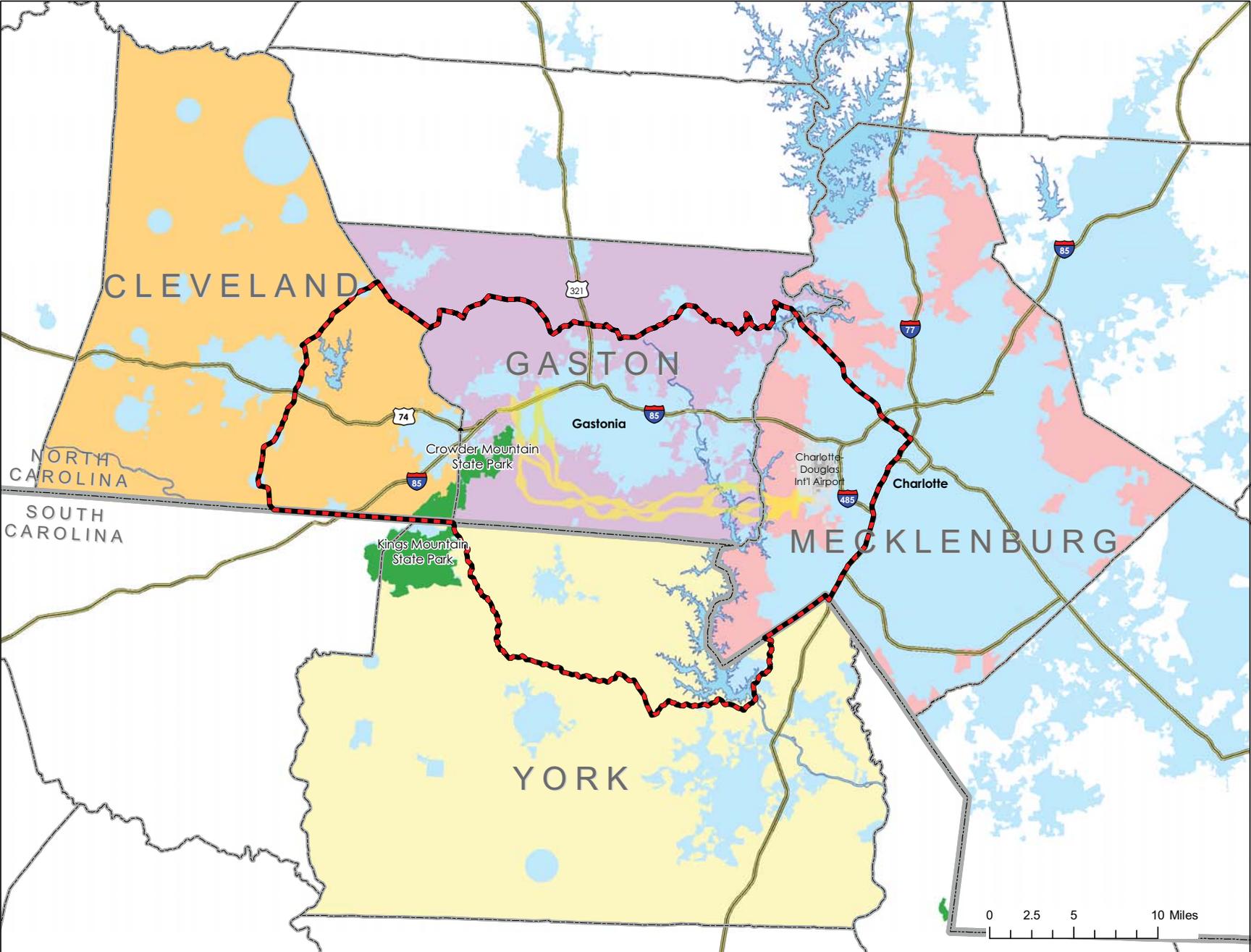


**Figure 1.2
Gaston
E-W Connector
Four-County
Study Area**



Legend

- Limited-access Highway
- Gaston E-W Connector Alternatives
- Lakes
- Parks
- Charlotte-Douglas Int'l Airport
- Municipalities
- ICE Study Area Boundary
- State Boundaries
- County Boundaries
- Gaston County
- Mecklenburg County
- York County
- Cleveland County

Data Sources: PBSJ (Alternatives), NCDOT and SCDOT (Roadways), Charlotte-Douglas Airport, York County, NCOneMap (boundaries, parks, hydrology)

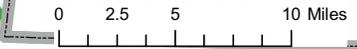


Figure 1.3 Gaston E-W Connector Detailed Study Alternatives

Page 1 of 2
(4 - 27)

Legend

- Detailed Study Alternative
- Corridor Segments (black labels)
- ▒ Gaston E-W Connector Alternatives

Data Source: PBSJ

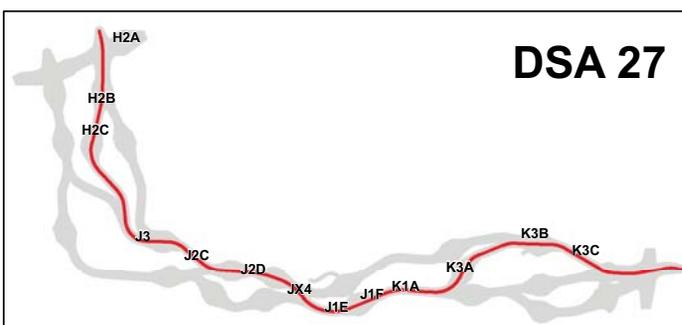
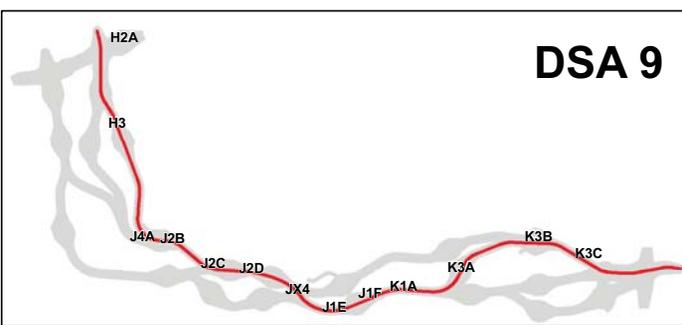
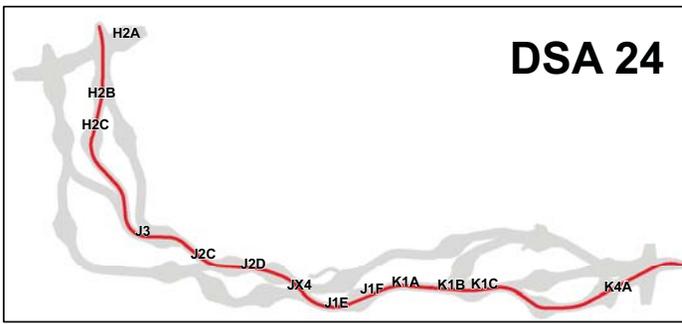
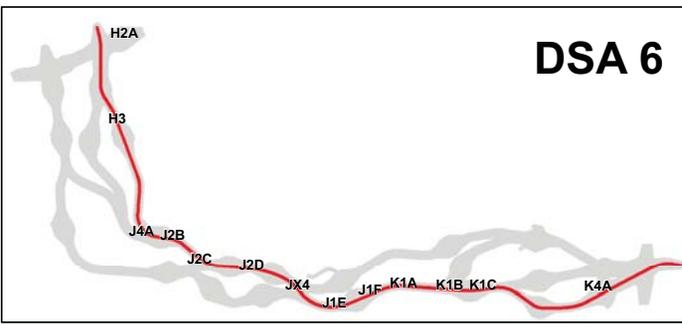
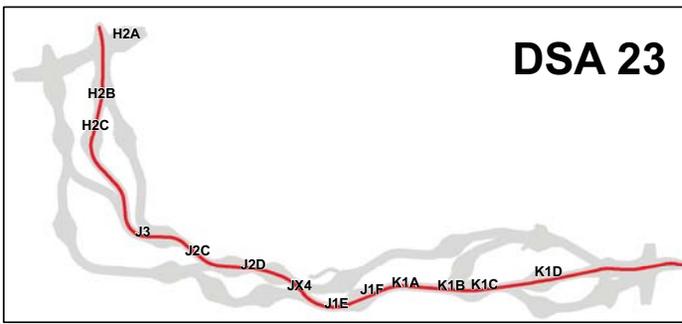
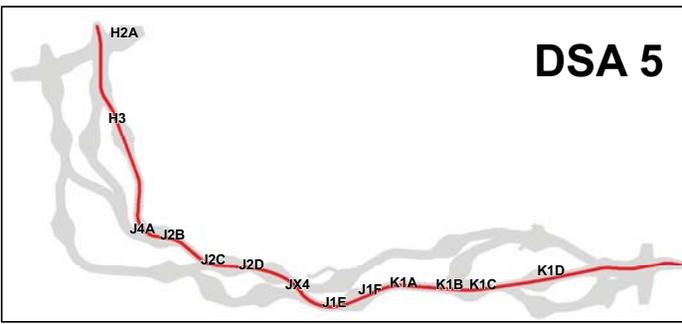
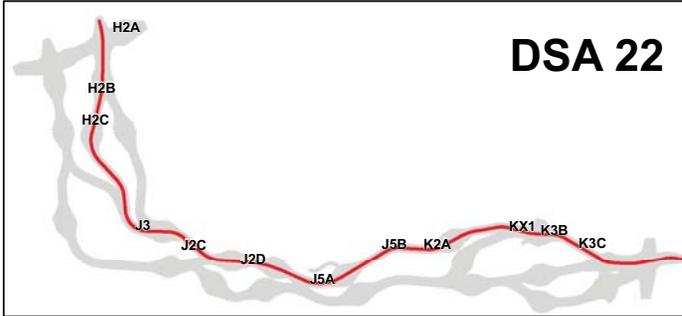
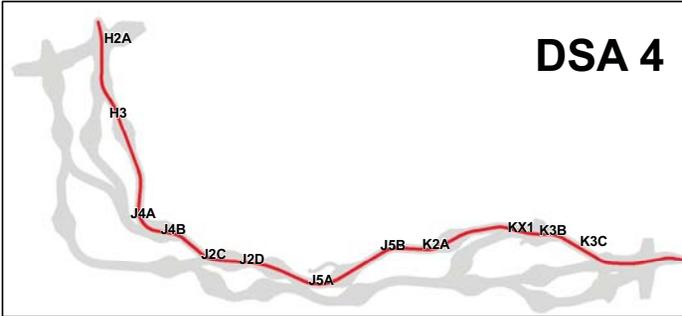
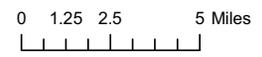
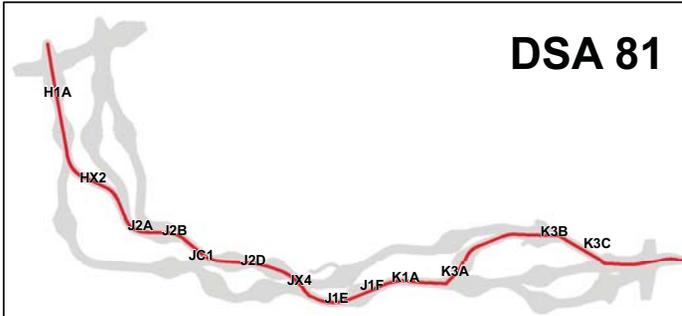
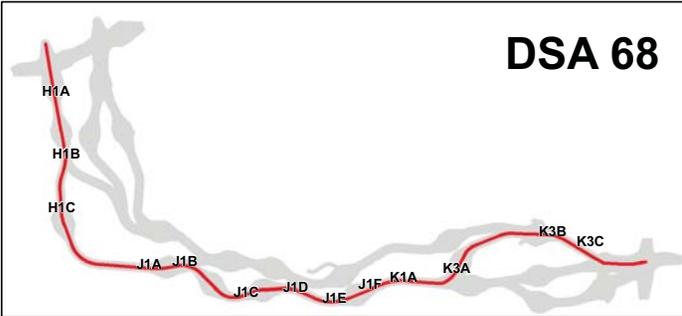
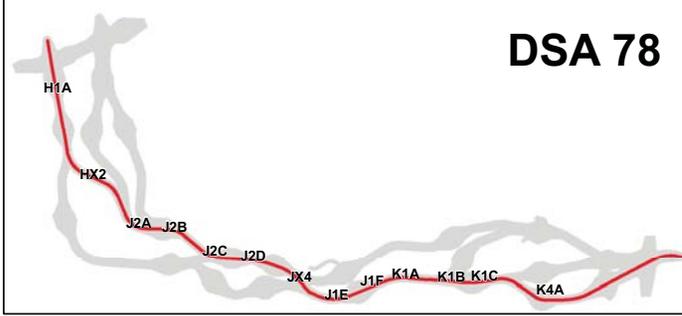
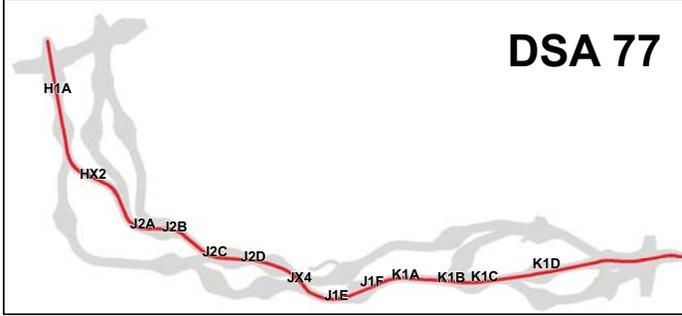
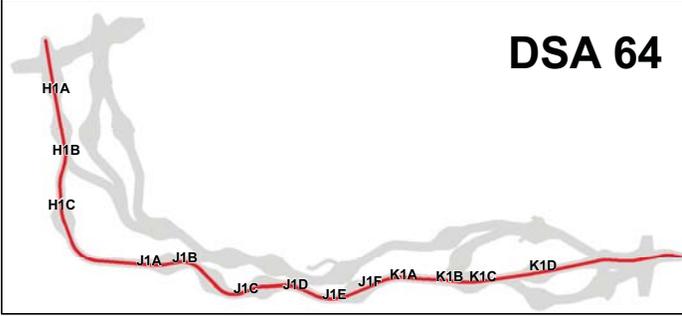
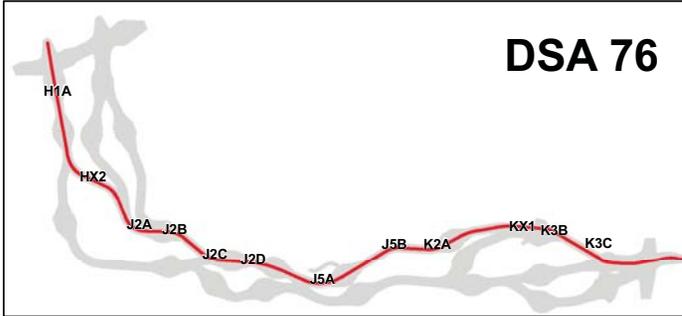
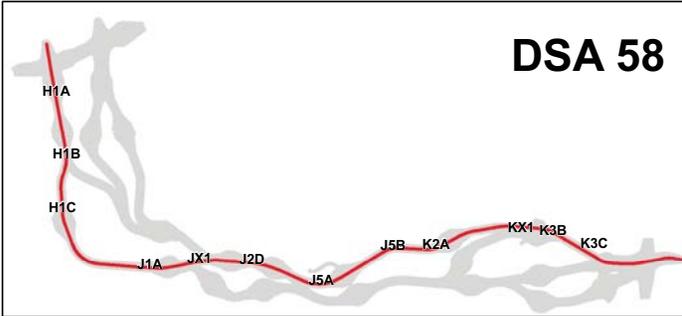


