

Utility Impact Report

For

State Project No.: 34922.1.TA1
(TIP No.: U-3321)

Gaston East-West Connector

**Gaston and Mecklenburg County,
North Carolina**

Prepared for:



Prepared by:



TBE Group, Inc.

July 15, 2008
Revised August 5, 2008

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North Carolina Turnpike Authority

State Project No: 34922.1.TA1

TIP No: U-3321

Gaston East-West Connector

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EXECUTIVE SUMMARY

It is the intent of this report to furnish all relevant information concerning the general location, dimension and characteristics of major utilities found within the Gaston East-West Connector (“Project”) within both the representative and alternative corridors.

The preliminary utility coordination and investigation effort is being conducted through on site investigation as well as written and verbal communications with the existing utility owners. An initial list of existing utility owners was acquired through the North Carolina One-Call. Verbal communication was made to utilities outlining the investigation effort along with the project limits as necessary.

Utility conflicts exist throughout the 22 mile long Project. Some of the more costly to the NCTA will be where the Project crosses existing gas and / or electric transmission facilities. Below is a brief outline of utilities that have existing facilities in conflict with the Project.

1. Electric:

- a. Duke Energy (“Duke”)
 - i. Distribution
 - ii. Transmission
- b. Rutherford Electric Membership Corporation (“REMC”)
 - i. Distribution
 - ii. Local Transmission
- c. City of Gastonia (“COG”)
 - i. Distribution

2. Telecommunications:

- a. AT&T (formerly BellSouth)
- b. Time Warner Cable (“TWC”)

3. Gas Transmission:

- a. Transcontinental Gas Pipeline Company (“TGPC”)
- b. Plantation Pipeline Company (“PPC”)
- c. Colonial Pipeline Company (“CPC”)

4. Gas Distribution:

- a. PSNC
- b. Piedmont Natural Gas (“PNG”)

5. Water & Sewer

- a. City of Gastonia (“COG”)
- b. City of Belmont (“COB”)
- c. Charlotte Mecklenburg Utilities Division (“CMUD”)

6. Telecommunications Tower

- a. Victory Christian Center, Inc.

EXECUTIVE SUMMARY

One representative route along with eleven (11) alternative routes was reviewed for utility conflicts of greater than \$250K each. Conflicts less than \$250K each were looked at for the representative route. As of the date of this report the cost to the NCTA for the relocation and / or modification of utilities with prior rights is estimated to be between \$15,000,000 and \$19,750,000.

More detail regarding utility contact information, impact assessment and potential cost to the NCTA are contained in the remaining sections of this report.

Utility Contact List

Type of Utility	Company Name	Address	Contact Person	Phone
Electric	Duke Energy (Distribution)	526 South Church Street (MC EC10Q) Charlotte, NC 28201	Larry Morris Asset Contract Administrator lxmorris@duke-energy.com	(704) 382-6299
		6325 Wilkinson Blvd. Charlotte, NC 28214	Mike Trower Sr. Dist. Engineering Specialist mdtrower@dukeenergy.com	(704) 382-0563
	Duke Energy (Transmission)	526 South Church Street (MC EC10Q) Charlotte, NC 28201	Larry Morris Asset Contract Administrator lxmorris@duke-energy.com	(704) 382-6299
		526 South Church Street (MC EC10Q) Charlotte, NC 28201	Michael D. Robinson Manager, Engineeing Design mdrobinson@dukeenergy.com	(980) 373-4228
	Rutherford EMC	186 Hudlow Road P.O. Box 1569 Forest City, NC 28043	Thomas Conner Engineering tconner@remc.com	(828) 245-1621
	City of Gastonia	1300 North Broad Street P.O. Box 1748 Gastonia, NC 28053-1748	Ed Miller Electric Utilities Director	
Sewer and Water	City of Gastonia	P.O. Box 1748 Gastonia, NC 28053	Thorne Martin, P.E. Assistant City Engineer thornem@cityofgastonia.com	(704) 866-6895
		or 150 S. York Street Gastonia, NC 28053-1748	Mike Bynum mikeb@cityofgastonia.com	(704) 866-6043
	City of Belmont	12 Mill Street Belmont, NC 28012	Danny Whisnant dwhisnant@cityofbelmont.org	704-910-2073
	Charlotte Mecklenburg Utility Department (CMUD)	5200 Brookshire Blvd. Charlotte, NC	William Deal wdeal@ci.charlotte.nc.us	(704) 391-5150

Utility Contact List

Type of Utility	Company Name	Address	Contact Person	Phone
Telecommunications	AT&T / BellSouth	13504 Southpoint Blvd., Suite A Charlotte, NC 28273	Steve Mode stevemode@bellsouth.net	800-686-9188
		Room 340 4100 South Stream Blvd. Charlotte, NC 28217	Danny Mounts mm5519@att.com	704-424-1522
Telecommunications Tower	Victory Christian Center, Inc.	7228 Old Pineville Rd. Charlotte, NC 28217	Terry Hammond	704-602-6027
Cable Television	Time Warner Communications	2125 Union Road Gastonia NC, 28054	Bill Garner Construction Supervisor bill.gardner@twcable.com	704-671-6114
		4606 Margaret Wallace Rd. Matthews, NC 28105	Tony Deal Director of Construction tony.deal@twcable.com	(704) 378-2815
Gas	Transcontinental Gas Pipeline Corporation	1345 Greenbrier Dr Charlottesville, VA 22901	Ronald Gray Senior Engineer ronald.e.gray@williams.com	(434) 964-2125
	Plantation Pipeline Company	2740 S. New Hope Road Gastonia, NC 28056	Mr. P. E. "Phil" Threlkeld Phil_Threlkeld@KinderMorgan.com	704-833-1007
	Colonial Pipeline Company	411 Gallimore Dairy Road Greensboro, NC 27409	Tom West twest@colpipe.com	336-931-6039 or 336 669 7996
	PSNC	800 Gaston Road, Bldg A Gastonia, NC 28056	Mike Coleman Engineering Specialist mcoleman2@scana.com	704 810 3210
	Piedmont Natural Gas	4339 South Tryon Street Charlotte, NC 28217	Vic Roberts victor.roberts@piedmontng.com	704-587-3160

Utility Impact Assessment

The following outlines at a high level the impact utilities may have with regard to the successful design and construction of the Gaston East-West Connector (“Project”). The representative route (DSA # 58) for the Project is over 22 miles in length and is laced with utility conflicts both with and without prior rights. The most expensive of these conflicts with prior rights reside with the electric and gas transmission facilities. Not only are they the most costly to relocate and / or modify, they are the most time consuming. In many cases transmission facilities may take as long as one year or longer to clear the Project given the need to purchase new right-of-way, order special materials as well as possible moratoriums, both regulatory and seasonal.

The NCTA has requested TBE to perform a preliminary utility assessment for multiple routes of the Project. The representative route is shown in **RED** in the Utility Impact Assessment Matrix contained in section 4 of this report. There are eleven (11) other alternative routes shown in various combinations of **RED**, **GOLD**, **BLUE** and **GREEN**. In all cases only conflicts estimated to be greater than \$250K each were documented. A general estimate of conflicts less than \$250K each were assessed along the representative route with the total cost to relocate and/or modify the facilities with prior rights is estimated to be \$3.5M. This estimate was based on previous projects, site visits and existing Subsurface Utility Engineering (“SUE”) data provided by the NCTA. Although this assessment was only made on the representative route, the conflict and associated cost can be assumed to be similar on any of the alternative routes.

Section 4 contains the following:

- Utility Impact Assessment cost summary
- A route map showing all DSA routes and Utility Impact Assessment Matrix summary
- Individual DSA route maps (12)
- Utility Impact Assessment Matrix for each DSA route (12)

The following utilities are identified as having existing facilities in conflict with the Project. Contact information for each utility is contained in section 2 of this report.

1. Electric:

- a. Duke Energy (“Duke”)
 - i. Distribution
 - ii. Transmission
- b. Rutherford Electric Membership Corporation (“REMC”)
 - i. Distribution
 - ii. Local Transmission
- c. City of Gastonia
 - i. Electric Distribution

Utility Impact Assessment

- 2. Telecommunications:**
 - a. AT&T
 - b. AT&T (formerly BellSouth)
 - c. Time Warner Cable (“TWC”)
- 3. Telecommunications Tower (privately owned):**
 - a. Victory Christian Center, Inc.
- 4. Gas Transmission:**
 - a. Transcontinental Gas Pipeline Company
 - b. Plantation Pipeline Company
 - c. Colonial Pipeline Company
- 5. Gas Distribution:**
 - a. PSNC
 - b. Piedmont Natural Gas
- 6. Water & Sewer**
 - a. City of Gastonia
 - b. City of Belmont
 - c. Charlotte Mecklenburg Utilities Division (“CMUD”)

To date the most costly relocations for highway projects are related to transmission facilities owned by both electric and gas companies. These companies will have prior rights and each will seek compensation for relocation and/or modification to its facilities.

The electric companies with distribution facilities throughout the project will claim prior rights on most of their aerial facilities impacting the Project and will seek compensation for relocation and or modification.

Telecommunication facilities related to telephone and cable TV for the most part is located within existing public ROW and may not have prior rights and as a consequence not be able to recover relocation cost from the NCTA.

Most of the water and sewer facilities are owned by the City of Gastonia and reside in public ROW and may not be compensable as well.

The two gas distribution companies also reside primarily in or near public ROW and may not be compensable.

Utility Impact Assessment

Based on the information gathered thus far the NCTA may want to consider some of the following suggestions to help reduce the impact of utility conflicts and consequentially costs related to relocations and / or modifications.

- At any crossing where the Project crosses an aerial transmission line, the design team should try to avoid having to excavate (cut or fill) within thirty (30) feet of an existing structure.
- Consider realignment of roadway to avoid existing towers, especially “corner” towers.
- Minimize reduction in vertical clearance when crossing transmission line between towers (mid span).
- Minimize fill over gas transmission lines
- Avoid cuts at gas transmission lines

In reviewing all DSA routes, DSA route 23 & 05 seem to have the least amount of utility conflicts with respect to cost to the NCTA. In addition, the DSA routes that employ the northernmost crossings of Lake Wylie are also in conflict with transmission lines at or very near the proposed bridges. This will drive cost up due to the need to purchase new ROW and perhaps temporary relocations for bridge construction. The DSA routes that employ the southernmost crossings may have lower utility relocation cost.

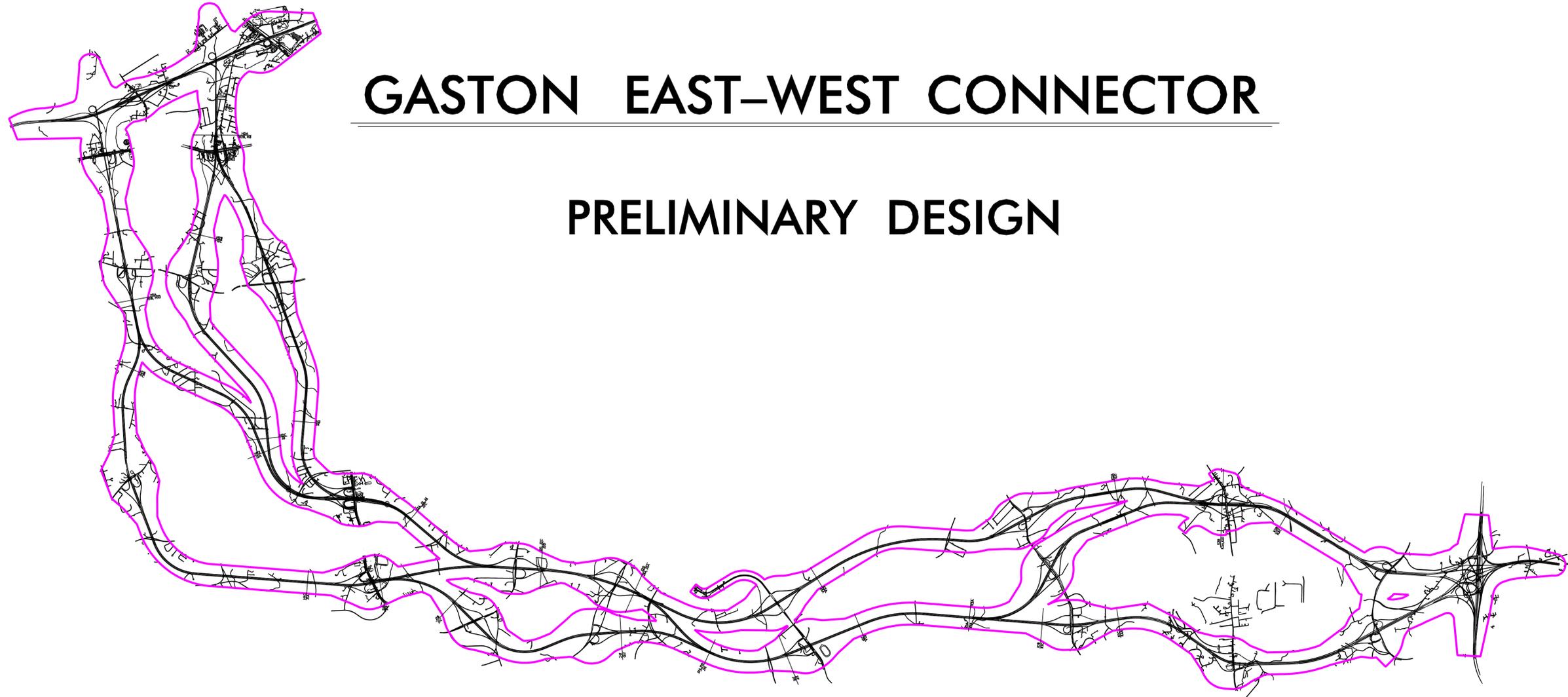
Utility Impact Assessment

DSA #	Estimated cost for conflicts > \$250K Ea.	Estimated cost for conflicts < 250K Ea.	Potential Savings for avoiding towers	Net Cost
58	\$16,250,000	\$3,500,000		\$19,750,000
76	\$16,000,000	\$3,500,000		\$19,500,000
22	\$14,500,000	\$3,500,000	(\$500,000)	\$17,500,000
4	\$14,500,000	\$3,500,000	(\$500,000)	\$17,500,000
9	\$14,000,000	\$3,500,000	(\$1,500,000)	\$16,000,000
27	\$14,000,000	\$3,500,000	(\$1,500,000)	\$16,000,000
81	\$15,500,000	\$3,500,000	(\$1,000,000)	\$18,000,000
68	\$15,750,000	\$3,500,000	(\$2,500,000)	\$16,750,000
64	\$13,750,000	\$3,500,000	(\$1,500,000)	\$15,750,000
77	\$13,500,000	\$3,500,000		\$17,000,000
23	\$12,000,000	\$3,500,000	(\$500,000)	\$15,000,000
5	\$12,000,000	\$3,500,000	(\$500,000)	\$15,000,000

GASTON COUNTY

GASTON EAST-WEST CONNECTOR

PRELIMINARY DESIGN



PREPARED FOR:



NCDOT TIP PROJECT NO. U-3321
OCTOBER 2007

PREPARED BY:



Utility Impact Assessment Matrix

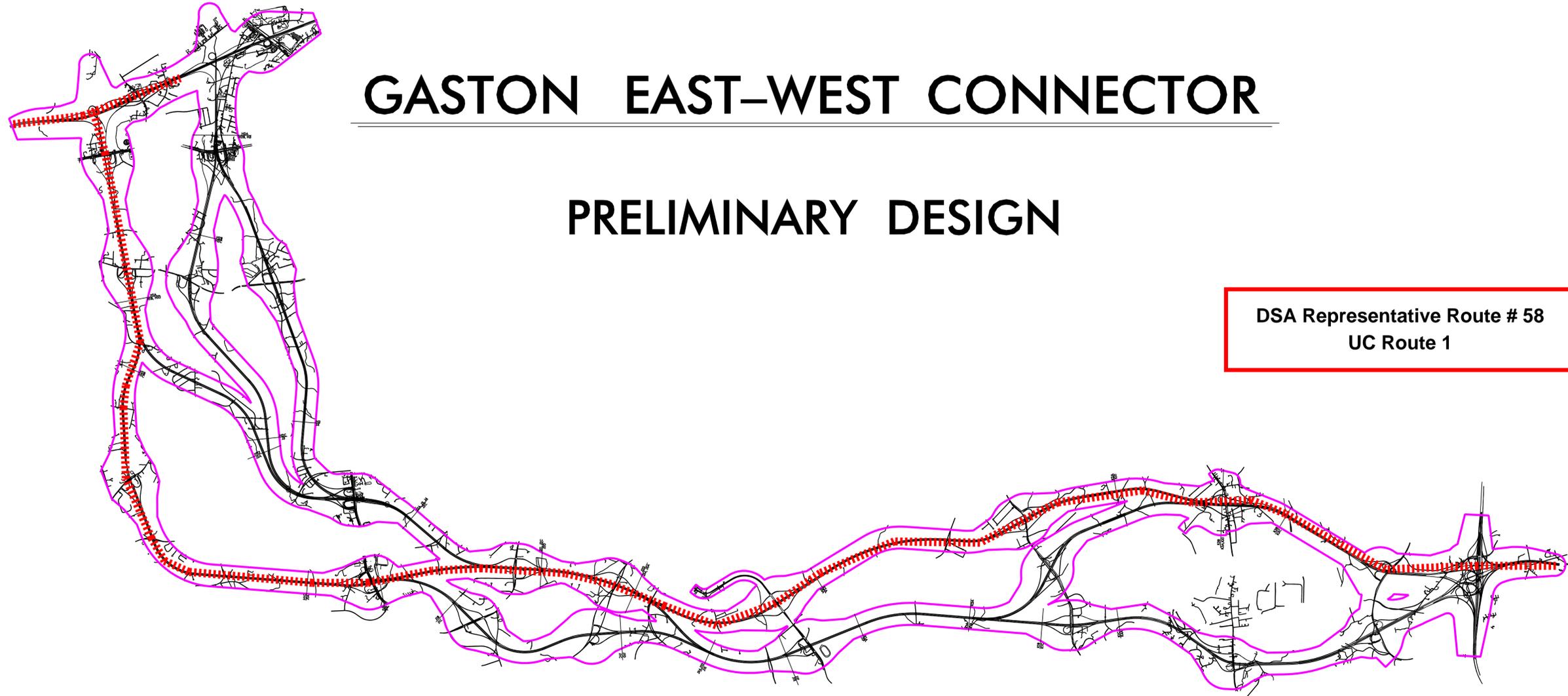
Conflicts >\$250K EA

Route Color	Map #	Conflict #	At or near the intersection of new roadway with:	Duke Energy				Rutherford EMC		Gas				Corridor Totals		
				Transmission		Est. Cost	Transmission		Est. Cost	Transcontinental Gas Pipeline Corp. 1-30" & 2-36" lines		Colonial Pipeline Company 36" & 40" lines			Plantation Pipeline Company 2-gas lines size unknown	
				Transmission	Est. Cost	Transmission	Est. Cost	Transmission	Est. Cost	Transmission	Est. Cost	Transmission	Est. Cost			
RED	H1-1	1R	Edgewood & Oats Rd. North of I-85	2 - 44KV lines - wood poles conflict with poles	\$500,000									\$500,000		
		2R	I-85 at Oats Rd	100KV line - steel towers & 44KV line wood poles conflict with tower	\$750,000										\$750,000	
		3R	I-85	230KV line - steel towers conflict with towers	\$1,000,000										\$1,000,000	
	H1-2	4R	0.38mi south of W. Franklin Blvd (29 / 74).	100KV line - steel towers conflicts with towers	\$500,000										\$500,000	
		5R	River Creek Ln.									parallel gas lines	\$1,500,000		\$1,500,000	
	H1-4	6R	Bethany Rd.								40" & 36" parallel gas lines	\$1,500,000			\$1,500,000	
		7R	Crowders Creek Rd.				69KV line - wood poles conflicts with poles	\$250,000							\$250,000	
	J1-1	8R	170yards east of Pearson's Tpke.	44KV line - steel towers conflicts with towers	\$500,000										\$500,000	
	JX1-1	9R	0.25mi east of Robinson Rd.	230KV line - steel towers	\$1,500,000										\$1,500,000	
	J2-2			100KV line - steel towers conflicts with towers												
	K2-1	10R	Union New Hope Rd.				69KV line - wood poles conflicts with poles	\$250,000							\$250,000	
	K2-2	11R	Lake crossing at Lake Wylie Rd. & Riverfront Dr	100KV line - steel towers conflicts with corner tower will require new ROW	\$1,000,000										\$1,000,000	
	KX1-1	12R	300yards south of Gaither Rd.	100KV line - steel towers conflicts with tower	\$500,000										\$500,000	
		13R	215yards east of Boat Club Rd	500KV line - steel towers 230KV line - steel towers 230KV line - steel towers conflicts with towers	\$4,000,000										\$4,000,000	
		14R	0.33mi south of Oak Crest Rd.	100KV line - steel towers conflicts with tower	\$500,000										\$500,000	
K3-3	K3-4	100yards southwest of Lochfoot Dr.	230KV line - steel towers conflicts with towers	\$2,000,000										\$2,000,000		
K3-4			will require new ROW													
Total Utility Est. Cost				\$12,750,000	\$500,000	\$0	\$1,500,000	\$1,500,000	\$16,250,000							
BLUE	H2-2	1B	0.37mi south of I-85	100KV line - steel towers & 44KV line wood poles conflict with tower	\$750,000									\$750,000		
	H3-2	2B	450yards northwest of Linwood Rd.	100KV line - steel towers mid span	\$500,000									\$500,000		
	J4-1	3B	200yards north of Crowders Creek Rd.									parallel gas lines	\$1,500,000		\$1,500,000	
		4B	0.26mi southeast of Crowders Creek Rd.								40" & 36" parallel gas lines	\$1,500,000			\$1,500,000	
Total Utility Est. Cost				\$1,250,000	\$0	\$0	\$1,500,000	\$1,500,000	\$4,250,000							
GOLD	H2-3	1GL	400yards north of Carson Dr.	100KV line - steel towers mid span	\$500,000									\$500,000		
	J2-1	2GL	0.46mi north of Crowders Creek Rd.									parallel gas lines	\$1,500,000		\$1,500,000	
		3GL	Crowders Creek Rd.								40" & 36" parallel gas lines	\$1,500,000			\$1,500,000	
	J4-1	4GL	0.42mi north of Forbes Rd. End of Benfield Rd.	44KV line - steel towers conflict with tower	\$500,000									\$500,000		
Total Utility Est. Cost				\$1,000,000	\$0	\$0	\$1,500,000	\$1,500,000	\$4,000,000							
GREEN	J1-2	1GR	0.25mi east of Bud Wilson Rd. at the end of Mandel Dr.	230KV line - steel towers 100KV line - steel towers mid span	\$1,500,000									\$1,500,000		
	K1-1	2GR	Rufus Ratchford Rd.				69KV line - wood poles conflicts with poles	\$250,000						\$250,000		
	K3-2	3GR	400yards & 0.36mi east of Gaither Rd.	2-100KV lines - steel towers mid span on each	\$1,000,000									\$1,000,000		
		4GR	335yards west of South Point Rd.	100KV line - steel towers conflicts with towers	\$500,000									\$500,000		
	K4-1	5GR	Reese Wilson Rd	500KV line - steel towers 230KV line - steel towers 100KV line - steel towers conflicts with towers	\$3,500,000									\$3,500,000		
		6GR	Dixie River Rd.	230KV line - steel towers 100KV line - steel towers conflicts with towers	\$1,500,000									\$1,500,000		
Total Utility Est. Cost				\$8,000,000	\$250,000	\$0	\$0	\$0	\$0	\$8,250,000						

GASTON COUNTY

GASTON EAST-WEST CONNECTOR

PRELIMINARY DESIGN



DSA Representative Route # 58
UC Route 1

PREPARED FOR:



NCDOT TIP PROJECT NO. U-3321
OCTOBER 2007

PREPARED BY:



Utility Impact Assessment Matrix

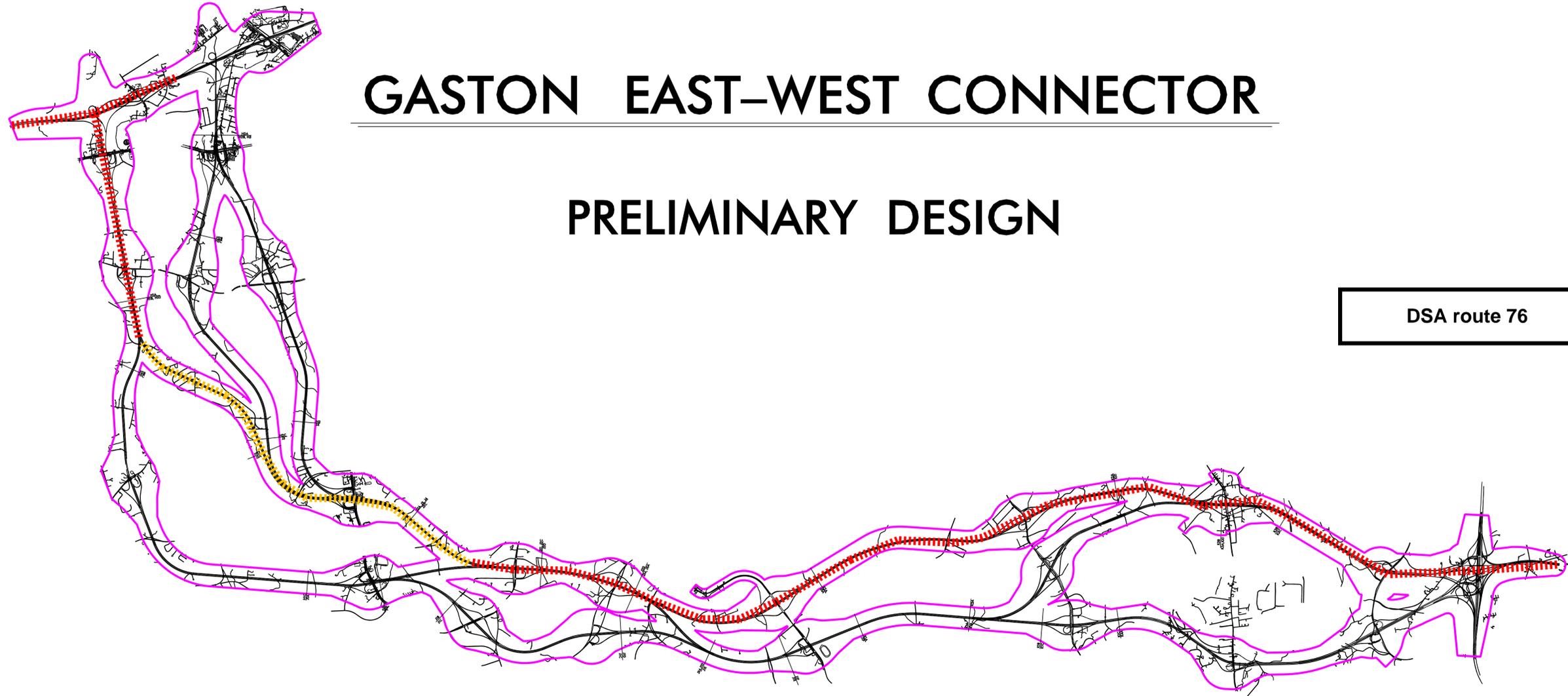
DSA route 58

Route Color	Map #	Conflict #	At or near the intersection of new roadway with:	Duke Energy		Rutherford EMC		Gas				Corridor Totals		
				Transcontinental Gas Pipeline Corp. 1-30" & 2-36" lines		Colonial Pipeline Company 36" & 40" lines		Plantation Pipeline Company 2-gas lines size unknown						
				Transmission	Est. Cost	Transmission	Est. Cost	Transmission	Est. Cost	Transmission	Est. Cost			
RED	H1-1	1R	Edgewood & Oats Rd. North of I-85	2 - 44KV lines - wood poles conflict with poles	\$500,000								\$500,000	
		2R	I-85 at Oats Rd	100KV line - steel towers & 44KV line wood poles conflict with tower	\$750,000									\$750,000
		3R	I-85	230KV line - steel towers conflict with towers	\$1,000,000									\$1,000,000
	H1-2	4R	0.38mi south of W. Franklin Blvd (29 / 74).	100KV line - steel towers conflicts with towers	\$500,000									\$500,000
	H1-4	5R	River Creek Ln.									parallel gas lines	\$1,500,000	\$1,500,000
		6R	Bethany Rd.						40" & 36" parallel gas lines	\$1,500,000				\$1,500,000
		7R	Crowders Creek Rd.			69KV line - wood poles conflicts with poles	\$250,000							\$250,000
	J1-1 JX1-1 J2-2	8R	170yards east of Pearson's Tpke.	44KV line - steel towers conflicts with towers	\$500,000									\$500,000
		9R	0.25mi east of Robinson Rd.	230KV line - steel towers 100KV line - steel towers conflicts with towers	\$1,500,000									\$1,500,000
	K2-1	10R	Union New Hope Rd.			69KV line - wood poles conflicts with poles	\$250,000							\$250,000
	K2-2	11R	Lake crossing at Lake Wylie Rd. & Riverfront Dr	100KV line - steel towers conflicts with corner tower will require new ROW	\$1,000,000									\$1,000,000
	KX1-1	12R	300yards south of Gaither Rd.	100KV line - steel towers conflicts with tower	\$500,000									\$500,000
		13R	215yards east of Boat Club Rd.	500KV line - steel towers 230KV line - steel towers 230KV line - steel towers conflicts with towers	\$4,000,000									\$4,000,000
		14R	0.33mi south of Oak Crest Rd.	100KV line - steel towers conflicts with tower	\$500,000									\$500,000
	K3-3 K3-4	15R	100yards southwest of Lochfoot Dr.	230KV line - steel towers conflicts with towers will require new ROW	\$2,000,000									\$2,000,000
Total Utility Est. Cost					\$12,750,000		\$500,000		\$0		\$1,500,000	\$1,500,000	\$16,250,000	
UC Route 1 Est. Cost					\$12,750,000		\$500,000		\$0		\$1,500,000	\$1,500,000	\$16,250,000	

GASTON COUNTY

GASTON EAST-WEST CONNECTOR

PRELIMINARY DESIGN



DSA route 76

PREPARED FOR:



NCDOT TIP PROJECT NO. U-3321
OCTOBER 2007

PREPARED BY:



Utility Impact Assessment Matrix

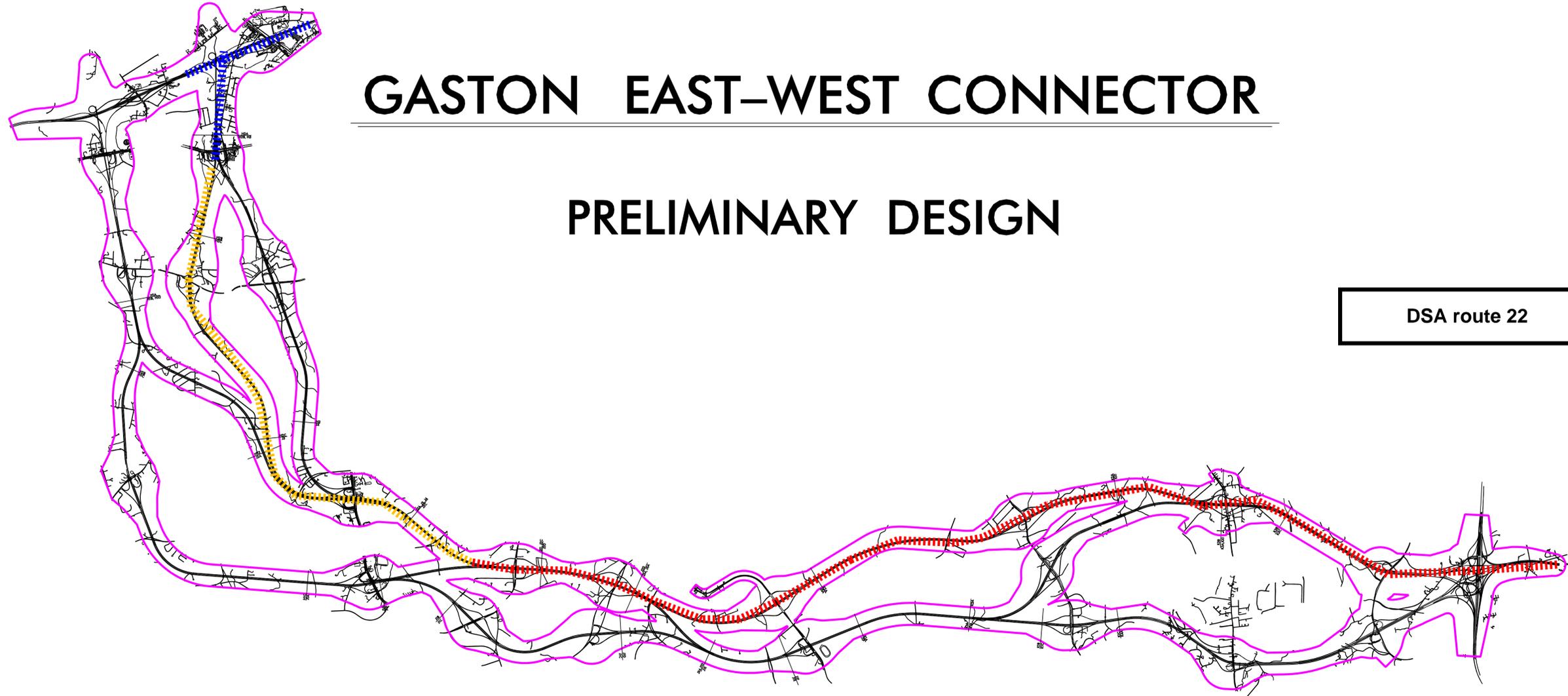
DSA route 76

Route Color	Map #	Conflict #	At or near the intersection of new roadway with:	Duke Energy		Rutherford EMC		Gas				Corridor Totals		
				Transcontinental Gas Pipeline Corp. 1-30" & 2-36" lines		Colonial Pipeline Company 36" & 40" lines		Plantation Pipeline Company 2-gas lines size unknown						
				Transmission	Est. Cost	Transmission	Est. Cost	Transmission	Est. Cost	Transmission	Est. Cost			
RED	H1-1	1R	Edgewood & Oats Rd. North of I-85	2 - 44KV lines - wood poles conflict with poles	\$500,000								\$500,000	
		2R	I-85 at Oats Rd	100KV line - steel towers & 44KV line wood poles conflict with tower	\$750,000									\$750,000
		3R	I-85	230KV line - steel towers conflict with towers	\$1,000,000									\$1,000,000
	H1-2	4R	0.38mi south of W. Franklin Blvd (29 / 74).	100KV line - steel towers conflicts with towers	\$500,000								\$500,000	
	J1-1 JX1-1 J2-2	9R	0.25mi east of Robinson Rd.	230KV line - steel towers 100KV line - steel towers conflicts with towers	\$1,500,000								\$1,500,000	
	K2-1	10R	Union New Hope Rd.			69KV line - wood poles conflicts with poles	\$250,000						\$250,000	
	K2-2	11R	Lake crossing at Lake Wylie Rd. & Riverfront Dr	100KV line - steel towers conflicts with corner tower will require new ROW	\$1,000,000								\$1,000,000	
	KX1-1	12R	300yards south of Gaither Rd.	100KV line - steel towers conflicts with tower	\$500,000								\$500,000	
		13R	215yards east of Boat Club Rd.	500KV line - steel towers 230KV line - steel towers 230KV line - steel towers conflicts with towers	\$4,000,000								\$4,000,000	
		14R	0.33mi south of Oak Crest Rd.	100KV line - steel towers conflicts with tower	\$500,000								\$500,000	
K3-3 K3-4	15R	100yards southwest of Lochfoot Dr.	230KV line - steel towers conflicts with towers will require new ROW	\$2,000,000								\$2,000,000		
Total Utility Est. Cost				\$12,250,000		\$250,000		\$0		\$0		\$0	\$12,500,000	
GOLD	J2-1	2GL	0.46mi north of Crowders Creek Rd.									parallel gas lines	\$1,500,000	\$1,500,000
		3GL	Crowders Creek Rd.							40" & 36" parallel gas lines	\$1,500,000			\$1,500,000
	J4-1	4GL	0.42mi north of Forbes Rd. End of Benfield Rd.	44KV line - steel towers conflict with tower	\$500,000									\$500,000
Total Utility Est. Cost				\$500,000		\$0		\$0		\$1,500,000		\$1,500,000	\$3,500,000	
UC Route 2 Est. Cost				\$12,750,000		\$250,000		\$0		\$1,500,000		\$1,500,000	\$16,000,000	

GASTON COUNTY

GASTON EAST-WEST CONNECTOR

PRELIMINARY DESIGN



DSA route 22

PREPARED FOR:



NCDOT TIP PROJECT NO. U-3321
OCTOBER 2007

PREPARED BY:



Utility Impact Assessment Matrix

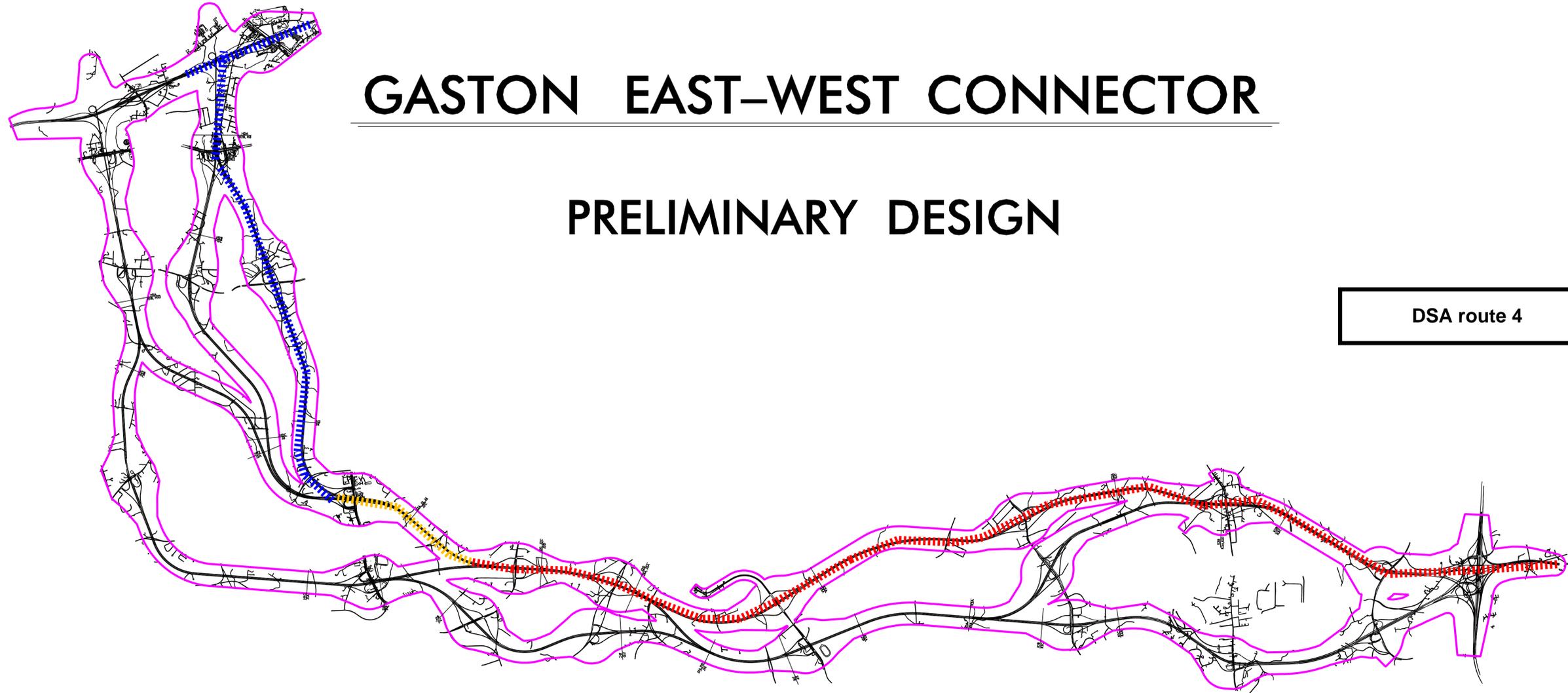
DSA route 22

Route Color	Map #	Conflict #	At or near the intersection of new roadway with:	Duke Energy		Rutherford EMC		Gas				Corridor Totals		
				Duke Energy		Rutherford EMC		Transcontinental Gas Pipeline Corp. 1-30" & 2-36" lines		Colonial Pipeline Company 36" & 40" lines			Plantation Pipeline Company 2-gas lines size unknown	
				Transmission	Est. Cost	Transmission	Est. Cost	Transmission	Est. Cost	Transmission	Est. Cost		Transmission	Est. Cost
RED	J1-1 JX1-1 J2-2	9R	0.25mi east of Robinson Rd.	230KV line - steel towers 100KV line - steel towers conflicts with towers	\$1,500,000									\$1,500,000
	K2-1	10R	Union New Hope Rd.			69KV line - wood poles conflicts with poles	\$250,000							\$250,000
	K2-2	11R	Lake crossing at Lake Wylie Rd. & Riverfront Dr	100KV line - steel towers conflicts with corner tower will require new ROW	\$1,000,000									\$1,000,000
	KX1-1	12R	300yards south of Gaither Rd.	100KV line - steel towers conflicts with tower	\$500,000									\$500,000
		13R	215yards east of Boat Club Rd.	500KV line - steel towers 230KV line - steel towers 230KV line - steel towers conflicts with towers	\$4,000,000									\$4,000,000
		14R	0.33mi south of Oak Crest Rd.	100KV line - steel towers conflicts with tower	\$500,000									\$500,000
	K3-3 K3-4	15R	100yards southwest of Lochfoot Dr.	230KV line - steel towers conflicts with towers will require new ROW	\$2,000,000									\$2,000,000
Total Utility Est. Cost					\$9,500,000		\$250,000		\$0		\$0		\$0	\$9,750,000
BLUE	H2-2	1B	0.37mi south of I-85	100KV line - steel towers & 44KV line wood poles conflict with tower	\$750,000									\$750,000
	Total Utility Est. Cost					\$750,000		\$0		\$0		\$0		\$0
GOLD	H2-3	1GL	400yards north of Carson Dr.	100KV line - steel towers mid span	\$500,000									\$500,000
	J2-1	2GL	0.46mi north of Crowders Creek Rd.									parallel gas lines	\$1,500,000	\$1,500,000
		3GL	Crowders Creek Rd.							40" & 36" parallel gas lines	\$1,500,000			\$1,500,000
	J4-1	4GL	0.42mi north of Forbes Rd. End of Benfield Rd.	44KV line - steel towers conflict with tower	\$500,000									\$500,000
Total Utility Est. Cost					\$1,000,000		\$0		\$0		\$1,500,000		\$1,500,000	\$4,000,000
UC Route 3 Est. Cost					\$11,250,000		\$250,000		\$0		\$1,500,000		\$1,500,000	\$14,500,000

GASTON COUNTY

GASTON EAST-WEST CONNECTOR

PRELIMINARY DESIGN



DSA route 4

PREPARED FOR:



NCDOT TIP PROJECT NO. U-3321
OCTOBER 2007

PREPARED BY:



Utility Impact Assessment Matrix

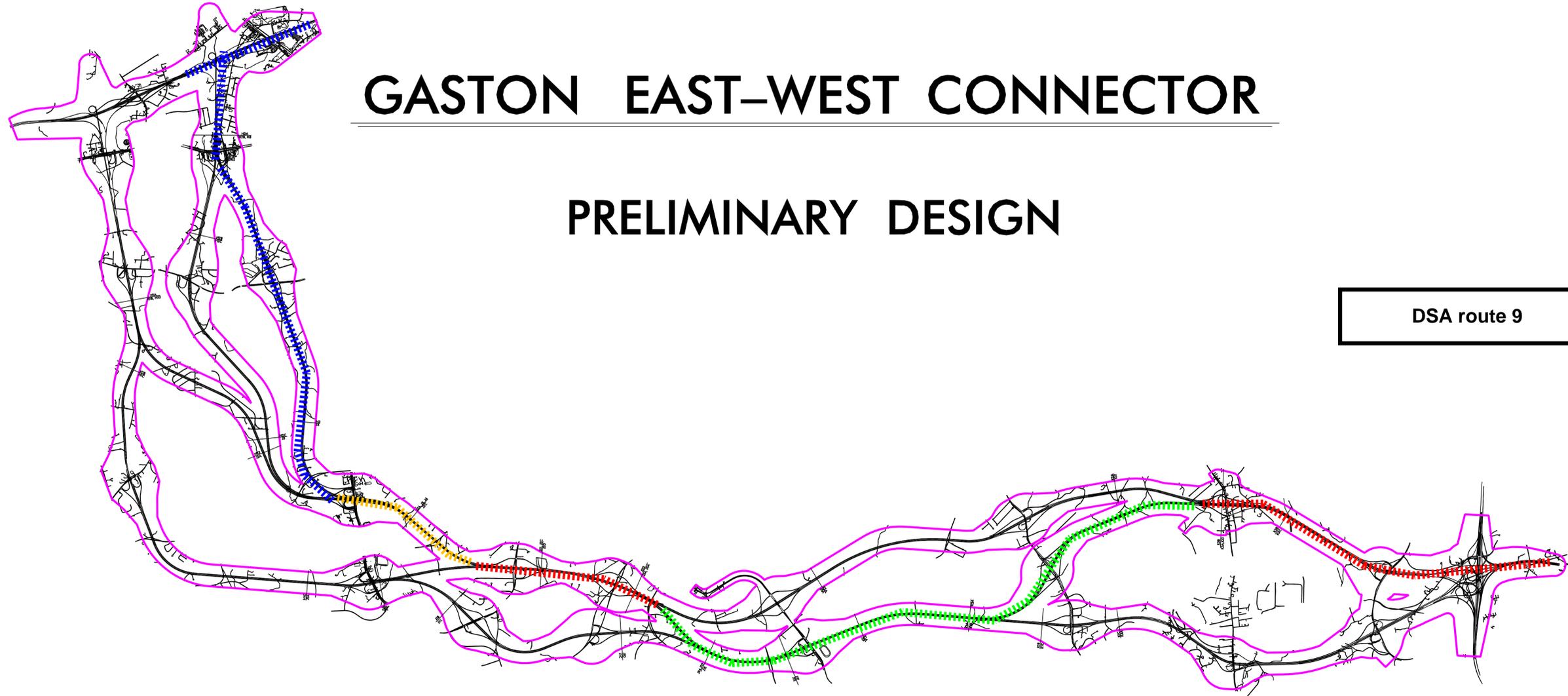
DSA route 4

Route Color	Map #	Conflict #	At or near the intersection of new roadway with:	Duke Energy		Rutherford EMC		Gas				Corridor Totals		
				Duke Energy		Rutherford EMC		Transcontinental Gas Pipeline Corp. 1-30" & 2-36" lines		Colonial Pipeline Company 36" & 40" lines			Plantation Pipeline Company 2-gas lines size unknown	
				Transmission	Est. Cost	Transmission	Est. Cost	Transmission	Est. Cost	Transmission	Est. Cost		Transmission	Est. Cost
RED	J1-1 JX1-1 J2-2	9R	0.25mi east of Robinson Rd.	230KV line - steel towers 100KV line - steel towers conflicts with towers	\$1,500,000									\$1,500,000
	K2-1	10R	Union New Hope Rd.			69KV line - wood poles conflicts with poles	\$250,000							\$250,000
	K2-2	11R	Lake crossing at Lake Wylie Rd. & Riverfront Dr	100KV line - steel towers conflicts with corner tower will require new ROW	\$1,000,000									\$1,000,000
	KX1-1	12R	300yards south of Gaither Rd.	100KV line - steel towers conflicts with tower	\$500,000									\$500,000
		13R	215yards east of Boat Club Rd.	500KV line - steel towers 230KV line - steel towers 230KV line - steel towers conflicts with towers	\$4,000,000									\$4,000,000
		14R	0.33mi south of Oak Crest Rd.	100KV line - steel towers conflicts with tower	\$500,000									\$500,000
	K3-3 K3-4	15R	100yards southwest of Lochfoot Dr.	230KV line - steel towers conflicts with towers will require new ROW	\$2,000,000									\$2,000,000
Total Utility Est. Cost				\$9,500,000	\$250,000	\$0	\$0	\$0	\$0	\$0	\$0	\$9,750,000		
BLUE	H2-2	1B	0.37mi south of I-85	100KV line - steel towers & 44KV line wood poles conflict with tower	\$750,000								\$750,000	
	H3-2	2B	450yards northwest of Linwood Rd.	100KV line - steel towers mid span	\$500,000								\$500,000	
	J4-1	3B	200yards north of Crowders Creek Rd.								parallel gas lines	\$1,500,000	\$1,500,000	
		4B	0.26mi southeast of Crowders Creek Rd.						40" & 36" parallel gas lines	\$1,500,000		\$1,500,000	\$1,500,000	
Total Utility Est. Cost				\$1,250,000	\$0	\$0	\$1,500,000	\$1,500,000	\$4,250,000					
GOLD	J4-1	4GL	0.42mi north of Forbes Rd. End of Benfield Rd.	44KV line - steel towers conflict with tower	\$500,000								\$500,000	
	Total Utility Est. Cost				\$500,000	\$0	\$0	\$0	\$0	\$500,000				
UC Route 4 Est. Cost				\$11,250,000	\$250,000	\$0	\$1,500,000	\$1,500,000	\$14,500,000					

GASTON COUNTY

GASTON EAST-WEST CONNECTOR

PRELIMINARY DESIGN



DSA route 9

PREPARED FOR:



NCDOT TIP PROJECT NO. U-3321
OCTOBER 2007

PREPARED BY:



Utility Impact Assessment Matrix

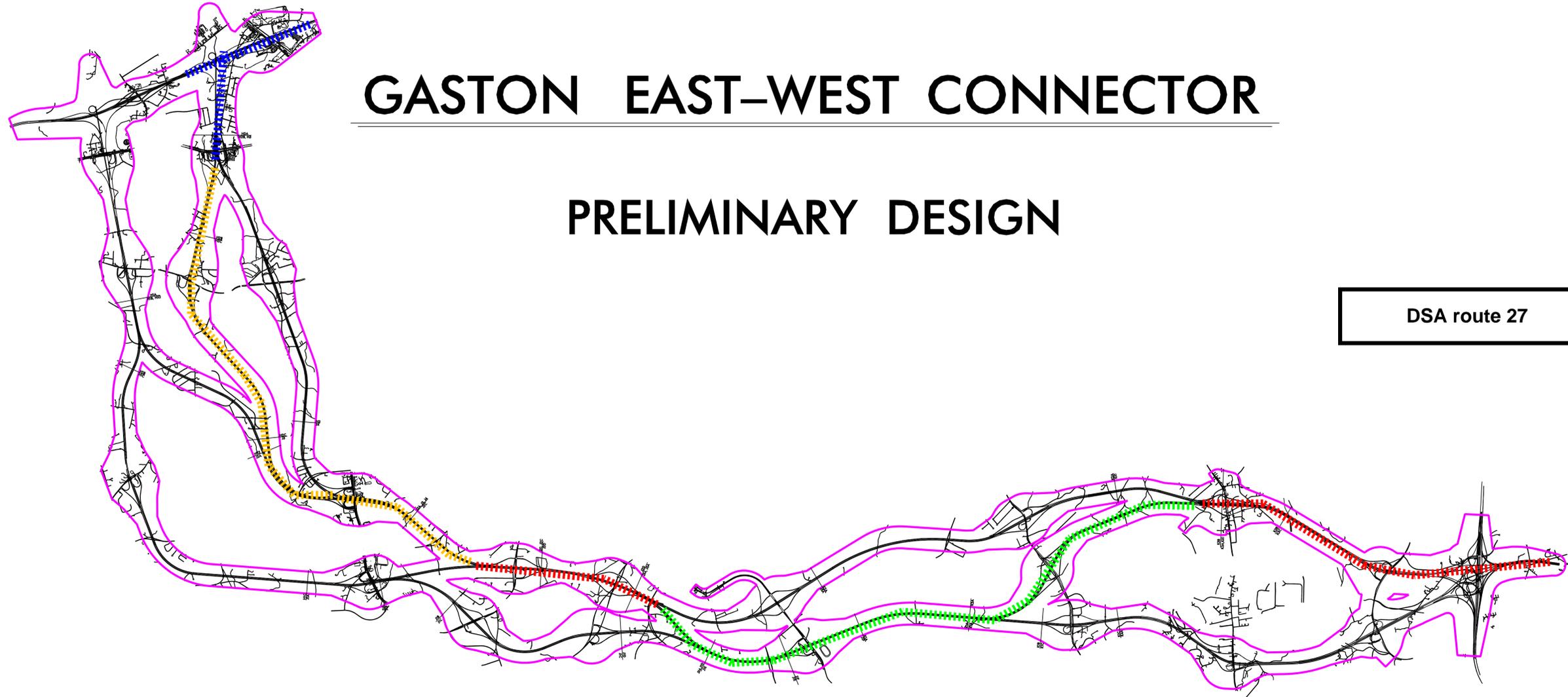
DSA route 9

Route Color	Map #	Conflict #	At or near the intersection of new roadway with:	Duke Energy		Rutherford EMC		Gas				Corridor Totals		
				Duke Energy		Rutherford EMC		Transcontinental Gas Pipeline Corp. 1-30" & 2-36" lines		Colonial Pipeline Company 36" & 40" lines			Plantation Pipeline Company 2-gas lines size unknown	
				Transmission	Est. Cost	Transmission	Est. Cost	Transmission	Est. Cost	Transmission	Est. Cost		Transmission	Est. Cost
RED	J1-1 JX1-1 J2-2	9R	0.25mi east of Robinson Rd.	230KV line - steel towers 100KV line - steel towers conflicts with towers	\$1,500,000									\$1,500,000
	KX1-1	13R	215yards east of Boat Club Rd.	500KV line - steel towers 230KV line - steel towers 230KV line - steel towers conflicts with towers	\$4,000,000									\$4,000,000
		14R	0.33mi south of Oak Crest Rd.	100KV line - steel towers conflicts with tower	\$500,000									\$500,000
	K3-3 K3-4	15R	100yards southwest of Lochfoot Dr.	230KV line - steel towers conflicts with towers will require new ROW	\$2,000,000									\$2,000,000
Total Utility Est. Cost					\$8,000,000		\$0		\$0		\$0		\$0	\$8,000,000
BLUE	H2-2	1B	0.37mi south of I-85	100KV line - steel towers & 44KV line wood poles conflict with tower	\$750,000									\$750,000
	H3-2	2B	450yards northwest of Linwood Rd.	100KV line - steel towers mid span	\$500,000									\$500,000
	J4-1	3B	200yards north of Crowders Creek Rd.									parallel gas lines	\$1,500,000	\$1,500,000
		4B	0.26mi southeast of Crowders Creek Rd.							40" & 36" parallel gas lines	\$1,500,000			\$1,500,000
Total Utility Est. Cost					\$1,250,000		\$0		\$0		\$1,500,000		\$1,500,000	\$4,250,000
GOLD	J4-1	4GL	0.42mi north of Forbes Rd. End of Benfield Rd.	44KV line - steel towers conflict with tower	\$500,000									\$500,000
	Total Utility Est. Cost					\$500,000		\$0		\$0		\$0		\$0
GREEN	K1-1	2GR	Rufus Ratchford Rd.			69KV line - wood poles conflicts with poles	\$250,000							\$250,000
	K3-2	3GR	400yards & 0.36mi east of Gaither Rd.	2-100KV lines - steel towers mid span on each	\$1,000,000									\$1,000,000
Total Utility Est. Cost					\$1,000,000		\$250,000		\$0		\$0		\$0	\$1,250,000
UC Route 5 Est. Cost					\$10,750,000		\$250,000		\$0		\$1,500,000		\$1,500,000	\$14,000,000

GASTON COUNTY

GASTON EAST-WEST CONNECTOR

PRELIMINARY DESIGN



DSA route 27

PREPARED FOR:



NCDOT TIP PROJECT NO. U-3321
OCTOBER 2007

PREPARED BY:



Utility Impact Assessment Matrix

DSA route 27

Route Color	Map #	Conflict #	At or near the intersection of new roadway with:	Duke Energy		Rutherford EMC		Gas				Corridor Totals		
				Duke Energy		Rutherford EMC		Transcontinental Gas Pipeline Corp. 1-30" & 2-36" lines		Colonial Pipeline Company 36" & 40" lines			Plantation Pipeline Company 2-gas lines size unknown	
				Transmission	Est. Cost	Transmission	Est. Cost	Transmission	Est. Cost	Transmission	Est. Cost		Transmission	Est. Cost
RED	J1-1 JX1-1 J2-2	9R	0.25mi east of Robinson Rd.	230KV line - steel towers 100KV line - steel towers conflicts with towers	\$1,500,000									\$1,500,000
	KX1-1	13R	215yards east of Boat Club Rd.	500KV line - steel towers 230KV line - steel towers 230KV line - steel towers conflicts with towers	\$4,000,000									\$4,000,000
		14R	0.33mi south of Oak Crest Rd.	100KV line - steel towers conflicts with tower	\$500,000									\$500,000
	K3-3 K3-4	15R	100yards southwest of Lochfoot Dr.	230KV line - steel towers conflicts with towers will require new ROW	\$2,000,000									\$2,000,000
Total Utility Est. Cost					\$8,000,000		\$0		\$0		\$0		\$0	\$8,000,000
BLUE	H2-2	1B	0.37mi south of I-85	100KV line - steel towers & 44KV line wood poles conflict with tower	\$750,000									\$750,000
Total Utility Est. Cost					\$750,000		\$0		\$0		\$0		\$0	\$750,000
GOLD	H2-3	1GL	400yards north of Carson Dr.	100KV line - steel towers mid span	\$500,000									\$500,000
	J2-1	2GL	0.46mi north of Crowders Creek Rd.									parallel gas lines	\$1,500,000	\$1,500,000
		3GL	Crowders Creek Rd.							40" & 36"parallel gas lines	\$1,500,000			\$1,500,000
	J4-1	4GL	0.42mi north of Forbes Rd. End of Benfield Rd.	44KV line - steel towers conflict with tower	\$500,000									\$500,000
Total Utility Est. Cost					\$1,000,000		\$0		\$0		\$1,500,000		\$1,500,000	\$4,000,000
GREEN	K1-1	2GR	Rufus Ratchford Rd.			69KV line - wood poles conflicts with poles	\$250,000							\$250,000
	K3-2	3GR	400yards & 0.36mi east of Gaither Rd.	2-100KV lines - steel towers mid span on each	\$1,000,000									\$1,000,000
Total Utility Est. Cost					\$1,000,000		\$250,000		\$0		\$0		\$0	\$1,250,000
UC Route 6 Est. Cost					\$10,750,000		\$250,000		\$0		\$1,500,000		\$1,500,000	\$14,000,000

