Gaston Chamber of Commerce. Gaston Together was founded in 1997 to “Bring the people and resources of Gaston County together to address unmet County/community needs achieved through the principles and best practices of collaboration, facilitation, promotion and the anticipation of possibilities” (Gaston Together Website, <http://www.gastontogogether.org/>).

Representatives from health and human service agencies, and volunteers interested in healthcare work make up the Gaston Community Healthcare Commission (GCHC), which works in partnership with Gaston Together. The CGHC mission is to identify healthcare gaps in the community, and to find the people and/or resources to meet those needs.

Representatives of the Gaston Together initiative (Gaston Together/Chamber, July 26, 2007) do not have any project concerns as it relates to consistency with the Gaston Together mission. On the contrary, the organization feels that the project could have a potentially positive impact, as it will enhance access across the County to community resources such as health services (hospital care, health department services for the underserved, and elderly care).

Gaston 2012 also works in partnership with representatives from the Gaston Together initiative. Gaston 2012 is another important effort for Gaston County with the mission to “make a difference in the future growth and development of the (Gaston) County.” This growth will involve not only economic development and education, but also the amenities of everyday life that make a community the most favored place to live in the region. The process provides work teams to local citizens called ‘Action Teams’ to work on specific initiatives. An oversight board, the Gaston 2012 Strategic Council, was established to assist with moving the overall process forward. The Action Teams are 1) Economic Development 2) Education/Work Force Development 3) Entrepreneurial Development 4) Marketing and Communications 5) Quality of Life 6) Transportation/Infrastructure (Gaston 2012 Website, <http://www.gaston2012.org/>).

Representatives of the Gaston Together initiative also noted that the project supports the goals/objectives of Gaston 2012.

3.2 NEIGHBORHOOD AND COMMUNITY LEVEL PROJECT EFFECTS

3.2.1 Community Services and Facilities

Community services and facilities include schools, churches, cemeteries, fire stations, community centers, libraries, hospitals, parks, and recreation areas. There are no hospitals in the DCIA.

Churches and Cemeteries. Table 8 shows the estimated impacts to churches and cemeteries. All of the DSAs, except for DSA 81, would result in an impact to at least one church and/or cemetery. DSAs 4, 5, and 23 would result in the most impacts. DSAs 27, 76, 77 would result in the least impacts to these facilities, after DSA 81.

Small, unmarked family cemeteries may be encountered during intensive surveys of the Preferred Alternative.

Schools. Two schools would have minor impacts from DSAs within the DCIA that include Segments H1A and J5a. DSAs 5, 9, 23, and 27 would not impact either school. The impacts to the two schools are described below.

Sadler Elementary School is located at 3940 West Franklin Boulevard (US 29-74). It is just east of the preliminary engineering design alignment in Corridor Segment H1A (DSAs 58, 64, 68, 76, 77, and 81). A minor encroachment onto school property is anticipated with the improvements to US 29-74 needed around the proposed interchange. The impact would involve approximately 0.36 acres of land along US 29-74 (about 2 percent of the 21.2-acre parcel). However, normal use of the school and its access would not be impacted.

Forest View High School is located at 5545 Union Road. It is near DSA Segment J5a (DSAs 4, 22, 58, and 76). DSAs that use this segment could require land from the southeast corner and the front of the Forest View High School property for the relocation of NC 274 (Union Road). All access points to the school would remain. A maximum of 20 parking spaces in the visitor lot in front of the school and 20 parking spaces in the student lot south of the school could be impacted. Any encroachments onto the site can be minimized during final design, if DSA 4, 22, 58, or 76 is selected as the Preferred Alternative. It appears likely that construction limits and right of way can be minimized during final design to avoid impacting the visitor parking lot. Impacts to the student lot also likely could be reduced substantially (less than 10 impacted parking spaces).

As stated previously, the potential new school site (in K2A or K3A) has not been determined at this time, therefore, impacts cannot be determined. The NCTA will continue to coordinate with the Gaston County School System to share information to aid in planning.

It is anticipated that the project, no matter which DSA is selected as the Preferred Alternative, would temporarily impact school bus routes during construction, as well as result in modifications of existing routes and/or promote new bus routes. Once a Preferred Alternative is identified, the NCTA will coordinate/initiate discussions with Gaston County Schools regarding minimizing impacts to school bus routes.

Table 8. Church and Cemetery Impacts

Church/ Cemetery Name	Address (County)	DSA Segment	Applicable DSAs	Building Taken?	Parcel (s) Acres (% Taken)	Notes
St. Titus AME Zion	437 Shannon Bradley Rd, Gastonia	H2A/H2B H2A/H3	4, 5, 9, 22, 23, 27	No	1.43 (70%)	Construction limits do not take main church building, but due to amount of right of way impacts to the church property it's considered a relocation.
Carolina Conf. Christian Meth. Episcopal Church, Inc.	937 Shannon Bradley Rd, Gastonia	H2A	4, 5, 9, 22, 23, 27	Yes	17.64 (46%)	Medium size building in back of property. Main church building not impacted.
Pisgah Associate Reformed Presbyterian Church & Cemetery	1000 Carson Rd (Gaston)	H2C	22, 23, 27	Yes	72.55 (40%)	Small auxiliary buildings and athletic field. Some impact to church cemetery.
Charity Independent Baptist	2425 Hillmont St, Gastonia	H3	4, 5, 9	Yes	8.88 (60%)	Main church.
True Vine Church of God	5348 Lewis Rd, Gastonia	H1C	58, 64, 68	Yes	11.29 (23%)	Smaller of two main buildings.
Union Presbyterian Church of Gastonia	5615 Union Rd, Gastonia	J5A	4, 22, 58, 76	No	16.45 (11%)	Right of way encroachment in parking lot (~1500 sq. ft.) and wooded area near road
Grace Wesleyan	6014 S New Hope Road, Gastonia	K1C	5, 23, 64, 77	No	21.17 (10%)	Property from front and rear and possibly some parking.
Gaston Christian	5339 New Hope Rd, Gastonia	K2A	4, 22, 58, 76	Yes	4.61 (26%)	Two of three buildings in complex (main church structure not w/in right of way).
Church of Christ	Dixie River Rd, Charlotte	K4A	5, 23, 64, 77	No	0.23 (100%)	Undeveloped property.
Glenn-Ragan Cemetery	Union Rd, Gastonia	J5A	4, 22, 58, 76	n/a	Size unknown	Complete take of cemetery.
Mt. Pleasant Cemetery	Tucker Rd, Gastonia	KX1	4, 22, 58, 76	No	2.05 (60%)	Wooded area on south and east side of property. Area of cemetery with gravestones not impacted.
Ramoth AME Zion Church and Cemetery	6800 Dixie River Rd, Charlotte	K4A	5, 23, 64, 77	Yes	1.45 (100%)	Complete take (including cemetery).

Fire Stations. Fire stations in the DCIA include Crowders Mountain Central VFD (also referred to as Chapel Grove) located on 4416 Linwood Road in Gastonia (Station F1 on **Figure 9a**), Crowders Mountain VFD and Rescue located on 480 Bethany Road in Gastonia (Station F2 on **Figure 9b**), and Crowders Mountain South VFD located on 4802 York Highway (US 321) (Station F3 on **Figure 9b**). Implementation of any of the DSAs would result in short-term impacts during construction. Such impacts could include re-routing of existing service routes. Maintenance of traffic along these routes will be important during construction. The NCTA will coordinate with the fire stations near the Preferred Alternative to ensure continuation of services during construction.

In addition, the preliminary engineering designs in Corridor Segment H1C (DSAs 58, 64, 68) could require a maximum of 0.64 acres of right of way from the front of the Crowders Mountain VFD along Bethany Road. A review of the construction limits show that it is unlikely that any impacts to parking or other uses on the site would occur. Any encroachments onto the site can be minimized during final design, if DSA 58, 64, or 68 is selected as the Preferred Alternative.

Libraries/Community Centers. The existing Union Road Branch Library would not be impacted by any of the DSAs.

As discussed previously, the Dixie Community Center is an important forum that provides for interaction among existing and former Garrison/Dixie River Road residents. The construction of I-485 and expansion of the Charlotte-Douglas International Airport in this area has split and reduced the extent of this neighborhood. The DSAs would further impact this community. As DSA Segment K3C (DSAs 4, 9, 22, 27, 58, 68, 76, and 81) would be located about 150 feet east of the center, it could likely further affect community cohesion and interaction among persons/groups in this area by altering social relationships and patterns for these last remaining residents.

DSA Segment K4A (DSAs 5, 23, 64, and 77) would not result in displacement of the community center, but it also would cumulatively (due to the presence of I-485) contribute to the perceived negative impact on quality of life, affect community cohesion by further isolating Garrison Road residents, and could encourage additional loss of population in this once tight-knit community.

Parks and Recreation Areas. Public and privately-owned facilities/areas are described in **Section 2.8.1**. Impacts to these resources are described below. The publicly-owned facilities described below are Crowders Mountain State Park and Berewick District Park. Future greenways planned for the area likely would be publicly owned. The remaining facilities listed below are privately owned.

Camp Rotary Girl Scout Camp. The project is not expected to negatively affect this camp. Access to this facility would be enhanced with an interchange at Linwood Road under any of the DSAs.

Crowders Mountain State Park. None of the DSAs would directly impact Crowders Mountain State Park, a natural, forested park that offers hiking and other nature-related activities. The nearest corridor is Corridor Segment H1A (DSAs 58, 64, 68, 76, 77, and 81), located roughly one mile from the top of Crowders Mountain. Potential indirect impacts related to visual effects and noise are discussed below.

Visual. As the park's appeal includes views of the surrounding region, there are areas of the park that will experience a change in the existing viewshed.

The northeast overlook, Summit Tower, Rock Top Trail, and Tower Trail all have the potential for intermittent views of the proposed highway at locations along the trails and/or summit where views to

the east are possible. The most visible alternatives would be those nearest the park. However, the existing viewshed in this direction includes a developed suburban and urban landscape. In addition, although viewers would notice an immediate change, it is anticipated that over time the proposed highway would blend with the partly suburban landscape.

Noise. Potential noise impacts to Crowders Mountain State Park are addressed in the *Traffic Noise Technical Memorandum* for the project (PBS&J, June 2008). The park is a Category A land use for noise abatement. Category A lands are “lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.” (23 CFR Part 772). Category A lands have a noise abatement criteria of 57 dBA Leq.

For comparison purposes, the existing noise levels in the park were assumed to be about 39-40 dBA Leq, which are the lowest noise levels measured in the project area. This is representative of rural areas away from major sources of noise.

Based on the projected 2030 traffic noise contours from the proposed project, maximum 2030 project-generated traffic noise levels at the park boundary nearest the DSAs (about 1,500 feet away) would be about 46 dBA Leq, well below the Category A abatement criteria of 57 dBA Leq, and below a substantial increase. At the nearest point of the Tower Trail (2,800 feet), maximum 2030 project-generated traffic noise levels would be about 42 dBA Leq, also well below the impact thresholds. Actual project-generated noise levels likely would be less due to reductions in noise levels from intervening terrain and vegetation that were not taken into account in developing the noise contours. No noise impacts to the park are anticipated.

Berewick District Park. All DSAs would involve a minor encroachment into the undeveloped parcels owned by Mecklenburg County and designated for future park use as Berewick District Park. DSAs that use Corridor Segment K3C (DSAs 4, 9, 22, 27, 58, 68, and 76) would acquire 1.62 acres on the west of and adjacent to I-485. DSAs that use Corridor Segment K4A (DSAs 5, 23, 64, and 77) would acquire approximately 3.3 acres (2.1 acres on the west of and adjacent to I-485, 0.58 acres from the northernmost parcel, and 0.61 acres on the southwest side of the property along Dixie River Road). These minor encroachments on the edges of the parcel are not anticipated to impact access or any future uses.

MCPR stated they believed that all DSAs would provide improved access to the Berewick District Park, which would be a benefit to the park. They did not believe that the proposed right of way needed from the park property under any of the DSAs would detract from the planned function and use of the site as a park. However, they would like to continue coordinating with the NCTA to ensure that, for the Preferred Alternative, right of way and construction limits within the property boundaries are minimized to the extent feasible.

Karyae Park. This YMCA facility would be impacted by DSAs (58, 64, 68, 76, 77, and 81) that include Corridor Segment H1A. Over 12 acres of the facility would be impacted, including impacts to the building complex, parking, ball field, and other uses. The uses and functions of this facility would be adversely impacted by DSAs 58, 64, 68, 76, 77 and 81.

Linwood Springs Golf Course. None of the DSAs would directly encroach on this golf course. Access to the golf course entrance would change slightly with the construction of an interchange at Linwood Road, but would remain off of Linwood Road.

Carolina Speedway. Approximately 7.7 acres of the speedway property would be impacted by DSAs that include Corridor Segment J1f (DSAs 5, 9, 23, 27, 64, 68, 77 and 81). Although no structures would be acquired, it appears there would be probable impacts to the parking area.

Daniel Stowe Botanical Gardens. None of the DSAs are anticipated to negatively impact the Daniel Stowe Botanical Gardens (DSBG). All the DSAs pass to the north of DSBG. The nearest DSAs are those that use Corridor Segment K1C (DSAs 5, 23, 64, and 77). The mainline of these DSAs passes approximately ¼ mile north of the northern boundary of DSBG, and each include an interchange with NC 279 (South New Hope Road). The nearest interchange ramps are approximately 630 feet north of the northern boundary of DSBG.

Construction of the NC 279 (South New Hope Road) interchange in Corridor Segment K1C (DSAs 5, 23, 65, and 77) would require widening and realigning NC 279 (South New Hope Road). Near the DSBG, these improvements would occur to the east, away from the DSBG property. However, there would be a minor right-of-way encroachment required at the northeastern end of the DSBG property. The total right-of-way area needed from the DSBG property would be approximately 0.55 acres. The new right of way would encroach a maximum distance of approximately 45 feet into the DSBG property. Within the new right of way, the construction footprint would have an area of approximately 0.28 acres. It is likely that these encroachments could be minimized during final design, if DSA 5, 23, 64, or 77 is identified as the Preferred Alternative.

These minor encroachments would not impact the use and function of the DSBG property. Access to the truck entrance at the northern end of the property would be maintained.

In a letter dated May 19, 2003, the Daniel Stowe Botanical Garden stated they believe the project, in concept, would improve access to their facility, and they state their support for the project:

DSBG is firmly behind the completion of the project...the project will afford easy access of a half million potential (annual) visitors in central and south Mecklenburg County (DSBG Executive Director).

Allen Fishing Access Area. DSAs that include Corridor Segments K4A (DSAs 5, 23, 64, and 77) could indirectly impact the fishing area owned by Duke Energy. Impacts could include visual changes due to the bridge crossing over the Catawba River and possible short-term fishing disturbances during construction activities.

Duke Energy Recreational Fields. DSAs that include Corridor Segment K3B (DSAs 4, 9, 22, 27, 58, 68, 76, 81) would impact the recreational ball fields owned by Duke Energy. The recreational fields are about 4.5 acres total area. The preliminary engineering designs for Corridor Segment K3B would impact the edge of the baseball field's outfield and the north corner of the general recreational field. The current right of way limits require approximately 0.3 acres, while the construction limits take about 0.1 acres. It may be possible to redesign the cut slope in this area to avoid impacting the recreational fields. This should be investigated during final design if DSA 4, 9, 22, 27, 58, 76, or 81 is selected as the Preferred Alternative. Types of measures that might be employed include steepening the cut slope (geotechnical information would be needed to determine feasibility of this measure) or constructing retaining walls.

Planned Greenways. As seen in **Figure 10a-b**, both private groups (Carolina Thread Trail lead by the Catawba Lands Conservancy) and public entities (GUAMPO) are planning a system of greenway

trails in the area and/or region. Although both greenway plans are conceptual at this time, there is the potential for several crossings throughout the DSAs, particularly west of US 321.

Table 9 shows the estimated impacts to parks and recreation facilities in the DCIA. All of the DSAs would result in an impact to one or more of these facilities. DSAs 5, 9, 64, 68, 77, and 81 would directly impact the most facilities (four each), while DSA 22 would impact the least (two). Note: impacts to the Dixie Community Center are discussed in the neighborhood section (**Section 3.2.3**) due to its importance in the Garrison Road/Dixie Community.

Table 9. Recreational Facilities Impacts

Recreational Facility Name (Ownership)	Address (County)	DSA Segment	Applicable DSA	Building Taken?	Total Parcel(s) Acres (% Taken)	Notes
Karyae Park-YMCA (Private)	4227 South Linwood Road (Gaston)	H1A	58, 64, 68, 76, 77, 81	Yes	46.51 (27%)	Entrance, half of building complex, parking, ball field, alpine tower, and most of courtyard.
Linwood Springs Golf Course (Private)	2900 Linwood Road (Gaston)	H3	4, 5, 9	No	144.39 (0.0%)	Access change
Carolina Speedway (Private)	6335 Union Road (Gaston)	J1F	5, 9, 23, 27, 64, 68, 77, 81	No	28.78 (27%)	Probable impacts to parking area.
Daniel Stowe Botanical Gardens (Private)	6500 South New Hope Road (Belmont)	K1C	5, 23, 64, 77	No	450 (0.12%)	Minor right of way encroachment at northeast corner. Likely can be minimized during final design.
Duke Energy Recreational Fields (Private)	Boat Club Road (Gaston)	K3B	4, 9, 22, 27, 58, 68, 76, 81	No	4.88 (9%)	One of two ball fields. Likely can be minimized during final design.
Berewick District Park (Public)	Dixie River Road (Mecklenburg)	K3C	4, 9, 22, 27, 58, 68, 76, 81	N/A	199.4 (1.6%)	Undeveloped property. Impact on edges of property.
		K4A	5, 23, 64, 77	N/A	199.4 (.81%)	Undeveloped property. Impact on edges of property.

3.2.2 Relocation and Displacements (by alternative)

Potential residential and business relocation impacts within each of the Detailed Study Alternatives are presented in **Table 10**. The detailed *Relocation Reports for the Gaston East-West Connector* (referred to in this section as *Relocation Reports*) (Carolina Land Acquisition, 2008) are included in **Appendix G**.

Residential Relocations. As shown in **Table 10**, the total number of residential relocations estimated for each DSA ranges from 326 residences (DSA 68) to 384 residences (DSA 76). Eight of the DSAs would include farm relocations. The highest percentages of tenants would be relocated by DSAs 5 and 9, which would each relocate approximately 30 percent of tenants, followed by DSA 4 with approximately 27 percent tenant relocations.

Table 10. Estimate of Business and Residential Relocations by DSA

DSA	Business Relocations	Residential Relocations				Farms	Non-Profit*
		Total Residential	Owners	Tenants	Minorities		
4	38	377	277	100	97	0	4
5	33	358	252	106	94	1	4
9	37	348	245	103	97	1	3
22	40	373	309	64	76	0	2
23	35	354	284	70	73	1	2
27	39	344	277	67	76	1	1
58	30	359	299	60	39	0	3
64	26	336	261	75	28	2	3
68	30	326	254	72	31	2	2
76	29	384	323	61	34	0	1
77	24	365	298	67	31	1	1
81	28	355	291	64	34	1	0

Source: *Relocation Reports for the Gaston East-West Connector*, Carolina Land Acquisition, April 2008

* Non-profit – for this project, the relocated non-profits are churches.

Table 11 shows the income levels of households to be relocated in each DSA. None of the DSAs are estimated to relocate more than one household with an annual income less than \$15,000. DSAs 4, 5 and 9 would relocate the highest numbers of households with annual incomes between \$15,000 and \$25,000 (82-87 households, which equates to 22-25 percent). DSAs 58 and 64 would relocate the lowest numbers of household with annual incomes in this range (about 2 percent each).