Figure 1.3 Gaston E-W Connector Detailed Study Alternatives

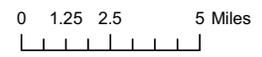
Page 2 of 2
(58 - 81)



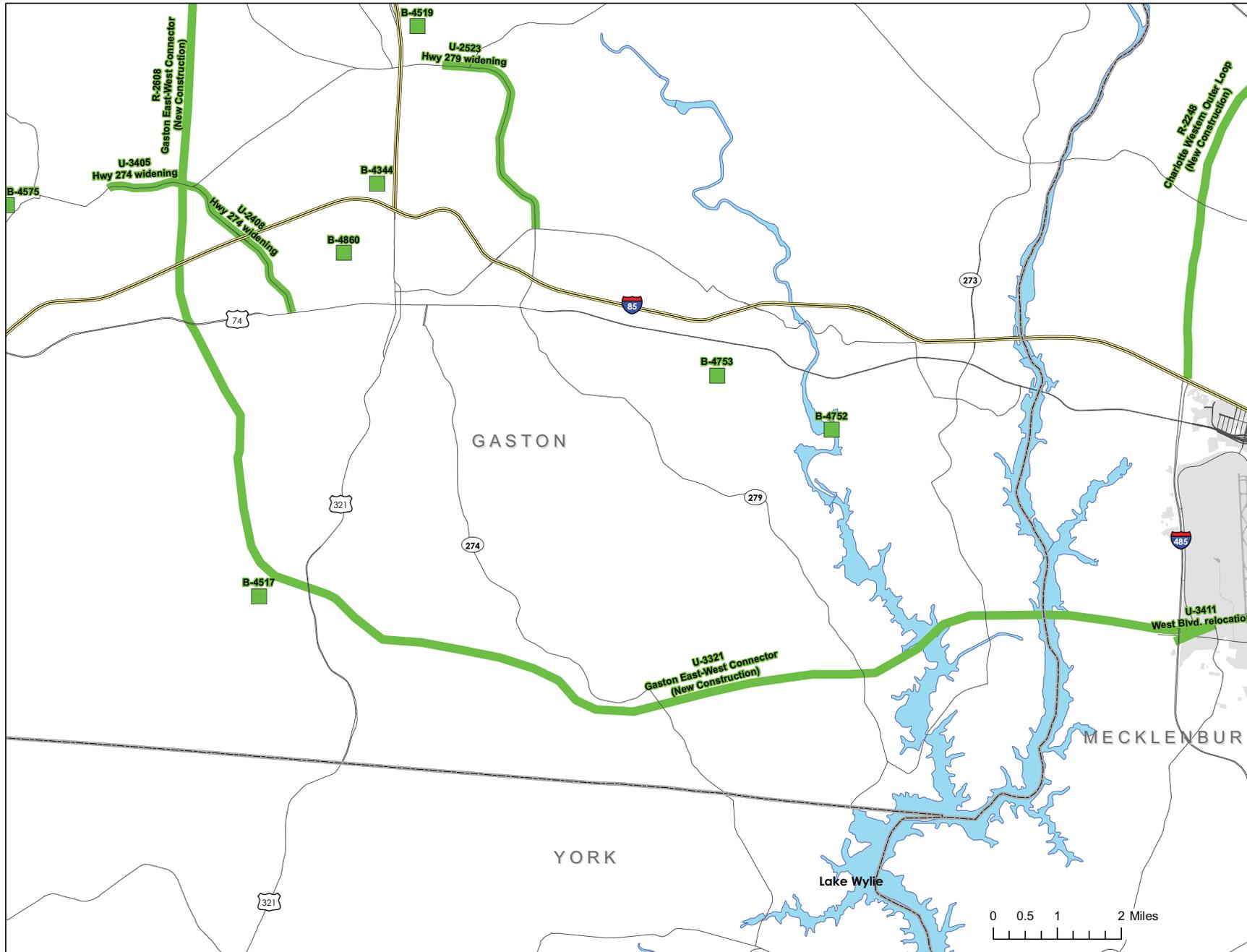
Legend

- Detailed Study Alternative
- Corridor Segments (black labels)
- ▒ Gaston E-W Connector Alternatives

Data Source: PBSJ



**Figure 1.4
Gaston
E-W Connector
Transportation
Improvement
Program
Projects**



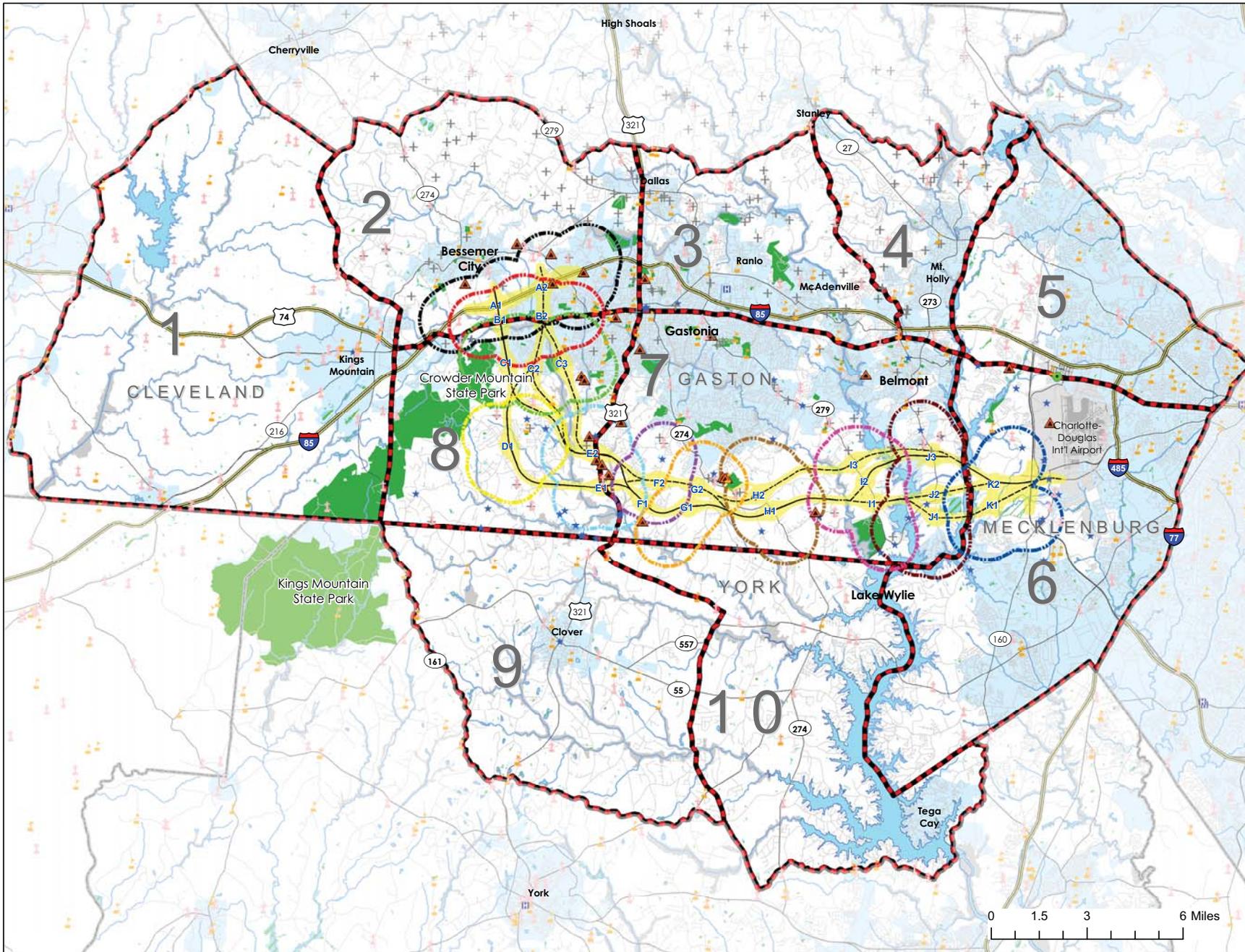
Legend

- Limited-access Highway
- Major Roads
- Lakes
- Charlotte-Douglas Int'l Airport
- County Boundaries
- TIP Bridges
- TIP Roadways

Data is for North Carolina only. Data for South Carolina were not available in spatial format. Data Source: NCDOT TIP Projects 2007-2013



**Figure 3.2
Gaston
E-W Connector
Study Areas**



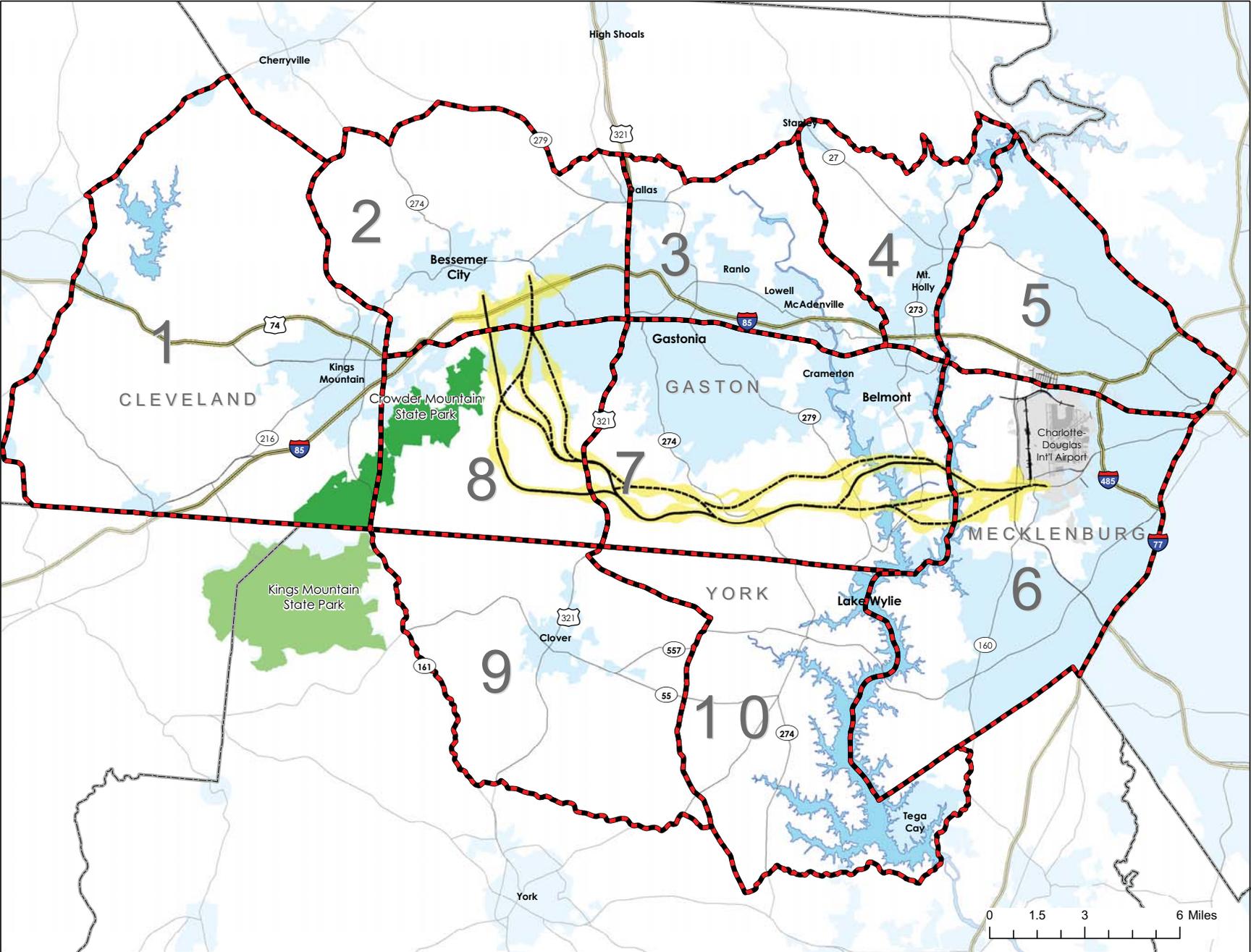
Legend

- Limited-access Highway
- Major Roads
- Rivers
- Alternatives Centerline
- Gaston E-W Connector Alternatives
- Interchanges (blue labels)
- School
- College
- Hospital
- Church
- Cemetery
- Hazardous Waste Disposal Locations
- 100-year Floodplain
- National Wetlands Inventory
- Lakes
- Proposed Park
- Parks
- Charlotte-Douglas Int'l Airport
- Municipal Boundaries
- County Boundaries
- District Boundaries (ICE Study Area)
- Interchange buffers (various colors)

Data Sources: PBSJ (Alternatives), NCDOT and SCDOT (Roadways), Charlotte-Douglas Airport, NC Floodplain Mapping Program, National Wetlands Inventory, York County, NOneMap (boundaries, community features, hydrology)



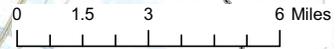
**Figure 6.1
Gaston
E-W Connector
ICE Study Area**



Legend

- Limited-access Highway
- Major Roads
- Alternatives Centerline
- Gaston E-W Connector Alternatives
- Lakes
- Parks
- Charlotte-Douglas Int'l Airport
- Municipal Boundaries
- County Boundaries
- District Boundaries (ICE Study Area)

Data Sources: PBSJ (Alternatives), NCDOT and SCDOT (Roadways), Charlotte-Douglas Airport, York County, NCOneMap (boundaries, parks, hydrology)

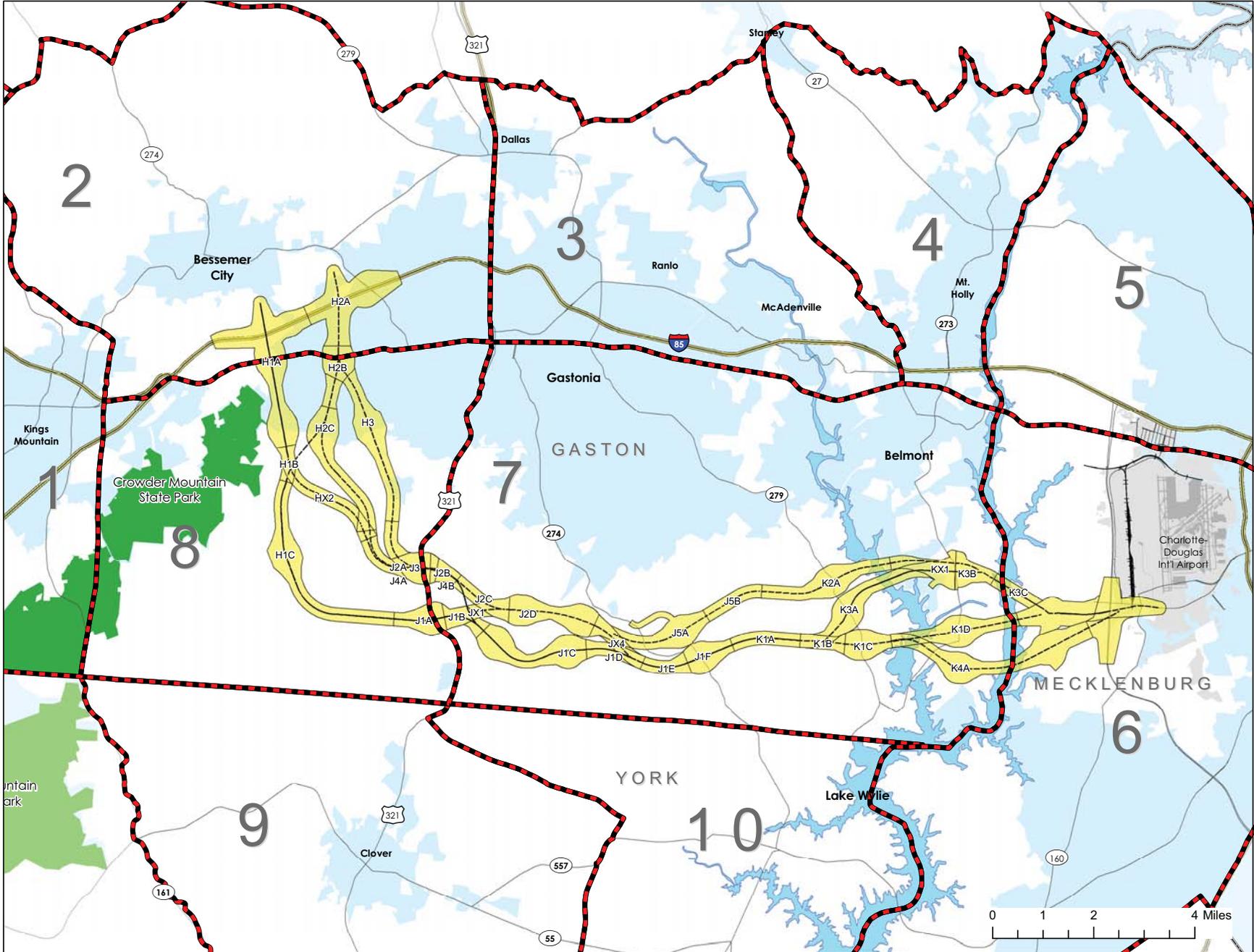
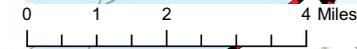


