

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

District 7 Office

PROJECT CONCEPT REPORT

Project Number: CSHPP-0007-00(533)

County: Fulton

P. I. Number: 0007533

Butner Road @ Stonewall Tell Road Intersection Improvement

Federal Route Number: N/A

State Route Number: N/A

County Route Number: CR 1374/CR1386

Recommendation for approval:

DATE _____

_____ Consultant

DATE _____

_____ Local Government

DATE _____

_____ Design Phase Office Head

DATE _____

_____ Project Manager

DATE _____

_____ Office Head/District Engineer

The concept as presented herein and submitted for approval is consistent with that which is included in the Regional Transportation Program (RTP) and/or the [State Transportation Improvement Program \(STIP\)](#).

DATE _____

_____ State Transportation Planning Administrator

DATE _____

_____ State Transportation Financial Management Administrator

DATE _____

_____ State Environment/Location Engineer

DATE _____

_____ State Traffic Safety and Design Engineer

DATE _____

_____ District Engineer

DATE _____

_____ Project Review Engineer

DATE _____

_____ Other Offices as required such as; Bridge Design, Road Design, Urban Design, etc.

PROJECT LOCATION MAP:



Need and Purpose: Butner Road and Stonewall Tell Road are both classified as Urban Minor Arterials. The surrounding areas of this intersection are predominately single family homes with a few exceptions. These exceptions are the two gas stations located directly adjacent to the intersection on opposite corners, the northwest and southeast corners. The Caribbean Kitchen Express and Young's market store just south of the intersection, Stonewall Tell Elementary approximately one mile north of the intersection, First Baptist Church of Cliftondale approximately a half mile south of the intersection and Cliftondale Park located approximately a quarter mile west of the intersection. The intersection of Butner Road at Stonewall Tell Road has seen a large amount of growth in traffic due to its proximity of an additional three thousand to four thousand single family homes being built over the last six years. This additional traffic along with a severe geometric alignment deficiency has caused this intersection to be in need of an upgrade.

The study area consists of the existing all-way stop controlled intersection at Butner Road and Stonewall Tell Road. Pedestrian facilities are not present in terms of sidewalks and crosswalks at the study intersection and there is currently no transit facilities located on either Butner Road or Stonewall Tell Road within the study area. Descriptions of the roadways are as follows: Butner Road is a two-lane roadway. According to GDOT Highway System Status Maps, Butner Road is functionally classified as an Urban Minor Arterial Street. Butner Road travels in east-west direction with a posted speed limit of 45 mph. Average Daily Traffic counts were collected on Butner Road in November of 2009 with a recorded two-way volume of 5,762 vpd east of Stonewall Tell Road and 3,261 vpd west of Stonewall Tell Road. The land uses along Butner Road are mostly residential. Stonewall Tell Road is a two-lane roadway. According to GDOT Highway System Status Maps, Harrison Road is functionally classified as an Urban Minor Arterial Street. Stonewall Tell Road travels in a north-south direction with a posted speed limit of 40 mph. Average Daily Traffic counts were collected on Stonewall Tell Road in November of 2009 with a recorded two-way volume of 5,588 vpd north and 2,901 vpd south of Butner Road. The land uses along Stonewall Tell Road are mostly residential. Stonewall Tell Elementary School is located approximately 1 mile north of the study intersection. Stonewall Tell Elementary has approximately 1,051 students and 75 Faculty and Staff Members. Because of the close proximity of the school to the study intersection additional traffic counts were taken to due to the off peak school hours.

Description of the proposed project: This project involves designing improvements for the existing four-way intersection of Butner Road at Stonewall Tell Road. Butner Road crosses Stonewall Tell Road at a severe skew and the two Butner Road approaches do not cross Stonewall Tell Road at similar angles. Approach lanes are approximately 12 feet wide with rural shoulders. There are no provisions for turning lanes on any approach. There is no curb and gutter or provisions for pedestrian crossing. Due to the geometry of the intersection a traditional intersection is not an option. In the following paragraph is a description of the preferred alternative.