The values of homes to be relocated in each DSA are shown in **Table 12**. The majority of homes in each DSA are valued at over \$100,000, while very few homes were valued at under \$20,000. DSAs 4, 9, and 22 have the highest numbers of dwellings valued under \$100,000.

Table 11. Income Levels of Relocated Households by DSA

DSA	Income Level				
	\$0- \$15,000	\$15,000- \$25,000	\$25,000- \$35,000	\$35,000- \$50,000	\$50,000+
4	1	82	94	69	131
5	1	82	66	74	135
9	1	87	98	63	99
22	1	31	90	57	194
23	1	31	62	62	198
27	1	36	94	51	162
58	1	7	72	98	181
64	0	6	45	96	189
68	0	11	77	85	153
76	1	34	63	100	186
77	1	34	35	105	190
81	1	39	67	94	154

Source: *Relocation Reports*, Carolina Land Acquisition, April 2008

Table 12. Values of Relocated Homes by DSA

DSA	Value of Dwelling (Owners)				
	\$0- \$20,000	\$20,000- \$40,000	\$40,000- \$70,000	\$70,000- \$100,000	\$100,000+
4	1	22	37	90	127
5	1	20	29	66	136
9	1	23	39	75	107
22	1	8	36	77	190
23	1	6	28	53	199
27	1	9	38	62	170
58	1	3	33	76	186
64	0	19	26	41	201
68	0	22	36	50	172
76	3	12	31	67	213
77	3	10	23	43	222
81	3	10	17	32	146

Source: *Relocation Reports*, Carolina Land Acquisition, April 2008

The monthly rents paid by tenants to be relocated in each DSA are shown in **Table 13**. The majority of tenants pay between \$250 and \$400 per month for rent.

Table 13. Monthly Rents of Relocated Tenants by DSA

DSA	Monthly Rent (Tenants)				
	\$0-\$150	\$150-\$250	\$250-\$400	\$400-\$600	\$600+
4	0	0	78	20	2
5	0	11	60	23	12
9	0	0	80	23	0
22	0	0	42	20	2
23	0	11	24	23	12
27	0	0	44	23	0
58	0	0	32	23	5
64	0	20	13	27	15
68	0	9	33	27	3
76	0	0	52	4	5
77	0	11	34	7	15
81	0	0	34	2	3

Source: *Relocation Reports*, Carolina Land Acquisition, April 2008

Business Relocations. The *Relocation Reports* provides an estimate of business relocations including those that are within the right-of-way limits or are assumed to be denied access based on the preliminary engineering designs for the DSAs. The DSAs would relocate between 24 and 40 businesses. It should be noted that the reports include churches as a “non-profit” business. Impacts to churches were discussed previously in **Section 3.2.1**.

The highest number of business relocations would occur with DSA 22, which would relocate 40 businesses, and 2 non-profits/churches. These businesses employ a total of 327 employees. The lowest number of business relocations would occur with DSA 77, which would relocate 24 businesses, one non-profit and one farm. These businesses employ a total of 119 employees. Most of the business relocations are concentrated around US 321, US 29-74 and I-85.

Segment H2A alone includes 14 business relocations and one non-profit/church relocation, which would impact a total of 198 employees. Five of the businesses to be relocated in this segment employ 20 or more people. This segment includes the area around I-85 and south along Shannon Bradley Road and makes up a portion of six of the twelve DSAs (DSAs 4, 5, 9, 22, 23, and 27).

Segment H1A makes up a portion of the other six DSAs (DSAs 58, 64, 68, 76, 77, and 81) and includes areas around I-85, US 29-74, and Linwood Road just to the east of Crowders Mountain State Park. This segment would relocate 15 businesses with 64 employees, including the Karyae Park YMCA Family Center, American Veteran’s Post 920, and Carolina Specialty Transport, which provides handicapped and other special transport.

The *Relocation Reports* included in **Appendix G** list the businesses anticipated to be displaced under each build alternative. A review of the reports suggests that none represent a unique type of business in the area. Accordingly, temporary disruption in their services during relocation is not anticipated to create any severe hardships to patrons in the area, as the reports note that business services would

remain available. However, particular consideration should be given to the relocation of Carolina Specialty Transport (4217 South Linwood Road in Gastonia) so that disruptions of service to special needs groups are minimized.

Relocation Assistance. According to the *Relocation Reports*, there is comparable replacement housing within the study area for displaced homeowners and tenants (See *Relocation Reports* in **Appendix G**).

The NCTA follows the relocation policies of NCDOT. It is their policy to ensure that comparable replacement housing is available for relocatees prior to construction of state and/or federally assisted projects. Furthermore, the NCTA/NCDOT has three programs to minimize the inconvenience of relocation: relocation assistance, relocation moving payments, and relocation replacement housing payments or rent supplements.

With the Relocation Assistance Program, experienced NCTA/NCDOT staff will be available to assist displacees with information such as; availability and prices of homes, apartments, or businesses for sale or rent, and financing or other housing programs. The Relocation Moving Payment Program, in general, provides for payment of actual moving expenses encountered in relocation. Where displacement will force an owner or tenant to purchase or rent property at higher cost or to lose a favorable financing arrangement (in case of ownership), the Relocation Replacement Housing Payments or Rent Supplement Program will compensate up to \$22,500 to owners who are eligible and qualify, and up to \$5,250 to tenants who are eligible and qualify.

The relocation program for the proposed action will be conducted in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646) and the North Carolina Relocation Assistance Act (GS-133-5 through 133-18). This program is designed to provide assistance to displaced persons in relocation to a replacement site in which to live or do business. At least one relocation officer is assigned to each highway project for this purpose.

The relocation officer will determine the needs of displaced families, individuals, businesses, non-profit organizations, and farm operations without regard to race, color, religion, sex, or national origin. The NCTA/NCDOT will schedule its work to allow ample time, prior to displacement, for negotiation and possession of replacement housing that meets decent, safe, and sanitary standards. The relocatees are given a 90-day written notice after NCTA/NCDOT purchases the property. Relocation of displaced persons will be offered in areas not generally less desirable in regard to public utilities and commercial facilities. Rent and sale prices of replacement housing will be within the financial budget of the families and individuals displaced and will be reasonably accessible to their places of employment. The relocation officer also will assist owners of displaced businesses, non-profit organizations, and farm operations in searching for and moving to replacement property.

All tenant and owner residential occupants who may be displaced will receive an explanation regarding all available options, such as: 1) purchases of replacement housing; 2) rental of replacement housing, either private or public; and 3) moving existing owner-occupied housing to another site (if practicable). The relocation officer also will supply information concerning other state or federal programs offering assistance to displaced persons and will provide other advisory services as needed in order to minimize hardships to displaced persons in adjusting to a new location.

Last Resort Housing is a program used when comparable replacement housing is not available, or is unavailable within the displacee's financial means, and the replacement payment exceeds the federal and state legal limitation. The purpose of the program is to allow broad latitudes in methods of

implementation by the state so that decent, safe, and sanitary replacement housing can be provided. As stated in the *Relocation Reports*, Last Resort Housing Program should be a consideration and where warranted, applied in accordance with the Uniform Relocation Act.

3.2.3 Neighborhood Impacts

The environmental planning process has given high priority to the avoidance and minimization of neighborhood disruption during the definition, evaluation, and selection of the DSAs and preliminary engineering designs within these DSA corridors. The initial land suitability mapping process identified residential areas and natural and historic resources in the study area. Alternatives were developed to achieve a balance between impacts to residential developments and sensitive, regulated natural and cultural features such as wetlands, floodplains, schools, and historic resources.

Substantial impacts to neighborhoods could not be avoided by the Detailed Study Alternatives because of the timing and density of development in proximity to sensitive natural and historic resources in key geographic areas.

Due to the large project size and number of neighborhoods affected by potential alternatives, a matrix was developed in order to better organize and describe impacts to neighborhoods. Impacts in the matrix are divided into where (if any) relocations would occur and whether access would be modified. For example, when comparing impact categories 'C1' and 'C2' the "C" indicates the location of impacted homes in a neighborhood, and the number (1 or 2) following "C" denotes if there is/is not an access change associated with a particular Corridor Segment/DSA.

Named Neighborhoods. Impacts to named neighborhoods associated with each DSA are listed in **Table 14** (see the legend at the end of table for impacts definition). Impacts are based on the January 2008 preliminary engineering designs. The locations of these neighborhoods are shown in **Figure 8a-b**. The number of neighborhoods impacted by the DSAs range from fourteen for DSA 81 to twenty-three for DSA 5. The type of effect ranges from a minor right-of-way encroachment with no relocations/access changes (listed as Category 'B1' in **Table 14**) to total displacement of a neighborhood (listed as Category 'E' in **Table 14**).

The most impacts to neighborhoods would be in the area between I-85 and US 321. This area is relatively heavily developed and there are numerous other constraints such as Crowders Creek and its floodplain and Crowders Mountain State Park, and designing an alternative that would not impact existing development was not possible.

Planned future subdivisions with site plans recently approved by local jurisdictions also would be impacted by the DSAs. The preliminary engineering designs for DSAs using Corridor Segment J5a (DSAs 4, 22, 58, and 76) pass through the center of the planned Presley development, with the eastern half of the NC 274 (Union Road) interchange within the planned site, as well as the mainline. The Presley development also is partially within Corridor Segments J1e and J1f. The preliminary engineering designs within these corridors (DSAs 5, 9, 23, 27, 64, 68, 77, and 81) may have minor encroachments on the areas of the site plan labeled future commercial village.

DSAs 5, 23, 64, and 77 would pass through the southern end of The Peninsula at Bayshore, adversely impacting several lots.

Table 14. Impacts to Named Neighborhoods

Segment	Affected Neighborhood	Type of Effect	Detailed Study Alternative												
			4	5	9	22	23	27	58	64	68	76	77	81	
Section 1 – Named Neighborhoods West of US 321															
H1A	Brentwood MHP	C2								•	•	•	•	•	•
	Edgewood Acres	C1								•	•	•	•	•	•
	Erskine Woods	A								•	•	•	•	•	•
	ED's #1 MHP	E								•	•	•	•	•	•
	ED's #2 MHP	B1								•	•	•	•	•	•
	Silverstone	D2								•	•	•	•	•	•
H2A	Brookhaven	B2	•	•	•	•	•	•							
	Edgewood Acres	A	•	•	•	•	•	•							
	Erskine Woods	A	•	•	•	•	•	•							
	Matthews Acres)	C2	•	•	•	•	•	•							
	Spring Valley	C2	•	•	•	•	•	•							
	Myrtle Mill	A	•	•	•	•	•	•							
H2B	Crowders Woods	B2				•	•	•							
	Crowders View (platted)	C1				•	•	•							
	Laurel Woods	B2				•	•	•							
H1C	Berkley Oaks MHP	A								•	•	•			
	Ferguson Acres	A								•	•	•			
	Hannaford Place	D1								•	•	•			
	Jack A. Shell MHP	C1								•	•	•			
	Oakley Park	B1								•	•	•			
	Sparrow MHP	A								•	•	•			
	Stoney Oaks	C1								•	•	•			
	West Palm Acres	B1								•	•	•			
H2C	Fallscrest	A				•	•	•							
	Ferguson/Forest Estates	C1				•	•	•							
	Suburban Heights	C2				•	•	•							
	Mt. Brooke	C1				•	•	•							
H3	Lakewood Forest	C2	•	•	•										
	Stablegate Farms	C2	•	•	•										
HX2	Fallscrest	D2										•	•	•	
	Fallsdale	C2										•	•	•	
	Ferguson/Forest Estates	D1										•	•	•	
	Old Providence	A										•	•	•	
J4a	Fall Estates	D1	•	•	•										

Table 14. Impacts to Named Neighborhoods

Segment	Affected Neighborhood	Type of Effect	Detailed Study Alternative											
			4	5	9	22	23	27	58	64	68	76	77	81
	Levi's MHP	E	•	•	•									
	Orion Oaks MHP #1	D2	•	•	•									
	Orion Oaks MHP #2	D2	•	•	•									
	Orion Oaks MHP #3	D2	•	•	•									
	Orion Oaks MHP #4	D2	•	•	•									
Section 2 – Named Neighborhoods from US 321 to NC 279														
J1d	Bridgestone Estates	A									•	•		
	White Oak	B1									•	•		
J2C	Brittany Woods	C1	•	•	•	•	•	•				•	•	•
	Forbes Cove	B1	•	•	•	•	•	•				•	•	•
	Saddlewood	B2	•	•	•	•	•	•				•	•	•
	Wesley Acres	C1	•	•	•	•	•	•				•	•	•
J1C	Cedar Grove	C1									•	•		
	Popular Downs MHP	C1									•	•		
	Saddlewood	A									•	•		
K2a	Cameron Pointe	C2	•			•				•			•	
	Farmwood	A	•			•				•			•	
JX1	Brittany Woods	D1								•				
J1B	Brittany Woods	A									•	•		
J3	Charleston	A				•	•	•						
J2b	Charleston	A		•	•							•	•	•
J4b	Charleston	A	•											
J1E	Forest Pointe	A		•	•		•	•			•	•		•
J5a	Keltic Meadows	C1	•			•				•			•	
	White Oak	B1	•			•				•			•	
J2d	Saddlewood	B2	•	•	•	•	•	•	•			•	•	•
Section 3 – Named Neighborhoods from NC 279 to I-485														
KX1	Belle Meade	A	•			•				•			•	
	Brook Forest/South Forest	C1	•			•				•			•	
K3A	Brook Forest/South Forest	C1			•			•			•			•
K4A	Ellington MHP	D1		•			•				•			•
	Forest Bay	D1		•			•				•			•

Table 14. Impacts to Named Neighborhoods

Segment	Affected Neighborhood	Type of Effect	Detailed Study Alternative											
			4	5	9	22	23	27	58	64	68	76	77	81
	River Lakes	D1		•			•			•			•	
	Misty Waters	C1		•			•			•			•	
	Southpoint Landing	C2		•			•			•			•	
	Wilson Estates MHP	B2		•			•			•			•	
K3B	Joye MHP	D2	•		•	•		•	•		•	•		•
K1C	Minnie Queen Estates	E		•				•		•			•	
	Woodland Bay	B1		•				•		•			•	
Total Number of Category B Impacts			5	6	4	7	8	6	5	6	4	5	6	4
Total Number of Category C Impacts			9	8	7	11	10	9	7	8	7	8	7	6
Total Number of Category D Impacts			6	8	6	1	3	1	4	5	3	4	6	4
Total Number of Category E Impacts			1	2	1	0	1	0	1	2	1	1	2	1
Total Number of Neighborhood Impacts			21	24	18	19	22	16	17	21	15	18	21	15

EFFECT: A – No impact.

B1 – No relocations, but right of way encroachment and existing access maintained.

B2 – No relocations, but change in access (could include right of way encroachment).

C1 – Relocation of homes on end of road or at edge of neighborhood.

C2 – Relocation of homes on end of road or at edge of neighborhood and change in access.

D1 – Relocation of homes in midst of neighborhood.

D2 – Relocation of homes in midst of neighborhood and change in access.

E – Total displacement of a neighborhood.

Notes: MHP = mobile home park; Letter denotes type of direct impact; number denotes access change; Based on January 2008 preliminary engineering designs in the DSAs.

DSAs 5, 23, 64, and 77 also would pass through the southern end of the Bowman development, adversely impacting several lots.

Rural Communities. As discussed in **Section 2.5.2**, there are areas with housing clusters within the DCIA that are not identified/named through available GIS layers. However, because these could represent rural communities in which there may be social interconnections, they are shown in **Figure 8a-b** and listed in **Table 15** and were evaluated for potential impacts (see the legend at the end of table for impacts definition). Similar to named neighborhoods listed in **Table 14**, the type of effect ranges from a minor right-of-way encroachment with no relocations/access changes (listed as Category ‘B1’ in **Table 15**) to total displacement of a neighborhood (listed as Category ‘E’ in **Table 15**). The number of rural communities impacted by the DSAs range from five for DSA 27 to nine for DSAs 58 and 64.

Dixie Community and Center. As discussed in **Section 2.5.2**, the Dixie Community Center is an important forum that provides for interaction among existing and former Garrison/Dixie River Road residents. The construction of I-485 and expansion of the Charlotte-Douglas International Airport in this area has split and reduced the extent of this neighborhood. The proposed project would further impact this community. Corridor Segment K3C (DSAs 4, 9, 22, 27, 58, 68, 76, and 81) would result in the acquisition of several homes along Garrison Road and would be located about 150 feet east of the community center. It could likely further affect community cohesion and interaction among

persons/groups in this area by altering social relationships and patterns for these last remaining residents.

Corridor Segment K4A (DSAs 5, 23, 64, and 77) would not result in displacement of the community center, but an interchange at Dixie River Road would require the acquisition of several homes along Dixie River Road. This would cumulatively (due to the presence of I-485) contribute to the perceived negative impact on quality of life, affect community cohesion by further isolating Garrison Road residents, and could encourage additional loss of population in this once tight-knit community.

In addition, Corridor Segment K4A (DSAs 5, 23, 64, and 77) would result in the acquisition of the Ramoth AME Zion Church located on 6800 Dixie River Road. As this church plays an important part in the community, this could also impact community cohesion of the Dixie (Garrison Road) Community.

Table 15. Impacts to Rural Communities (Unnamed Neighborhoods*)

Segment	Affected Area	Type of Effect	Detailed Study Alternative												
			4	5	9	22	23	27	58	64	68	76	77	81	
Section 1 – Unnamed Neighborhoods West of US 321															
H1A	N1 located on SR 1122 northeast of Linwood Rd	D2								•	•	•	•	•	•
H1B	N4 located east of Camp Rotary Rd south of Linwood Rd	D1								•	•	•			
H1C	N5 located on Old Church Rd Northeast of SR 1106	D2								•	•	•			
	N6 located off Grissom Rd southeast of Crowders Creek Road	E								•	•	•			
H3	N2 located west of Stage Coach Rd south of Linwood Rd	C1	•	•	•										
	N3 located west of Stage Coach Rd south of Linwood Rd	C1	•	•	•										
Section 2 – Unnamed Neighborhoods from US 321 to NC 279															
J1C	N17 located west of Bud Wilson Rd	C2									•	•			
K2a	N8 located off Union New Hope Rd and west of NC 279	C2	•			•				•			•		
	N9 located off Union New Hope Rd and west of NC 279	B1	•			•				•			•		

Table 15. Impacts to Rural Communities (Unnamed Neighborhoods*)

Segment	Affected Area	Type of Effect	Detailed Study Alternative											
			4	5	9	22	23	27	58	64	68	76	77	81
	N10 Located along South Fork Catawba River east of NC 279	D2	•			•				•			•	
J1F	N7 located on Union Rd south of Union New Hope Rd	C2		•	•		•	•		•	•		•	•
J2d	N17 located west of Bud Wilson Rd	C2	•	•	•	•	•	•	•			•	•	•
Section 3 – Unnamed Neighborhoods from NC 279 to I-485														
K3A	N11 located on Dixon Rd east of NC 279	B2			•			•			•			•
K4A	N13 located east of South Point Rd west of Catawba River	C2		•			•			•			•	
	N14 located southwest of Dixie River Rd east of Catawba River	B2		•			•			•			•	
	N15 located along Dixie River Road	E		•			•			•			•	
	N16 located along Garrison Rd east of Dixie River Rd	D2		•			•			•			•	
K3B	N12 located off of South Point Rd.	D2	•		•	•		•	•		•	•		•
K3C	N16 located along Garrison Rd east of Dixie River Rd	D2	•		•	•		•	•		•	•		•
Total Number of Category B Impacts			1	1	1	1	1	1	1	1	1	1	1	1
Total Number of Category C Impacts			4	5	4	2	3	2	2	3	2	2	3	2
Total Number of Category D Impacts			3	1	2	3	1	2	6	4	5	4	2	3
Total Number of Category E Impacts			0	1	0	0	1	0	1	2	1	0	1	0
Total Number of Neighborhood Impacts			8	8	7	6	6	5	10	10	9	7	7	6

EFFECT:

- A – No impact.
- B1 – No relocations, but right of way encroachment and existing access maintained.
- B2 – No relocations, but change in access (could include right of way encroachment).
- C1 – Relocation of homes on end of road or at edge of neighborhood.
- C2 – Relocation of homes on end of road or at edge of neighborhood and change in access.
- D1 – Relocation of homes in midst of neighborhood.
- D2 – Relocation of homes in midst of neighborhood and change in access.
- E – Total displacement of a neighborhood.