**Figure 6.2
Gaston
E-W Connector
Detailed Study
Alternative
Segments**

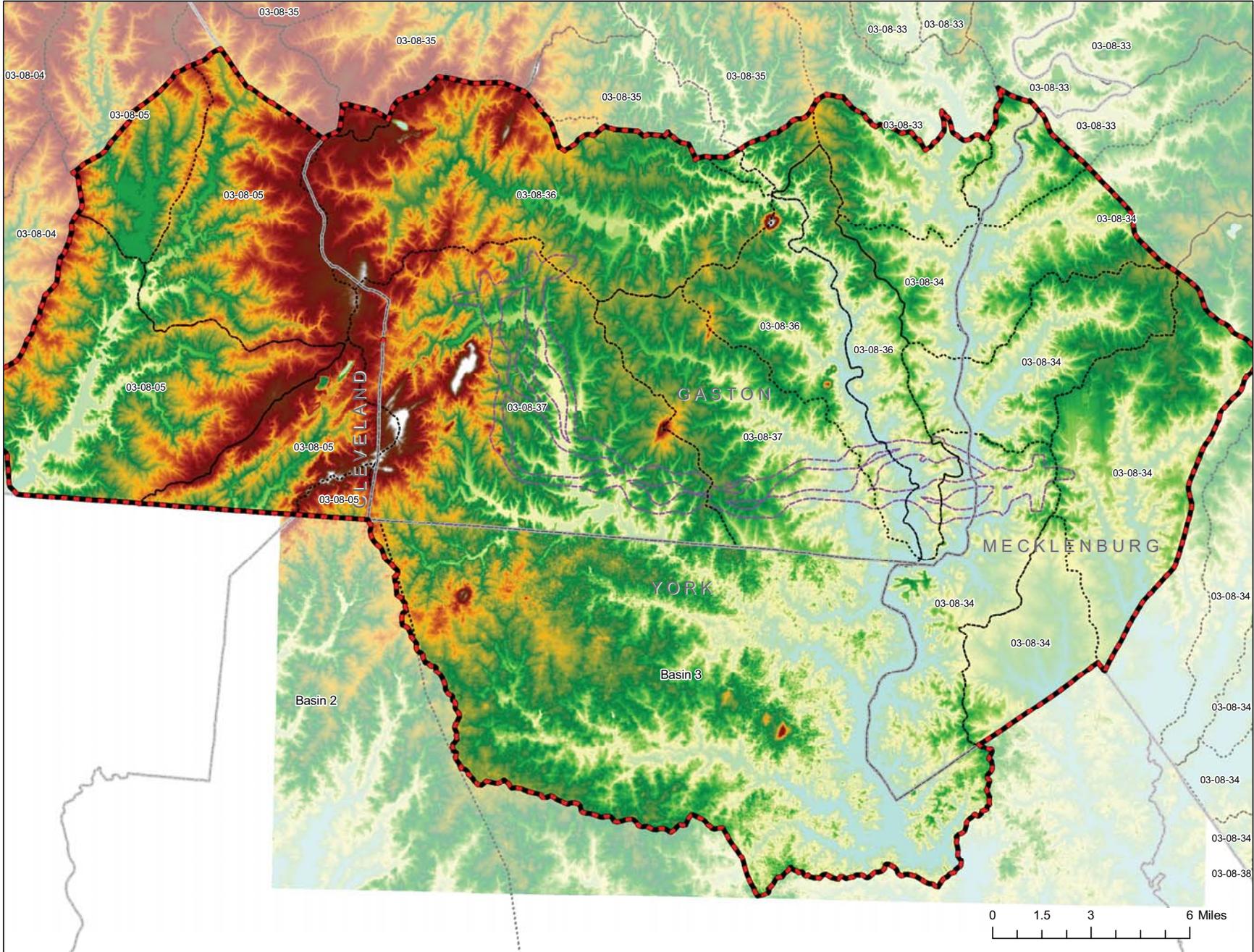
Legend

-  Limited-access Highway
-  Major Roads
-  Alternative segments (labeled)
-  Alternatives Centerline
-  Lakes
-  Parks
-  Charlotte-Douglas Int'l Airport
-  Municipal Boundaries
-  County Boundaries
-  District Boundaries (ICE Study Area)

Data Sources: PBSJ (Alternatives), NCDOT and SCDOT (Roadways), Charlotte-Douglas Airport, York County, NCOneMap (boundaries, parks, hydrology)



**Figure 7.1
Gaston
E-W Connector
Elevation and
Watersheds**



Legend

- Gaston E-W Connector Alternatives
- County Boundaries
- Hydrologic Units

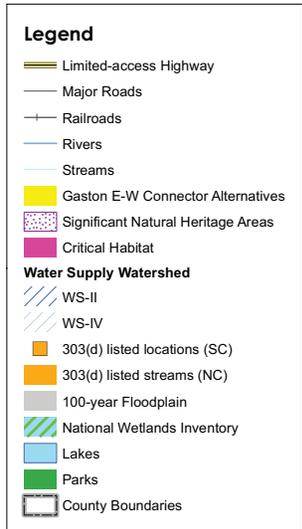
Elevation

- High
- Low

*Labels are NC DWQ hydrologic units in North Carolina, sub-basins in South Carolina.
Data Sources: NCDOT GIS Branch, NCOneMap (watersheds), SC Department of Natural Resources*



**Figure 8.1
Gaston
E-W Connector
Environmental
Features**

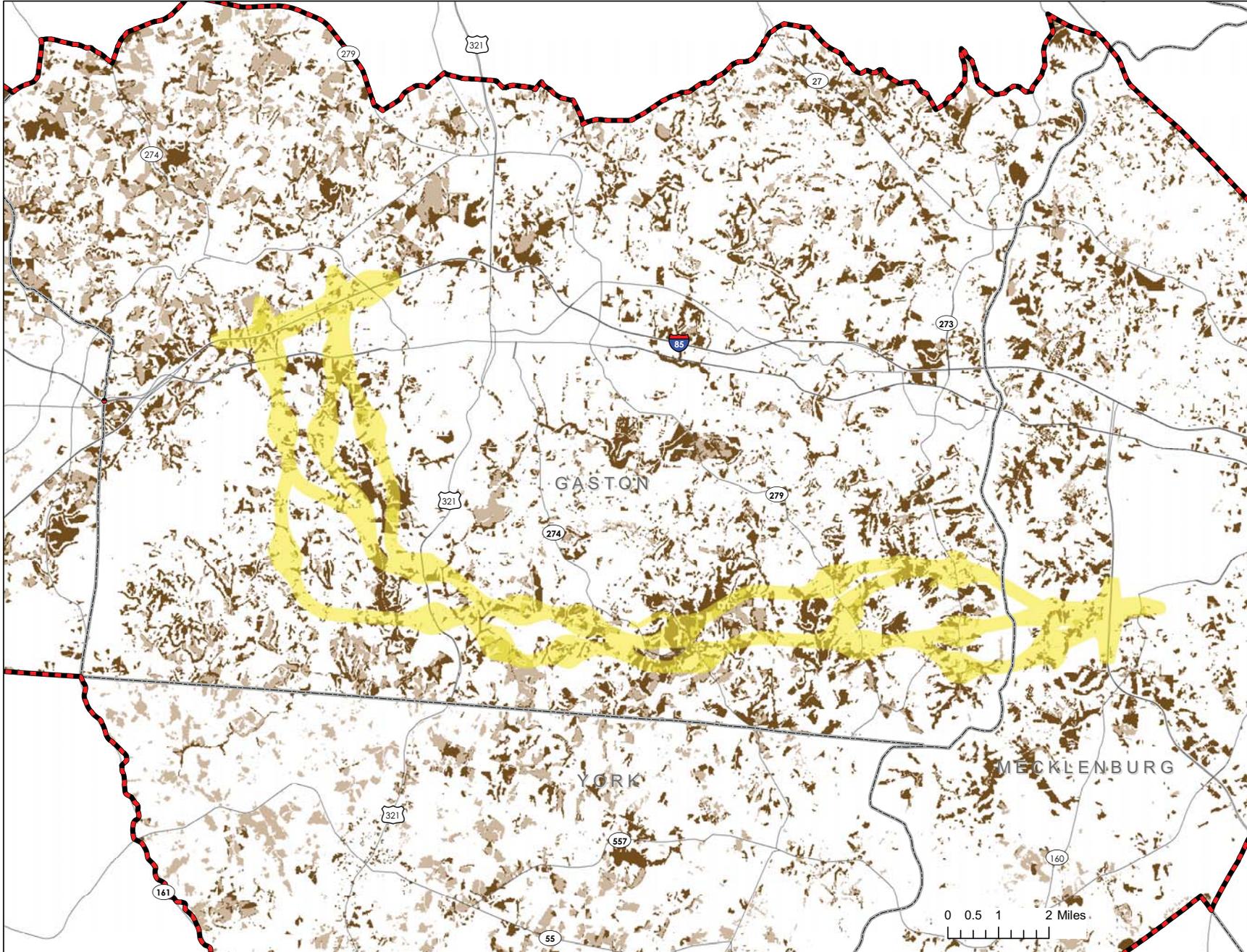


303(d) data from 2006 final reports from NCDENR and SCDNR.

Data Sources: PBSJ (Alternatives), NCDOT and SCDOT (Roadways), NC Floodplain Mapping Program, National Wetlands Inventory, York County, NCDENR, SCDNR, NCOneMap (boundaries, watersheds, parks, natural heritage areas, hydrology)



**Figure 10.1
Gaston
E-W Connector
Farmland and Prime
Agricultural
Soils**



Legend

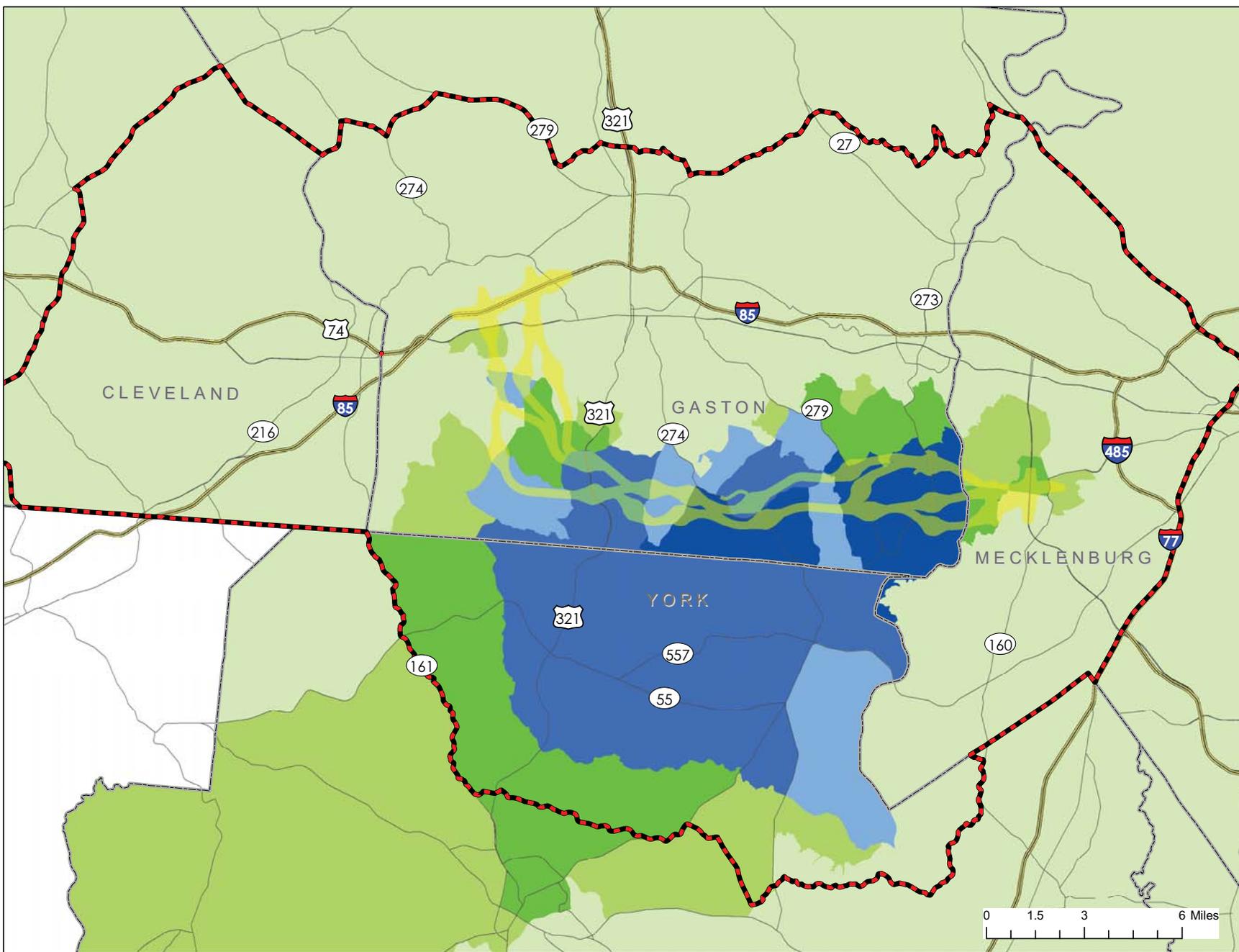
- Major Roads
- ▬ ICE Study Area Boundary
- ▬ County Boundaries
- Gaston E-W Connector Alternatives
- Farmland (corrected)
- Prime agricultural soils (undeveloped land)

Data Sources: Farmland - National Land Cover Database 2001 (corrected for development using updated parcel layers from four counties); Soils - USDA (corrected for development using parcel layers from four counties)



0 0.5 1 2 Miles

**Figure 11.9
Gaston
E-W Connector
Travel Time
Changes (2030)
With and Without
Gaston East-
West Connector**



Legend

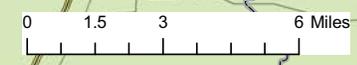
- Limited-access Highway
- Major Roads
- Gaston E-W Connector Alternatives
- County Boundaries
- ICE Study Area

Difference in Travel Time with Project

- 11 - 15.25 minute reduction
- 8 - 11 minute reduction
- 5 - 8 minute reduction
- 3 - 5 minute reduction
- 1 - 3 minute reduction
- 0 - 1 minute reduction

This data was generated using the Metrolina Travel Demand Model, which calculated the difference in average travel time from each location with and without the proposed Gaston East-West Connector. Darker colors indicate greater travel time savings.