The Preferred Alternative is Concept 5c. This alternative includes two three-legged approach roundabouts located in the southwestern and northeastern corners of the existing intersection connected by a median. The roundabouts will have two inscribed circles of 115' with splitter islands on all of the approaches. Access will be provided to the existing gas station via a right-in right-out onto Stonewall Tell between the two new roundabouts as well as access to the market via a right-in left-in and right-out entrance. This alternative offers the best cost-benefit analysis results of the six alternatives considered in terms of ROW costs, public involvement, access for businesses, construction staging, utility cost, construction costs and Level of Service (LOS).

Is the project located in a PM 2.5 Non-attainment area? Yes No

Is this project located in an Ozone Non-attainment area? Yes No

PDP Classification: Major _____ Minor

Federal Oversight: Full Oversight (), Exempt(X), State Funded(), or Other ()

Functional Classification: Butner – Urban Minor Arterial Stonewall Tell - Urban Minor Arterial

U. S. Route Number(s): N/A

State Route Number(s): N/A

County Route Number(s): Butner Road (CR 1374) /Stonewall Tell (CR1386)

Traffic (AADT):

Base Year: (2009) 3,261

Design Year: (2031) 8,826

Existing design features:

- Typical Section: Two 11' lanes on all legs of the existing intersection, no curb & gutter, and no sidewalks.
- Posted speed 35 mph Minimum radius for curve: 371 ft
- Maximum super-elevation rate for curve: 4%
- Maximum grade: 10 %
- Width of right-of-way: 50 ft.
- Major structures: N/A
- Major interchanges or intersections along the project. N/A
- Existing length of roadway segment. Project is an intersection but total length is approximately 2000'. Mile markers listed are 5.52 to 5.92.

Proposed Design Features:

- Proposed typical section(s): Two 12' lanes on all legs of the new roundabouts, 30" curb & gutter, and 5' sidewalks.
- Proposed Design Speed 25 mph
- Proposed Maximum grade 10 %
- Maximum grade allowable 10 %

- Proposed Maximum grade driveway 12 %
- Proposed Maximum degree of curve 1
- Maximum degree allowable 1
- Maximum superelevation rate 4 %
- Right-of-Way
 - Width 50 ft
 - Easements: Temporary (), Permanent (X), Utility (), Other ().
 - Type of access control: Full (), Partial (), By Permit (X), Other ().
 - Number of parcels: 8 Number of displacements:
 - Business: 0
 - Residences: 0
 - Mobile homes: 0
 - Other: 0
- Structures:
 - Bridges – N/A
 - Retaining walls – N/A
- Major intersections and interchanges. – N/A
- Traffic control during construction: No detours are proposed.
- Design Exceptions to controlling criteria anticipated:

	<u>UNDETERMINED</u>	<u>YES</u>	<u>NO</u>
HORIZONTAL ALIGNMENT:	()	()	(X)
ROADWAY WIDTH:	()	()	(X)
SHOULDER WIDTH:	()	()	(X)
VERTICAL GRADES:	()	()	(X)
CROSS SLOPES:	()	()	(X)
STOPPING SIGHT DISTANCE:	()	()	(X)
SUPERELEVATION RATES:	()	()	(X)
HORIZONTAL CLEARANCE:	()	()	(X)
SPEED DESIGN:	()	()	(X)
VERTICAL CLEARANCE:	()	()	(X)
BRIDGE WIDTH:	()	()	(X)
BRIDGE STRUCTURAL CAPACITY:	()	()	(X)

- Design Variances – None
- Environmental concerns – Potential UST at northwest corner of intersection, Historical homes located in the southwest corner of the intersection.
- Anticipated Level of environmental analysis:
 - Are Time Savings Procedures appropriate? Yes (X), No (),
 - Categorical exclusion (X),
 - Environmental Assessment/Finding of No Significant Impact (FONSI) (), or
 - Environmental Impact Statement (EIS) ().
- Utility involvements: Power, Cable, Gas, Water, Fiber Optic
- VE Study/ Anticipated Yes() No(X)
- Benefit/ Cost Ratio – N/A

Project Activities Responsibilities:

- Design: T.Y. Lin International
- Right-of-Way Acquisition: Fulton County
- Right-of-Way funding (real property): Fulton County
- Relocation of Utilities: Fulton County
- Letting to contract: Fulton County
- Supervision of construction: Fulton County
- Providing material pits: N/A
- Providing detours: None anticipated
- Environmental Studies/Documents/Permits: The LPA Group, Inc.
- Environmental Mitigation: N/A