Notes: *Neighborhoods not named/identified in available GIS mapping, but areas containing “clusters” of homes and considered rural community. Letter denotes type of direct impact and number denotes access change. Based on 01/2008 preliminary designs.

Social and Physical Environment. The project would result in population changes in neighborhoods due to displacements/relocations. Redistribution of population is most likely to occur with DSAs that displace a greater number of residents in a neighborhood as well as DSAs that displace residents in the midst of the neighborhood as opposed to the edge.

Community/Neighborhood Stability and/or Cohesion. DSAs that result in relocations at the edge of neighborhoods are less likely to have substantial negative impacts on community cohesion, social interaction, and/or change in neighborhood social patterns. Neighborhoods with displacement impacts in the midst are more likely to feel isolated and perceive that their quality of life is negatively impacted by the project. Based on **Table 14**, DSAs 4, 5, and 58 would potentially result in the most community cohesion issues, and DSAs 22, 23, and 27 would be less likely to impact community cohesion.

Social interconnectivity among rural communities also could be potentially be impacted by project alternatives. An example would be Rural Community “N1”, which is located on Archie Whitesides Road (SR 1122) northeast of Linwood Road. The existing road (Archie Whitesides Road) would be intersected by DSA Segment H1A (DSAs 58, 64, 68, 76, 77, and 81) with a cul-de-sac provision on each side, separating homes on the west and east side of the proposed project.

Accessibility/Access. The project would increase overall east-west accessibility within and outside of the DCIA.

All of the DSAs would result in access changes to existing neighborhoods, with some resulting in notable changes in travel patterns to and from neighborhoods. The degree of impact varies from minor to major access modifications. The number of neighborhoods that would be subject to access changes (minor or major) range from ten for DSA 68 to nineteen for DSA 5. DSAs 4, 5, and 9 would result in the most impacts to neighborhood access, while DSAs 58, 64, 68, and 81 would have less neighborhood access impacts.

Modifications range from closing off existing access and creating new access/service roads (i.e. corridor segment “H3” at Lakewood Forest neighborhood) to more severe impacts such as where no grade separation and access across the Gaston East-West connector would be available (i.e. corridor segment “H1A” at Rural Community “N1”). In such instances, the existing roadway would dead end into a cul-de-sac on both sides of the project.

Noise. Most of the project study area is rural or suburban in nature, with relatively low existing noise levels since there are few major noise sources in areas such as these. Communities located adjacent to the proposed project in rural and suburban areas would experience a general increase in noise levels.

Significant noise increases (as defined in 23 CFR Part 772) are most likely to occur within 190-380 feet of the nearest travel lanes based on 2030 project-generated traffic (*Traffic Noise Technical Memorandum, PBS&J, April 2008*). However, it should be noted that traffic noise from the project would be audible farther than 380 feet away from the road.

In areas where significant noise impacts were predicted to occur, reasonable and feasible noise mitigation measures were developed for the project in accordance with FHWA and NCDOT noise abatement criteria. Several locations along the DSAs were recommended to have noise barriers to reduce noise levels. These barriers would be incorporated into the ultimate design for the project.

3.3 ENVIRONMENTAL JUSTICE

The consideration of environmental justice (EJ/Title VI) impacts in the development of toll projects is a relatively new realm. cursory research revealed that Texas is the only state that has guidance to assist in assessing such effects for toll projects (*Guidance on Environmental Justice for Toll Roads*, TxDOT, March 2005) [referred to as the *Guidance*]. However, the need to identify and address the effects of tolling on environmental justice populations is gaining attention at both the transportation system level and project level.

There are currently no plans for an inter-connected system of toll roads in the region or state. The *Guidance* noted above lists potential issues that could apply to all toll road scenarios, including a toll road on new location. These potential issues as they relate to the proposed Gaston East-West Connector DSAs are listed and evaluated in **Table 16**.

Table 16. General Environmental Justice Evaluation for Toll Facility

Potential Issue	Comment
Availability of non-toll facilities	No potential for disproportionately high and adverse impact. Non-toll facilities remain available as alternate routes, including existing I-85.
Adequate N/S and E/W corridors to serve as alternate routes	No potential for disproportionately high and adverse impact. Non-toll corridors are available to continue to serve as alternate routes.
Non-toll alternative equitable in terms of travel time or distance	No potential for disproportionately high and adverse impact. The non-toll alternative would include existing roadways. Major existing roadways include I-85, US 29-74 and US 321. All travelers would still have access to these existing routes, as they do today. If travelers choose to use existing routes, their travel distance would remain the same as it is today. Travel time may be slightly better on the existing roadways with any of the DSAs in place since the DSAs would be diverting traffic from the existing routes.
Tolling affect on transit	Not known. The transit system in Gaston County is limited to Gastonia. The project could provide opportunities for transit service enhancement by providing a potential new route.
Cost of toll	Although the <i>Preliminary Traffic and Revenue Study</i> (October 12, 2006) estimates a passenger car cash rate of \$2.50 (\$0.1121 per mile for a full-length trip on the facility at a length of 22.3 miles), this estimate is preliminary and subject to change.
100% Electronic Tolling	Specific payment options have not yet been determined. In addition to paying tolls, electronic toll collection may involve establishing an account. Some low-income users may not be willing or able to establish an account. Electronic tolling options that do not require an account will be available. Non-toll facilities also are available as alternate routes, including existing I-85.
Diversion of traffic through neighborhoods	No potential for disproportionate impact. Very limited potential for diverted traffic through neighborhoods containing special populations.
Increased air quality noise/issues in neighborhoods	Although some neighborhoods with special populations would experience noise level increases, there are no disproportionate impacts.
Access to businesses	No potential for disproportionate impacts.
Impact to businesses	No potential for disproportionate impacts.
Denial of benefits or disproportionate impacts to low-income drivers	No potential for disproportionate impacts.

The *Guidance* noted above lists potential issues that could apply to toll road scenarios, including a toll road on new location and suggests that:

When a single toll facility or a system of toll roads are placed within a mature local transportation network, the potential for disproportionate user impacts appear to be less than those for a less developed transportation network. This is because non-toll alternatives available for those who are unable to pay are limited. The users who are able to pay will not bear as much of the toll burden as the low-income population.

In addition, the *Guidance* also suggests that:

Using tolling as a funding source to provide accelerated project delivery may provide benefits such as congestion relief on non-toll facilities in adjacent EJ communities and on local arterials sooner than through traditional funding methods.

Any of the Gaston East-West Connector DSAs would provide an alternate route in the region. A result of the project would be reduced traffic and congestion on existing alternate non-toll routes, including I-85. Completing the project would benefit all motorists, including low-income motorists who may choose not to use the toll facility or may tend to use it less frequently.

The project as a non-toll project is not funded in the NCDOT 2009-2015 STIP, and it is not likely to be constructed in the foreseeable future without use of innovative financing, such as tolling. Implementing the project as a toll facility would ensure the construction of this needed transportation improvement, and the accelerated construction schedule would improve mobility in the region and in southern Gaston County.

EJ Findings. Neighborhoods within the DCIA could contain special groups, particularly low-income and minority populations. One example is mobile home parks, which could represent low-income populations. Based on available census data, low-income and minority populations are generally located more in the southwest corner of Gaston County and west Mecklenburg County. All DSAs pass through these parts of Gaston and Mecklenburg Counties and all could have an affect on low-income populations. All DSAs also directly impact mobile home parks, with most impacts to mobile home parks occurring with DSAs 58, 64, and 68.

When the facility first opens, cash lanes will not be available to commuters. At the time of this report, no decision has been made regarding the sale of transponders or if discounts would be available to special groups. Low-income commuters would have the option to use a non-toll alternative route such as I-85.

The *Relocation Reports* discussed in **Section 3.2.2** provided information on the income level of households that would be displaced as a result of STIP U-3321. A review of these reports revealed that no disproportionate impacts to households with lower income levels would occur, as all DSAs impact a wide range of neighborhoods, from mobile home parks to high-end residential development.

The *Relocation Reports* discussed in **Section 3.2.2** also provided an estimate of minority relocations. The highest percentages of minorities would be relocated with DSA 9 (about 28 percent), DSA 4 (about 25 percent) and DSA 5 (about 26 percent). The higher percentages for these DSAs can be attributed to the western Corridor Segments which pass through minority block groups around I-85/Bessemer City. DSAs 64, 76, and 77 displace the least minorities at approximately eight to nine percent.

Impacts to low-income and/or minority populations resulting from implementing the Gaston East-West Connector as a toll facility are not anticipated to be “disproportionately high and adverse”.

4 CONCLUSIONS AND RECOMMENDATIONS

4.1 CONCLUSIONS

The following lists general conclusions regarding STIP Project U-3321 on communities and community resources within the DCIA:

- Communities in the DCIA would benefit from the project through its enhancement of the existing transportation network by improving regional connectivity, and east-west mobility in the region.
- The project would have a positive impact on public safety services within the DCIA and in the region by providing improved east-west mobility in southern Gaston County that will benefit response times.
- All DSAs would have a negative impact to some existing neighborhoods. Impacts range from minor right of way encroachments on neighborhood properties to complete acquisition of a neighborhood.
- All DSAs would result in access changes to some existing neighborhoods.
- All DSAs would likely impact neighborhoods that contain low-income and/or minority populations. However, none of the DSAs are expected to result disproportionate impacts to these special populations.
- The project would provide opportunities for aesthetically pleasing views from the highway, but could also detract from the existing views of rural areas, including open agricultural space.
- All project alternatives, with the exception of DSA 81, would have impacts to churches, ranging from minor right-of-way encroachment to structural takings.
- Most DSAs would require a minor right-of-way encroachment into the Sadler Elementary School site (DSAs 4, 5, 9, 22, 23, and 27 would not). DSAs that use DSA Segment J5A (DSAs 4, 22, 58, and 76) would require land from Forest View High School for the relocation of NC 274 (Union Road). The property required could include a maximum of approximately 20 parking spaces from the visitor lot at the front of the school and 20 parking spaces in the student lot on the south side of the school. However, it is likely during final design that these impacts can be substantially minimized or avoided.
- All project alternatives would impact park/recreational facilities. Impacts include minor or moderate visual changes to public parks (Crowders Mountain State Park) and private (Allen Fishing Access) recreational areas, minor to moderate right of way encroachments (Mecklenburg County proposed park and DSBG), and structural takings (YMCA Karyae Park).
- All of the DSAs would subject neighborhoods adjacent to the Connector to an increase in noise levels.

Table 17 summarizes impacts to community facilities. **Tables 7, 8 and 9** provide more detail on the type and/or amount of impact.

Table 17. Summary of Impacts to Community Resources

Detailed Study Alternative	Churches		Cemeteries ¹	Schools ²	Fire Stations ³	Parks & Recreational Facilities ⁴	Total Impacts to Community Facilities
	# of Churches with Impacts to Main Buildings	Impact to Property and/or Outbuildings Only					
4	2	3	1	1	0	3 ^{a,c,e}	10
5	3	3	1	0	0	4 ^{a,c,d,f}	10
9	2	1	0	0	0	4 ^{a,c,d,e}	7
22	1	4	1	1	0	2 ^{a,e}	9
23	2	4	1	0	0	3 ^{a,e,f}	9
27	1	2	0	0	0	3 ^{a,d,e}	6
58	1	2	1	2	1	3 ^{a,b,e}	10
64	2	2	1	1	1	4 ^{a,b,d,f}	10
68	1	0	0	1	1	4 ^{a,b,d,e}	7
76	0	2	1	2	0	3 ^{a,b,e}	8
77	1	2	1	1	0	4 ^{a,b,e,f}	8
81	0	0	0	1	0	4 ^{a,b,d,e}	5

1. The cemeteries included are those that would require relocation.
2. DSAs 4, 22, 58, and 76 encroach on Forestview High School property fringe and some parking areas. DSAs 4, 22, 58, and 76 encroach on Sadler Elementary School property with no impact on school use or access.
3. Encroachment on property of Crowders Mountain VFD. Use of site not affected.
4. a. – Berewick District Park, minor right-of-way encroachment not affecting use and function
b. – Karyae YMCA Facility – impacts to several buildings and courtyard
c. – Linwood Springs Golf Course – access change only
d. – Carolina Speedway – right-of-way encroachment and probable impacts to parking area
e. – Duke Energy recreational fields – right-of-way encroachment at northern boundary of fields
f. – Daniel Stowe Botanical Garden (DSBG) – minor right-of-way encroachment not affecting use and function.

Based on the summary provided in **Table 17**:

- DSAs 27 and 81 would have the least impacts to community facilities in the DCIA. However, DSA 81 would not impact any churches, while DSA 27 would impact three churches.
- DSAs 4, 5, 9, 64, 68, 77, and 81 would have the highest total number of community facilities impacted.
- DSAs 27 and 81 would have the lowest total number of community facilities impacted.
- All DSAs would require a minor amount of property from the edges of Berewick District Park, which would not affect the use of the park.
- DSAs 9, 68, and 81 would have the most impacts to recreational facilities. However, most impacts to recreational facilities are anticipated to be minor property encroachments that would

not affect the uses of the sites, with the exception of impacts to Karyae Park. DSAs 58, 64, 68, 76, 77, and 81 would adversely affect this site.

4.2 RECOMMENDATIONS

This section includes suggestions for minimizing or mitigating impacts and measures that could become part of project commitments. Specific project activities and/features will be further evaluated in later design phases for the Preferred Alternative. The implementation of recommendations is at the discretion of the NCTA, in consultation with FHWA.

- Once a Preferred Alternative is selected, the NCTA should consider additional mitigation measures for community impacts, based on final designs and comment/input from affected communities. Mitigation options for lessening neighborhood impacts were incorporated into the preliminary engineering designs, where practicable. These included bridging for access across the East-West Connector, and providing new access routes if bridging is not practical. As part of final design, construction of noise barriers will be incorporated where reasonable and feasible, and visual barriers and vegetative screens will be considered.
- The aesthetic quality of the proposed project areas could be enhanced by the following measures, which can be considered during final design:
 - Implementation of a roadside landscaping plan.
 - Structural design (such as drainage structures and bridges) consideration to enhance visual appearance
 - Bifurcated roadways (opposing lanes on roadways on different grades) to blend better with existing topographical features.
 - Natural earth berms for mitigation of noise and visual impacts where space permits.
- If DSA 4, 22, 58, or 76 is selected as the Preferred Alternative, the NCTA should work with representatives from the Gaston County Schools to minimize/avoid encroachments onto the Forest View High School property.
- If DSA 58, 64, or 68 is selected as the Preferred Alternative, the NCTA should work with representatives from the Crowders Mountain VFD Fire Station on Bethany Road to minimize/avoid encroachments onto the fire station property and to minimize disruption of services.
- Other transportation projects (extension of I-485, Charlotte-Douglas International Airport) have cumulatively impacted and isolated the Dixie/Garrison Road community. Therefore, coordination with the Dixie Community Center president and neighborhood advocate, Ben Morrow, or his successor, should continue through project development and design.
- Project coordination should continue between Gaston County Schools and the NCTA regarding the school system's planning for a new school facility in the project vicinity.
- In later phases (Preferred Alternative) the NCTA should coordinate/initiate discussions with Gaston County Schools transportation staff regarding minimizing impacts to school bus routes.
- As all DSAs have the potential to intersect with planned future greenways, the NCTA should coordinate with the Catawba Lands Conservancy and GUAMPO on the timing of proposed

greenways regarding the possible inclusion of special design features, if necessary and feasible, to accommodate these plans.

- For established and planned bicycle routes and greenways, the NCTA should work with the entities having jurisdiction over these facilities to provide appropriate and safe crossing of these facilities. For example, later phases of project design should include accommodations for the existing bicycle route (Route 1) at the Linwood Road interchange.
- In the future, the NCTA should coordinate/initiative discussions with public safety departments to ensure response times are maintained during project construction.
- If DSA 4, 9, 22, 27, 58, 76, or 81 is selected as the Preferred Alternative, redesigning the cut slope (such as steepening the cut slope or constructing retaining walls) should be investigated during final design to minimize impact to the baseball field's outfield and the north corner of the general recreational field of the Duke Energy Recreational Fields
- Future public involvement should include small group meetings with neighborhoods and continuing use of a variety of methods to notify people of workshops and offers for small group meetings (letters to churches, posting of flyers in community centers, etc.). It also is recommended that the NCTA continue to publish project workshop information in Hispanic newspapers and continue to have a staff member who can speak Spanish at the meetings.

5 REFERENCES

Purpose and Need Statement for the Gaston East-West Corridor Study, STIP Project U-3321.
Prepared by PBS&J. August 2002.

Traffic Noise Technical Memorandum for the Gaston East-West Corridor Study, STIP Project U-3321.
Prepared by PBS&J. April 2008.

Phase II Historic Architectural Resources Survey for the Gaston East-West Connector, STIP Project U-3321. Prepared by Mattson, Alexander and Associates. May 2007.

Community Impact Assessment: A Quick Reference for Transportation. FHWA Office of Environment and Planning. September 1996.

Guidance for Assessing Indirect and Cumulative Impacts of Transportation Projects in North Carolina. NCDOT.

2007-2013 State Transportation Improvement Program. NCDOT.

2030 Long Range Transportation Plan. Gaston Urban Area Metropolitan Planning Organization. May 24, 2005.

Gaston County Comprehensive Land Use Plan. Adopted 2002.

Gastonia 2020 DRAFT Comprehensive Plan. (In Progress with draft chapters available online: <http://www.cityofgastonia.com/dept/planning/cityplanning/ComprehensivePlan.cfm>.)

2030 Long Range Transportation Plan & Air Quality Conformity Determination. May 2007.

Dixie-Berryhill Strategic Plan. Charlotte Mecklenburg Planning Commission. Adopted April 2003.

York County Industry Cluster & Target Market Study. Prepared by Whittaker Associates, Inc. for York County. 2005.

DRAFT Indirect and Cumulative Effects Assessment. Prepared by Louis Berger Group, Inc. February 22, 2008.

Natural Resources Technical Memorandum. Prepared for the NCTA. February 2008.

Interviews (since the CCR)

- Ben Morrow, President, Dixie Community Center (December 7, 2007)
- Larry Hyde, Park Superintendent, Crowders Mountain State Park (email communication March 31, 2008)
- Jim Parks, Gaston County Schools (Telephone interview, April 11, 2008)

- Legend**
- Refined Study Area Boundary for New Location Alternatives
 - County Lines
 - Railroad
 - Major Roads
 - Parks
 - Private Recreation Facilities
 - Hydrography

Source: Gaston County and Mecklenburg County GIS. Map Printed On 9-16-08.