Data Sources: 2006 Metrolina Regional Travel Demand Model, The Louis Berger Group, Inc.

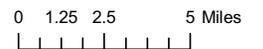


**Figure 11.10
Gaston
E-W Connector
10-Minute
Travel Time
Isochrones for
2030**



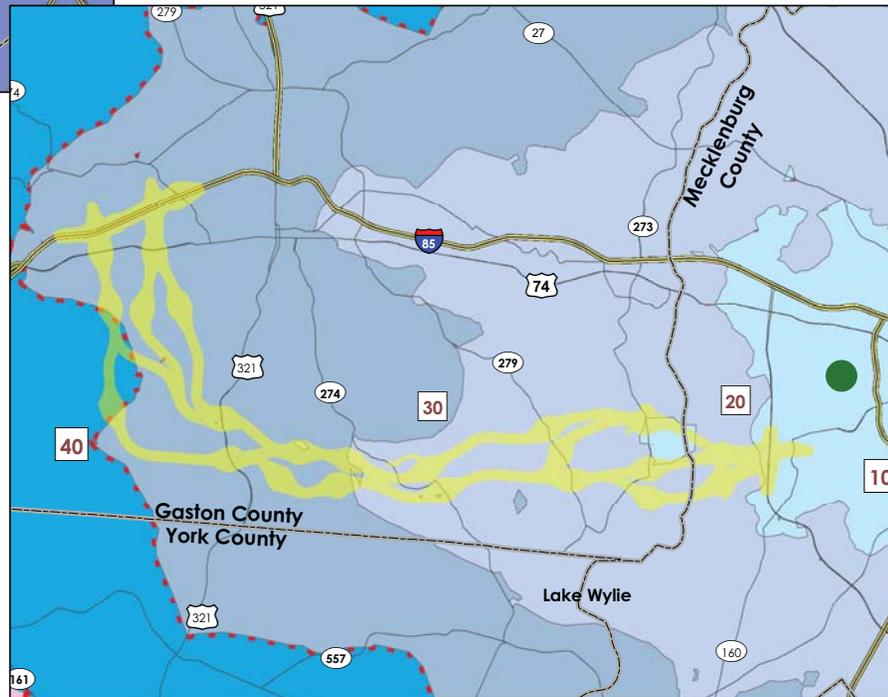
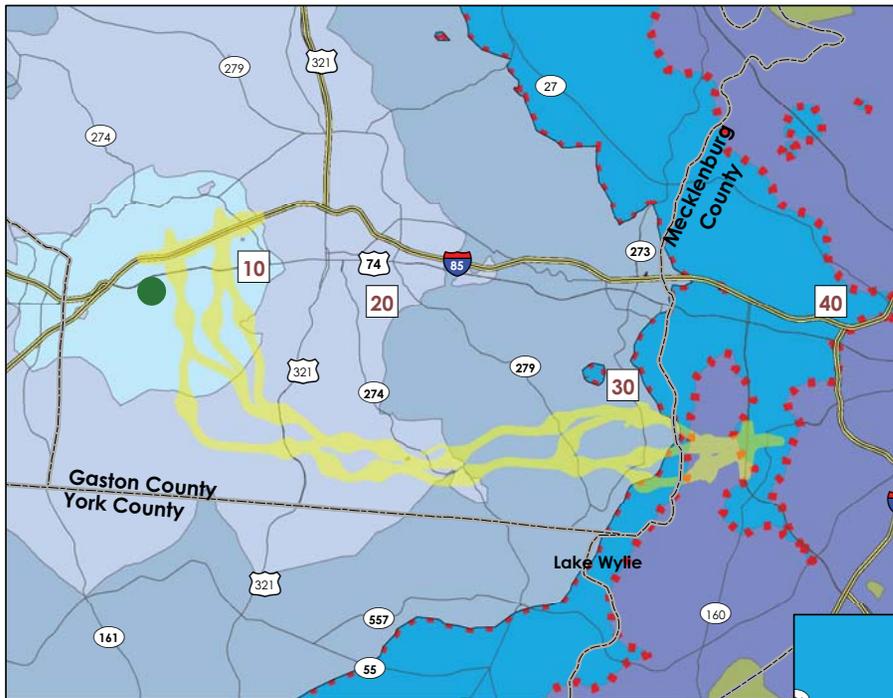
Travel times are shown for destinations near the east and west ends of the project (origins are green dots). Red line is 40-minute isochrone, illustrating maximum typical commuted.

Data Sources: 2007 Metrolina Regional Travel Demand Model, The Louis Berger Group, Inc.

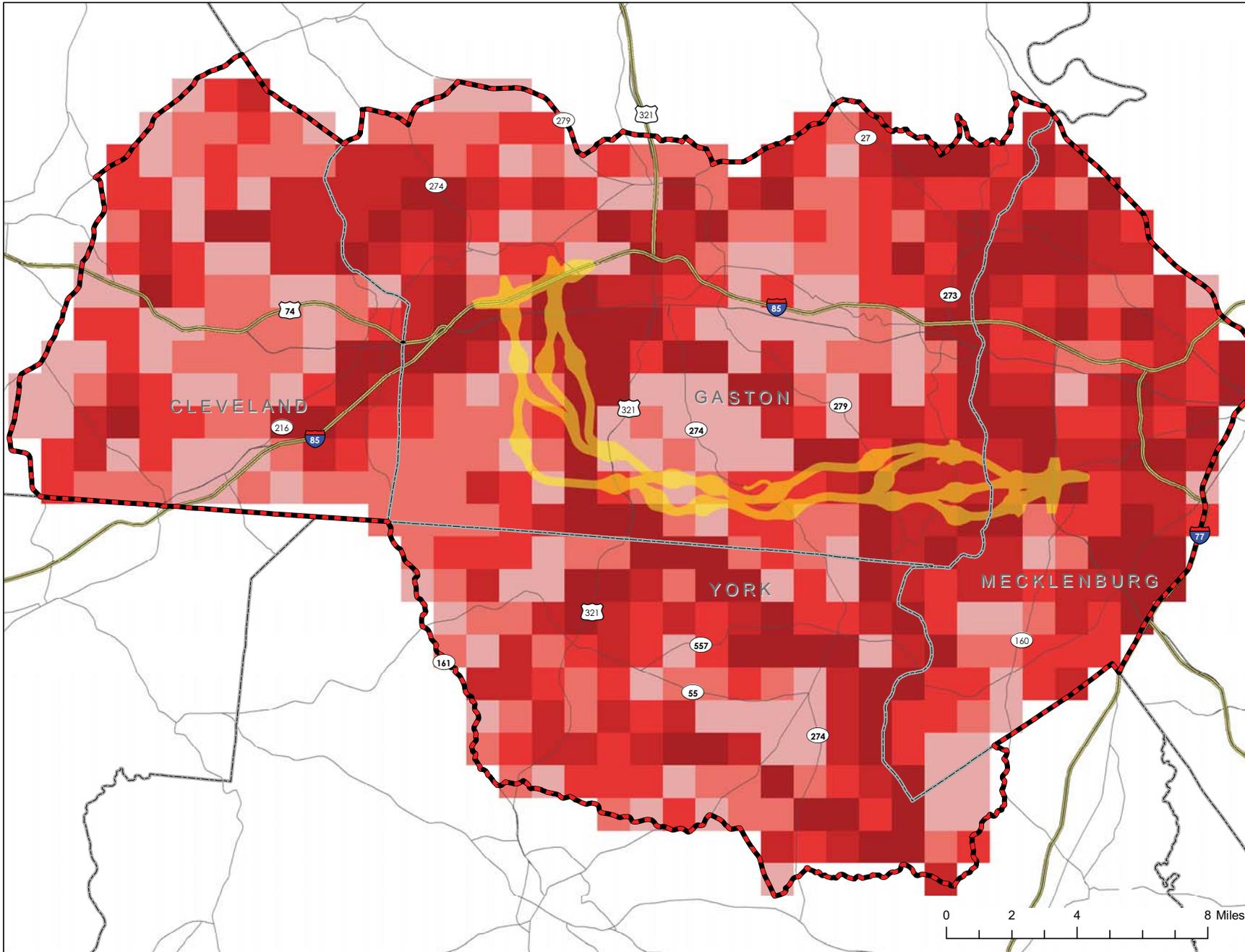


West

East



**Figure 12.1
Gaston
E-W Connector
Human and
Natural
Environment
Sensitivity**



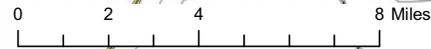
Legend

- Limited-access Highway
- Major Roads
- Gaston E-W Connector Alternatives
- County Boundaries
- ICE Study Area

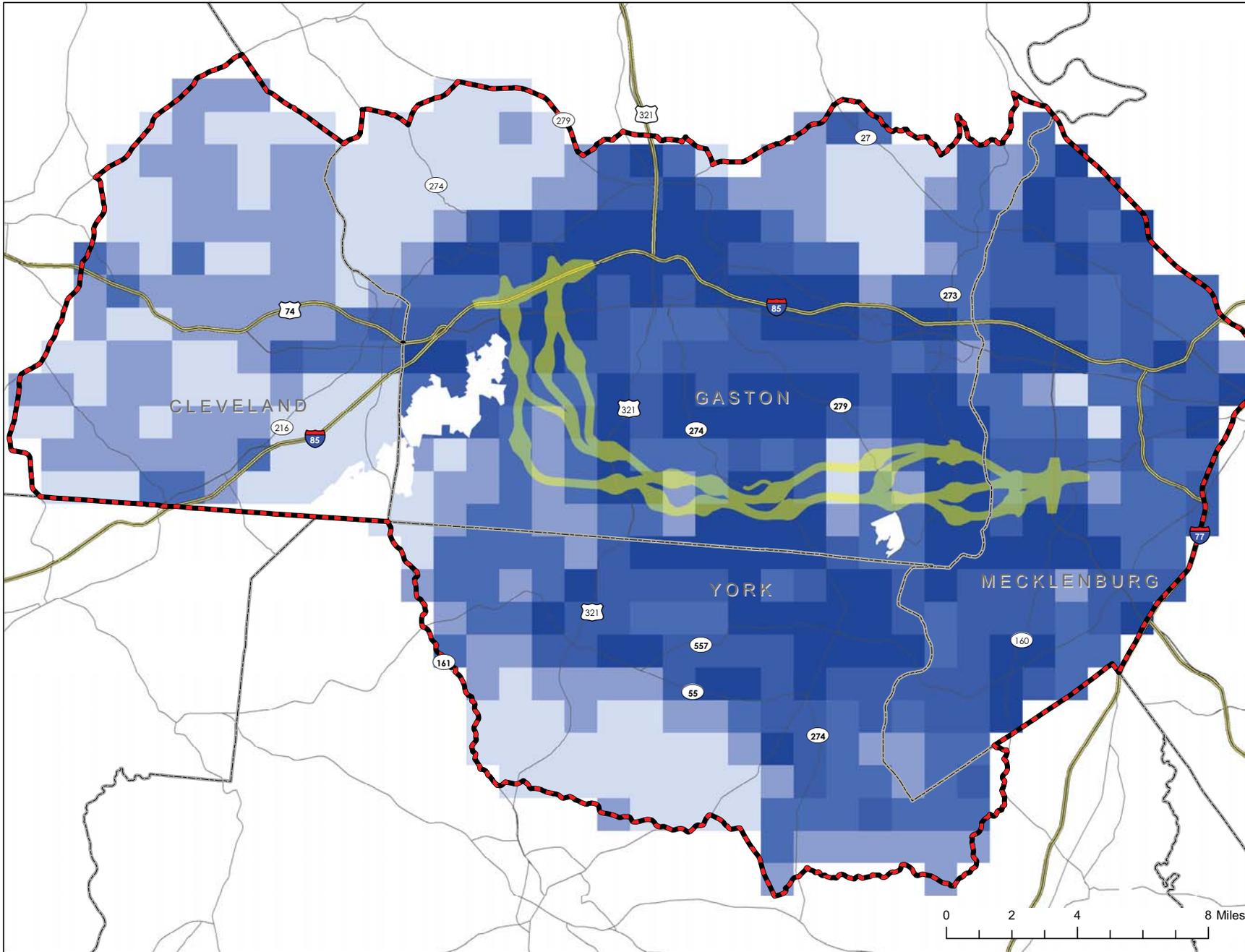
Human and Natural Environment Sensitivity

- Bottom quintile (0-20%)
- 2nd quintile (20-40%)
- 3rd quintile (40-60%)
- 4th quintile (60-80%)
- Top quintile (80-100%)

The one-mile grid cells were used to summarize many data layers representing human and natural environment sensitivity. Higher values indicate a greater cumulative sensitivity (e.g. presence of wetlands, historic sites, etc). Values for York County were scaled separately, reflecting a lower potential maximum value due to missing data layers that were present in other counties. Therefore, the maximum value in York County is shown as the same color/ quintile as the maximum value in other counties, even though the numeric values are different. For more information on how the grid values were calculated, please see section 12.1 of the report.



**Figure 12.2
Gaston
E-W Connector
Cumulative
Growth Potential**



Legend

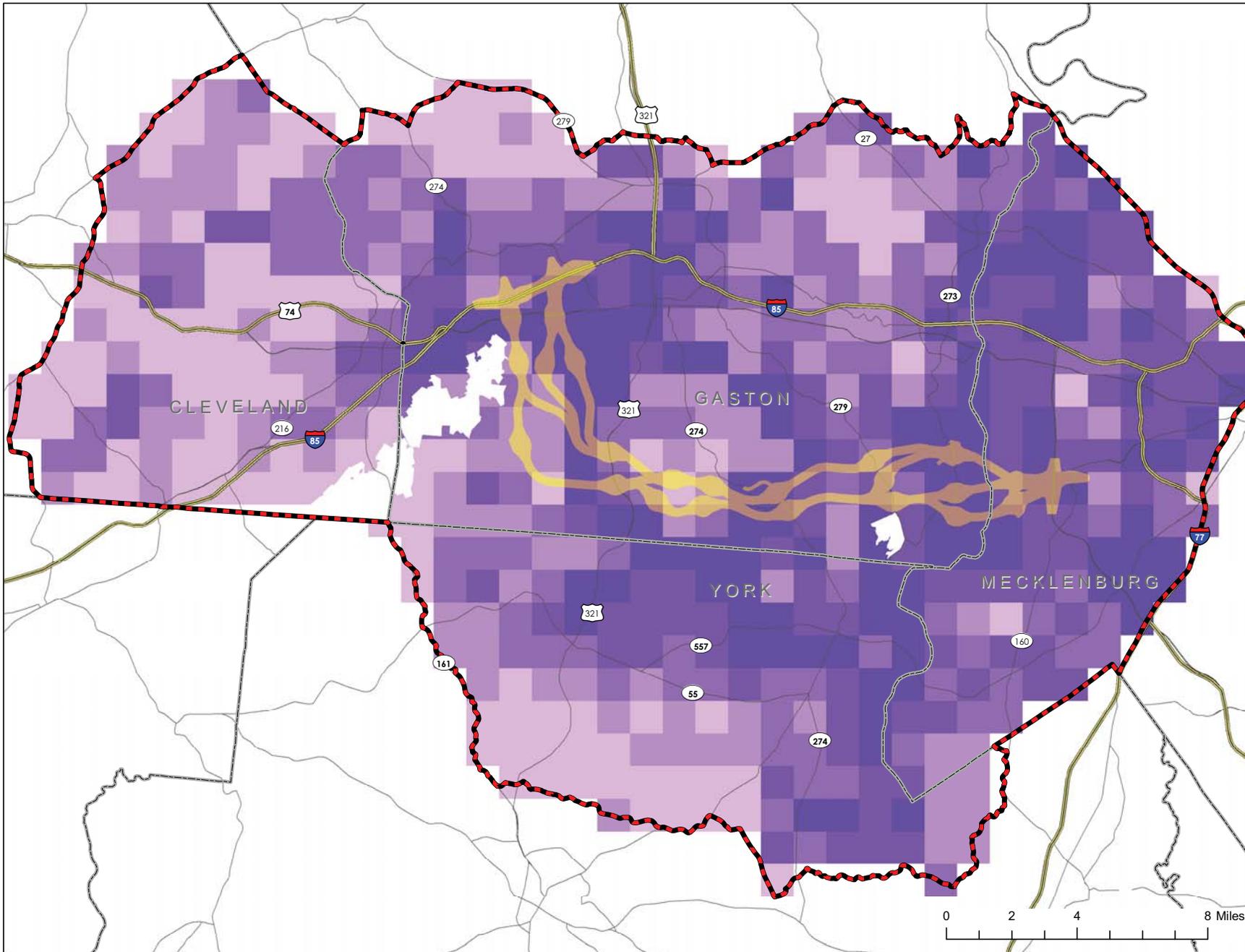
- Limited-access Highway
- Major Roads
- Gaston E-W Connector Alternatives
- County Boundaries
- ICE Study Area

Growth Potential

- Bottom quintile (0-20%)
- 2nd quintile (20-40%)
- 3rd quintile (40-60%)
- 4th quintile (60-80%)
- Top quintile (80-100%)

The one-mile grid cells were used to summarize many data layers representing cumulative growth potential and growth potential as an indirect effect to the proposed roadway. Higher values indicate a greater cumulative growth potential (e.g. developable land, public utilities, etc). Values for York County were scaled separately, reflecting a lower potential maximum value due to missing data layers that were present in other counties. Therefore, the maximum value in York County is shown as the same color/quintile as the maximum value in other counties, even though the numeric values are different. Permanently protected lands were omitted from the analysis. For more information on how the grid values were calculated, please see section 12.1 of the report.