Utility Impact Assessment Matrix

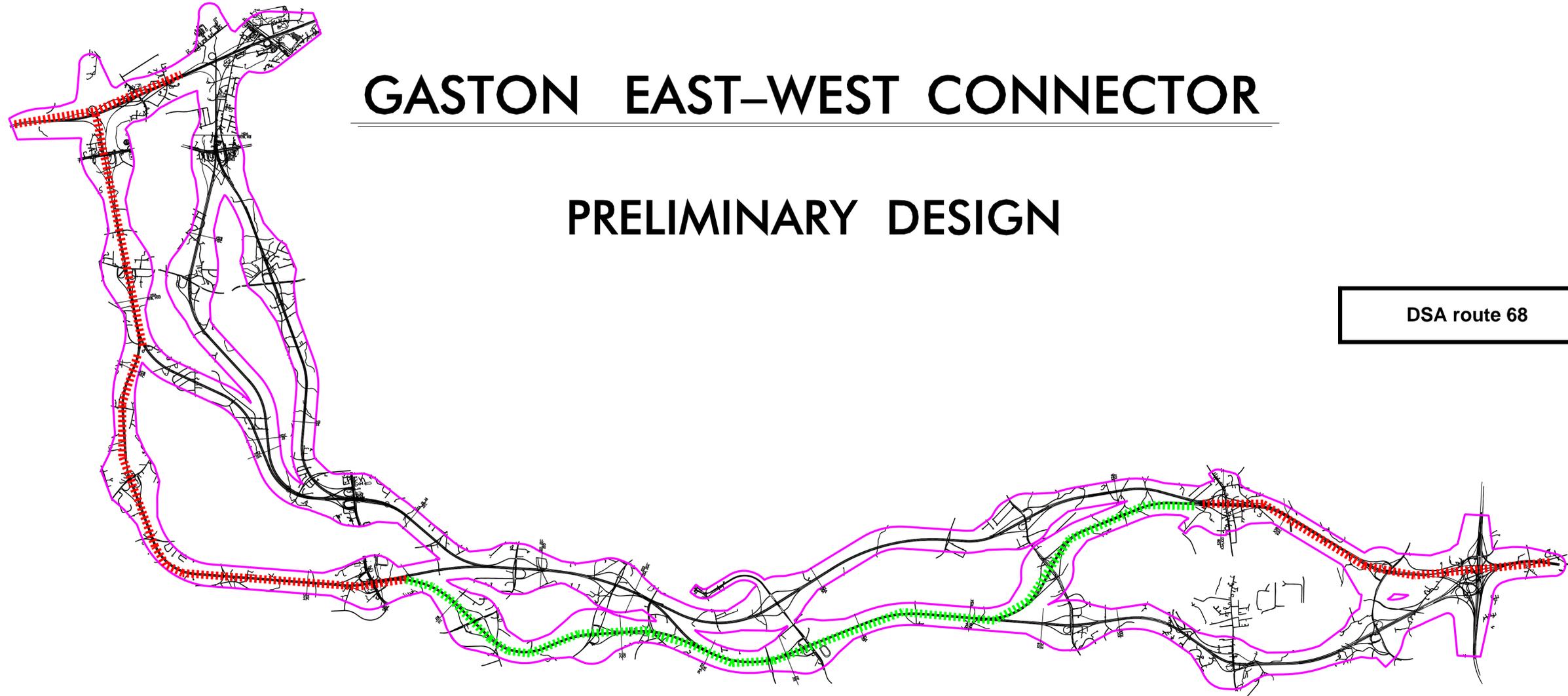
DSA route 81

Route Color	Map #	Conflict #	At or near the intersection of new roadway with:	Duke Energy		Rutherford EMC		Gas				Corridor Totals		
				Duke Energy		Rutherford EMC		Transcontinental Gas Pipeline Corp. 1-30" & 2-36" lines		Colonial Pipeline Company 36" & 40" lines			Plantation Pipeline Company 2-gas lines size unknown	
				Transmission	Est. Cost	Transmission	Est. Cost	Transmission	Est. Cost	Transmission	Est. Cost		Transmission	Est. Cost
RED	H1-1	1R	Edgewood & Oats Rd. North of I-85	2 - 44KV lines - wood poles conflict with poles	\$500,000								\$500,000	
		2R	I-85 at Oats Rd	100KV line - steel towers & 44KV line wood poles conflict with tower	\$750,000									\$750,000
		3R	I-85	230KV line - steel towers conflict with towers	\$1,000,000									\$1,000,000
	H1-2	4R	0.38mi south of W. Franklin Blvd (29 / 74).	100KV line - steel towers conflicts with towers	\$500,000								\$500,000	
	J1-1 JX1-1 J2-2	9R	0.25mi east of Robinson Rd.	230KV line - steel towers 100KV line - steel towers conflicts with towers	\$1,500,000								\$1,500,000	
	KX1-1	13R	215yards east of Boat Club Rd.	500KV line - steel towers 230KV line - steel towers 230KV line - steel towers conflicts with towers	\$4,000,000									\$4,000,000
		14R	0.33mi south of Oak Crest Rd.	100KV line - steel towers conflicts with tower	\$500,000									\$500,000
	K3-3 K3-4	15R	100yards southwest of Lochfoot Dr.	230KV line - steel towers conflicts with towers will require new ROW	\$2,000,000									\$2,000,000
Total Utility Est. Cost				\$10,750,000		\$0		\$0		\$0		\$0	\$10,750,000	
GOLD	J2-1	2GL	0.46mi north of Crowders Creek Rd.									parallel gas lines	\$1,500,000	\$1,500,000
		3GL	Crowders Creek Rd.								40" & 36"parallel gas lines	\$1,500,000		\$1,500,000
	J4-1	4GL	0.42mi north of Forbes Rd. End of Benfield Rd.	44KV line - steel towers conflict with tower	\$500,000									\$500,000
Total Utility Est. Cost				\$500,000		\$0		\$0		\$1,500,000		\$1,500,000	\$3,500,000	
GREEN	K1-1	2GR	Rufus Ratchford Rd.			69KV line - wood poles conflicts with poles	\$250,000							\$250,000
	K3-2	3GR	400yards & 0.36mi east of Gaither Rd.	2-100KV lines - steel towers mid span on each	\$1,000,000									\$1,000,000
Total Utility Est. Cost				\$1,000,000		\$250,000		\$0		\$0		\$0	\$1,250,000	
UC Route 7 Est. Cost				\$12,250,000		\$250,000		\$0		\$1,500,000		\$1,500,000	\$15,500,000	

GASTON COUNTY

GASTON EAST-WEST CONNECTOR

PRELIMINARY DESIGN



DSA route 68

PREPARED FOR:



NCDOT TIP PROJECT NO. U-3321
OCTOBER 2007

PREPARED BY:



Utility Impact Assessment Matrix

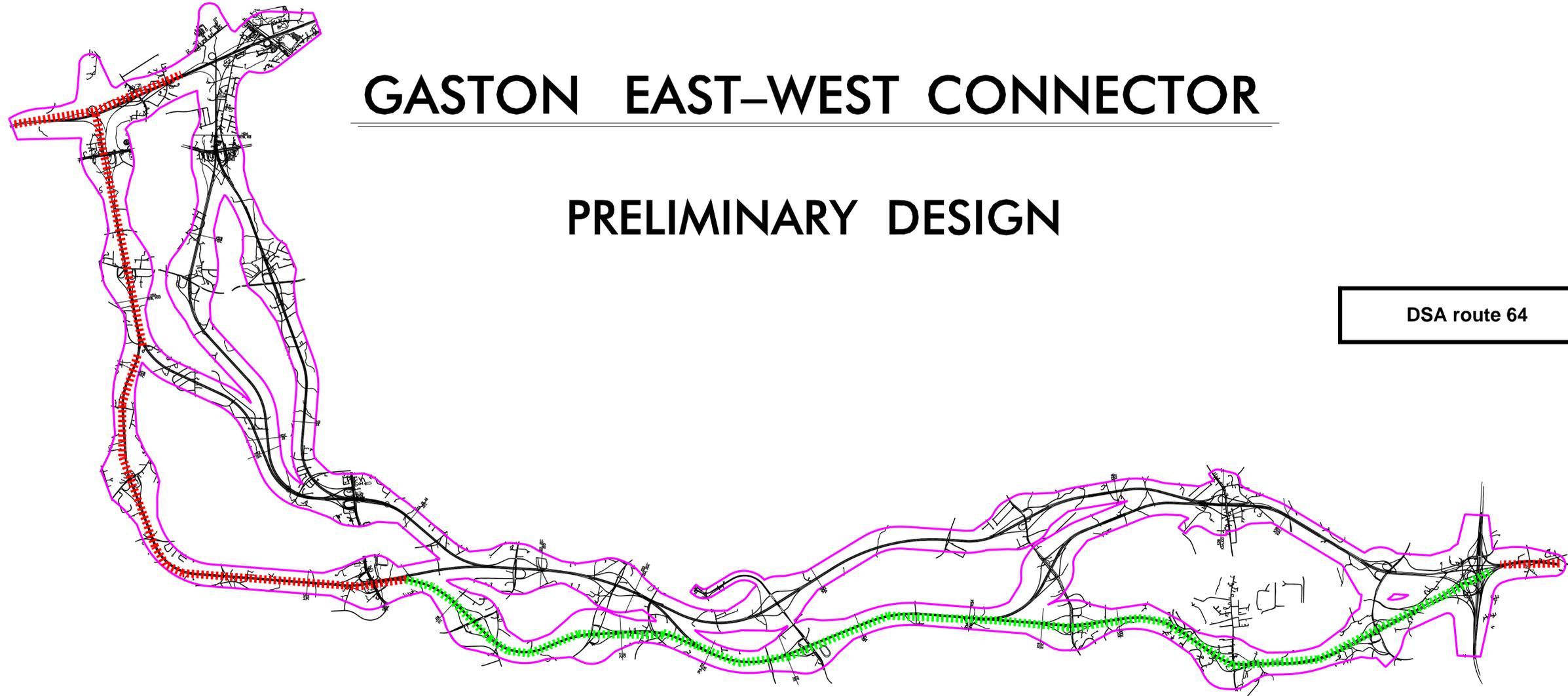
DSA route 68

Route Color	Map #	Conflict #	At or near the intersection of new roadway with:	Duke Energy		Rutherford EMC		Gas				Corridor Totals		
				Transcontinental Gas Pipeline Corp. 1-30" & 2-36" lines		Colonial Pipeline Company 36" & 40" lines		Plantation Pipeline Company 2-gas lines size unknown						
				Transmission	Est. Cost	Transmission	Est. Cost	Transmission	Est. Cost	Transmission	Est. Cost			
RED	H1-1	1R	Edgewood & Oats Rd. North of I-85	2 - 44KV lines - wood poles conflict with poles	\$500,000								\$500,000	
		2R	I-85 at Oats Rd	100KV line - steel towers & 44KV line wood poles conflict with tower	\$750,000									\$750,000
		3R	I-85	230KV line - steel towers conflict with towers	\$1,000,000									\$1,000,000
	H1-2	4R	0.38mi south of W. Franklin Blvd (29 / 74).	100KV line - steel towers conflicts with towers	\$500,000								\$500,000	
	H1-4	5R	River Creek Ln.								parallel gas lines	\$1,500,000		\$1,500,000
		6R	Bethany Rd.							40" & 36" parallel gas lines	\$1,500,000			\$1,500,000
		7R	Crowders Creek Rd.			69KV local transmission	\$250,000							\$250,000
	J1-1 JX1-1 J2-2	8R	170yards east of Pearson's Tpke.	44KV line - steel towers conflicts with towers	\$500,000								\$500,000	
	KX1-1	13R	215yards east of Boat Club Rd.	500KV line - steel towers 230KV line - steel towers 230KV line - steel towers conflicts with towers	\$4,000,000									\$4,000,000
		14R	0.33mi south of Oak Crest Rd.	100KV line - steel towers conflicts with tower	\$500,000									\$500,000
K3-3 K3-4	15R	100yards southwest of Lochfoot Dr.	230KV line - steel towers conflicts with towers will require new ROW	\$2,000,000									\$2,000,000	
Total Utility Est. Cost					\$9,750,000		\$250,000		\$0		\$1,500,000		\$1,500,000	\$13,000,000
GREEN	J1-2	1GR	0.25mi east of Bud Wilson Rd. at the end of Mandel Dr.	230KV line - steel towers 100KV line - steel towers mid span	\$1,500,000								\$1,500,000	
	K1-1	2GR	Rufus Ratchford Rd.			69KV line - wood poles conflicts with poles	\$250,000						\$250,000	
	K3-2	3GR	400yards & 0.36mi east of Gaither Rd.	2-100KV lines - steel towers mid span on each	\$1,000,000								\$1,000,000	
Total Utility Est. Cost					\$2,500,000		\$250,000		\$0		\$0		\$0	\$2,750,000
UC Route 9 Est. Cost					\$12,250,000		\$500,000		\$0		\$1,500,000		\$1,500,000	\$15,750,000

GASTON COUNTY

GASTON EAST-WEST CONNECTOR

PRELIMINARY DESIGN



PREPARED FOR:



NCDOT TIP PROJECT NO. U-3321
OCTOBER 2007

PREPARED BY:



Utility Impact Assessment Matrix

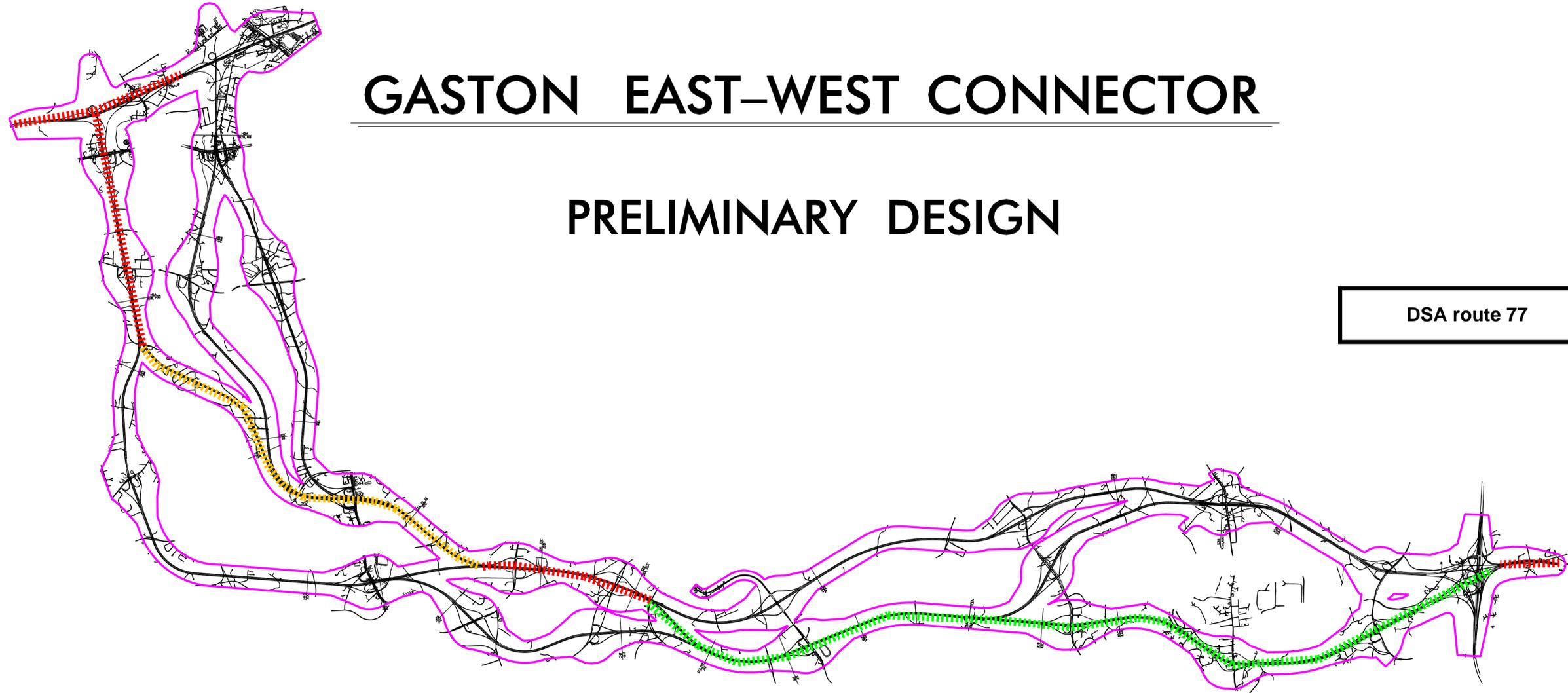
DSA route 64

Route Color	Map #	Conflict #	At or near the intersection of new roadway with:	Duke Energy		Rutherford EMC		Gas				Corridor Totals		
				Duke Energy		Rutherford EMC		Transcontinental Gas Pipeline Corp. 1-30" & 2-36" lines		Colonial Pipeline Company 36" & 40" lines			Plantation Pipeline Company 2-gas lines size unknown	
				Transmission	Est. Cost	Transmission	Est. Cost	Transmission	Est. Cost	Transmission	Est. Cost		Transmission	Est. Cost
RED	H1-1	1R	Edgewood & Oats Rd. North of I-85	2 - 44KV lines - wood poles conflict with poles	\$500,000								\$500,000	
		2R	I-85 at Oats Rd	100KV line - steel towers & 44KV line wood poles conflict with tower	\$750,000									\$750,000
		3R	I-85	230KV line - steel towers conflict with towers	\$1,000,000									\$1,000,000
	H1-2	4R	0.38mi south of W. Franklin Blvd (29 / 74).	100KV line - steel towers conflicts with towers	\$500,000								\$500,000	
	H1-4	5R	River Creek Ln.								parallel gas lines	\$1,500,000		\$1,500,000
		6R	Bethany Rd.							40" & 36" parallel gas lines	\$1,500,000			\$1,500,000
		7R	Crowders Creek Rd.			69KV local transmission	\$250,000							\$250,000
	J1-1 JX1-1	8R	170yards east of Pearson's Tpke.	44KV line - steel towers conflicts with towers	\$500,000									\$500,000
Total Utility Est. Cost					\$3,250,000		\$250,000		\$0		\$1,500,000	\$1,500,000	\$6,500,000	
GREEN	J1-2	1GR	0.25mi east of Bud Wilson Rd. at the end of Mandel Dr.	230KV line - steel towers 100KV line - steel towers mid span	\$1,500,000								\$1,500,000	
	K1-1	2GR	Rufus Ratchford Rd.			69KV line - wood poles conflicts with poles	\$250,000						\$250,000	
	K4-1	4GR	335yards west of South Point Rd.	100KV line - steel towers conflicts with towers	\$500,000									\$500,000
		5GR	Reese Wilson Rd	500KV line - steel towers 230KV line - steel towers 100KV line - steel towers conflicts with towers	\$3,500,000									\$3,500,000
	K4-2	6GR	Dixie River Rd.	230KV line - steel towers 100KV line - steel towers conflicts with towers	\$1,500,000									\$1,500,000
	Total Utility Est. Cost					\$7,000,000		\$250,000		\$0	\$0	\$0	\$0	\$7,250,000
UC Route 10 Est. Cost					\$10,250,000		\$500,000		\$0	\$1,500,000	\$1,500,000		\$13,750,000	

GASTON COUNTY

GASTON EAST-WEST CONNECTOR

PRELIMINARY DESIGN



DSA route 77

PREPARED FOR:



NCDOT TIP PROJECT NO. U-3321
OCTOBER 2007

PREPARED BY:



Utility Impact Assessment Matrix

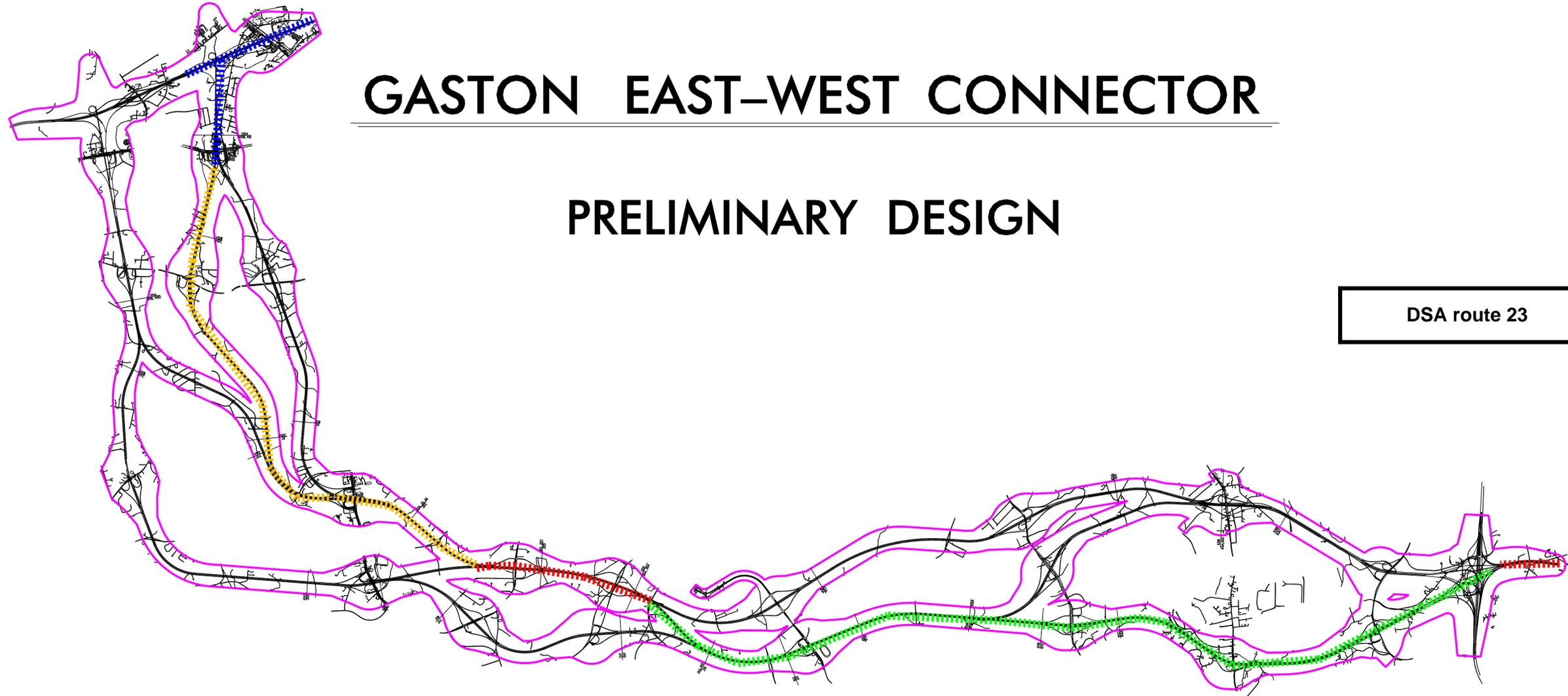
DSA route 77

Route Color	Map #	Conflict #	At or near the intersection of new roadway with:	Duke Energy		Rutherford EMC		Gas				Corridor Totals			
				Duke Energy		Rutherford EMC		Transcontinental Gas Pipeline Corp. 1-30" & 2-36" lines		Colonial Pipeline Company 36" & 40" lines			Plantation Pipeline Company 2-gas lines size unknown		
				Transmission	Est. Cost	Transmission	Est. Cost	Transmission	Est. Cost	Transmission	Est. Cost		Transmission	Est. Cost	
RED	H1-1	1R	Edgewood & Oats Rd. North of I-85	2 - 44KV lines - wood poles conflict with poles	\$500,000									\$500,000	
		2R	I-85 at Oats Rd	100KV line - steel towers & 44KV line wood poles conflict with tower	\$750,000										\$750,000
		3R	I-85	230KV line - steel towers conflict with towers	\$1,000,000										\$1,000,000
	H1-2	4R	0.38mi south of W. Franklin Blvd (29 / 74).	100KV line - steel towers conflicts with towers	\$500,000									\$500,000	
	J1-1 JX1-1 J2-2	9R	0.25mi east of Robinson Rd.	230KV line - steel towers 100KV line - steel towers conflicts with towers	\$1,500,000									\$1,500,000	
Total Utility Est. Cost				\$4,250,000		\$0		\$0		\$0		\$0		\$4,250,000	
GOLD	J2-1	2GL	0.46mi north of Crowders Creek Rd.									parallel gas lines	\$1,500,000	\$1,500,000	
		3GL	Crowders Creek Rd.							40" & 36" parallel gas lines	\$1,500,000			\$1,500,000	
	J4-1	4GL	0.42mi north of Forbes Rd. End of Benfield Rd.	44KV line - steel towers conflict with tower	\$500,000									\$500,000	
Total Utility Est. Cost				\$500,000		\$0		\$0		\$1,500,000		\$1,500,000		\$3,500,000	
GREEN	K1-1	2GR	Rufus Ratchford Rd.			69KV line - wood poles conflicts with poles	\$250,000							\$250,000	
	K4-1	4GR	335yards west of South Point Rd.	100KV line - steel towers conflicts with towers	\$500,000									\$500,000	
		5GR	Reese Wilson Rd	500KV line - steel towers 230KV line - steel towers 100KV line - steel towers conflicts with towers	\$3,500,000									\$3,500,000	
	K4-2	6GR	Dixie River Rd.	230KV line - steel towers 100KV line - steel towers conflicts with towers	\$1,500,000									\$1,500,000	
Total Utility Est. Cost				\$5,500,000		\$250,000		\$0		\$0		\$0		\$5,750,000	
UC Route 12 Est. Cost				\$10,250,000		\$250,000		\$0		\$1,500,000		\$1,500,000		\$13,500,000	

GASTON COUNTY

GASTON EAST-WEST CONNECTOR

PRELIMINARY DESIGN



DSA route 23

PREPARED FOR:



NCDOT TIP PROJECT NO. U-3321
OCTOBER 2007

PREPARED BY:



Utility Impact Assessment Matrix

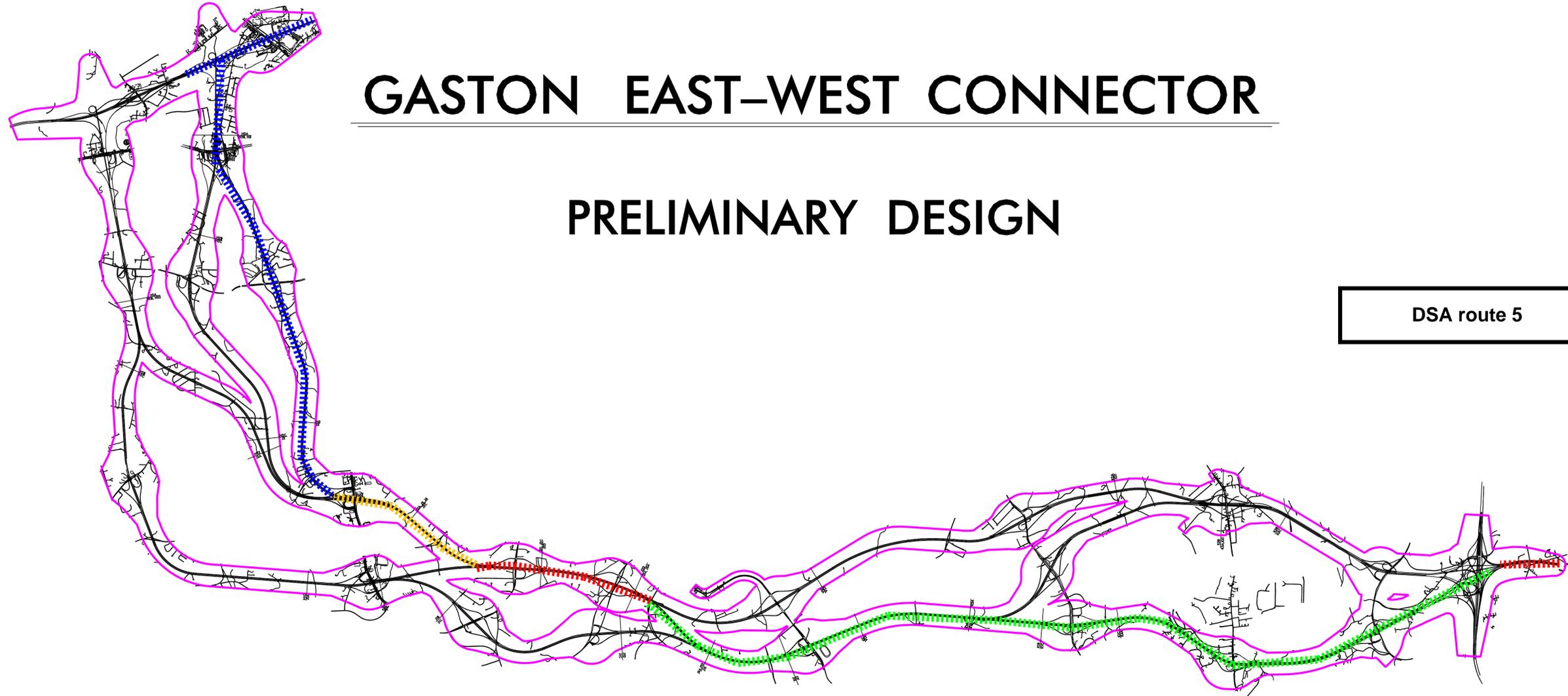
DSA route 23

Route Color	Map #	Conflict #	At or near the intersection of new roadway with:	Duke Energy		Rutherford EMC		Gas				Corridor Totals		
				Transmission		Transmission		Transcontinental Gas Pipeline Corp. 1-30" & 2-36" lines		Colonial Pipeline Company 36" & 40" lines			Plantation Pipeline Company 2-gas lines size unknown	
				Est. Cost		Est. Cost		Est. Cost		Est. Cost			Est. Cost	
RED	J1-1	9R	0.25mi east of Robinson Rd.	230KV line - steel towers 100KV line - steel towers conflicts with towers	\$1,500,000								\$1,500,000	
	JX1-1													J2-2
Total Utility Est. Cost					\$1,500,000		\$0		\$0		\$0		\$1,500,000	
BLUE	H2-2	1B	0.37mi south of I-85	100KV line - steel towers & 44KV line wood poles conflict with tower	\$750,000								\$750,000	
	Total Utility Est. Cost					\$750,000		\$0		\$0		\$0		\$750,000
GOLD	H2-3	1GL	400yards north of Carson Dr.	100KV line - steel towers mid span	\$500,000								\$500,000	
	J2-1	2GL	0.46mi north of Crowders Creek Rd.								parallel gas lines	\$1,500,000	\$1,500,000	
		3GL	Crowders Creek Rd.							40" & 36"parallel gas lines	\$1,500,000		\$1,500,000	
	J4-1	4GL	0.42mi north of Forbes Rd. End of Benfield Rd.	44KV line - steel towers conflict with tower	\$500,000								\$500,000	
Total Utility Est. Cost					\$1,000,000		\$0		\$0		\$1,500,000	\$1,500,000	\$4,000,000	
GREEN	K1-1	2GR	Rufus Ratchford Rd.			69KV line - wood poles conflicts with poles	\$250,000						\$250,000	
	K4-1	4GR	335yards west of South Point Rd.	100KV line -steel towers conflicts with towers	\$500,000								\$500,000	
		5GR	Reese Wilson Rd	500KV line - steel towers 230KV line - steel towers 100KV line - steel towers conflicts with towers	\$3,500,000								\$3,500,000	
	K4-2	6GR	Dixie River Rd.	230KV line - steel towers 100KV line - steel towers conflicts with towers	\$1,500,000								\$1,500,000	
Total Utility Est. Cost					\$5,500,000		\$250,000		\$0		\$0		\$5,750,000	
UC Route 13 Est. Cost					\$8,750,000		\$250,000		\$0		\$1,500,000	\$1,500,000	\$12,000,000	