TURNPIKE AUTHORITY

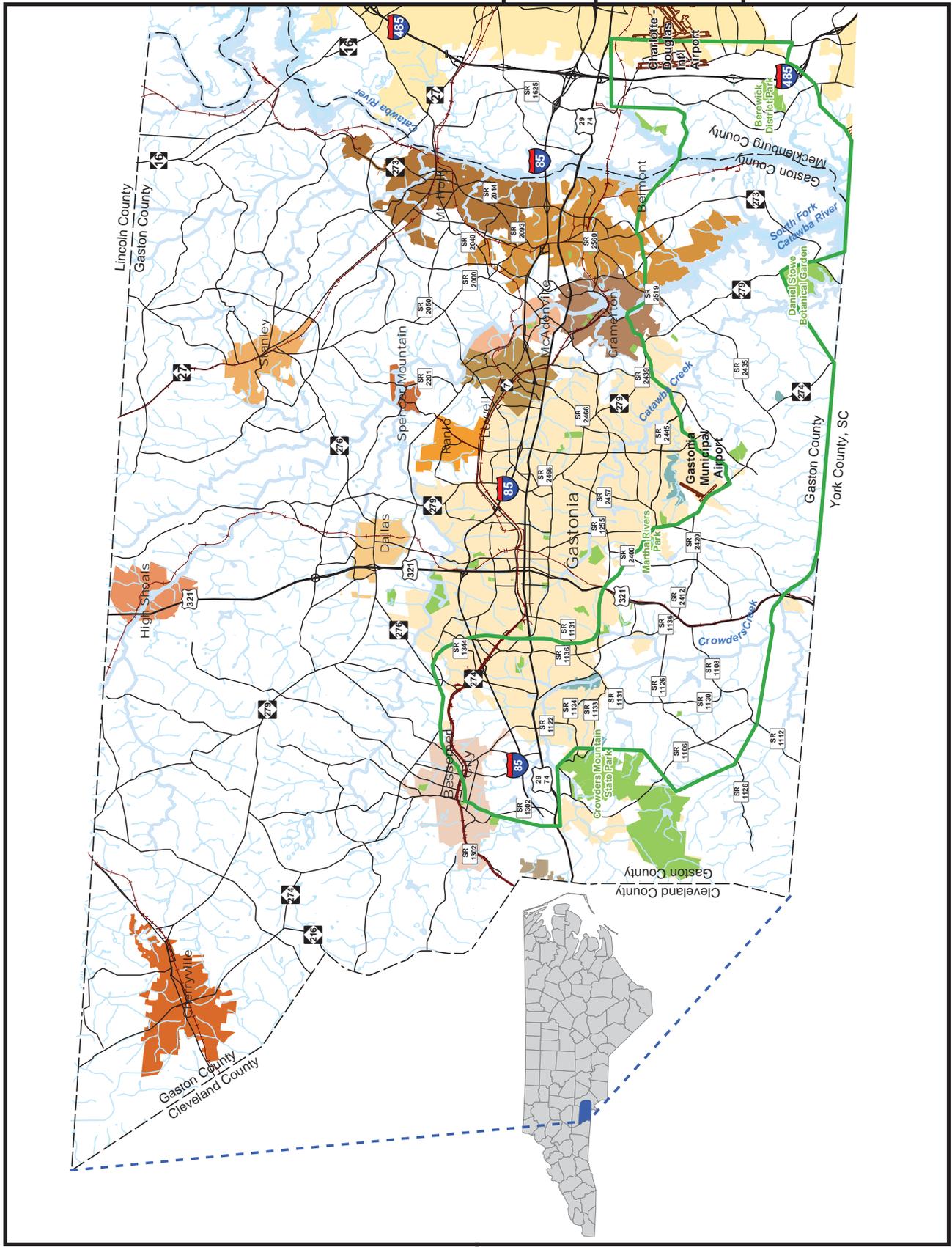
STIP PROJECT NO. U-3321

Gaston County and Mecklenburg County

GASTON EAST-WEST CONNECTOR

PROJECT LOCATION

Figure 1



- Legend**
- Refined Study Area Boundary for New Location Alternatives
 - Detailed Study Alternatives
 - Design Centerline
 - Segment Breaks
 - County Lines
 - Railroad
 - Interstates
 - US Routes
 - Streets
 - Proposed West Blvd Realignment
 - Private Recreation Facilities
 - Parks
 - State Complexes
 - Hydrography
 - City Limits

Source: Gaston County and Mecklenburg County GIS
Map Printed On 8-11-08.

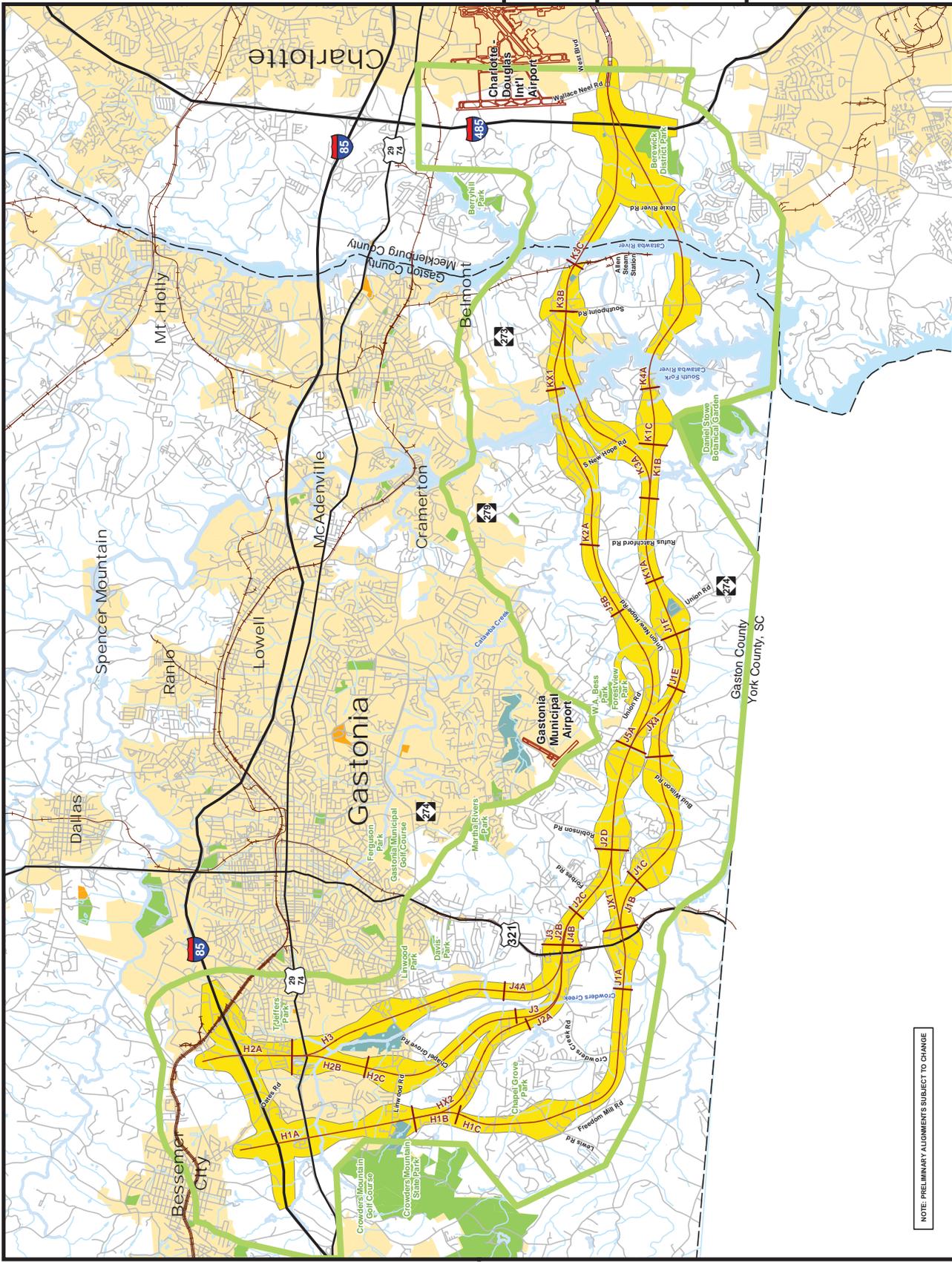


turnpike Authority
 NORTH CAROLINA
 STIP PROJECT NO. U-3321
 Gaston County and Mecklenburg County

GASTON EAST-WEST CONNECTOR

RECOMMENDED DETAILED STUDY ALTERNATIVES

Figure 2a

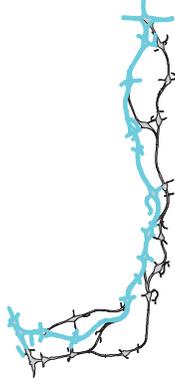


NOTE: PRELIMINARY ALIGNMENTS SUBJECT TO CHANGE

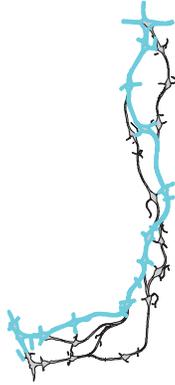
Legend

- Design Right-of-Way
- Corridor Segments Comprising Each Detailed Study Alternative

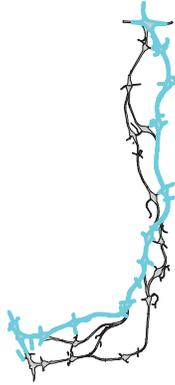
Alternative 22



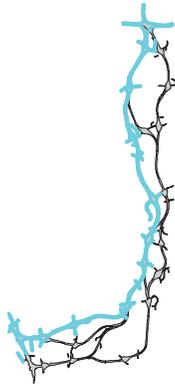
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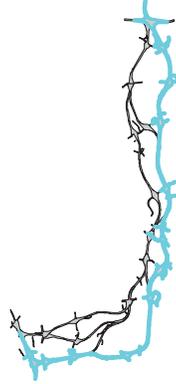
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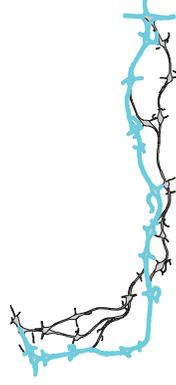
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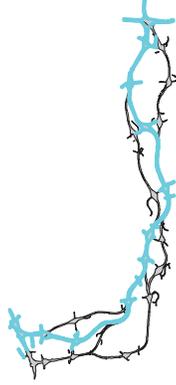
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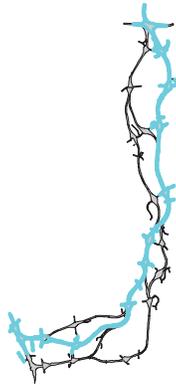
Alternative 58



Alternative 27



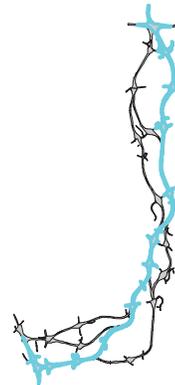
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Alternative 81



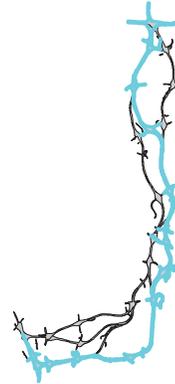
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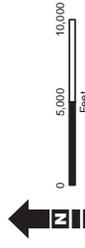
Alternative 76



Alternative 68



Source: Gaston County and Mecklenburg Counties, GIS. Map Printed On 9-16-08.



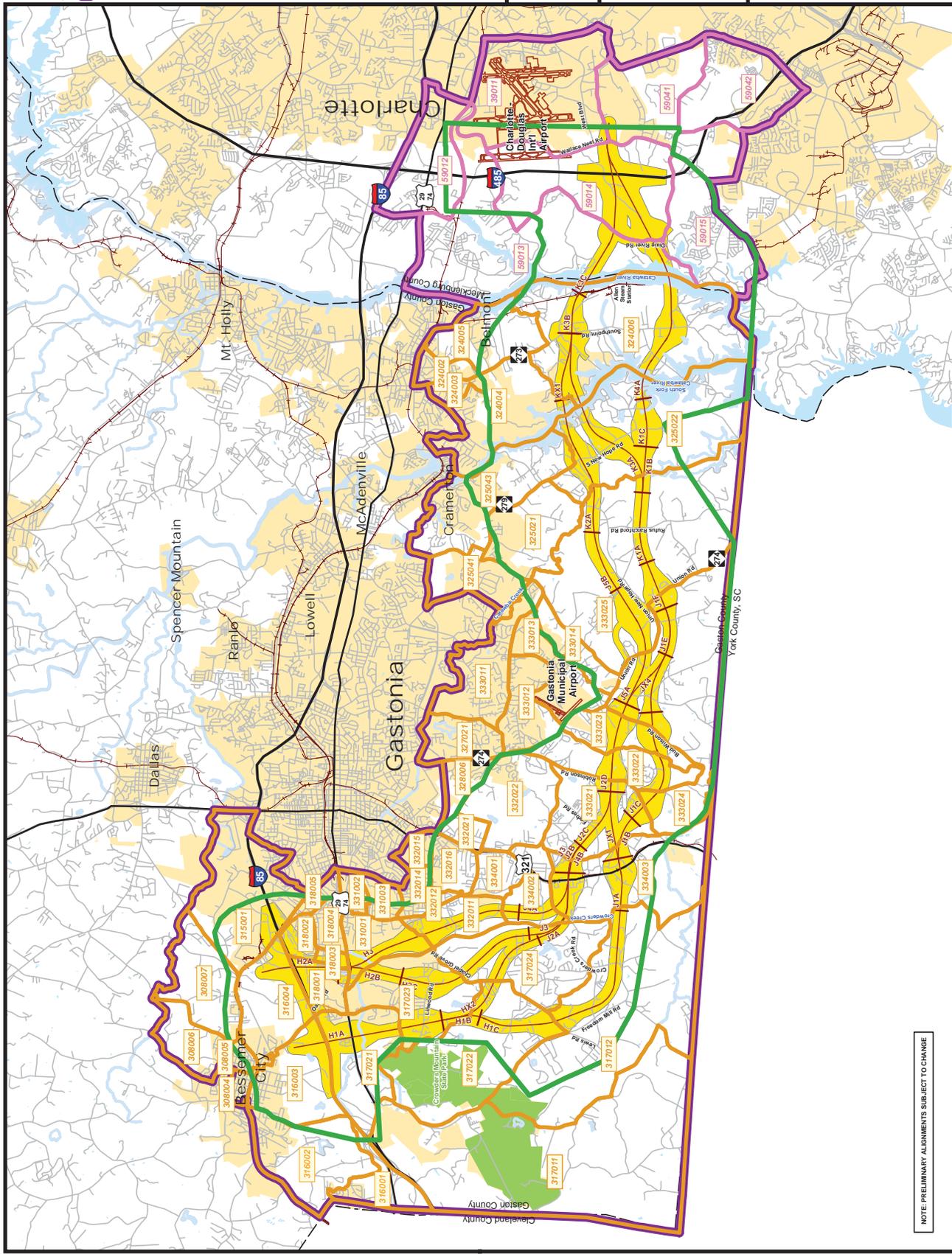
STIP PROJECT NO. U-3321

Gaston County and Mecklenburg County

GASTON EAST-WEST CONNECTOR

RECOMMENDED DETAILED STUDY ALTERNATIVES

Figure 2b



Legend

- Refined Study Area Boundary for New Location Alternatives
- U-3321 Demographic Area
- Gaston 2000 Block Groups
- Mecklenburg 2000 Block Groups
- Segment Breaks
- Design Centerline
- County Lines
- Interstates
- US Routes
- Streets
- Railroad
- Lakes, Rivers, Streams
- City Limits

Source: U.S. Bureau of the Census, Census 2000 Tiger/Line Data from ESRI. Map Printed On 9-16-08.



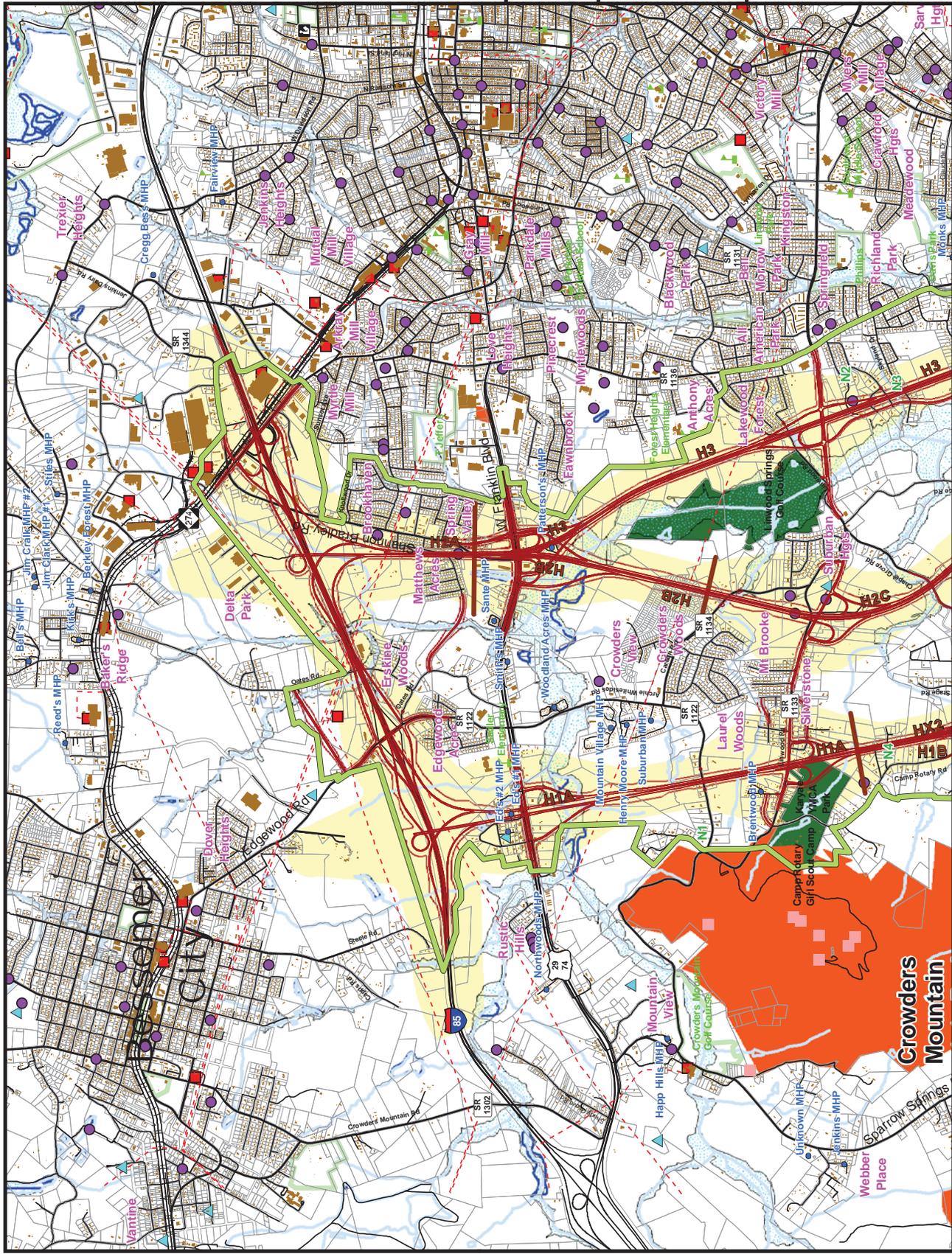
STIP PROJECT NO. U-3321
Gaston County and Mecklenburg County

GASTON EAST-WEST CONNECTOR

DEMOGRAPHIC AREA

NOTE: PRELIMINARY ALIGNMENTS SUBJECT TO CHANGE

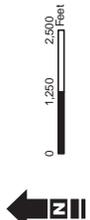
Figure 3



Legend

- Direct Community Impact Area
- Design
- Corridor Segment Break Lines
- County Lines
- Transmission Lines
- Railroads
- Proposed Roadway/Realignment
- Proposed Airport Expansion
- Mobile Home Parks
- Un-Named Neighborhoods / Rural Communities
- Landmarks
- Subdivisions
- Structures
- Churches
- Cemeteries
- Schools
- Libraries
- National Heritage Occurrence Sites
- Substations
- Ply Ash Basins
- Leach Areas
- Potential Recreational Facilities
- National Heritage Occurrence Areas
- FEMA Floods
- Proposed Landfills
- Hydrology
- NW1 Wetlands
- 100 Year Floodplains
- State Comakers
- Detailed Study Corridors

Source: Gaston County and Mecklenburg County GIS
Map Printed On 9-17-08.