Coordination

- Initial Concept Meeting date and brief summary. (Held on 3/26/10)
- Concept meeting date and brief summary. (To be determined)
- Public involvement – On the 21st of January 2010, Fulton County and the TY Lin consultant team met with the Cliftondale Community at the Cliftondale Community Center. This meeting was a public information gathering session. We supplied 4 initial ideas: two of which were roundabouts place on either side of the existing intersection, reconstructing the Butner approaches into two T-intersections with Stonewall Tell. Additionally, there have been multiple meetings with the community to try and meet their needs for access and operations.

Scheduling – Responsible Parties’ Estimate

- Time to complete the environmental process: 12 Months.
- Time to complete preliminary construction plans: 4 Months.
- Time to complete right-of-way plans: 4 Months.
- Time to complete the Section 404 Permit: N/A Months.
- Time to complete final construction plans: 4 Months.
- Time to complete to purchase right-of-way: 15 Months.

Other alternates considered: Alternate Layouts Provided in the Appendix

Attachments:

1. Detailed Cost Estimates:
 - a. Construction including Contingencies, Engineering and Inspection.
 - b. Right-of-Way.
 - c. Utilities.
2. Typical sections.
3. Accident summaries.
4. Traffic diagrams.
5. Capacity analysis summary.
6. Summary of Signal Warrant Studies

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County: Fulton

7. Minutes of Concept meetings.
8. Minutes of any meetings that show support or objection to the concept.
9. Location and Design Notice. (On Minor Projects)
10. Public responses from first and second community meeting held on the 21st of January and 15th of July.

Exempt projects

Concur: _____
Director of Preconstruction

Concur: _____
Director of Program Delivery

Approve: _____
Chief Engineer

SCORING RESULTS AS PER TOPPS 2440-2

Project Number:		County:		PI No.:	
Report Date:		Concept By:			
		DOT Office:			
<input type="checkbox"/> CONCEPT					
		Consultant:			
Project Type: Choose One From Each Column		<input type="checkbox"/> Major <input type="checkbox"/> Minor	<input type="checkbox"/> Urban <input type="checkbox"/> Rural	<input type="checkbox"/> ATMS <input type="checkbox"/> Bridge <input type="checkbox"/> Building <input type="checkbox"/> Interchange <input type="checkbox"/> Intersection <input type="checkbox"/> Interstate <input type="checkbox"/> New Location <input type="checkbox"/> Widening & Reconstruction <input type="checkbox"/> Miscellaneous	
FOCUS AREAS	SCORE	RESULTS			
Presentation					
Judgement					
Environmental					
Right-of-Way					
Utility					
Constructability					
Schedule					

Estimate Report for file "dt007533"