**Figure 12.3
Gaston
E-W Connector
Composite of
Cumulative
Growth Potential
and Human/
Natural
Environment
Sensitivity**



Legend

- Limited-access Highway
- Major Roads
- Gaston E-W Connector Alternatives
- County Boundaries
- ICE Study Area

Composite: Growth Potential and Sensitivity

- Bottom quintile (0-20%)
- 2nd quintile (20-40%)
- 3rd quintile (40-60%)
- 4th quintile (60-80%)
- Top quintile (80-100%)

The one-mile grid cells were used to summarize many data layers representing both cumulative growth potential and human/natural environment sensitivity. Higher values indicate areas that have both high cumulative growth potential and high environmental sensitivity. Values for York County were scaled separately, reflecting a lower potential maximum value due to missing data layers that were present in other counties. Therefore, the maximum value in York County is shown as the same color/quintile as the maximum value in other counties, even though the numeric values are different. Permanently protected lands were omitted from the analysis. For more information on how the grid values were calculated, please see section 12.1 of the report.

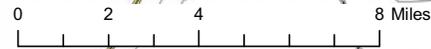
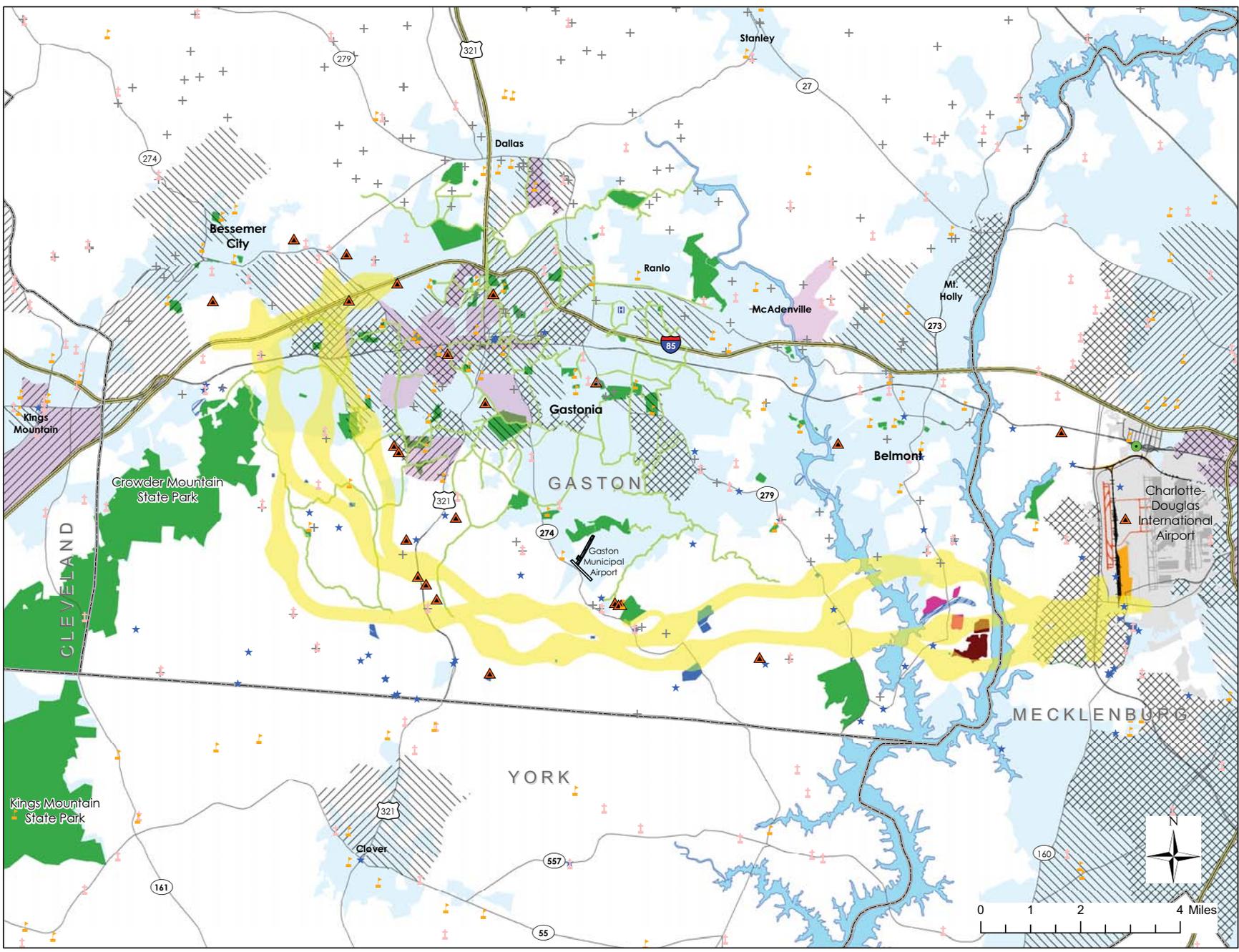


Figure 12.4 Gaston E-W Connector Community Features

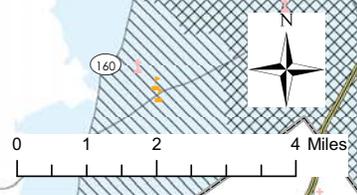


Legend

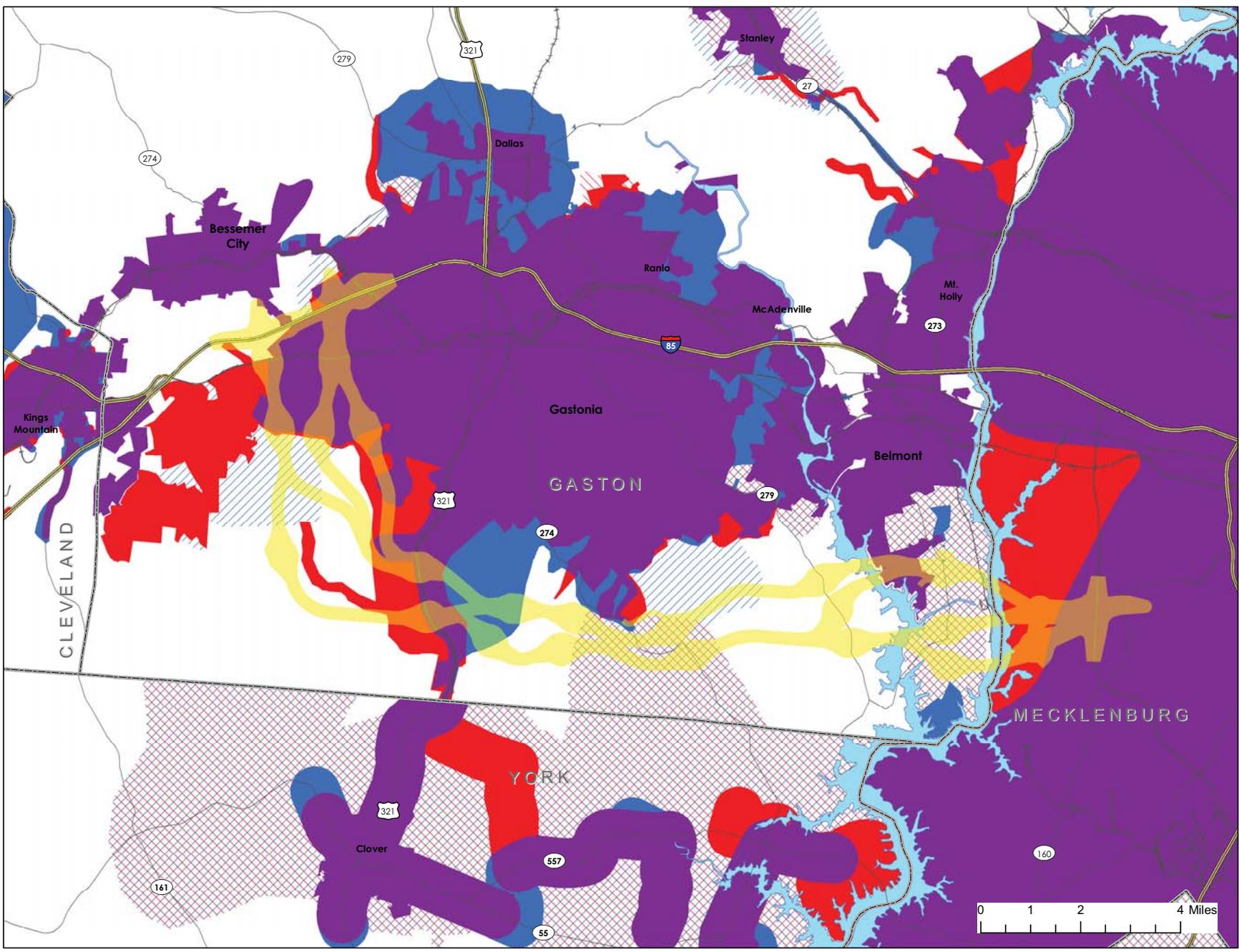
- Limited-access Highway
- Major Roads
- Gaston E-W Connector Alternatives
- School
- College
- Hospital
- Church
- Cemetery
- Historic Sites
- Hazardous Waste Disposal Locations
- Greenways/Trails
- Lakes
- Historic Districts
- Duke Power Plant
- Landfill
- Proposed Park
- Parks
- Charlotte-Douglas Int'l Airport
- Proposed Runway
- Proposed Intermodal Facility
- Municipal Boundaries
- County Boundaries
- Above average % non-white
- Above average % Hispanic
- Lowest 20% of median household income

Demographics are from the 2000 Census, blockgroup level. Averages were calculated for blockgroups within the ICE Study Area.

Data Sources: US Census, NCDOT and SCDOT (roadways), NCOneMap (boundaries, parks, hydrology, community features), ESRI (community features), PBSJ (alternatives, historic sites), City of Gastonia (greenways), Charlotte-Douglas Int'l Airport



**Figure 12.5
Gaston
E-W Connector
Public
Utilities**

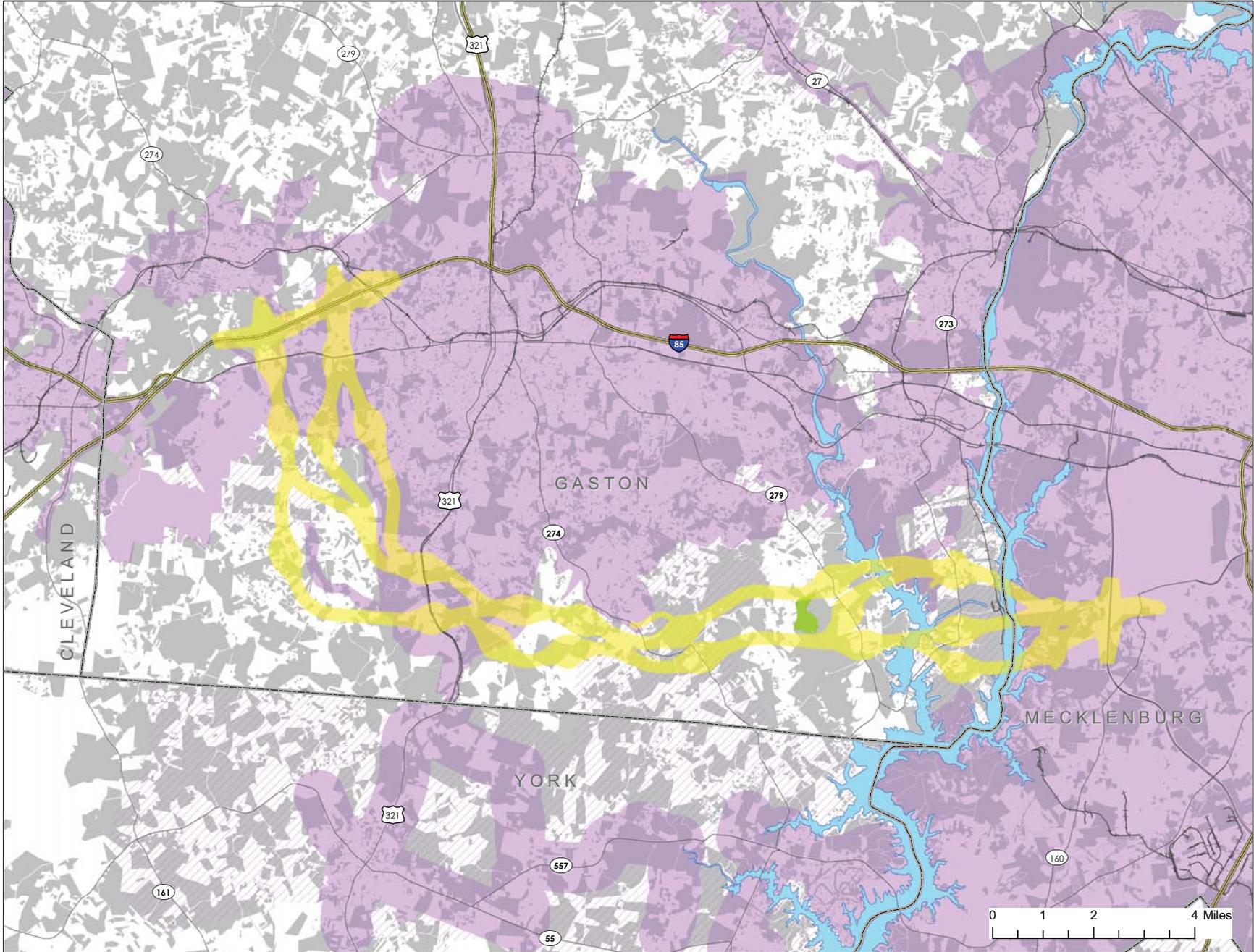


Legend

- Limited-access Highway
- Major Roads
- Railroads
- Gaston E-W Connector Alternatives
- County Boundaries
- Lakes
- Public Water and Sewer Service Area (Current)
- Public Water Service Area (Current)
- Public Sewer Service Area (Current)
- Public Water Service Area (Planned)
- Public Sewer Service Area (Planned)

The utilities data is a compilation of data from several sources: 2004 Current and Future Public Water and Sewer GIS layers prepared by the NC Center for Geographic Information & Analysis and the NC Rural Center, York County Comprehensive Plan conceptual urban services area, and local utility boundary information acquired from the City of Gastonia, Towns of Clover and Belmont, and Carolina Water Services. In cases where the boundaries of these various sources did not match, the more extensive boundary was used.