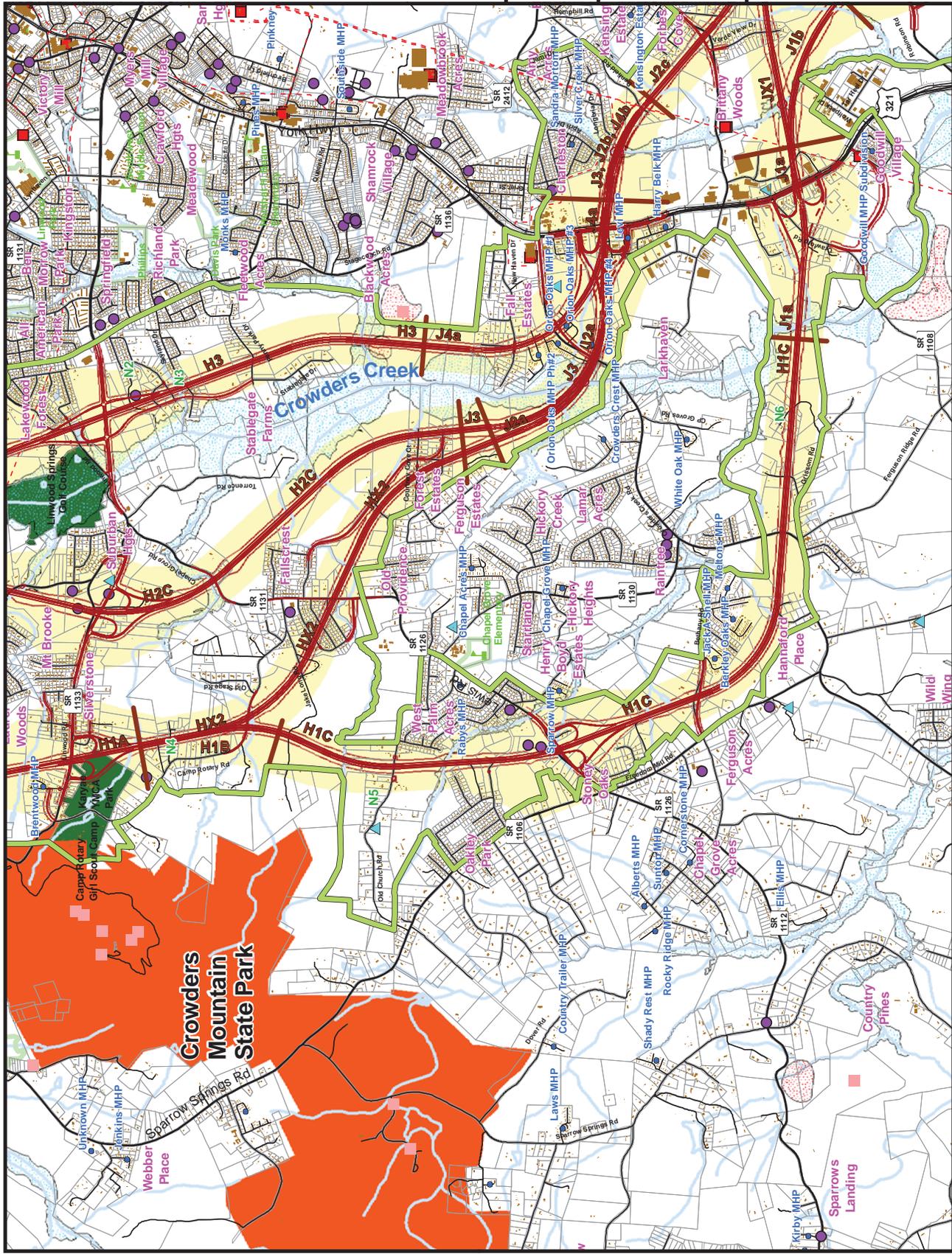


STIP PROJECT
NO. U-3321
Gaston County and
Mecklenburg County

**GASTON EASTWEST
CONNECTOR**

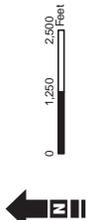
**DIRECT COMMUNITY
IMPACT AREA**

Figure 4a



- Legend**
- Direct Community Impact Area
 - Design
 - Corridor Segment Break Lines
 - County Lines
 - Transmission Lines
 - Railroads
 - Proposed Roadway/Realtignment
 - Proposed Airport Expansion
 - Mobile Home Parks
 - Un-Named Neighborhoods / Rural Communities
- Areas**
- Subdivisions
 - Structures
 - Churches
 - Cemeteries
 - Schools
 - Libraries
 - National Heritage Occurrence Sites
 - Substations
 - Ply Ash Basins
 - Leach Areas
 - Pesticide Application Facilities
 - National Heritage Occurrence Areas
 - FEMA Flood Areas
 - Proposed Landfills
 - Hydrology
 - NW1 Wetlands
 - 100 Year Floodlines
 - State Comainers
 - Detailed Study Corridors

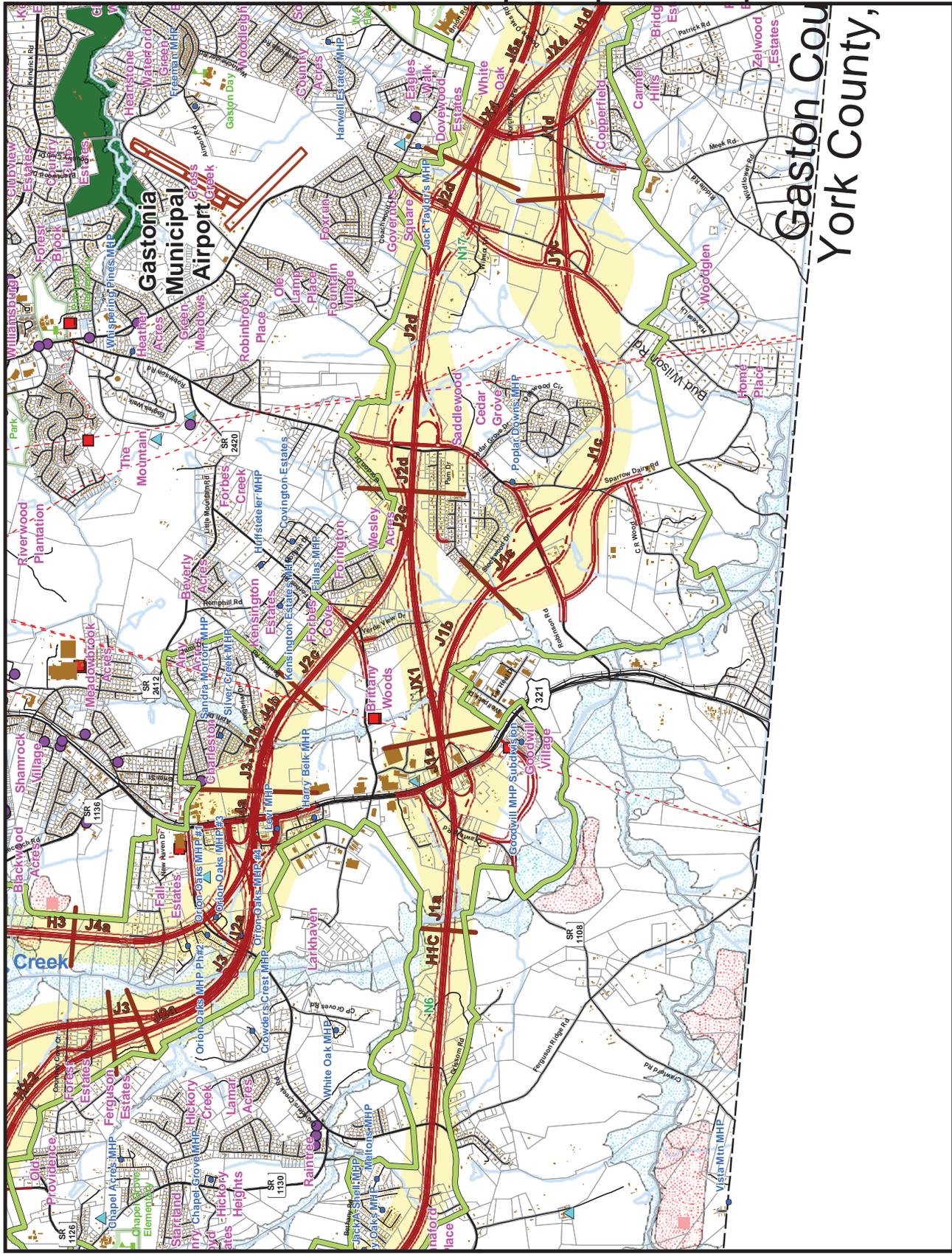
Source: Gaston County and Mecklenburg County GIS
Map Printed On 9-17-08.



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STIP PROJECT NO. U-3321
Gaston County and Mecklenburg County

GASTON EAST-WEST CONNECTOR
DIRECT COMMUNITY IMPACT AREA

Figure 4b



- Legend**
- Direct Community Impact Area
 - Design
 - Corridor Segment Break Lines
 - County Lines
 - Transmission Lines
 - Railroads
 - Proposed Roadway / Realignment
 - Proposed Airport Expansion
 - Mobile Home Parks
 - Un-Name Neighborhoods / Rural Communities
- Landmarks**
- Subdivisions
 - Structures
 - Churches
 - Cemeteries
 - Schools
 - Libraries
 - National Heritage Occurrence Sites
 - Substations
 - Ply Ash Basins
 - Leach Ash Areas
 - Pre-1930s Residential Facilities
 - National Heritage Occurrence Areas
 - FEMA Flood Hazard
 - Proposed Landfills
 - Hydrology
 - NWI Wetlands
 - 100 Year Floodplains
 - State Comprehensives
 - Detailed Study Corridors

Source: Gaston County and Mecklenburg County GIS
Map Printed On 9-17-08.

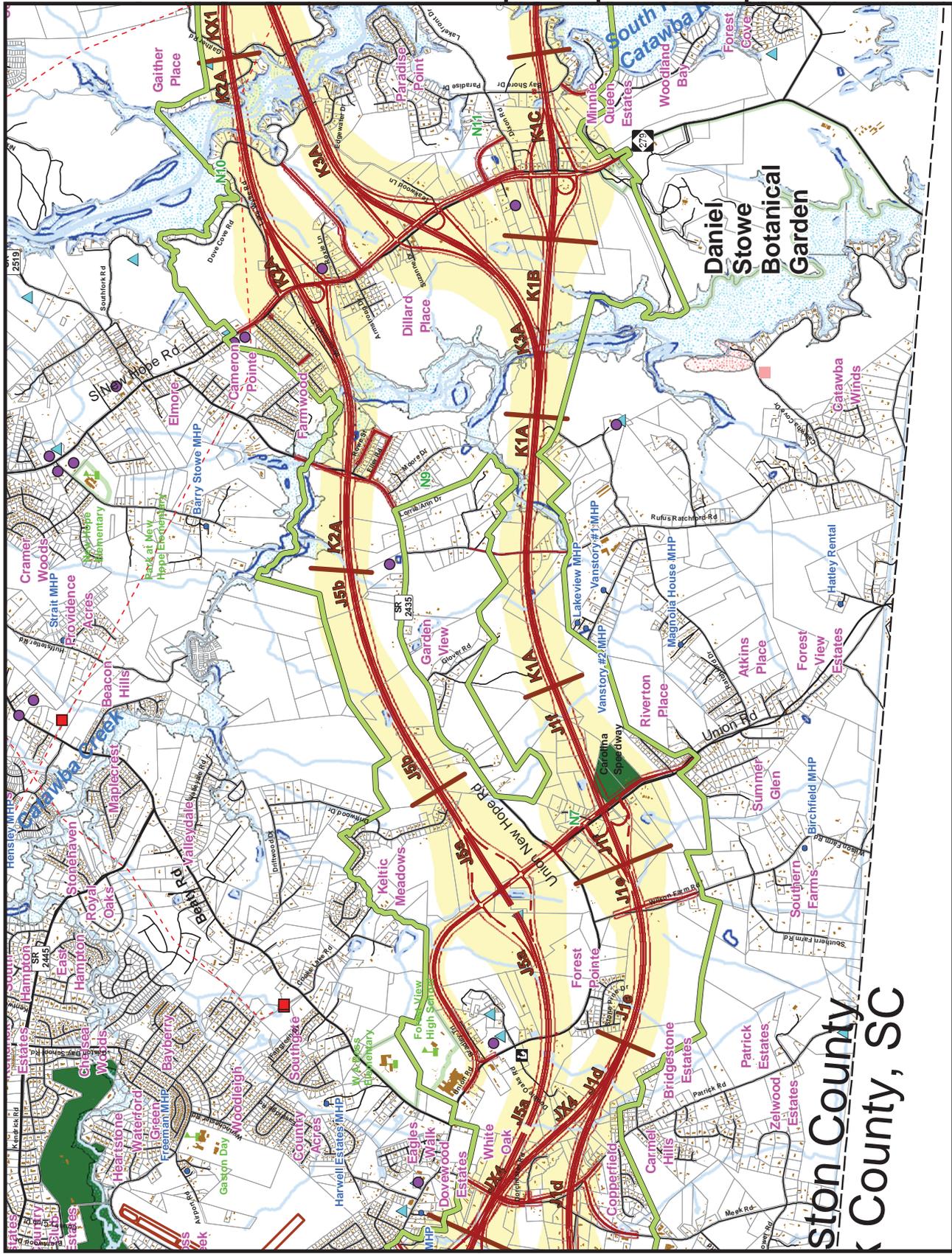


TURNPIKE AUTHORITY
STIP PROJECT NO. U-3321
Gaston County and Mecklenburg County

GASTON EASTWEST CONNECTOR
DIRECT COMMUNITY IMPACT AREA

Figure 4c

Gaston County, York County,



- Legend**
- Direct Community Impact Area
 - Design
 - Corridor Segment Break Lines
 - County Lines
 - Transmission Lines
 - Railroads
 - Proposed Roadway/Realtignment
 - Proposed Airport Expansion
 - Mobile Home Parks
 - Un-Named Neighborhoods / Rural Communities
 - Landmarks
 - Subdivisions
 - Structures
 - Churches
 - Cemeteries
 - Schools
 - Libraries
 - National Heritage Occurrence Sites
 - Substations
 - Ply Ash Basins
 - Leach Areas
 - Perennial Recreational Facilities
 - Natural Heritage Occurrence Areas
 - FEMA Flood Zones
 - Proposed Landfills
 - Hydrology
 - NW1 Wetlands
 - 100 Year Floodplains
 - State Comakers
 - Detailed Study Corridors

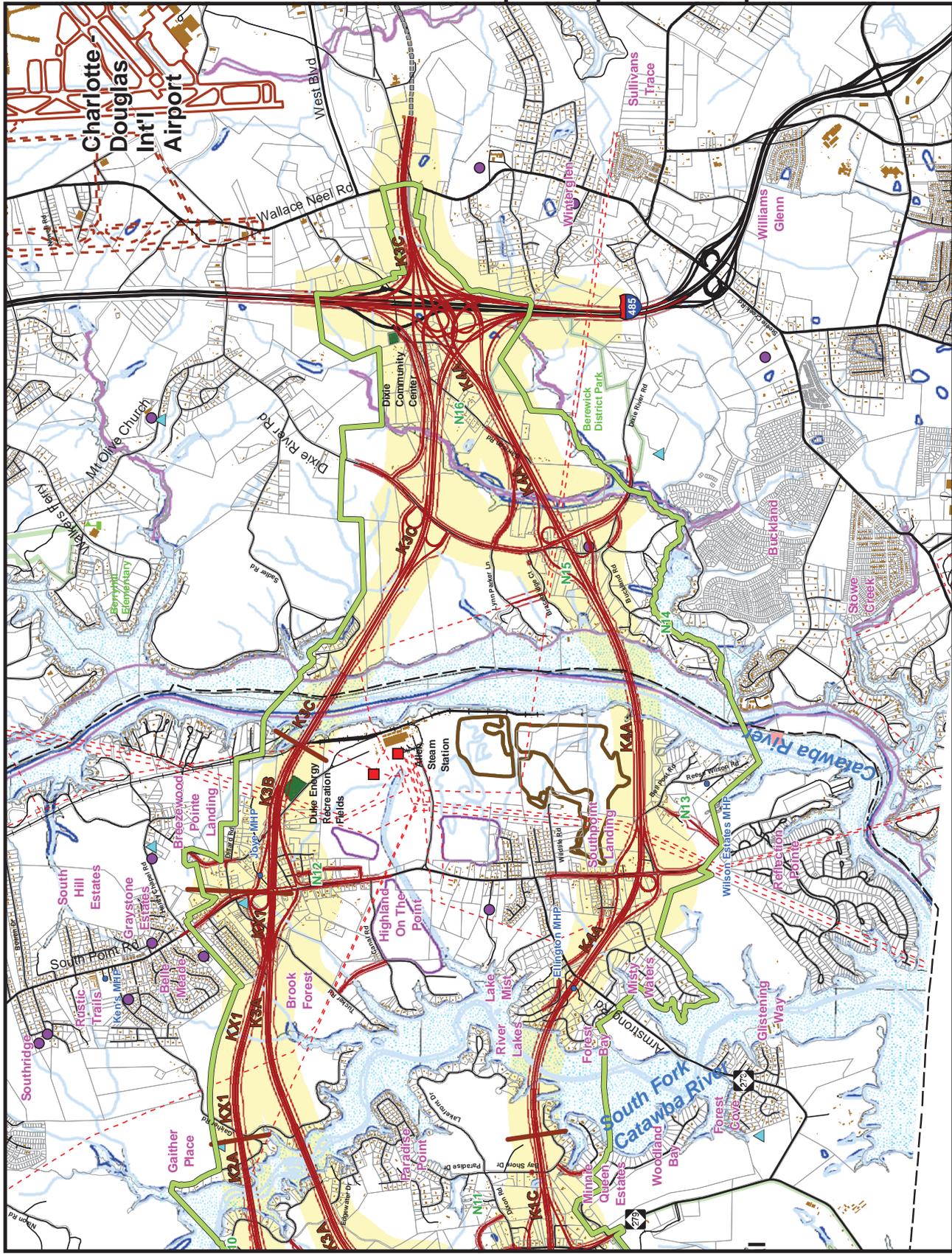
Source: Gaston County and Mecklenburg County GIS
Map Printed On 9-17-08.