GASTON COUNTY

GASTON EAST-WEST CONNECTOR

PRELIMINARY DESIGN



DSA route 5

PREPARED FOR:



NCDOT TIP PROJECT NO. U-3321
OCTOBER 2007

PREPARED BY:

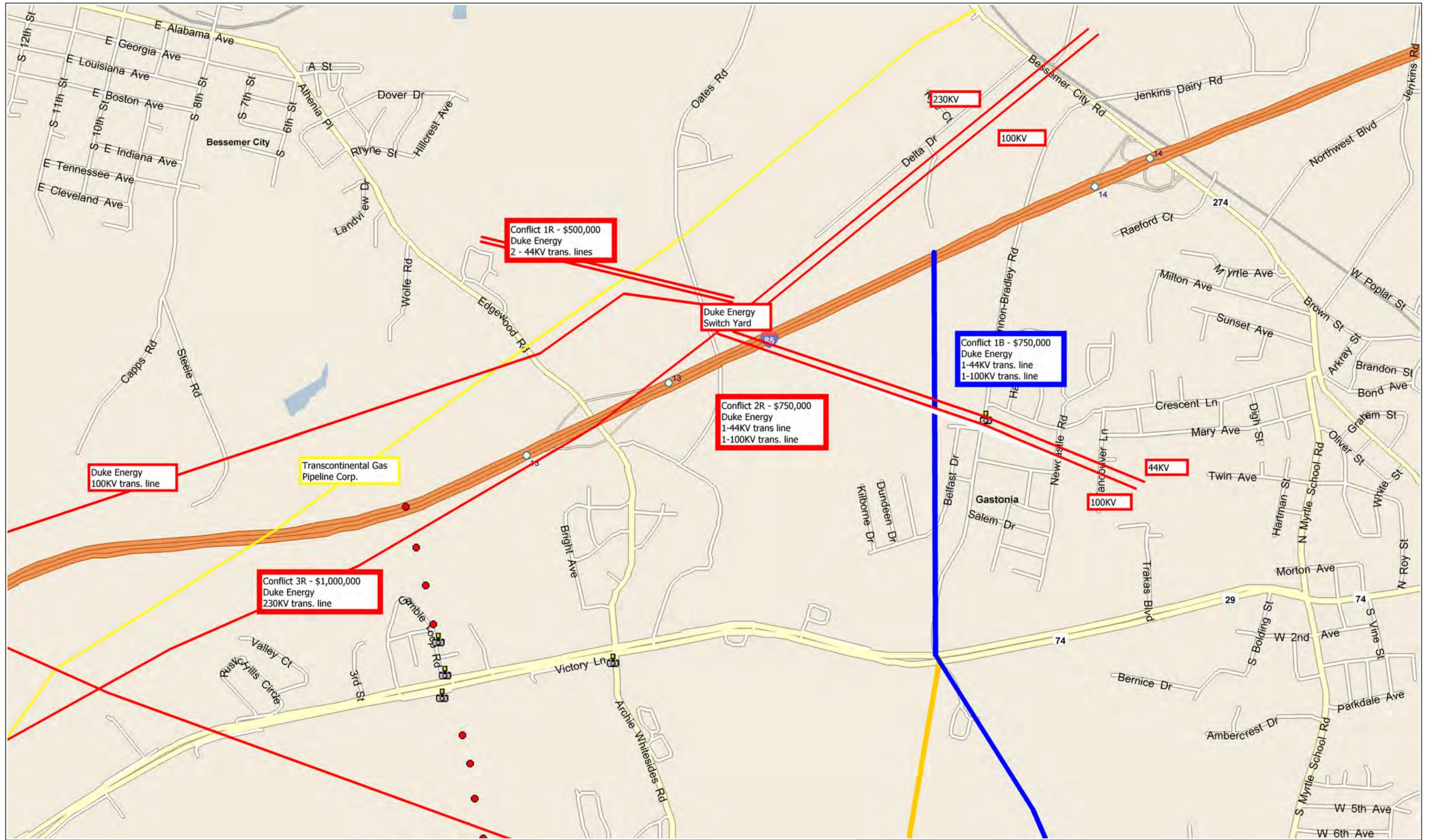


Utility Impact Assessment Matrix

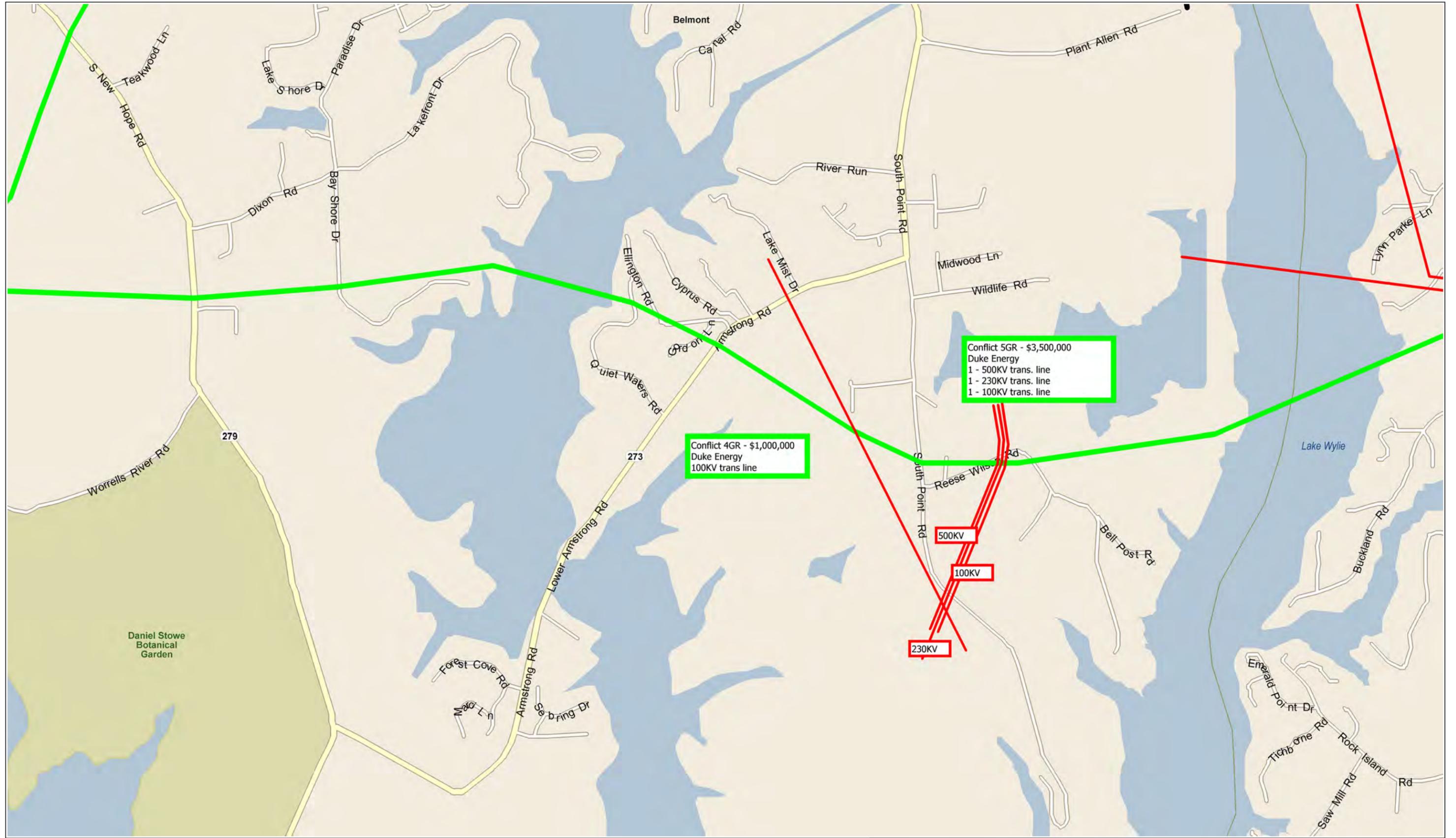
DSA route 5

Route Color	Map #	Conflict #	At or near the intersection of new roadway with:	Duke Energy		Rutherford EMC		Gas				Corridor Totals			
				Transmission		Transmission		Transcontinental Gas Pipeline Corp. 1-30" & 2-36" lines		Colonial Pipeline Company 36" & 40" lines			Plantation Pipeline Company 2-gas lines size unknown		
				Transmission	Est. Cost	Transmission	Est. Cost	Transmission	Est. Cost	Transmission	Est. Cost		Transmission	Est. Cost	
RED	J1-1	9R	0.25mi east of Robinson Rd.	230KV line - steel towers 100KV line - steel towers conflicts with towers	\$1,500,000									\$1,500,000	
	JX1-1														J2-2
Total Utility Est. Cost				\$1,500,000		\$0		\$0		\$0		\$0		\$1,500,000	
BLUE	H2-2	1B	0.37mi south of I-85	100KV line - steel towers & 44KV line wood poles conflict with tower	\$750,000									\$750,000	
	H3-2	2B	450yards northwest of Linwood Rd.	100KV line - steel towers mid span	\$500,000									\$500,000	
	J4-1	3B	200yards north of Crowders Creek Rd.									parallel gas lines	\$1,500,000		\$1,500,000
		4B	0.26mi southeast of Crowders Creek Rd.							40" & 36" parallel gas lines	\$1,500,000				\$1,500,000
Total Utility Est. Cost				\$1,250,000		\$0		\$0		\$1,500,000		\$1,500,000		\$4,250,000	
GOLD	J4-1	4GL	0.42mi north of Forbes Rd. End of Benfield Rd.	44KV line - steel towers conflict with tower	\$500,000									\$500,000	
	Total Utility Est. Cost				\$500,000		\$0		\$0		\$0		\$0		\$500,000
GREEN	K1-1	2GR	Rufus Ratchford Rd.			69KV line - wood poles conflicts with poles	\$250,000							\$250,000	
	K4-1	4GR	335yards west of South Point Rd.	100KV line - steel towers conflicts with towers	\$500,000									\$500,000	
		5GR	Reese Wilson Rd	500KV line - steel towers 230KV line - steel towers 100KV line - steel towers conflicts with towers	\$3,500,000									\$3,500,000	
	K4-2	6GR	Dixie River Rd.	230KV line - steel towers 100KV line - steel towers conflicts with towers	\$1,500,000									\$1,500,000	
Total Utility Est. Cost				\$5,500,000		\$250,000		\$0		\$0		\$0		\$5,750,000	
UC Route 14 Est. Cost				\$8,750,000		\$250,000		\$0		\$1,500,000		\$1,500,000		\$12,000,000	