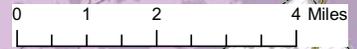
**Figure 12.6
Gaston
E-W Connector
Developable
Land**



Legend

- Limited-access Highway
- Major Roads
- Railroads
- Gaston E-W Connector Alternatives
- County Boundaries
- Lakes
- Conservation Easement
- Developable Parcels
- Public Water and/or Sewer Service Area (Current)
- Public Water and/or Sewer Service Area (Planned)

Updated parcel layers were obtained from Gaston, Mecklenburg, York and Cleveland counties. Parcels identified as developable (undeveloped) are selected in the parcel database as having less than \$1000 in building/improvement value (i.e. there are no substantial buildings present on the parcel), OR greater than 100 acres and less than \$100,000 in building/improvement value. Tax exempt parcels such as airports and state parks were excluded regardless of value. For sources of the public utilities data layers, please see Figure 12.5.



**Figure 12.7
Gaston
E-W Connector
Development
Over Time**

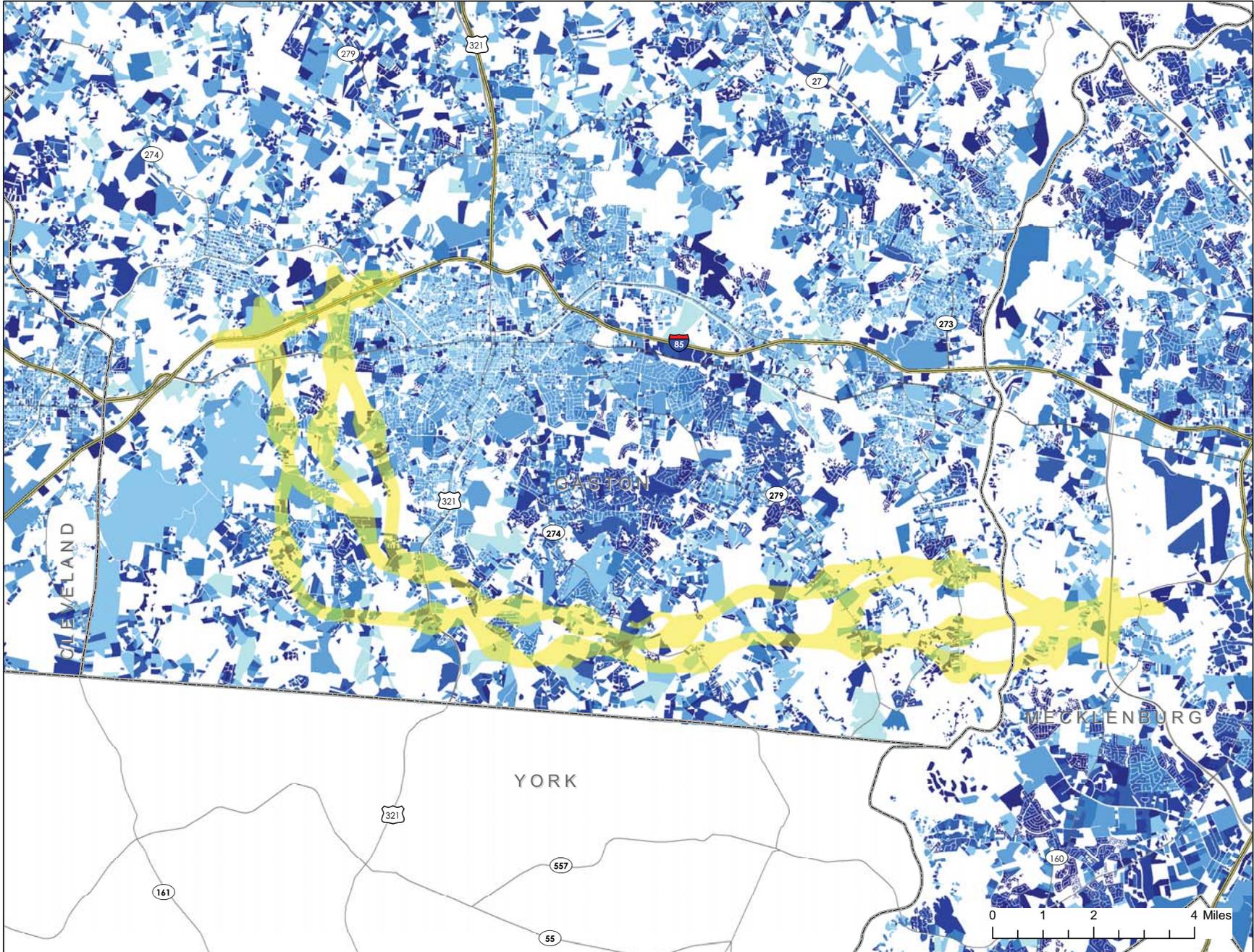
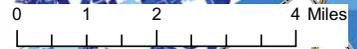
Legend

- Limited-access Highway
- Major Roads
- Gaston E-W Connector Alternatives
- County Boundaries

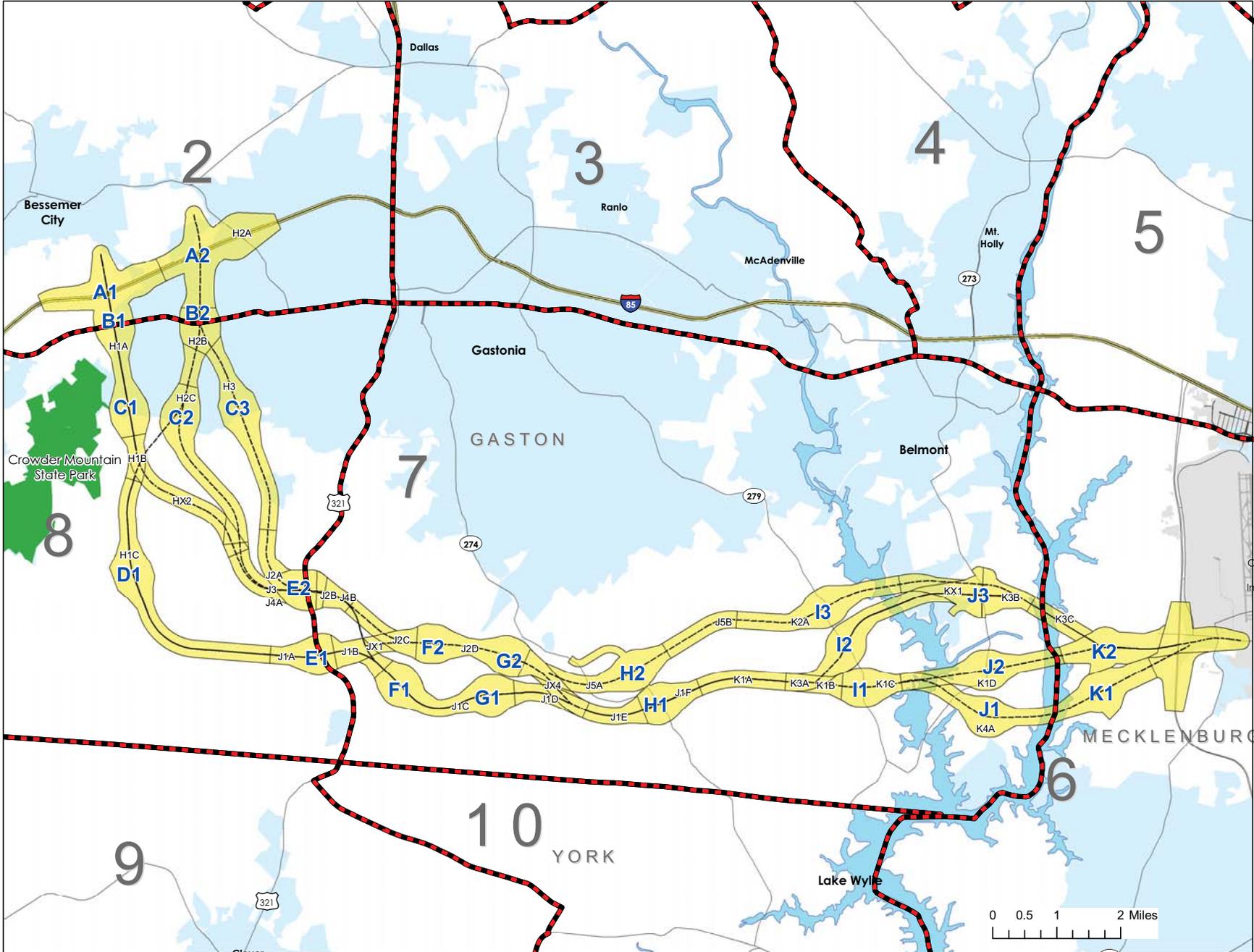
Year Parcel was Built

- 1799 - 1900
- 1901 - 1950
- 1951 - 1970
- 1971 - 1980
- 1981 - 1990
- 1991 - 2000
- 2001 - 2007

Data from parcel databases for Gaston, Mecklenburg and Cleveland Counties. Year built data were not available for York County.



**Figure 12.8
Gaston
E-W Connector
Alternative
Interchanges**



Legend

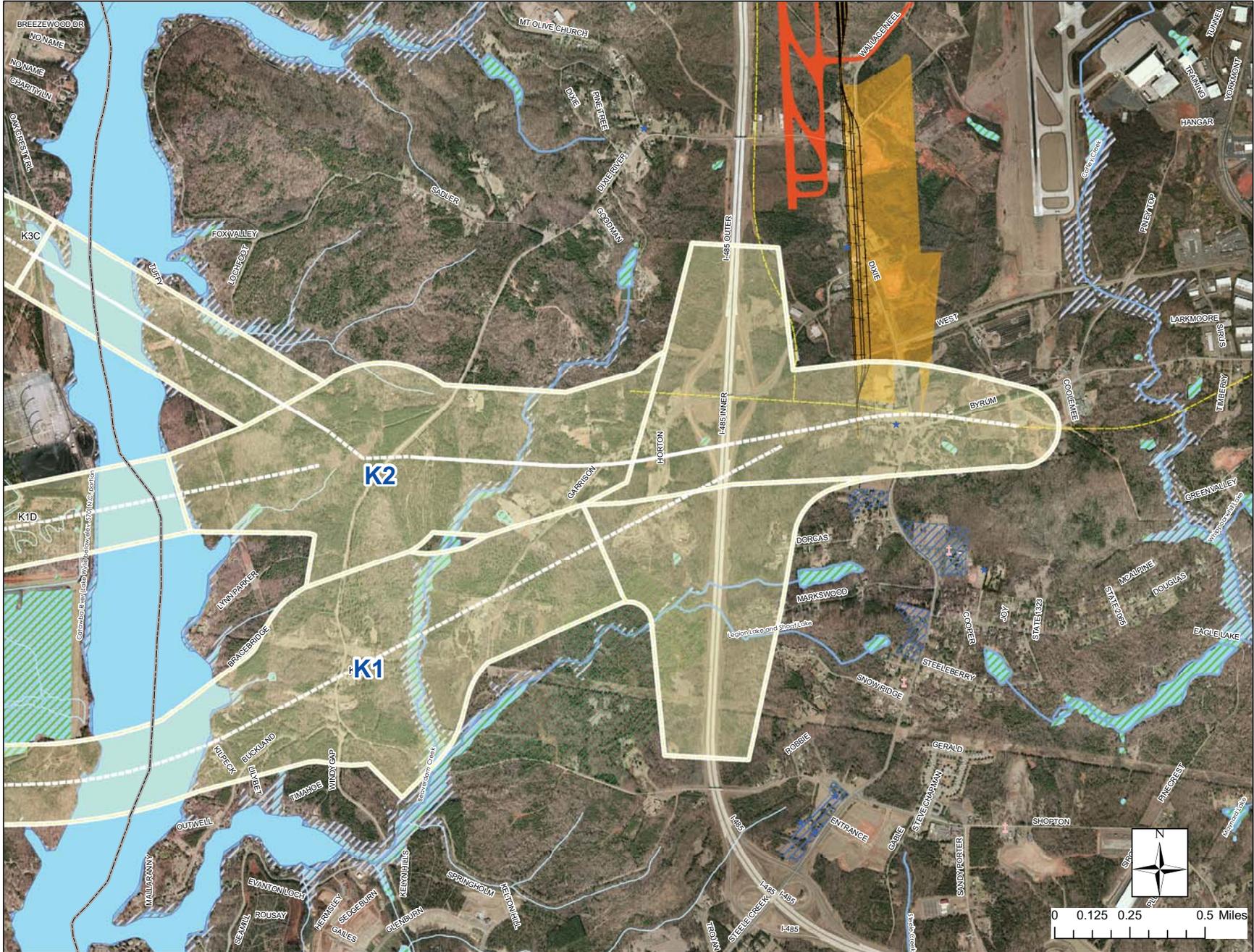
- Limited-access Highway
- Major Roads
- Alternative Centerline
- Gaston E-W Connector Alternatives
- Corridor Segments (black labels)
- Interchanges (blue labels)
- Lakes
- Parks
- Charlotte-Douglas Int'l Airport
- Municipal Boundaries
- County Boundaries
- District Boundaries (ICE Study Area)

A, B, C, D interchange designations (blue labels) were used during the local expert interviews conducted for this study. They are a simplification of the corridor segments (black labels) that have been used in other study materials.