Turnpike Authority
NORTH CAROLINA
STIP PROJECT
NO. U-3321
Gaston County and
Mecklenburg County

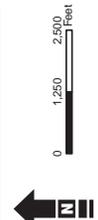
GASTON EASTWEST CONNECTOR
DIRECT COMMUNITY IMPACT AREA

Figure 4d



- Legend**
- Direct Community Impact Area
 - Design
 - Corridor Segment Break Lines
 - County Lines
 - Transmission Lines
 - Railroads
 - Proposed Roadway/Realtment
 - Proposed Airport Expansion
 - Mobile Home Parks
 - Un-Named Neighborhoods / Rural Communities
- Landmarks**
- Subdivisions
 - Structures
 - Churches
 - Schools
 - Libraries
 - National Heritage Occurrence Sites
 - Substations
 - Ply Ash Basins
 - Leach Areas
 - Prehistoric Archeological Features
 - Natural Heritage Occurrence Areas
 - FEMA Flood Areas
 - Proposed Landfills
 - Hydrology
 - NW1 Wetlands
 - 100 Year Floodplains
 - State Comakers
 - Detailed Study Corridors

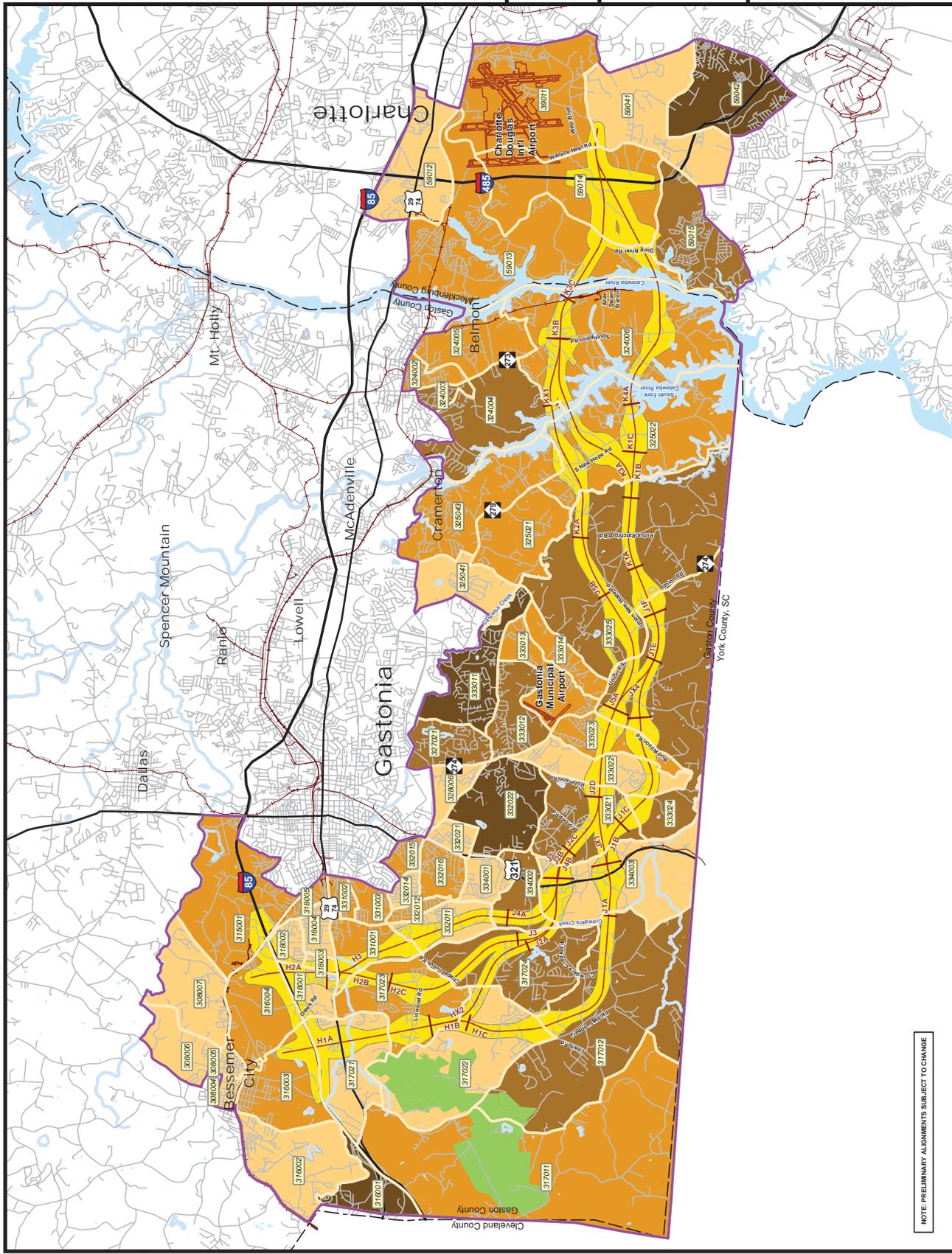
Source: Gaston County and Mecklenburg County GIS
Map Printed On 9-17-08.



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STIP PROJECT NO. U-3321
Gaston County and Mecklenburg County

GASTON EASTWEST CONNECTOR
DIRECT COMMUNITY IMPACT AREA

Figure 4e



Legend

- 2000 Block Groups
- Population Growth
 - <0%
 - 0-25%
 - 25-50%
 - 50+
- 2000 Block Groups
- U-3321 Demographic Area
- Segment Breaks
- Design Centerline
- Detailed Study Alternatives
- County Lines
- Interstates
- US Routes
- Streets
- Railroad
- Lakes, Rivers, Streams

Source: U.S. Bureau of the Census,
Census 2000 Tiger/Line Data
from ESRI.
Map Printed On 9-16-08.



STIP PROJECT
NO. U-3321
Gaston County and
Mecklenburg County

**GASTON EAST-WEST
CONNECTOR**

**POPULATION
CHANGE
1990 TO 2000**

Figure 5

NOTE: PRELIMINARY ALIGNMENTS SUBJECT TO CHANGE

- Legend**
- 2000 Percentage African American by Census Block Group
 - 0 - 24.99%
 - 25 - 49.99%
 - 50 - 74.44%
 - 75% or above
 - 2000 Block Groups
 - U-3321 Demographic Area
 - Segment Breaks
 - Design Centerline
 - Detailed Study Alternatives
 - County Lines
 - Interstates
 - US Routes
 - Streets
 - Railroad
 - Lakes, Rivers, Streams

Source: U.S. Bureau of the Census, Census 2000 Tiger/Line Data
 Map Printed On 9-16-08.

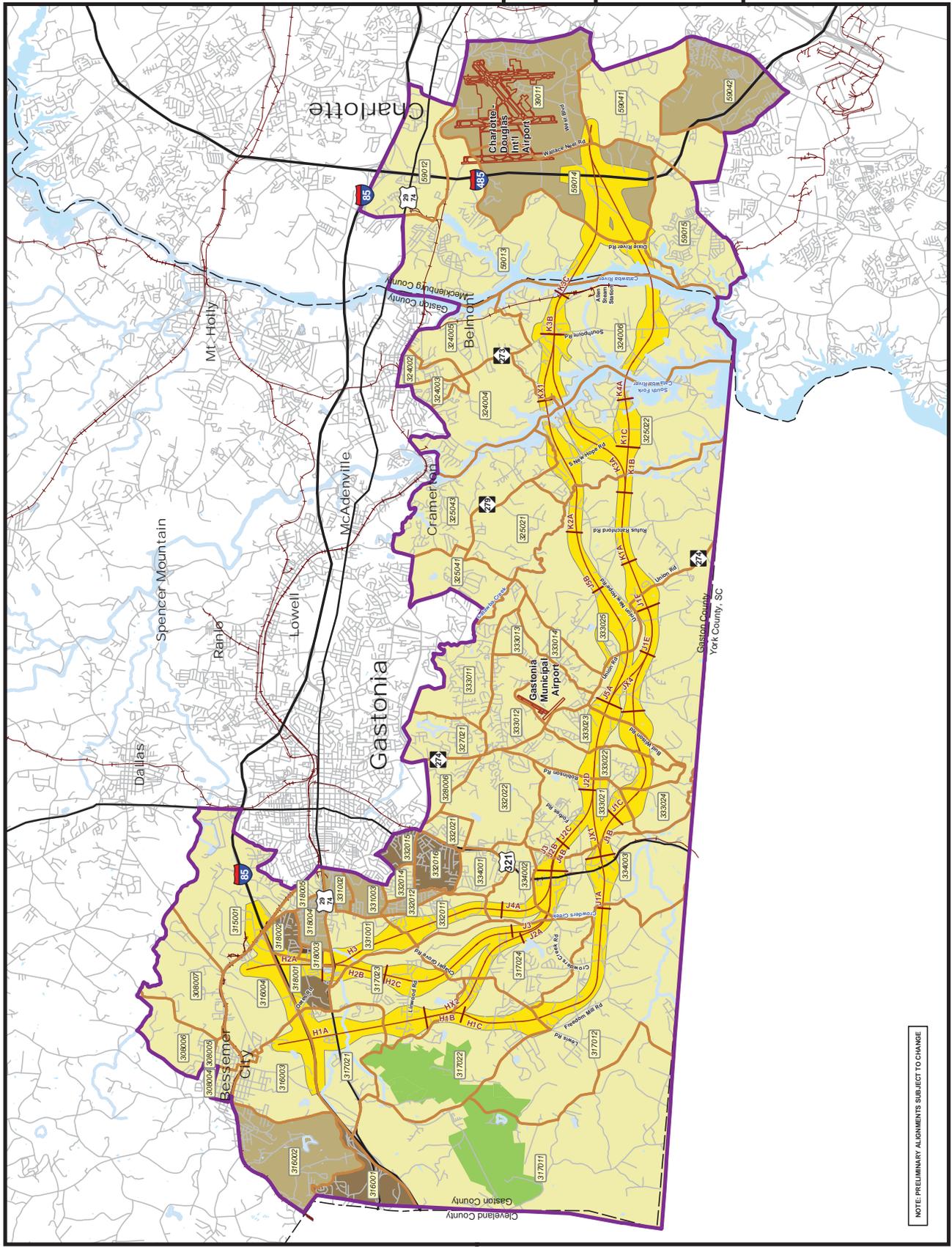


STIP PROJECT
 NO. U-3321
 Gaston County and
 Mecklenburg County

**GASTON EAST-WEST
 CONNECTOR**

**MINORITY
 POPULATION -
 AFRICAN AMERICAN**

Figure 6a



NOTE: PRELIMINARY ALIGNMENTS SUBJECT TO CHANGE

Legend

- 2000 Percentage Hispanic by Census Block Group
 - 0 - 4.99%
 - 5 - 14.99%
 - 15 - 24.99%
 - 25% or above
- 2000 Block Groups
- U-3321 Demographic Area
- Segment Breaks
- Design Centerline
- Detailed Study Alternatives
- County Lines
- Interstates
- US Routes
- Streets
- Railroad
- Lakes, Rivers, Streams

Source: U.S. Bureau of the Census, Census 2000 Tiger/Line Data from ESRI. Map Printed On 9-16-08.



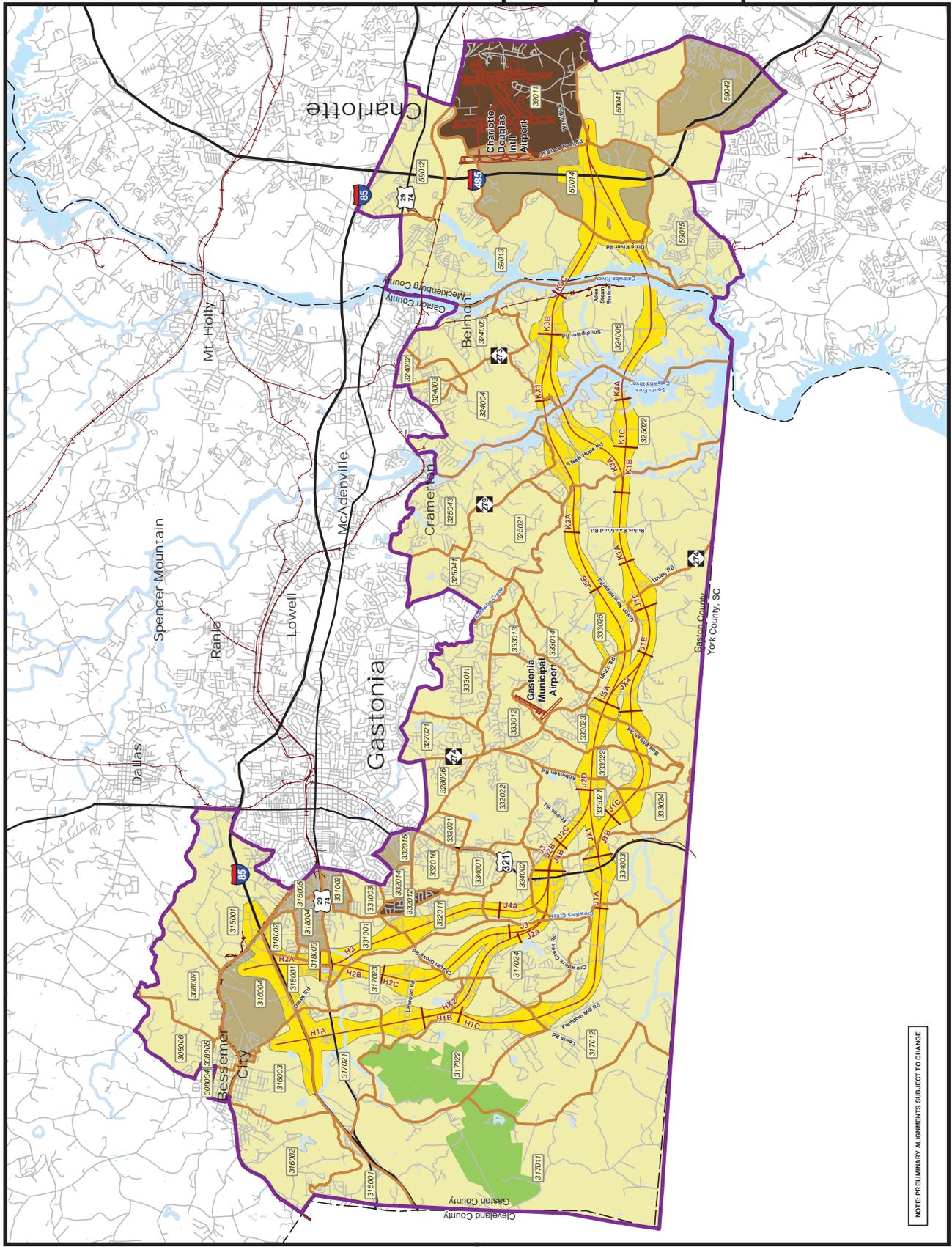
STIP PROJECT
NO. U-3321

Gaston County and
Mecklenburg County

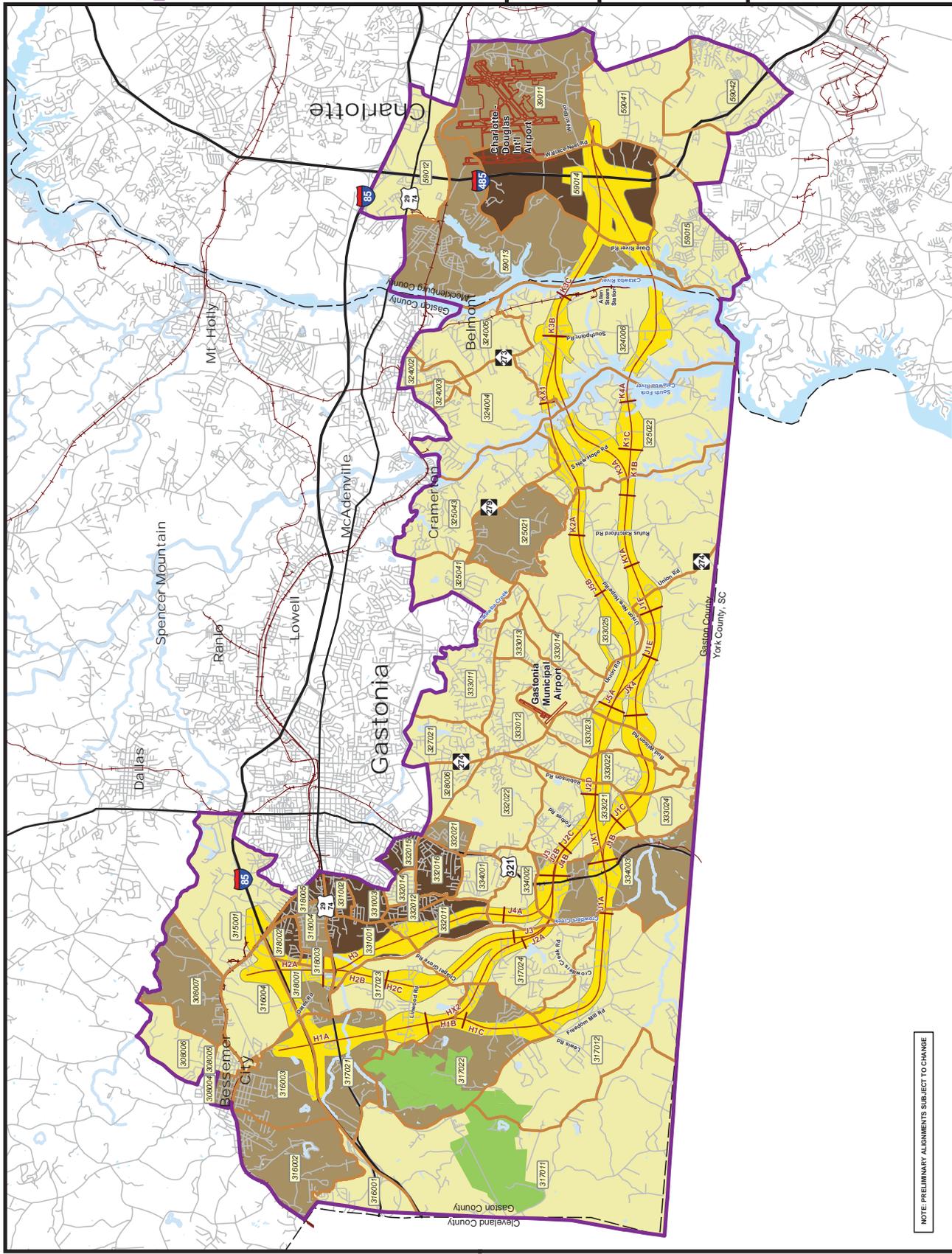
**GASTON EAST-WEST
CONNECTOR**

**MINORITY
POPULATION -
HISPANIC**

Figure 6b



NOTE: PRELIMINARY ALIGNMENTS SUBJECT TO CHANGE



Legend

2000 Percentage Below Poverty Level by Census Block Group

- 0 - 9.99%
- 10 - 19.99%
- 20% or above
- 2000 Block Groups

- U-3321 Demographic Area
- Segment Breaks
- Design Centerline
- Detailed Study Alternatives
- County Lines
- Interstates
- US Routes
- Streets
- Railroad
- Lakes, Rivers, Streams

Source: U.S. Bureau of the Census, Census 2000 Tiger/Line Data from ESRI. Map Printed On 9-16-08.