Section Roadway					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1	LS	120000.0	TRAFFIC CONTROL -	120000.0
163-0232	2	AC	242.27	TEMPORARY GRASSING	484.54
163-0240	5	TN	149.0	MULCH	745.0
163-0501	4	EA	801.13	CONSTRUCT AND REMOVE SILT CONTROL GATE, TP 1	3204.52
163-0527	15	EA	189.57	CONSTRUCT AND REMOVE RIP RAP CHECK DAMS, STONE PLAIN RIP RAP/SAND BAGS	2843.54
163-0528	50	LF	2.65	CONSTRUCT AND REMOVE FABRIC CHECK DAM - TYPE C SILT FENCE	132.5
163-0529	50	LF	3.6	CONSTRUCT AND REMOVE TEMPORARY SEDIMENT BARRIER OR BALED STRAW CHECK DAM	180.0
165-0010	5000	LF	0.49	MAINTENANCE OF TEMPORARY SILT FENCE, TP A	2450.0
165-0041	25	LF	1.14	MAINTENANCE OF CHECK DAMS - ALL TYPES	28.49
171-0010	10000	LF	1.4	TEMPORARY SILT FENCE, TYPE A	14000.0
201-1500	1	LS	100000.0	CLEARING & GRUBBING -	100000.0
210-0100	1	LS	300000.0	GRADING COMPLETE -	300000.0
310-1101	180	TN	20.0	GR AGGR BASE CRS, INCL MATL	3600.0
318-3000	80	TN	22.0	AGGR SURF CRS	1760.0
402-3121	500	TN	61.0	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	30500.0
402-3141	250	TN	90.0	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL	22500.0
413-1000	50	GL	1.92	BITUM TACK COAT	96.0
429-1000	16	EA	900.0	RUMBLE STRIPS	14400.0
441-0104	3500	SY	24.62	CONC SIDEWALK, 4 IN	86170.0
441-0740	500	SY	21.98	CONCRETE MEDIAN, 4 IN	10990.0
441-4020	350	SY	35.56	CONC VALLEY GUTTER, 6 IN	12446.0
441-6012	5000	LF	7.8	CONC CURB & GUTTER, 6 IN X 24 IN, TP 2	39000.0
500-3101	60	CY	348.0	CLASS A CONCRETE	20880.0
550-1180	300	LF	29.94	STORM DRAIN PIPE, 18 IN, H 1-10	8982.0
550-1240	300	LF	36.23	STORM DRAIN PIPE, 24 IN, H 1-10	10868.99
550-1300	200	LF	44.03	STORM DRAIN PIPE, 30 IN, H 1-10	8806.0
550-3318	10	EA	610.84	SAFETY END SECTION 18 IN, STORM DRAIN, 4:1 SLOPE	6108.40
550-3324	10	EA	503.0	SAFETY END SECTION 24 IN, STORM DRAIN, 4:1 SLOPE	5030.0
550-3330	7	EA	1585.0	SAFETY END SECTION 30 IN, STORM DRAIN, 4:1 SLOPE	11095.0
636-1020	200	SF	14.14	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 3	2828.0
636-2070	500	LF	6.35	GALV STEEL POSTS, TP 7	3175.0
653-0110	16	EA	69.94	THERMOPLASTIC PVMT MARKING, ARROW, TP 1	1119.04
653-0210	16	EA	103.24	THERMOPLASTIC PVMT MARKING, WORD, TP 1	1651.84
653-2501	10000	LM	1.17	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	11700.0
653-2502	7500	LM	1.32	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	9900.0
653-2804	1000	LM	1.13	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	1130.0
654-1001	100	EA	2.96	RAISED PVMT MARKERS TP 1	296.0
668-1100	10	EA	2077.47	CATCH BASIN, GP 1	20774.69
668-1200	5	EA	2670.4	CATCH BASIN, GP 2	13352.0
668-2100	5	EA	1866.33	DROP INLET, GP 1	9331.65
681-4269	40	EA	4635.0	LIGHTING STANDARD 16 FT MH, 6 FT ARM	185400.0
681-6220	40	EA	1190.0	LUMINAIRE, TP 2, 150 W, HP SODIUM	47600.0
700-6910	2	AC	673.3	PERMANENT GRASSING	1346.6
702-0030	75	EA	31.35	ACER RUBRUM -	2351.25
702-0049	50	EA	202.91	AMELANCHIER ARBOREA -	10145.5
900-0037	500	SF	14.95	CONCRETE PAVERS	7475.0
Section Sub Total:					\$1,166,877.59

Total Estimated Cost: \$1,166,877.59

Subtotal Construction Cost	\$1,166,877.59
E&C Rate 10.0 %	\$116,687.76
Inflation Rate 4.0 % @ 3 Years	\$160,271.10
	<hr/>
Total Construction Cost	\$1,443,836.45
Right Of Way	221000
ReImb. Utilities	150000
	<hr/>
Grand Total Project Cost	\$1,814,836.45

NOTICE OF LOCATION AND DESIGN APPROVAL

Project Number: CSHPP-0007-00(533)

County: Fulton

P. I. Number: 0007533

Notice is hereby given in compliance with Georgia Code 22-2-109 that the Georgia Department of Transportation has approved the Location and Design of this project.