Data Sources: PBSJ, NCOneMap (boundaries, parks, hydrology), Charlotte-Douglas Int'l Airport



Figure 12.9
Gaston
E-W Connector
Interchange K



Legend

- Railroads
- Rivers
- Streams
- ▭ Gaston E-W Connector Alternatives ROW
- ▭ Corridor Segments (black labels)
- ▭ Interchanges (blue labels)
- Alternative Centerline
- 🏫 School
- 🎓 College
- ⛪ Church
- ⚰ Cemetery
- 🏥 Hospital
- ⚠ Hazardous Waste Disposal Locations
- ★ Historic Sites
- Natural Heritage Element Occurrences
- ▨ Significant Natural Heritage Areas
- 🌊 Lakes
- ▨ 100-year Floodplain
- ▨ National Wetlands Inventory
- ▨ Parks
- ▨ Historic Sites & Districts
- 🏭 Duke Power Plant
- 🚧 Proposed Runway
- 🏗 Proposed Intermodal Facility
- 🛣 West Blvd/Wallace Neel Realignment
- ▭ County Boundaries

Aerial photograph taken in 2005 by Gaston County. Data Sources: PBSJ (alternatives, historic sites), National Wetlands Inventory, NC Floodplain Mapping Program, NC OneMap (boundaries, base map data)

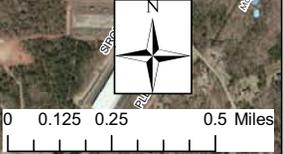
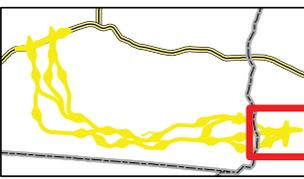
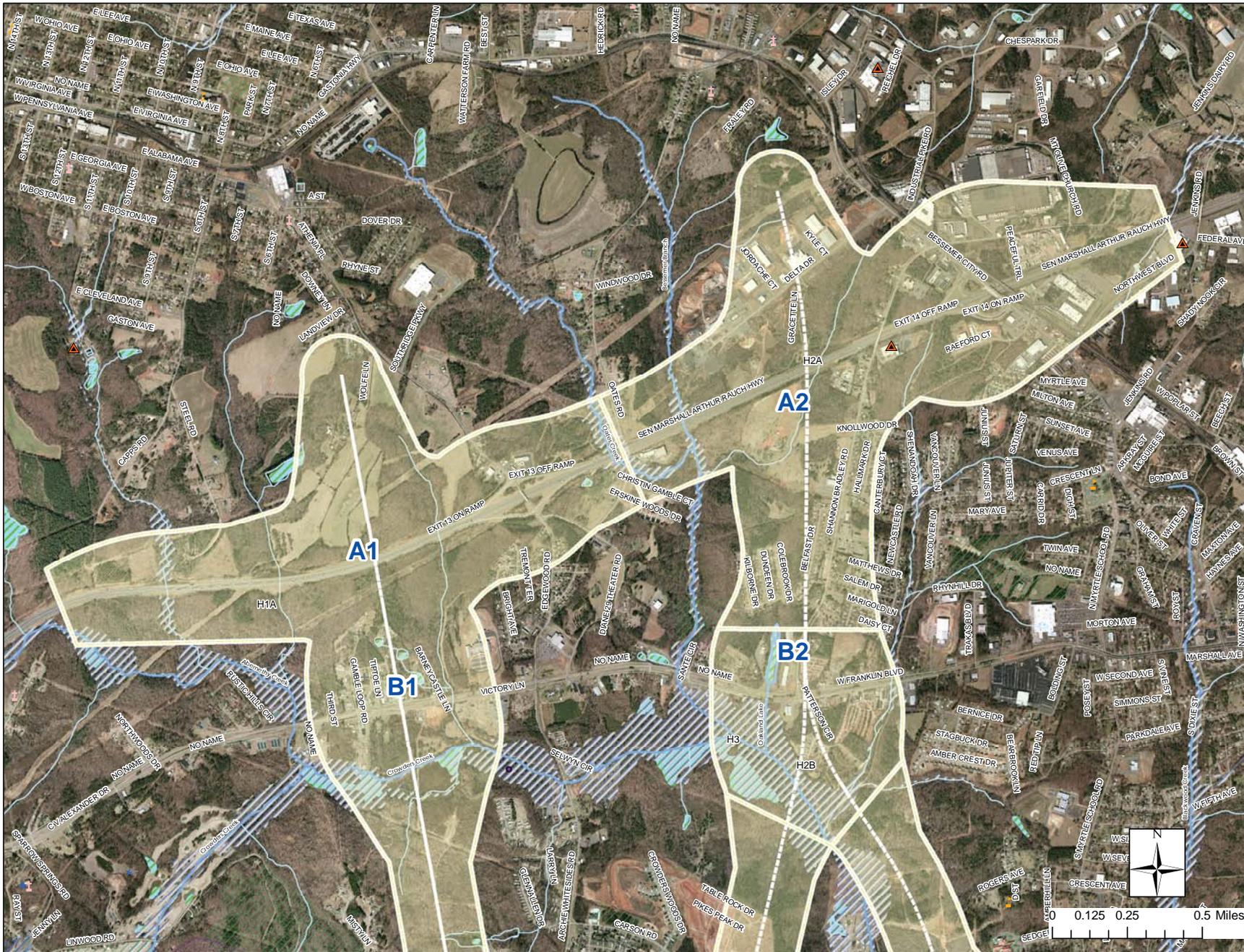


Figure 12.10
Gaston
E-W Connector
Interchanges
A and B



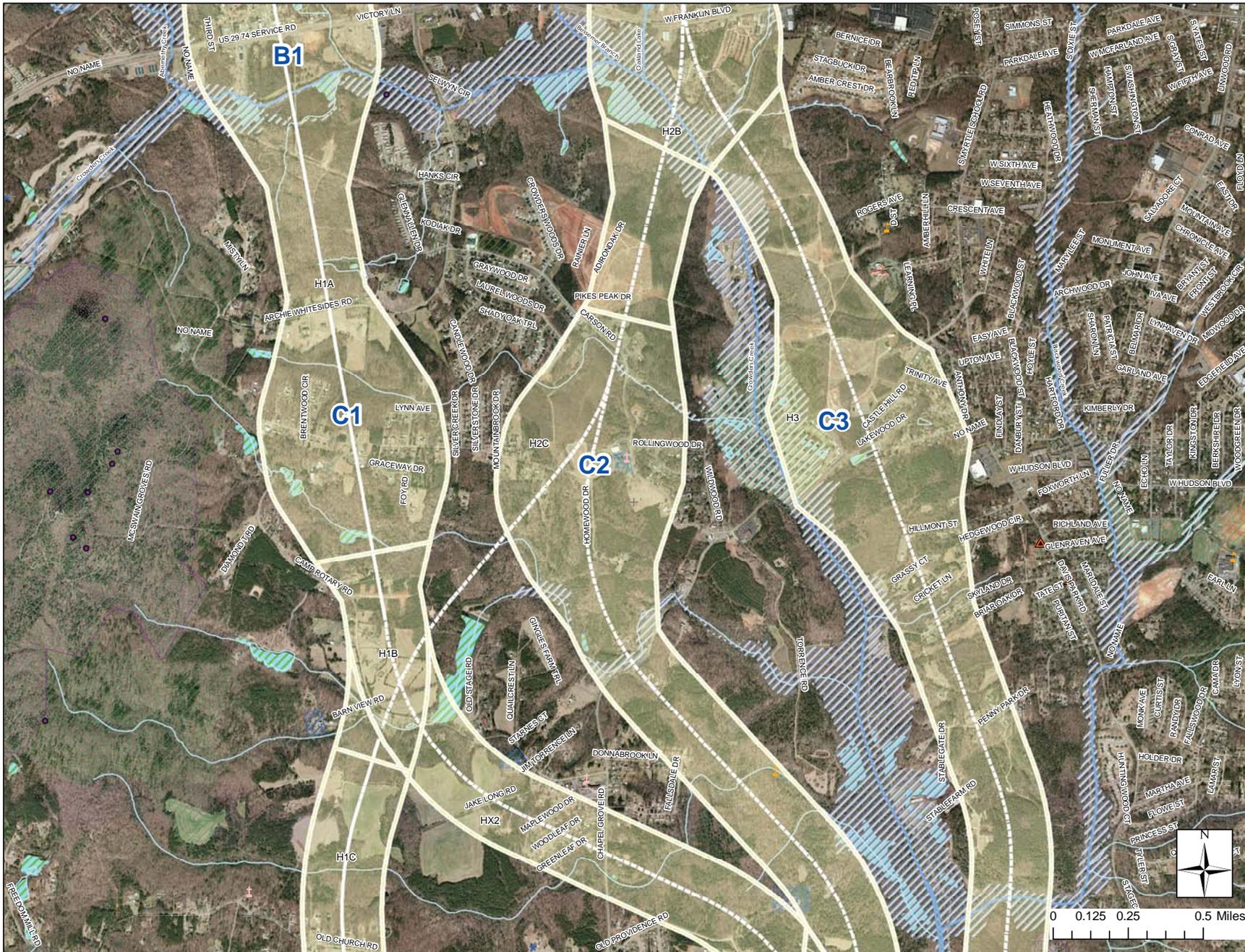
Legend

- Railroads
- Rivers
- Streams
- Gaston E-W Connector Alternatives ROW
- Corridor Segments (black labels)
- Interchanges (blue labels)
- Alternative Centerline
- School
- College
- Church
- Cemetery
- Hospital
- Hazardous Waste Disposal Locations
- Historic Sites
- Natural Heritage Element Occurrences
- Significant Natural Heritage Areas
- Lakes
- 100-year Floodplain
- Natural Wetlands Inventory
- Parks
- Historic Sites & Districts
- County Boundaries

Aerial photograph taken in 2005 by Gaston County. Data Sources: PBSJ (alternatives, historic sites), National Wetlands Inventory, NC Floodplain Mapping Program, NC OneMap (boundaries, base map data)



Figure 12.11
Gaston
E-W Connector
Interchange C



Legend

- Railroads
- Rivers
- Streams
- ▭ Gaston E-W Connector Alternatives ROW
- ▭ Corridor Segments (black labels)
- ▭ Interchanges (blue labels)
- Alternative Centerline
- 🏫 School
- 🎓 College
- ⛪ Church
- ⊕ Cemetery
- 🏥 Hospital
- ⚠ Hazardous Waste Disposal Locations
- ★ Historic Sites
- Natural Heritage Element Occurrences
- ▭ Significant Natural Heritage Areas
- 🟦 Lakes
- ▨ 100-year Floodplain
- ▨ National Wetlands Inventory
- ▨ Parks
- ▨ Historic Sites & Districts
- ▭ County Boundaries

Aerial photograph taken in 2005 by Gaston County. Data Sources: PBSJ (alternatives, historic sites), National Wetlands Inventory, NC Floodplain Mapping Program, NC OneMap (boundaries, base map data)

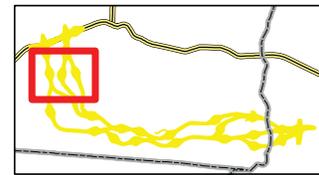
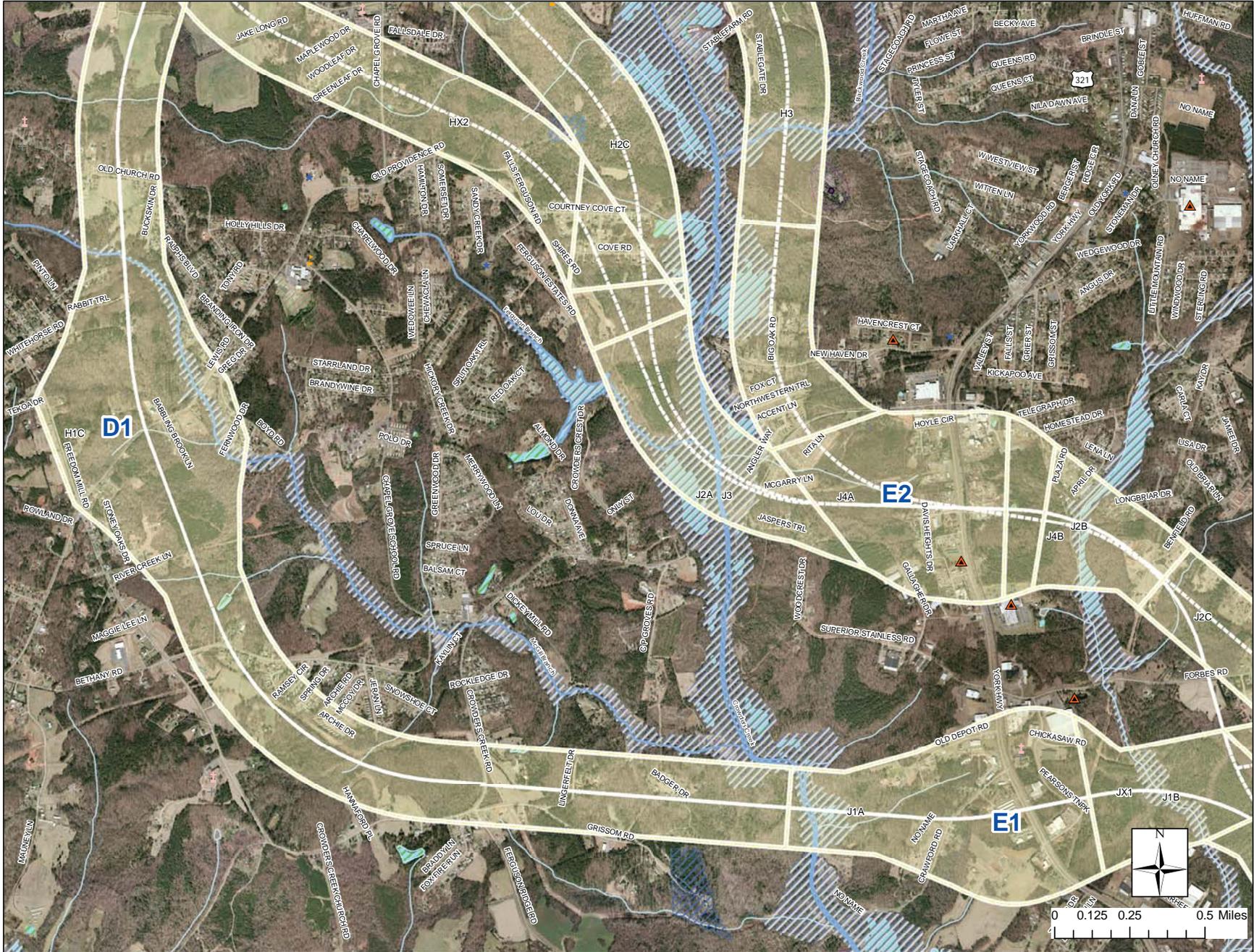


Figure 12.12
 Gaston
 E-W Connector
 Interchanges
 D and E



Legend

- Railroads
- Rivers
- Streams
- Gaston E-W Connector Alternatives ROW
- Corridor Segments (black labels)
- Interchanges (blue labels)
- Alternative Centerline
- School
- College
- Church
- Cemetery
- Hospital
- Hazardous Waste Disposal Locations
- Historic Sites
- Natural Heritage Element Occurrences
- Significant Natural Heritage Areas
- Lakes
- 100-year Floodplain
- National Wetlands Inventory
- Parks
- Historic Sites & Districts
- County Boundaries

Aerial photograph taken in 2005 by Gaston County. Data Sources: PBSJ (alternatives, historic sites), National Wetlands Inventory, NC Floodplain Mapping Program, NC OneMap (boundaries, base map data)

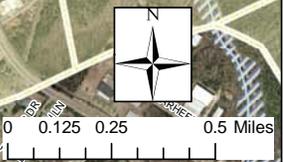
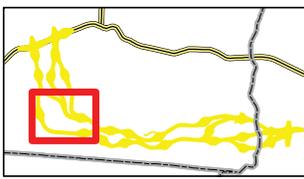