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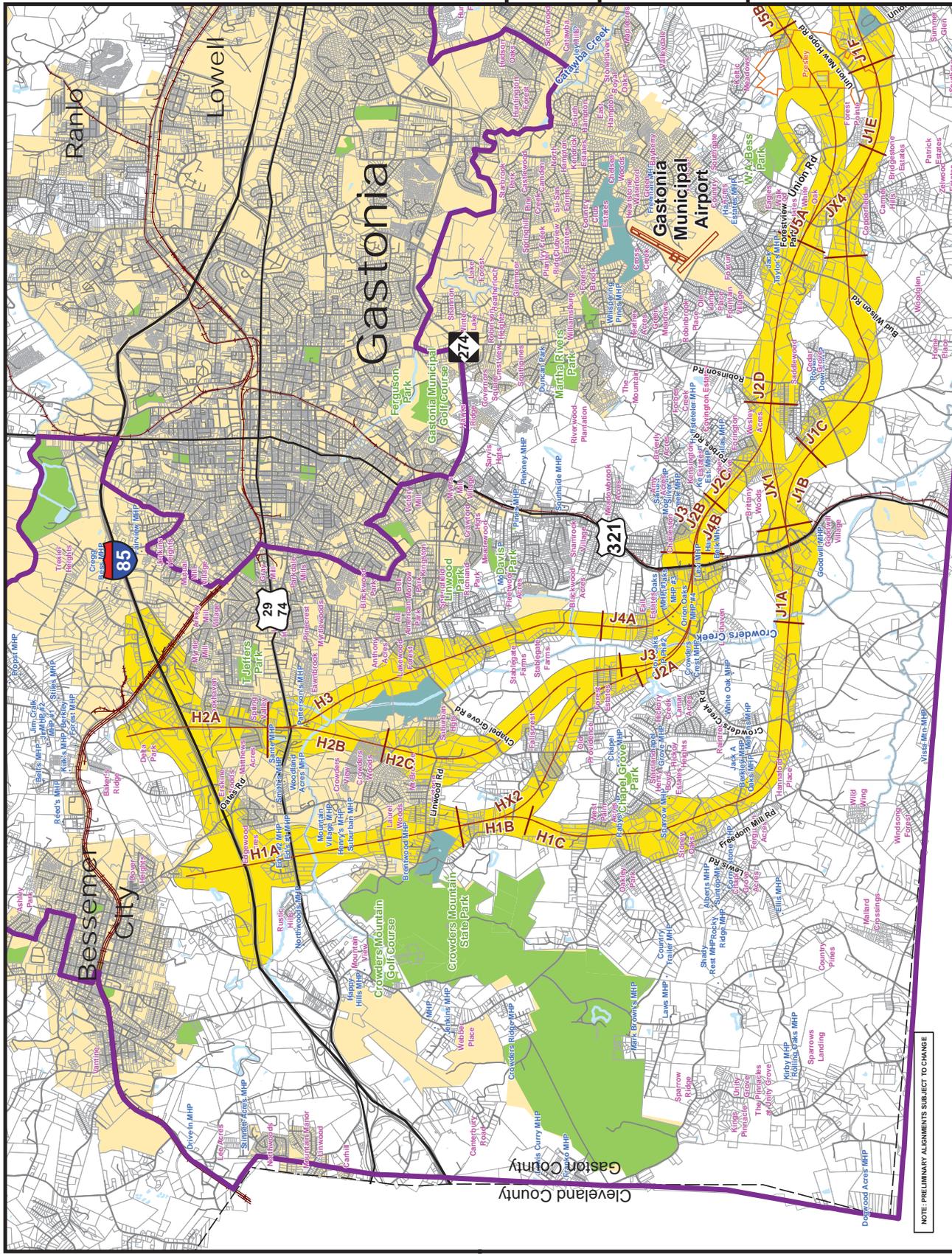
Gaston County and Mecklenburg County

GASTON EAST-WEST CONNECTOR

2000 PERCENTAGE BELOW POVERTY LEVEL

Figure 7

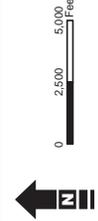
NOTE: PRELIMINARY ALIGNMENTS SUBJECT TO CHANGE



Legend

- U-3321 Demographic Area
- Un-Named Neighborhoods and Rural Communities
- Mobile Home Parks
- Approved Future Development
- Segment Breaks
- Design Centerline
- Detailed Study Alternatives
- County Lines
- Interstates
- US Routes
- Streets
- Railroad
- Parcels
- Private Recreation Facilities
- Parks
- Lakes, Rivers, Streams
- City Limits

Source: Gaston County and Mecklenburg County GIS
Map Printed On 9-16-08.



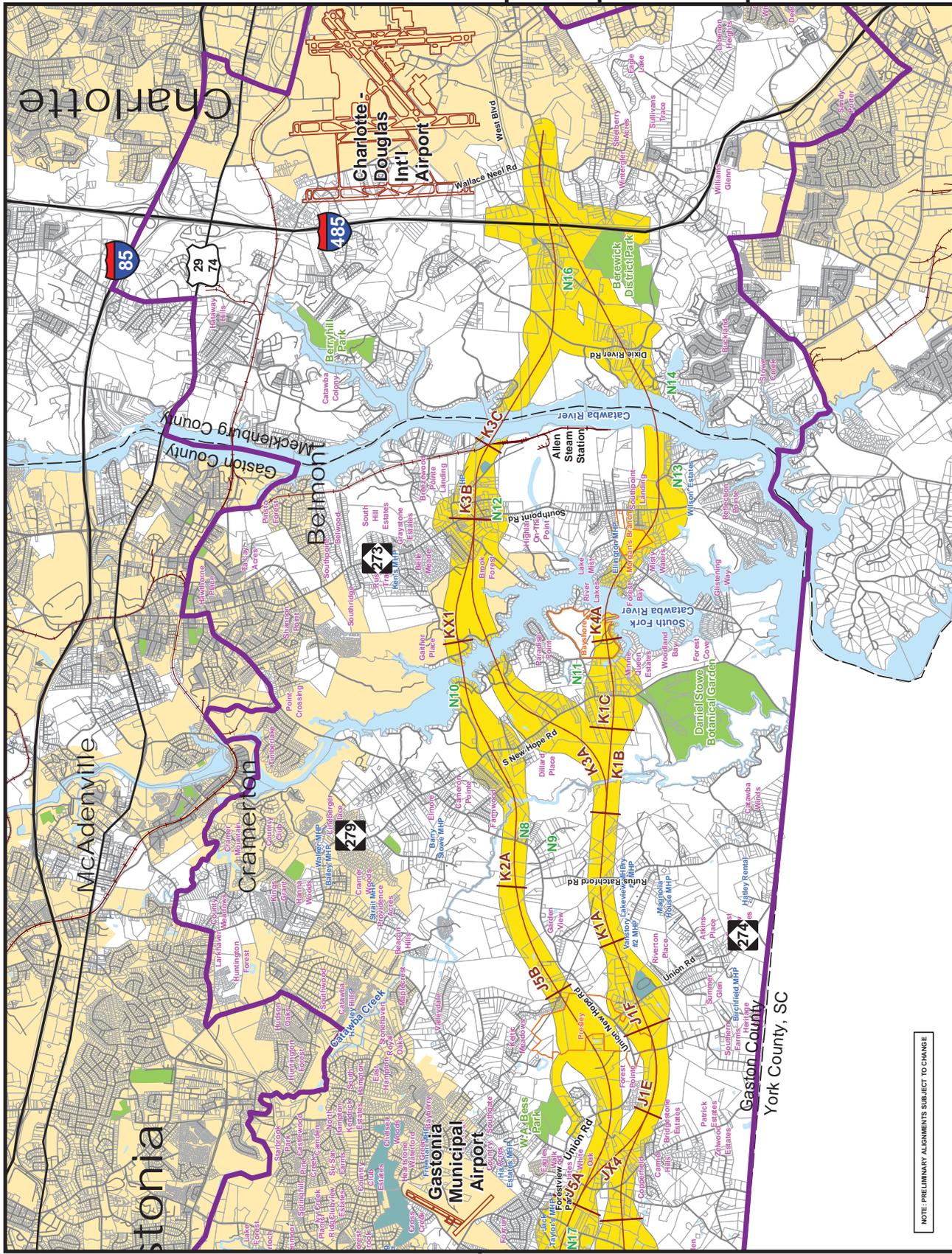
STIP PROJECT
NO. U-3321
Gaston County and
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GASTON EAST-WEST CONNECTOR

NEIGHBORHOODS

Figure 8a

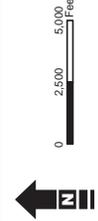
NOTE: PRELIMINARY ALIGNMENTS SUBJECT TO CHANGE



Legend

- U-3321 Demographic Area
- Un-Named Neighborhoods and Rural Communities
- Mobile Home Parks
- Approved Future
- Development
- Segment Breaks
- Design Centerline
- Detailed Study Alternatives
- County Lines
- Interstates
- US Routes
- Streets
- Railroad
- Parcels
- Private Recreation Facilities
- Parks
- Lakes, Rivers, Streams
- City Limits

Source: Gaston County and Mecklenburg County GIS
Map Printed On 9-16-08.



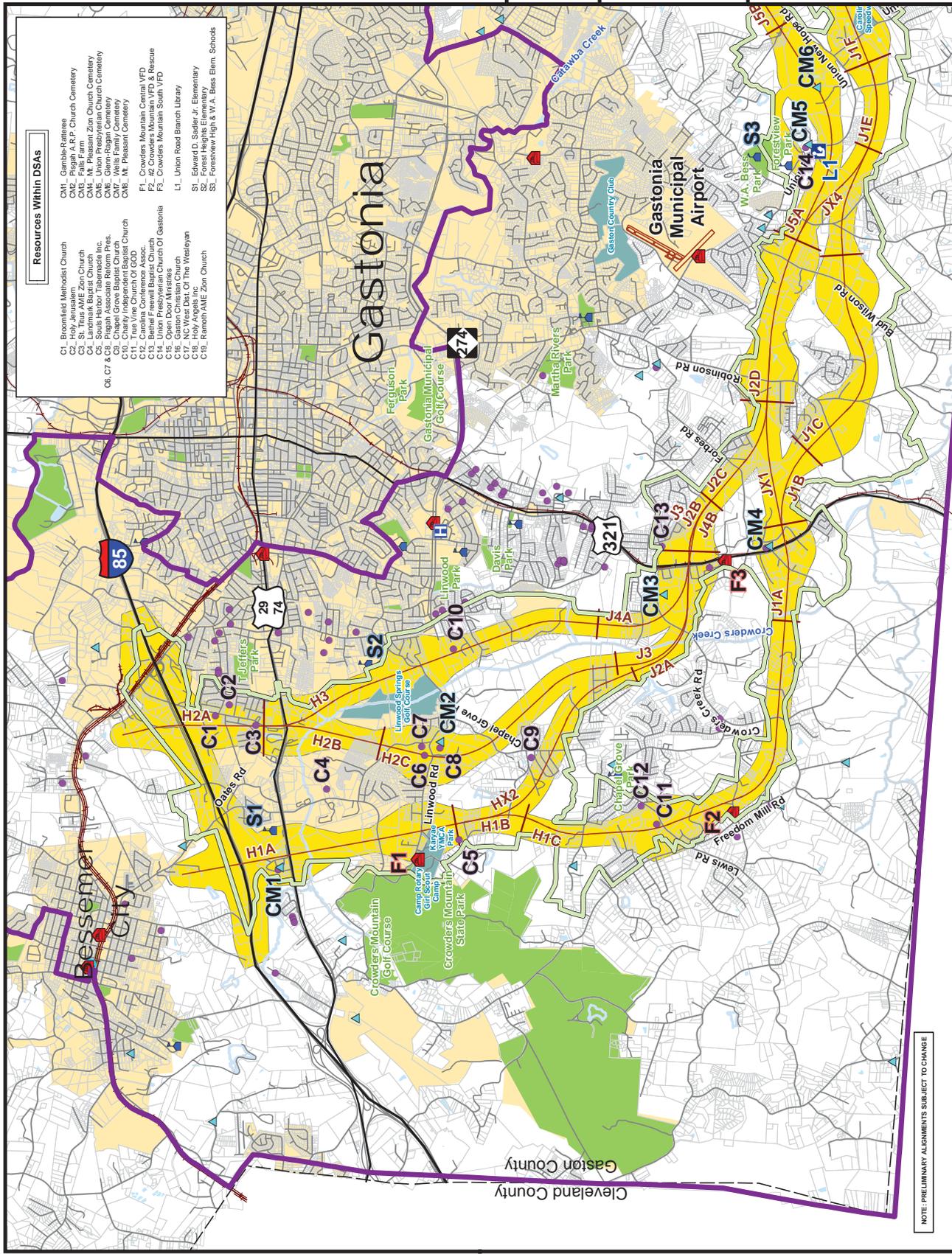
STIP PROJECT
NO. U-3321
Gaston County and
Mecklenburg County

**GASTON EAST-WEST
CONNECTOR**

NEIGHBORHOODS

Figure 8b

NOTE: PRELIMINARY ALIGNMENTS SUBJECT TO CHANGE



- Resources Within DSAs**
- C1. Broomfield Methodist Church
 - C2. Holy Jerusalem
 - C3. Landmark Baptist Church
 - C4. Landmark Baptist Church
 - C5. Souls Harbor Tabernacle Inc.
 - C6. Gaston Associate Reform Pres.
 - C7. Trinity Baptist Church
 - C8. Trinity Baptist Church
 - C9. Trinity Baptist Church
 - C10. Trinity Baptist Church
 - C11. True Vine Church of GOD
 - C12. Carolina Conference Assoc.
 - C13. Crowders Mountain Church of God
 - C14. Union Presbyterian Church of Gastonia
 - C15. Open Door Ministries
 - C16. Gaston Christian Church
 - C17. The Wesleyan
 - C18. Holy Angels Inc.
 - C19. Ramoth AME Zion Church
 - CM1. Gamble-Rattese
 - CM2. Piggan A.P.P. Church Cemetery
 - CM3. Mt. Pleasant Zion Church Cemetery
 - CM4. Mt. Pleasant Zion Church Cemetery
 - CM5. Union Presbyterian Church Cemetery
 - CM6. Glenn-Ragan Cemetery
 - CM7. Mt. Pleasant Cemetery
 - CM8. Mt. Pleasant Cemetery
 - F1. Crowders Mountain Central VFD
 - F2. Crowders Mountain South VFD
 - L1. Union Road Branch Library
 - S1. Edward D. Sadler Jr. Elementary
 - S2. Forest Heights Elementary
 - S3. Forestview High & W.A. Besse Elem. Schools

- Legend**
- Direct Community Impact Area
 - U-3321 Demographic Area
 - Hospitals/Medical Services
 - Church Properties
 - Cemeteries
 - Libraries
 - Fire Stations
 - Schools
 - Police Departments
 - Parks
 - Private Recreation Facilities
 - Parcels
 - Segment Breaks
 - Design Centerline
 - Detailed Study Alternatives
 - County Lines
 - Interstates
 - US Routes
 - Streets
 - Railroad
 - Lakes, Rivers, Streams
 - City Limits

Source: Gaston County and Mecklenburg County GIS
Map Printed On 9-16-08.

0 2,500 5,000 Feet



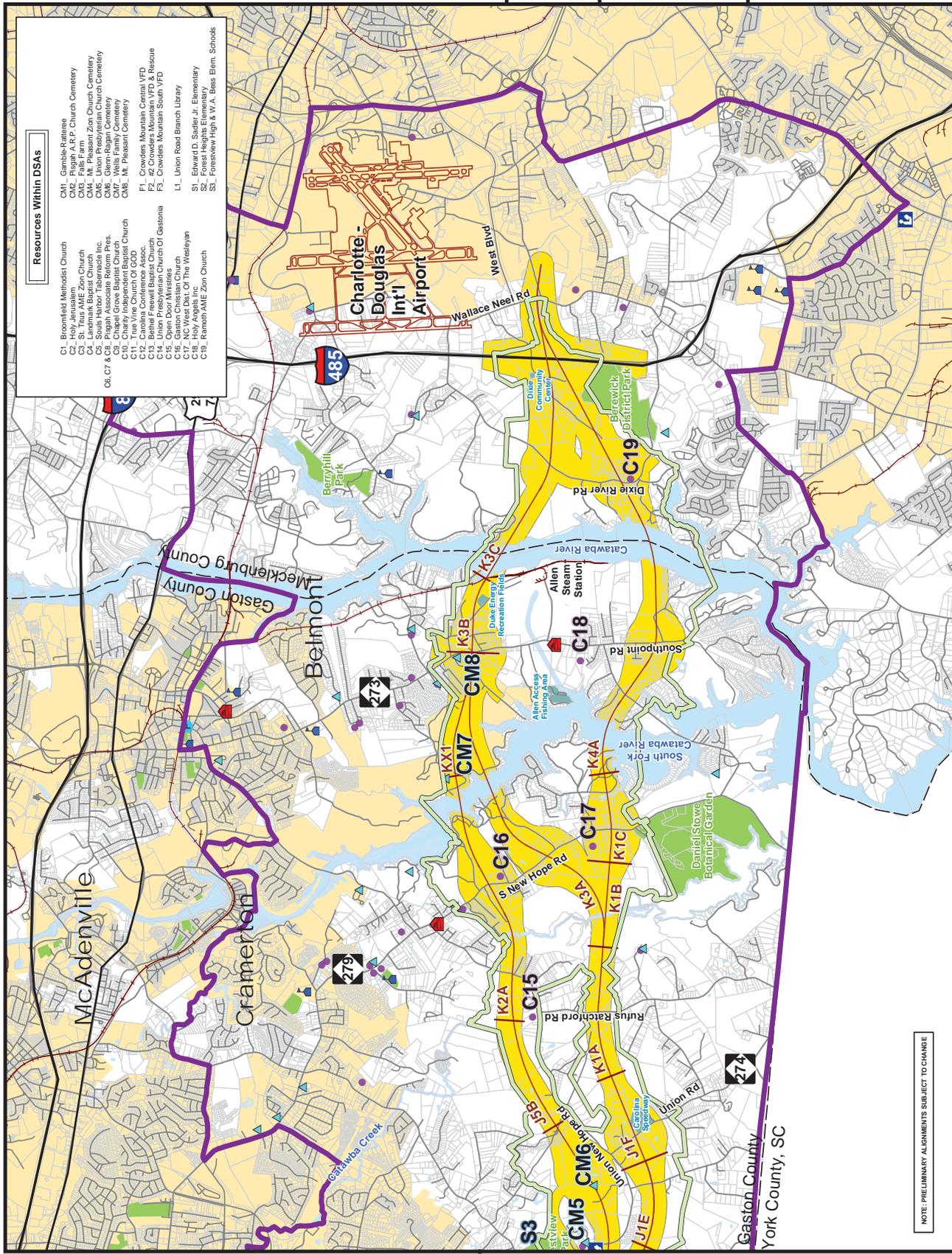
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STIP PROJECT
NO. U-3321
Gaston County and
Mecklenburg County

GASTON EAST-WEST CONNECTOR

COMMUNITY RESOURCES

Figure 9a

NOTE: PRELIMINARY ALIGNMENTS SUBJECT TO CHANGE

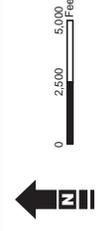


- Resources Within DSAs**
- C1. Broomfield Methodist Church
 - C2. Holy Jerusalem Church
 - C3. Landmark Baptist Church
 - C4. Mt. Pleasant Zion Church Cemetery
 - C5. Mt. Pleasant Zion Church Cemetery
 - C6. Union Presbyterian Church Cemetery
 - C7. Union Presbyterian Church Cemetery
 - C8. Glenn-Ragan Cemetery
 - C9. Mt. Pleasant Cemetery
 - C10. Trinity Baptist Church
 - C11. True Vine Church of God
 - C12. Carolina Conference Assoc.
 - C13. Crowders Mountain Church
 - C14. Union Presbyterian Church of Gastonia
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 - C16. Gaston Christian Church
 - C17. The Wesleyan Church
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 - C19. Ramoth AME Zion Church
 - OM1. Gamble-Ratnesse Church Cemetery
 - OM2. Piggan A.P.P. Church Cemetery
 - OM3. Mt. Pleasant Zion Church Cemetery
 - OM4. Mt. Pleasant Zion Church Cemetery
 - OM5. Union Presbyterian Church Cemetery
 - OM6. Glenn-Ragan Cemetery
 - OM7. Mt. Pleasant Cemetery
 - OM8. Mt. Pleasant Cemetery
 - F1. Crowders Mountain Central VFD
 - F2. Crowders Mountain South VFD
 - F3. Crowders Mountain South VFD
 - L1. Union Road Branch Library
 - S1. Edward D. Sadler Jr. Elementary
 - S2. Forest Heights Elementary
 - S3. Forestview High & W.A. Besse Elem. Schools

Legend

- Direct Community Impact Area
- U-3321 Demographic Area
- Hospitals/Medical Services
- Church Properties
- Cemeteries
- Libraries
- Fire Stations
- Schools
- Police Departments
- Parks
- Private Recreation Facilities
- Parcels
- Segment Breaks
- Design Centerline
- Detailed Study Alternatives
- County Lines
- Interstates
- US Routes
- Streets
- Railroad
- Lakes, Rivers, Streams
- City Limits

Source: Gaston County and Mecklenburg County GIS
Map Printed On 9-16-08.