The date of location approval is *(To be inserted by the Program Control Administrator after approval by the Chief Engineer.)*

Butner Road and Stonewall Tell Road intersection is surrounded by predominately single family homes with a few exceptions. These exceptions are the two gas stations located directly adjacent to the intersection on opposite corners, the northwest and southeast corners. The Caribbean Kitchen Express and Young's market store just south of the intersection, Stonewall Tell Elementary approximately one mile north of the intersection, First Baptist Church of Cliftondale approximately a half mile south of the intersection and Cliftondale Park located approximately a quarter mile west of the intersection. Pedestrian facilities are not present in terms of sidewalks and crosswalks at the study intersection. Descriptions of the roadways are as follows: Butner Road is a two-lane roadway. Stonewall Tell Road is a two-lane roadway.

The Preferred Alternative includes two three-legged approach roundabouts located in the southwestern and northeastern corners of the existing intersection connected by a median. The roundabouts will have two inscribed circles of 115' with splitter islands on all of the approaches. Access will be provided to the existing gas station via a right-in right-out onto Stonewall Tell between the two new roundabouts as well as access to the market via a right-in left-in and right-out entrance.

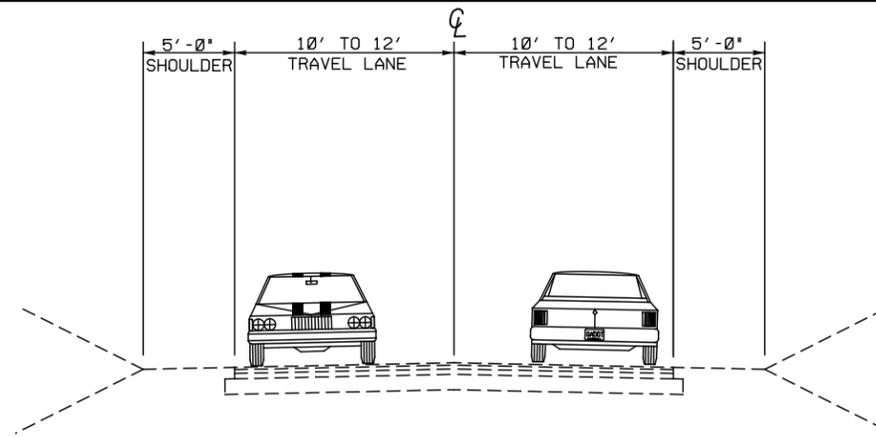
Drawings or maps or plats of the proposed project, as approved, are on file and are available for public inspection at the Georgia Department of Transportation:

Michael Hill, P.E. - Area 3 Engineer
mhill@dot.ga.gov
4125 Roosevelt Hwy
College Park, GA 30349
404-559-6699

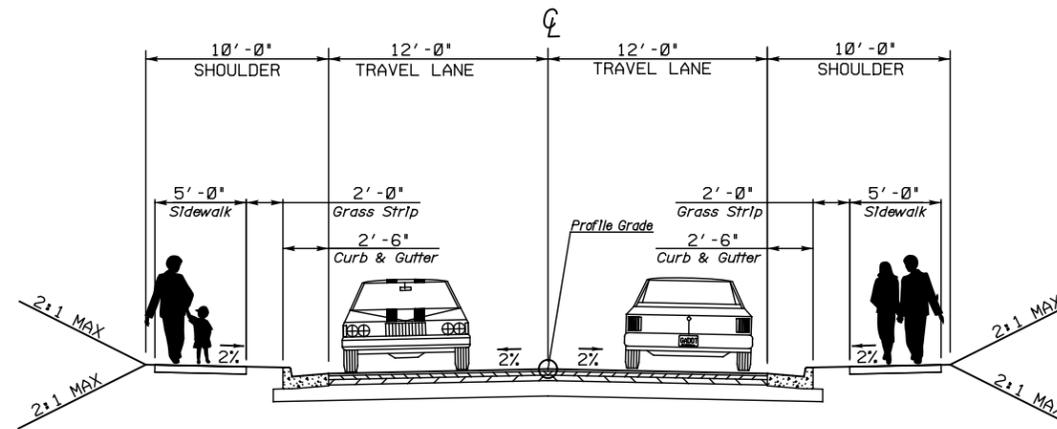
Any interested party may obtain a copy of the drawings or maps or plats or portions thereof by paying a nominal fee and requesting in writing to:

Michael A. Lobdell, P.E.
District 7 Pre-construction Engineer
mlobdell@dot.ga.gov
5025 New Peachtree Road
Chamblee, GA 30341
770-986-1257

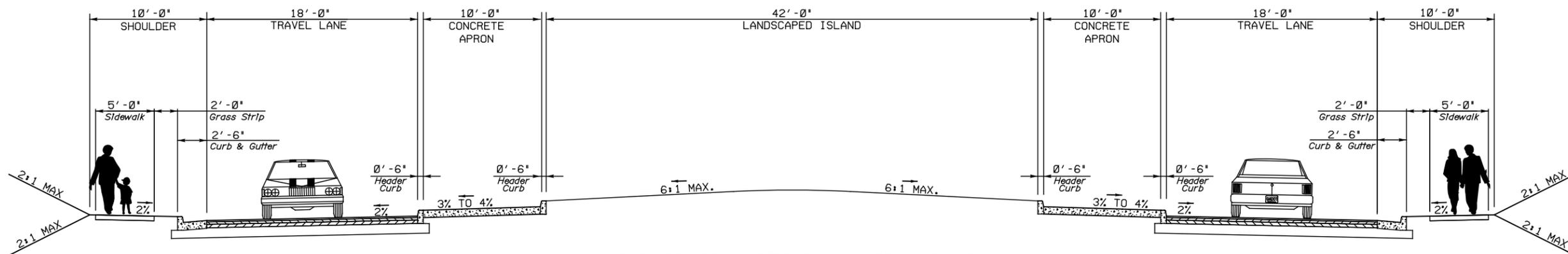
Any written request or communication in reference to this project or notice SHOULD include the Project and P. I. Numbers as noted at the top of this notice.



BUTNER ROAD/STONEWALL TELL ROAD
EXISTING ROADWAY TYPICAL SECTION



BUTNER ROAD/STONEWALL TELL ROAD
PROPOSED ROADWAY TYPICAL SECTION



BUTNER ROAD/STONEWALL TELL ROAD
ROUNDBOUT TYPICAL SECTION

FULTON COUNTY, Butner Road (CR 1374) @ Stonewall Tell Road (CR 1386)

Accident No	Date	Time	County	Route Type	Route	Milelog	Intersecting Rt Type	Intersecting Rt	Injuries	Fatalities	Harmful Event	Collision	Location of Impact	Light	Surface	DirVeh1	DirVeh2	MnvrVeh1	MnvrVeh2
'71650222	4/3/2007	2:13 AM	Fulton	County Road	'137400	5.72	2	'138600	0	0	Tree	Not A Collision With A Motor Vehicle	Off Roadway	Dark-Not Lighted	Dry	S		Straight	
'70090116	1/6/2007	10:05 PM	Fulton	County Road	'137400	5.72	2	'138600	0	0	Deer	Not A Collision With A Motor Vehicle	On Roadway	Dark-Not Lighted	Dry	W		Straight	
'81360480	3/11/2008	9:03 AM	Fulton	County Road	'137400	5.72	2	'138600	0	0	Guardrail Face	Not A Collision With A Motor Vehicle	Off Roadway	Dark-Not Lighted	Dry	S		Straight	
'82550114	5/17/2008	9:21 AM	Fulton	County Road	'137400	5.72	2	'138600	2	0	Motor Vehicle in Motion	Angle	On Roadway	Daylight	Dry	S	N	Turning Left	Turning Left
'83800200	9/20/2008	12:25 PM	Fulton	County Road	'137400	5.72	2	'138600	0	0	Motor Vehicle in Motion	Rear End	On Roadway	Daylight	Dry	S	S	Straight	Stopped
'80460282	2/9/2008	7:36 PM	Fulton	County Road	'137400	5.72	2	'138600	1	0	Guardrail Face	Not A Collision With A Motor Vehicle	Off Roadway	Dark-Not Lighted	Dry	W		Straight	