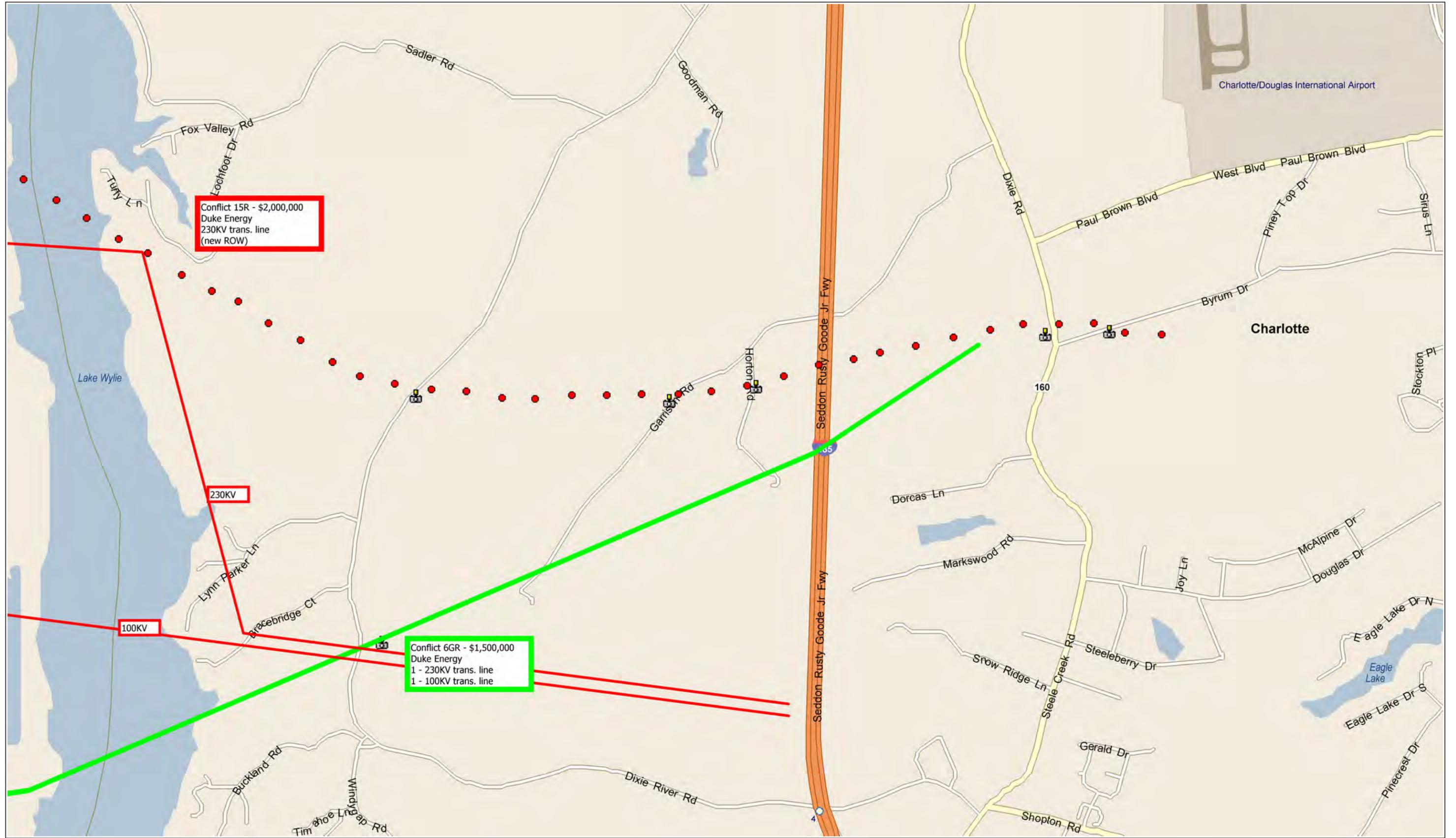
Gaston EW Connector H1-1 & H2-2



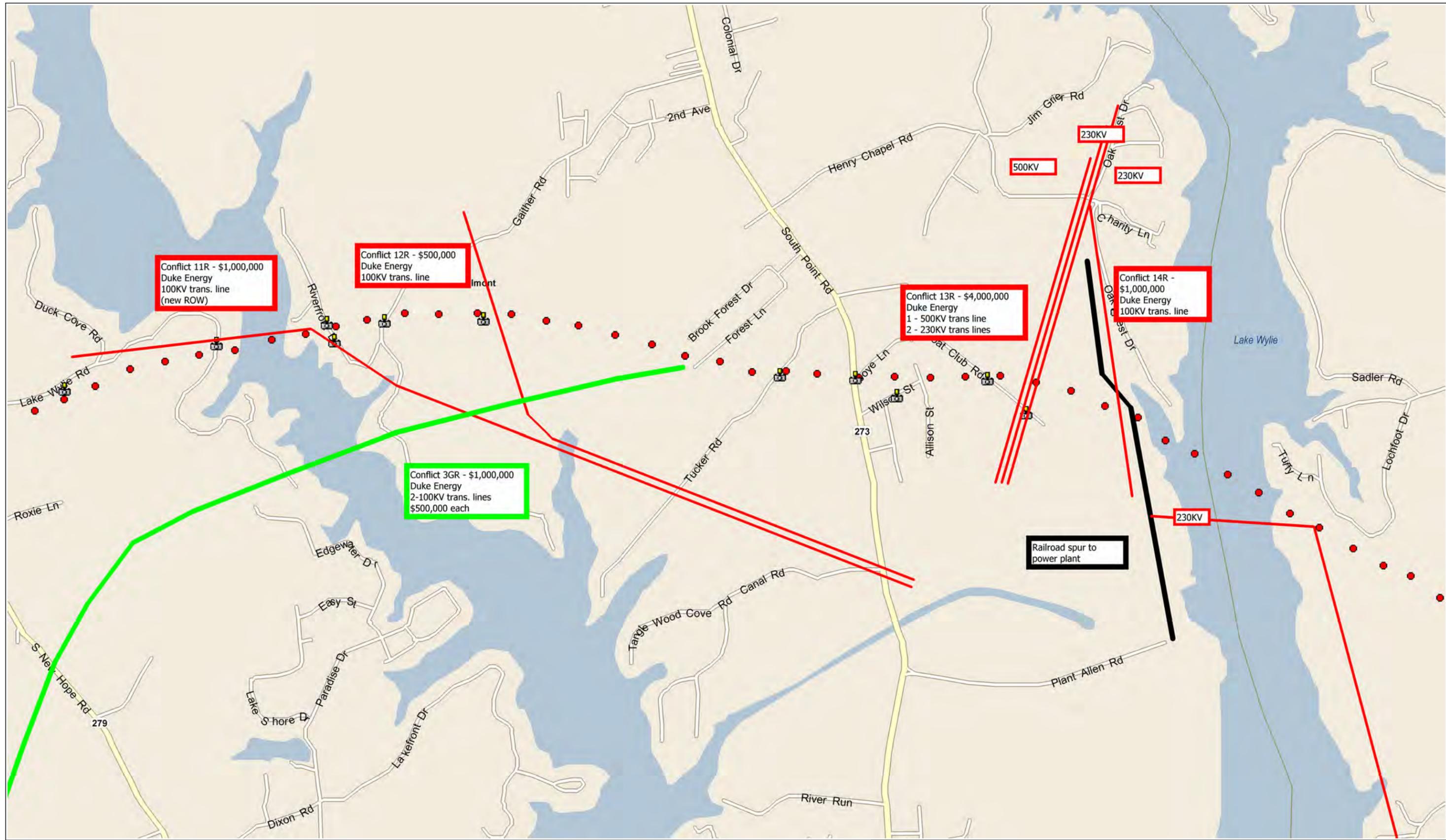
Gaston EW Connector - K4-1



Gaston EW Connector - K3-3, K3-4 & K4-2



Gaston EW Connector - K2-2, KX1-1 & K3-2

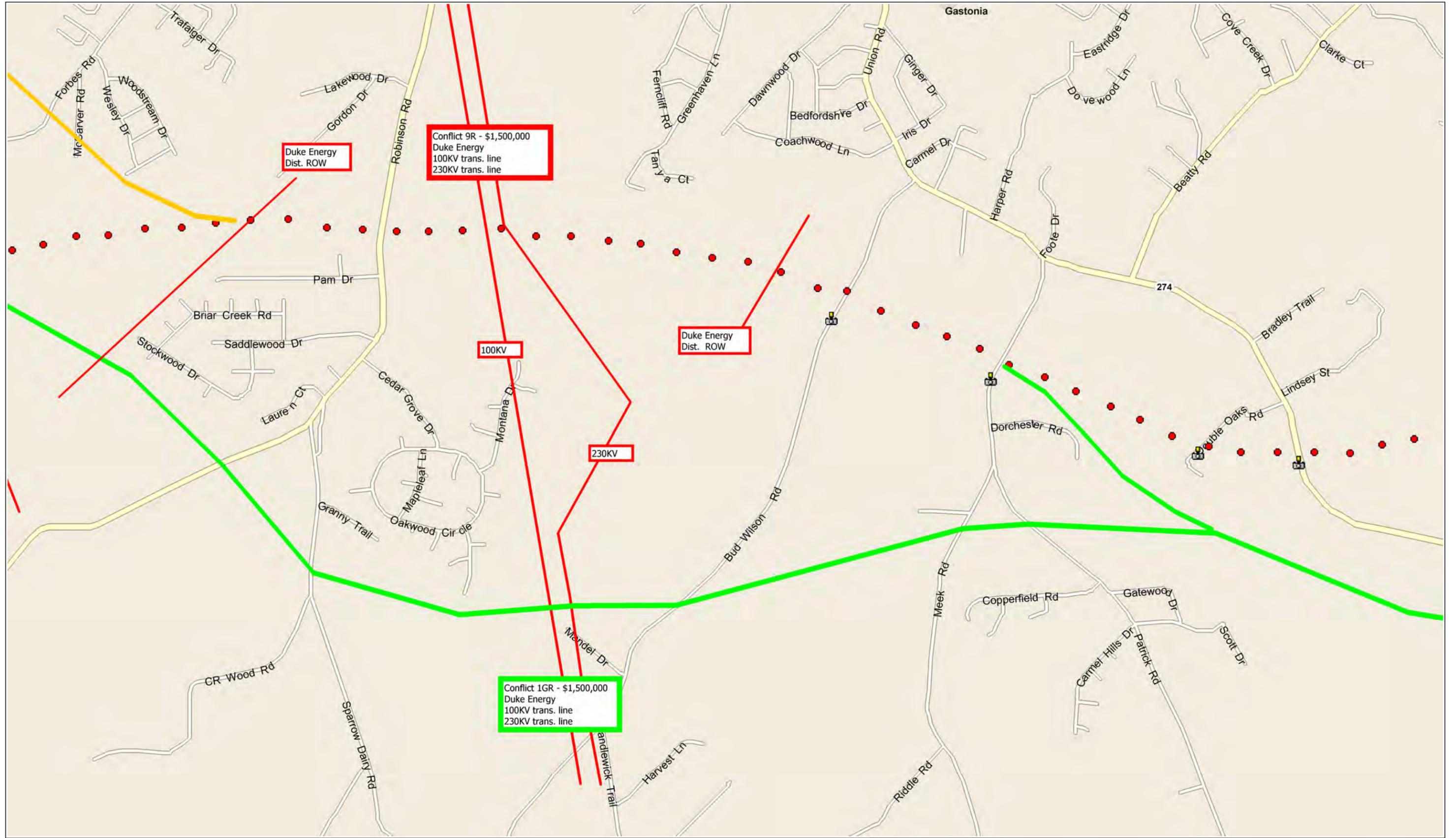


0 mi 0.5 1 1.5

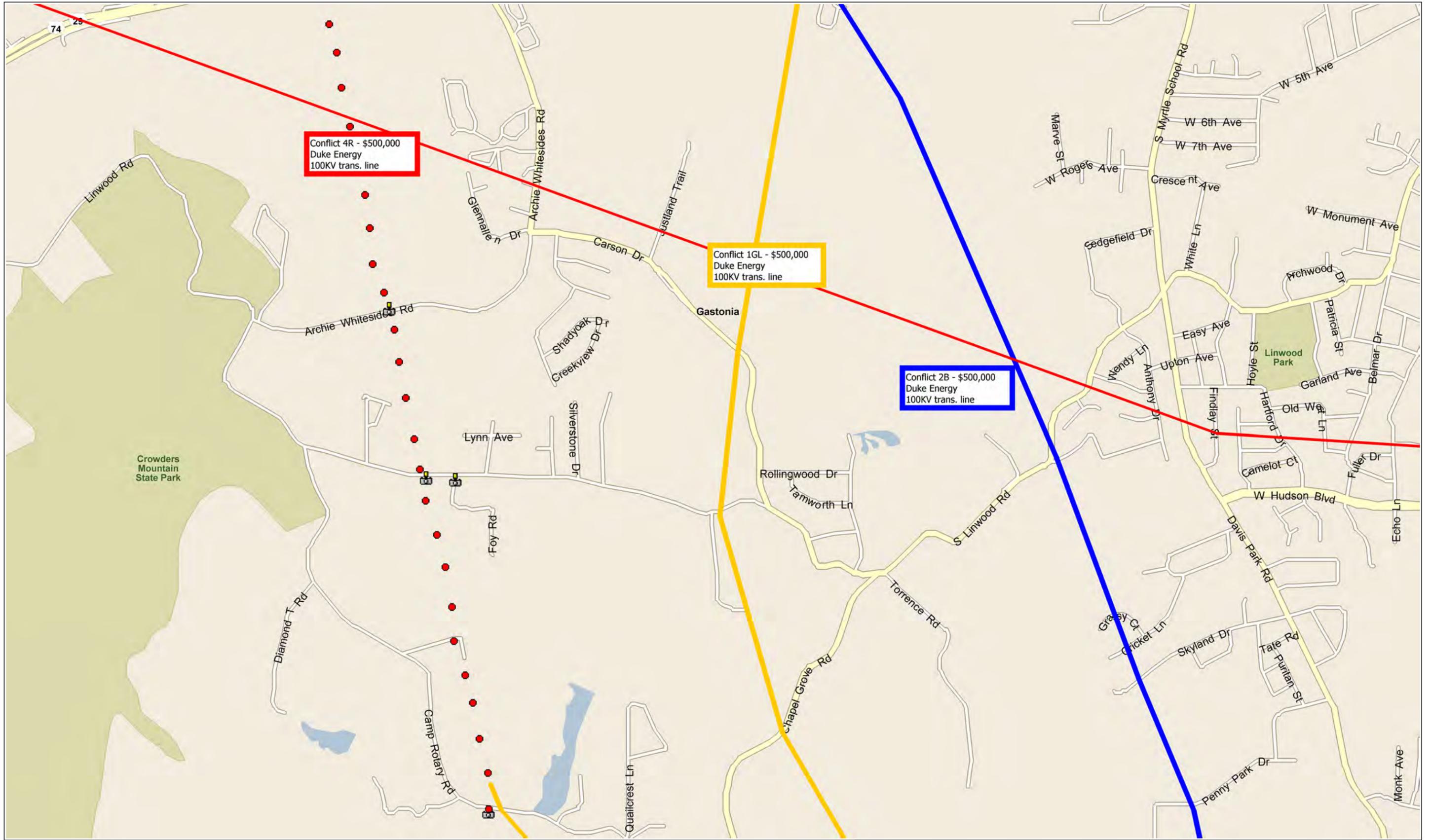
Gaston EW Connector - K2-1 & K1-1



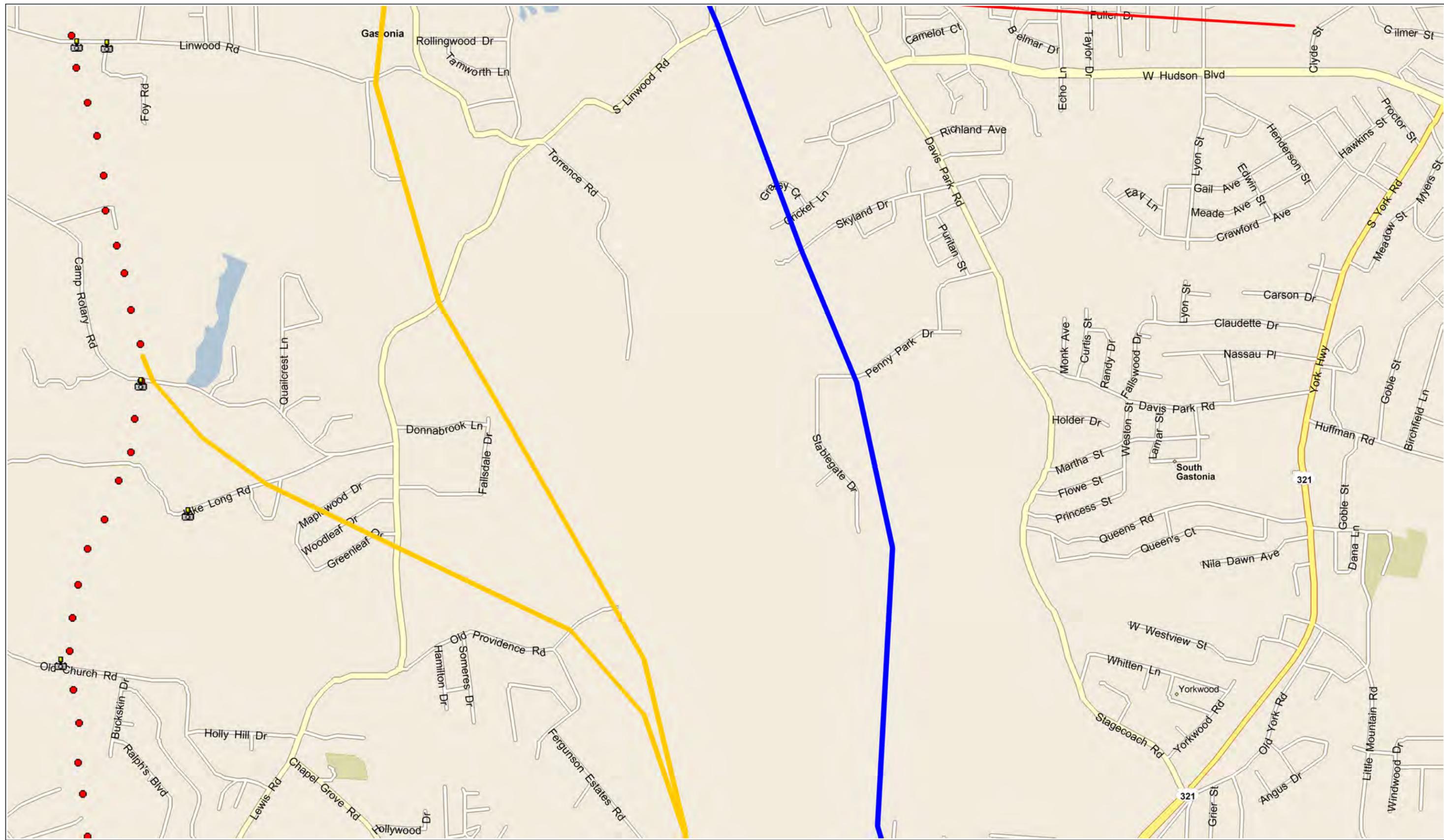
Gastonia EW Connector - J2-2 & J1-2



Gaston EW Connector H1-2, H2-3 & H3-2



Gaston EW Connector - A



Gaston EW Connector H1-4, JX1-1, J2-1 & J4-1