STIP PROJECT
NO. U-3321

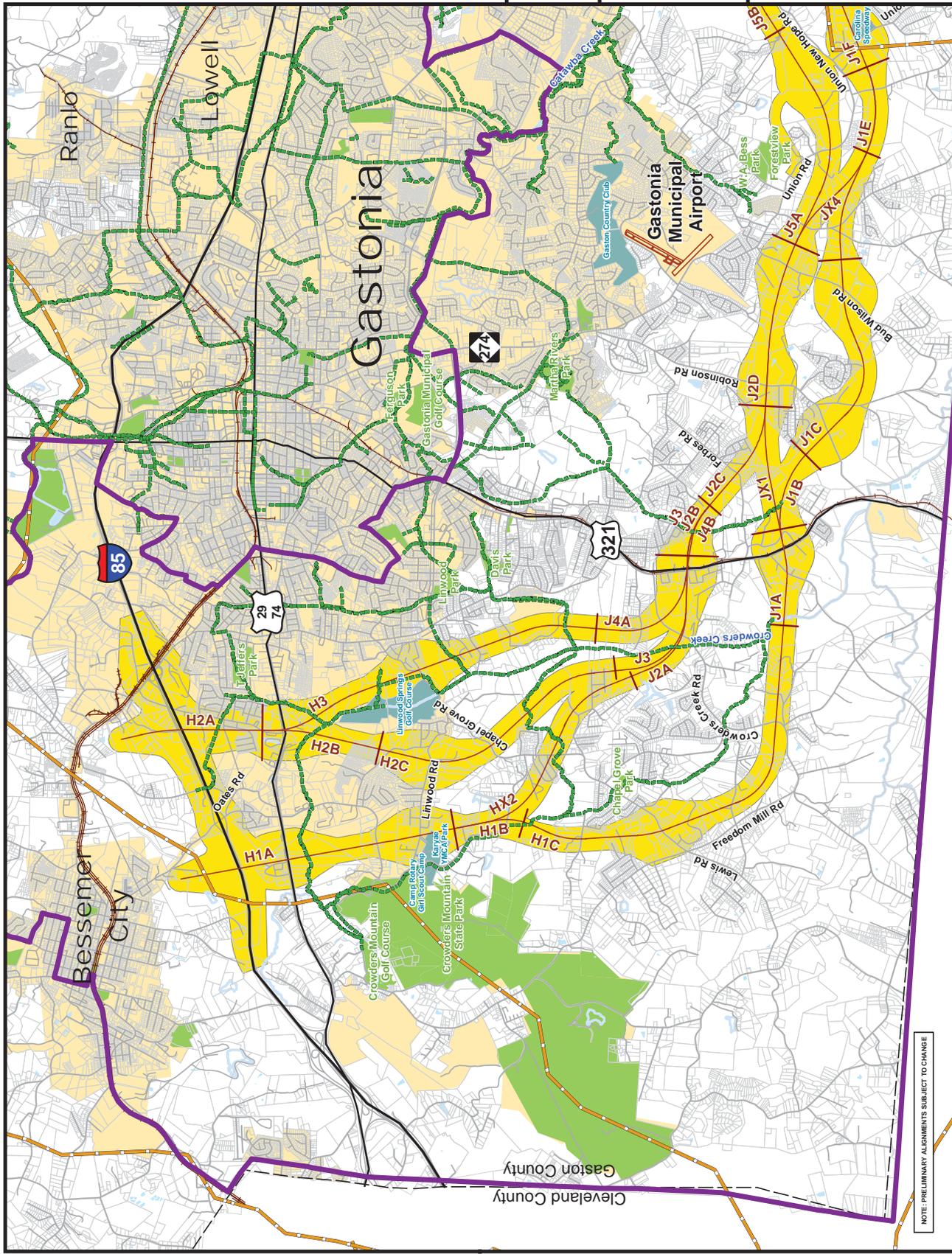
Gaston County and
Mecklenburg County

**GASTON EAST-WEST
CONNECTOR**

**COMMUNITY
RESOURCES**

Figure 9b

NOTE: PRELIMINARY ALIGNMENTS SUBJECT TO CHANGE

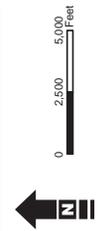


Legend

- U-3321 Demographic Area
- Planned Greenways - MPO
- Greenways Conceptual - CTT*
- Parks
- Private Recreation Facilities
- Parcels
- Design Centerline
- Segment Breaks
- Detailed Study Alternatives
- Interstates
- US Routes
- Streets
- Railroad
- County Lines
- Lakes, Rivers, Streams
- City Limits

*CTT = Carolina Thread Trail

Source: Gaston County and Mecklenburg County GIS
Map Printed On 9-16-08.



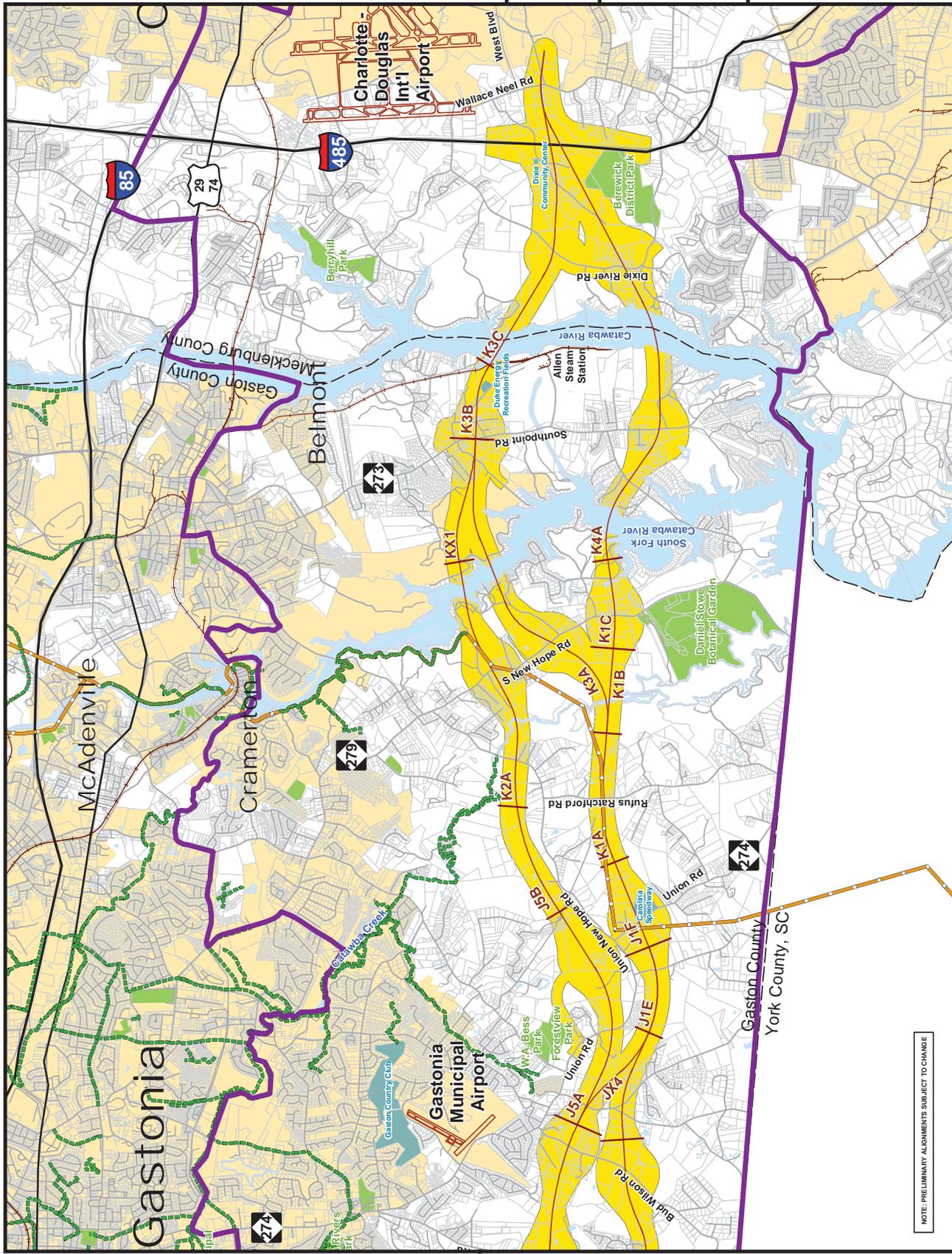
STIP PROJECT NO. U-3321
Gaston County and Mecklenburg County

GASTON EAST-WEST CONNECTOR

PLANNED GREENWAYS

NOTE: PRELIMINARY ALIGNMENTS SUBJECT TO CHANGE

Figure 10a

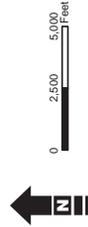


Legend

- U-3321 Demographic Area
- Planned Greenways - MPO
- Greenways Conceptual - CTT*
- Parks
- Private Recreation Facilities
- Parcels
- Design Centerline
- Segment Breaks
- Detailed Study Alternatives
- Interstates
- US Routes
- Streets
- Railroad
- County Lines
- Lakes, Rivers, Streams
- City Limits

*CTT = Carolina Thread Trail

Source: Gaston County and Mecklenburg County GIS
Map Printed On 9-16-08.



STIP PROJECT
NO. U-3321

Gaston County and
Mecklenburg County

**GASTON EAST-WEST
CONNECTOR**

**PLANNED
GREENWAYS**

Figure 10b

NOTE: PRELIMINARY ALIGNMENTS SUBJECT TO CHANGE

Legend

- Historic Architectural Sites On or Eligible for the National Register of Historic Places.
- Area of Potential Effects Boundary
- Design Centerline
- Segment Breaks
- Detailed Study Alternatives
- County Lines
- Interstates
- US Routes
- Streets
- Proposed West Blvd Realignment
- Railroad
- Private Recreation Facilities
- Parks
- State Complexes
- Hydrography
- City Limits

Source: Phase II Historic Architectural Survey - Matison Alexander and Associates (Feb. 2007) Mecklenburg & Gaston Counties GIS. Map Printed On 9-16-08.

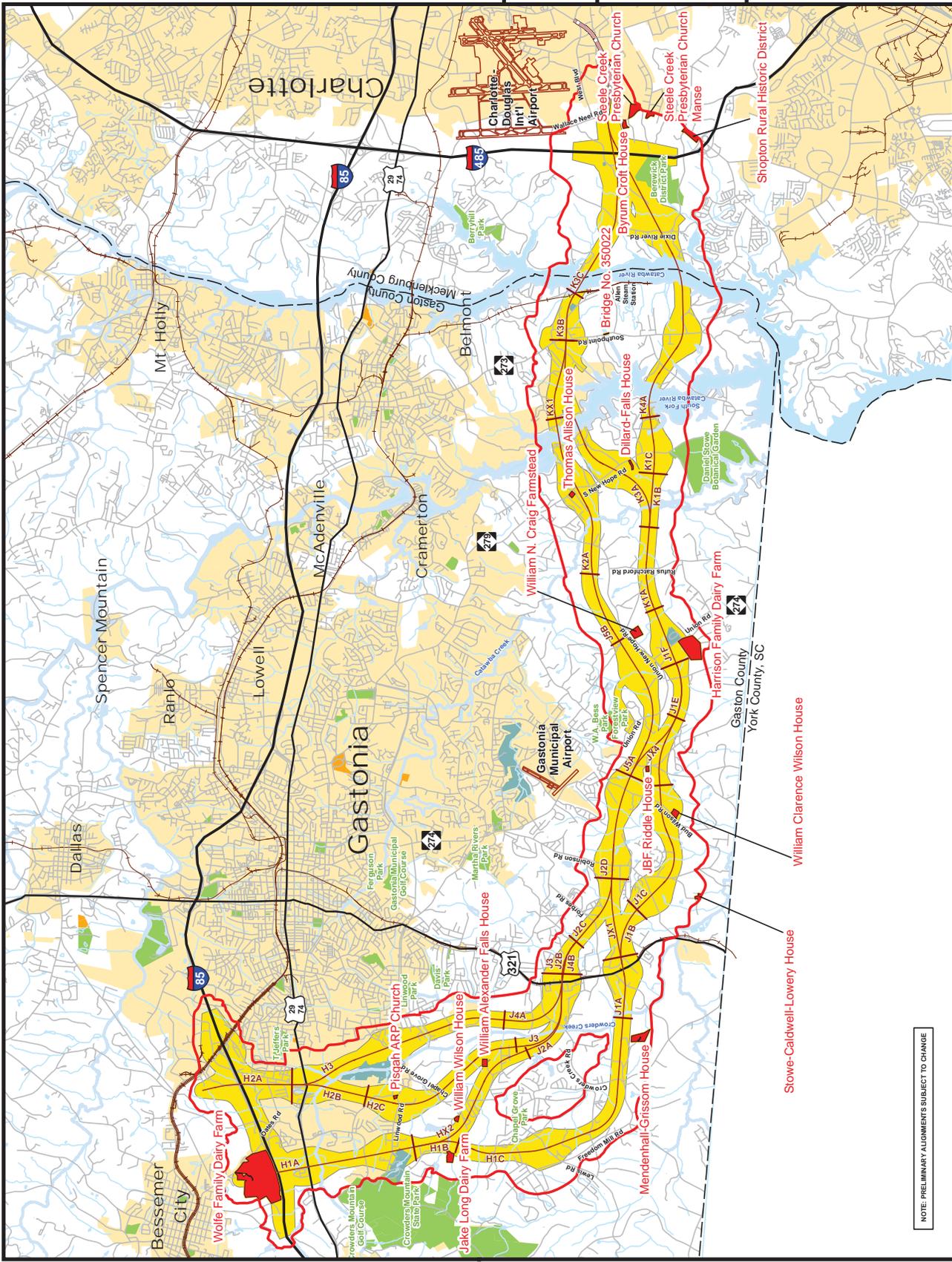


STIP PROJECT NO. U-3321
Gaston County and Mecklenburg County

GASTON EAST-WEST CONNECTOR

HISTORIC ARCHITECTURAL RESOURCES

Figure 11



NOTE: PRELIMINARY ALIGNMENTS SUBJECT TO CHANGE

- Legend**
- Voluntary Agricultural District Properties
 - Design Centerline
 - Segment Breaks
 - Detailed Study Alternatives
 - County Lines
 - Interstates
 - US Routes
 - Streets
 - Proposed West Blvd Realignment
 - Railroad
 - Parcels
 - Private Recreation Facilities
 - Parks
 - Hydrography
 - City Limits

Source: Gaston County and Mecklenburg County GIS
Map Printed On 9-16-08.



turnpike Authority

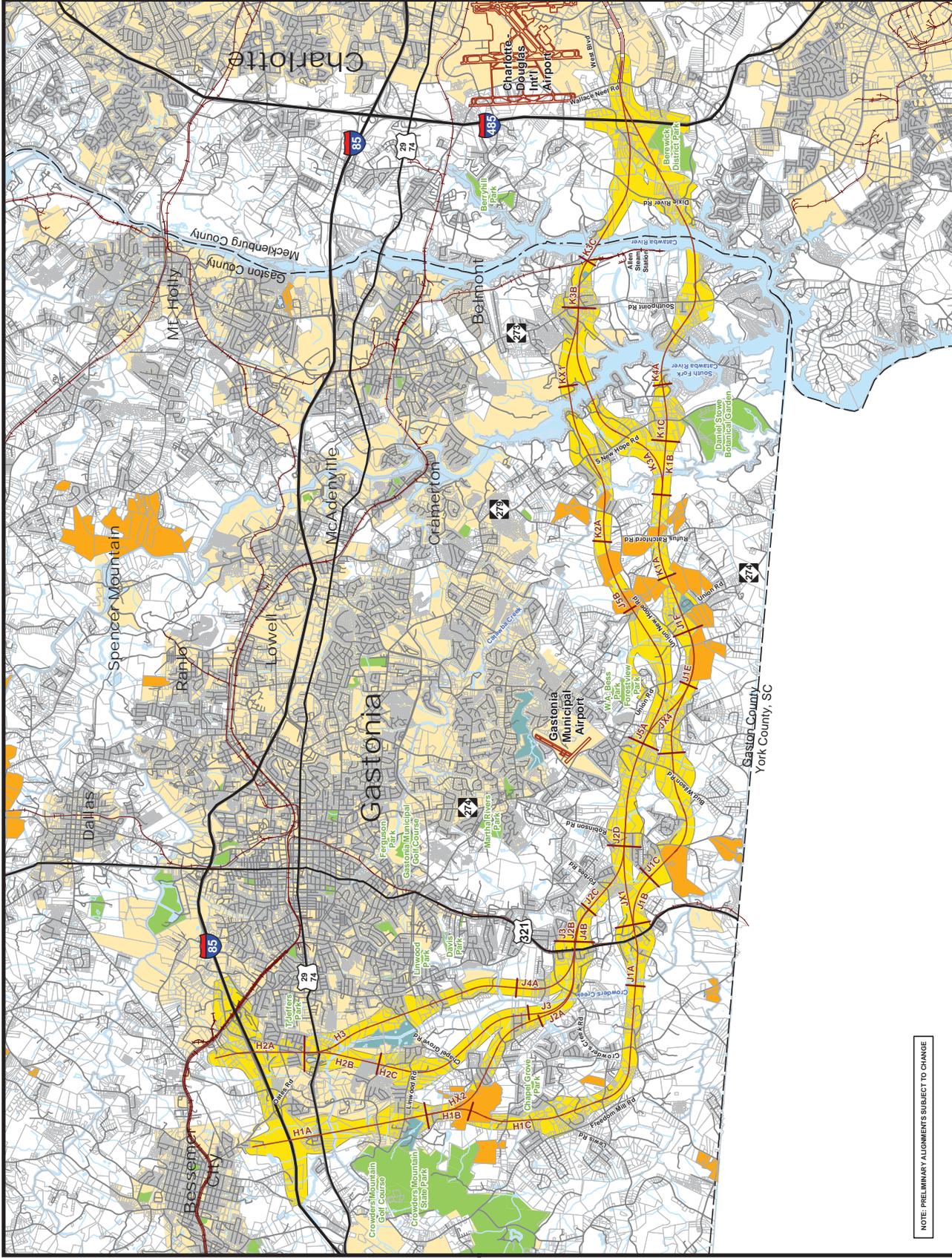
STIP PROJECT
NO. U-3321

Gaston County and Mecklenburg County

GASTON EAST-WEST CONNECTOR

VOLUNTARY AGRICULTURAL DISTRICT PROPERTIES

Figure 12



NOTE: PRELIMINARY ALIGNMENT'S SUBJECT TO CHANGE

APPENDICES

Appendix A. Local Interviews List

**Appendix B. Community Impact Assessment
Preliminary Designs Mapping**

**Appendix C. Dixie Community Flyer/History/Photo of Dixie
Community Center**

Appendix D. Crowders Mountain State Park Map

Appendix E. Berewick Regional Park Master Plan

Appendix F. Farmland Conversion Impact Rating

Appendix G. Relocation Reports

Appendix A

Local Interviews List

Appendix B
Community Impact Assessment
Preliminary Designs Mapping

Appendix C
Dixie Community Flyer/History
Photo of Dixie Community Center

Appendix D
Crowders Mountain State Park Map

Appendix E
Berewick Regional Park Master Plan

Appendix F

Farmland Conversion Impact Rating

Appendix G

Relocation Reports