Figure 12.13
Gaston
E-W Connector
Interchanges
F and G

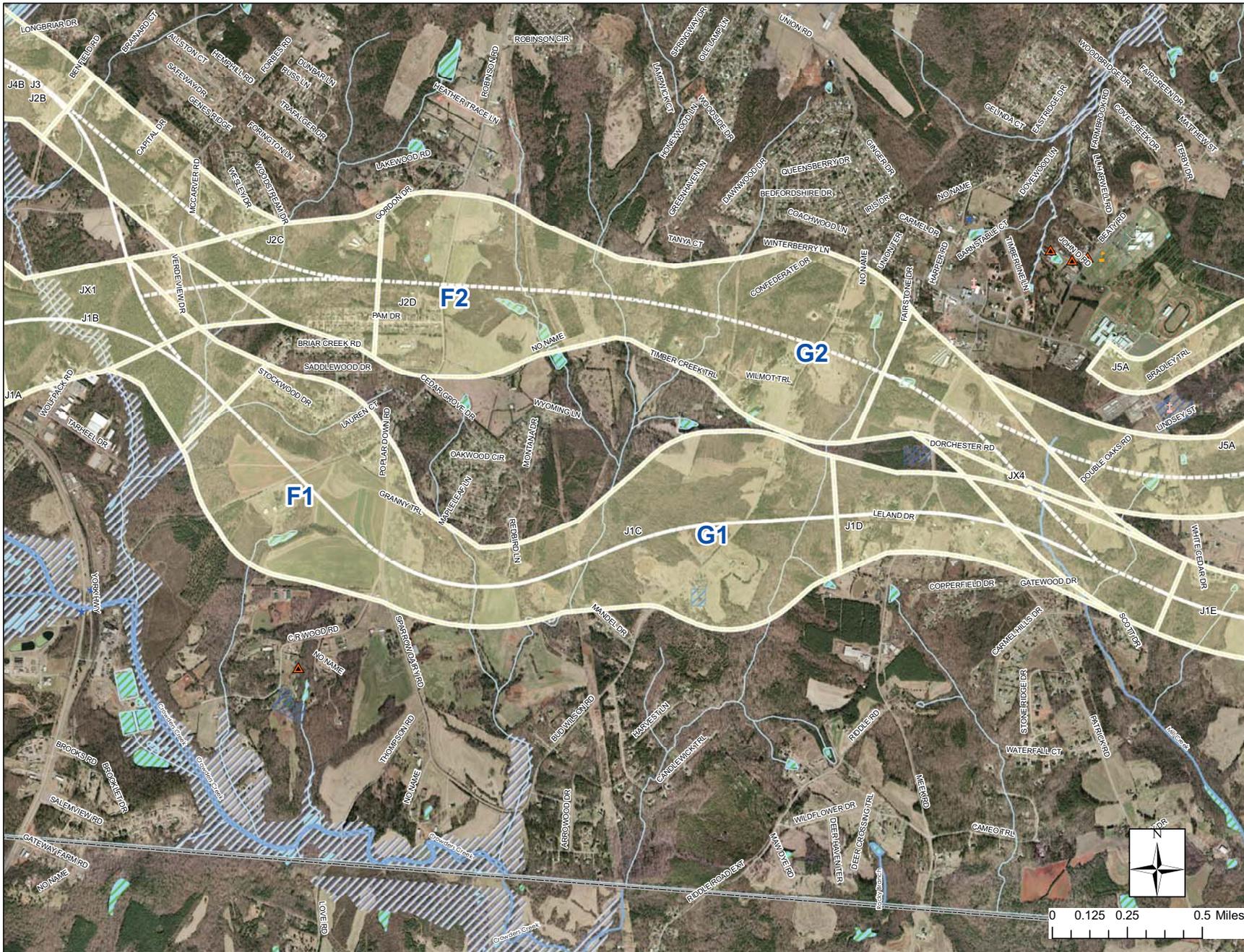
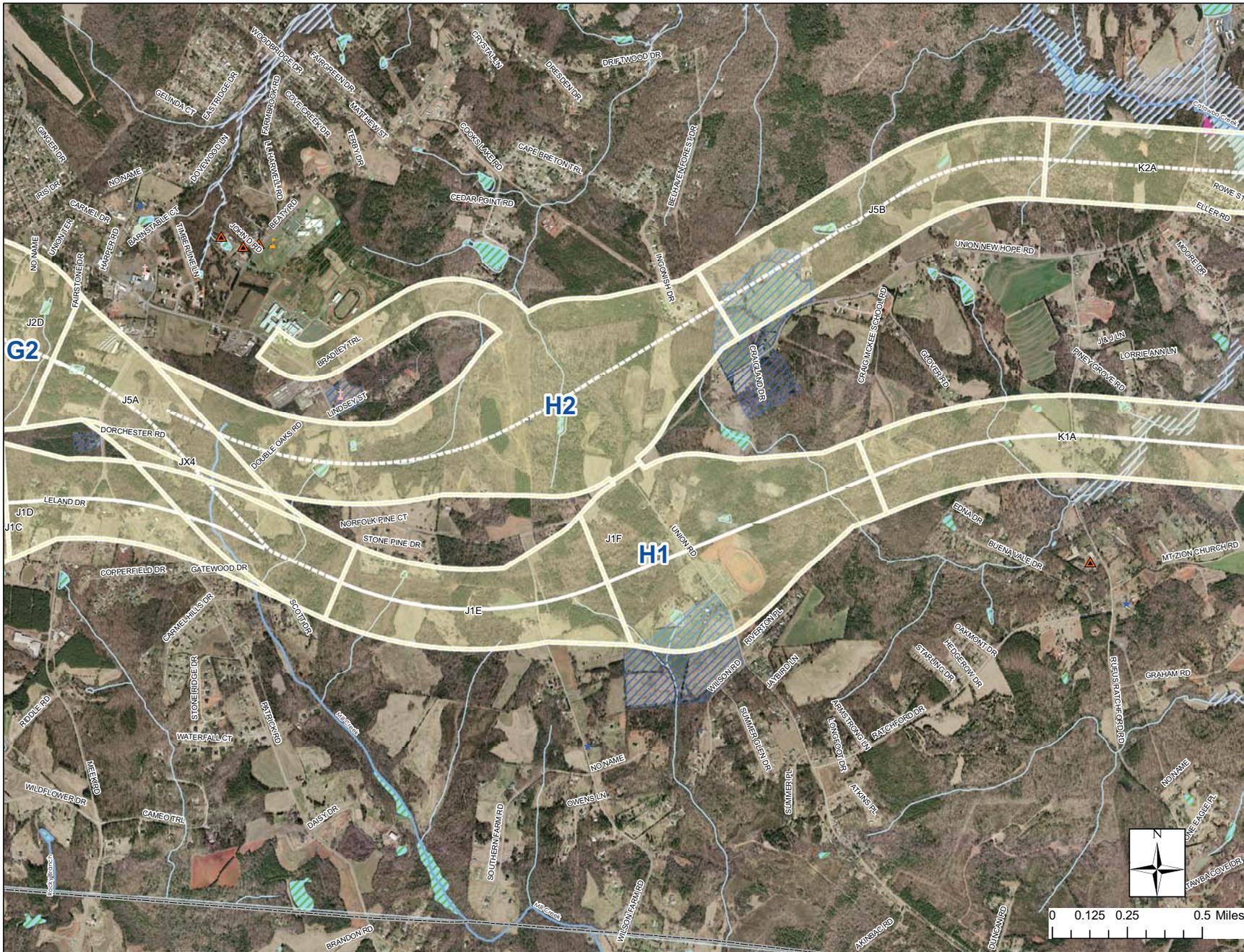


Figure 12.14
Gaston
E-W Connector
Interchange H



Legend

- Railroads
- Rivers
- Streams
- Gaston E-W Connector Alternatives ROW
- Corridor Segments (black labels)
- Interchanges (blue labels)
- Alternative Centerline
- School
- College
- Church
- Cemetery
- Hospital
- Hazardous Waste Disposal Locations
- Historic Sites
- Natural Heritage Element Occurrences
- Significant Natural Heritage Areas
- Critical Habitat
- Lakes
- 100-year Floodplain
- National Wetlands Inventory
- Parks
- Historic Sites & Districts
- County Boundaries

Aerial photograph taken in 2005 by Gaston County. Data Sources: PBSJ (alternatives, historic sites), National Wetlands Inventory, NC Floodplain Mapping Program, NC OneMap (boundaries, base map data)

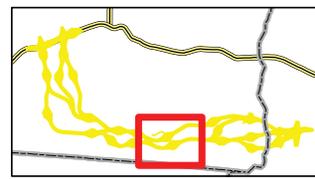
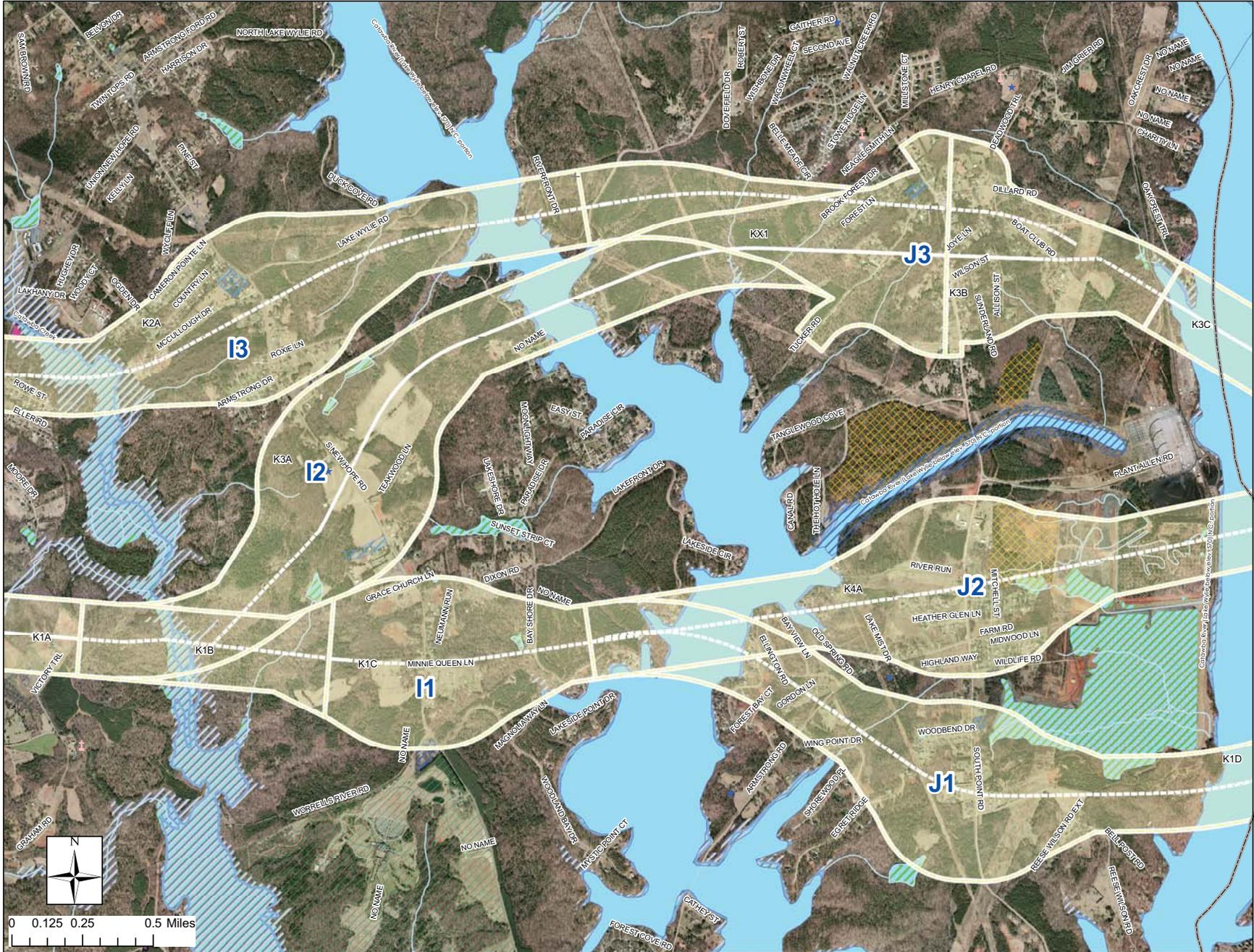


Figure 12.15 Gaston E-W Connector Interchanges I and J



Legend

- Railroads
- Rivers
- Streams
- Gaston E-W Connector Alternatives ROW
- Corridor Segments (black labels)
- Interchanges (blue labels)
- Alternative Centerline
- School
- College
- Church
- Cemetery
- Hospital
- Hazardous Waste Disposal Locations
- Historic Sites
- Natural Heritage Element Occurrences
- Significant Natural Heritage Areas
- Critical Habitat
- Lakes
- 100-year Floodplain
- National Wetlands Inventory
- Parks
- Historic Sites & Districts
- Landfill
- Duke Power Plant
- County Boundaries

Aerial photograph taken in 2005 by Gaston County. Data Sources: PBSJ (alternatives, historic sites), National Wetlands Inventory, NC Floodplain Mapping Program, NC OneMap (boundaries, base map data)

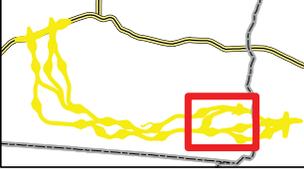
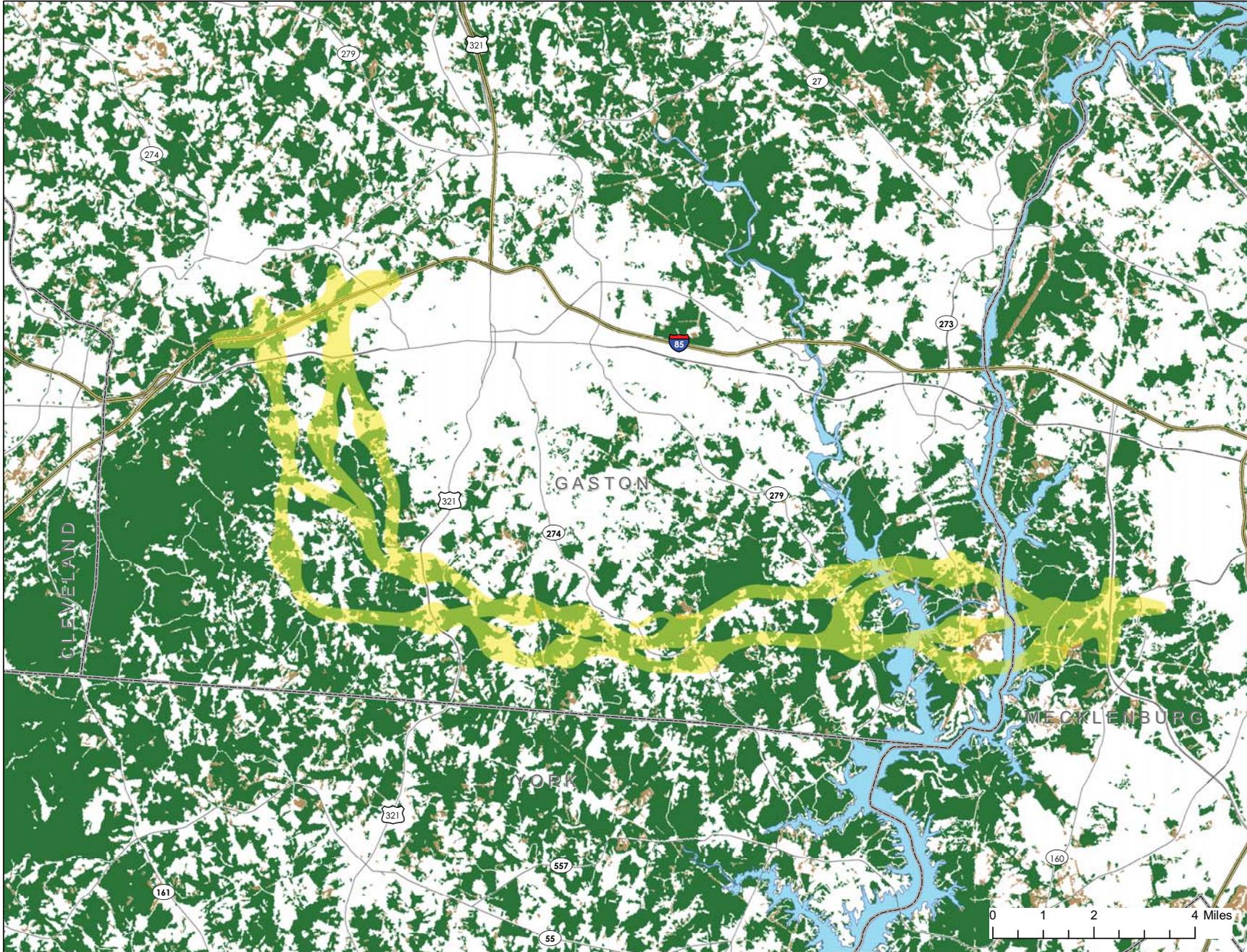


Figure 12.16
Gaston
E-W Connector
Wildlife Habitat



Legend

- Limited-access Highway
- Major Roads
- Gaston E-W Connector Alternatives
- County Boundaries
- Lakes
- Forest
- Grassland/Shrub

Forested and grassland/shrub areas were adapted from the National Land Cover Database 2001, part of the Multi-Resolution Land Characteristics Consortium. The initial landcover data was created using satellite images from 2000 and 2001. The forested layer was updated using aerial photos from 2005 for Gaston and Mecklenburg counties, and 2006 for York and Cleveland counties. The updates took into account new development that had occurred between the original NLCD satellite images to the date of the newer aerial photographs.


 N


 0 1 2 4 Miles

The Louis Berger Group
 April 14, 2008 L. Murphy 