APPENDIX F: Capacity Analysis

Capacity Analysis

2009 Existing AM Conditions



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	109	244	131	27	72	88	37	218	37	68	178	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.959			0.933			0.982			0.979	
Flt Protected		0.990			0.993			0.993			0.986	
Satd. Flow (prot)	0	1769	0	0	1726	0	0	1816	0	0	1798	0
Flt Permitted		0.990			0.993			0.993			0.986	
Satd. Flow (perm)	0	1769	0	0	1726	0	0	1816	0	0	1798	0
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		1512			1646			1156			1034	
Travel Time (s)		22.9			24.9			19.7			17.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.86	0.76	0.75	0.82	0.73	0.84	0.92	0.84	0.55	0.71	0.69
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	116	284	172	36	88	121	44	237	44	124	251	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	572	0	0	245	0	0	325	0	0	443	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	74.6%
ICU Level of Service	D
Analysis Period (min)	15

Capacity Analysis 2009 Existing Mid-Day Conditions

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	107	43	50	114	23	52	102	30	40	121	37
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.969			0.982			0.978			0.976	
Flt Protected		0.987			0.986			0.985			0.986	
Satd. Flow (prot)	0	1782	0	0	1804	0	0	1794	0	0	1793	0
Flt Permitted		0.987			0.986			0.985			0.986	
Satd. Flow (perm)	0	1782	0	0	1804	0	0	1794	0	0	1793	0
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		1519			1645			1156			1034	
Travel Time (s)		23.0			24.9			19.7			17.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.75	0.81	0.72	0.74	0.81	0.72	0.76	0.88	0.83	0.58	0.89	0.83
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	68	132	60	68	141	32	68	116	36	69	136	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	260	0	0	241	0	0	220	0	0	250	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	36.5%						ICU Level of Service A					
Analysis Period (min)	15											

Capacity Analysis

2009 Existing PM Conditions



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	60	112	52	58	188	40	83	176	38	49	174	60
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.966			0.983			0.983			0.969	
Flt Protected		0.987			0.989			0.986			0.991	
Satd. Flow (prot)	0	1776	0	0	1811	0	0	1805	0	0	1789	0
Flt Permitted		0.987			0.989			0.986			0.991	
Satd. Flow (perm)	0	1776	0	0	1811	0	0	1805	0	0	1789	0
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		1516			1645			1156			1034	
Travel Time (s)		23.0			24.9			19.7			17.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.90	0.81	0.76	0.84	0.91	0.86	0.86	0.86	0.82	0.89	0.79
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	68	124	64	76	224	44	97	205	44	60	196	76
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	256	0	0	344	0	0	346	0	0	332	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	52.0%
ICU Level of Service	A
Analysis Period (min)	15

Capacity Analysis 2011 AM Conditions



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	101	90	334	287	69	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	175		0	210	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25	100		25	50	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850	0.938			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1747	0	1770	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1747	0	1770	1863
Link Speed (mph)	45		40			40
Link Distance (ft)	1049		283			914
Travel Time (s)	15.9		4.8			15.6
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	110	98	363	312	75	250
Shared Lane Traffic (%)						
Lane Group Flow (vph)	110	98	675	0	75	250
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 54.5% ICU Level of Service A

Analysis Period (min) 15

Capacity Analysis 2011 AM Conditions



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	360	134	38	260	209	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	175	210			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25	100	50			25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850			0.950	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	1863	1770	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1770	1863	1770	0
Link Speed (mph)	45			40	40	
Link Distance (ft)	1483			850	283	
Travel Time (s)	22.5			14.5	4.8	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	391	146	41	283	227	132
Shared Lane Traffic (%)						
Lane Group Flow (vph)	391	146	41	283	359	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	51.7%			ICU Level of Service A		
Analysis Period (min)	15					

Capacity Analysis 2011 Mid-Day Conditions



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	140	51	156	140	38	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	175		0	210	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25	100		25	50	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850	0.936			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1744	0	1770	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1744	0	1770	1863
Link Speed (mph)	45		40			40
Link Distance (ft)	1049		283			914
Travel Time (s)	15.9		4.8			15.6
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	152	55	170	152	41	178
Shared Lane Traffic (%)						
Lane Group Flow (vph)	152	55	322	0	41	178
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 37.9% ICU Level of Service A

Analysis Period (min) 15

Capacity Analysis

2011 Mid-Day Conditions



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	161	44	53	135	147	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	175	210			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25	100	50			25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850			0.930	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	1863	1732	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1770	1863	1732	0
Link Speed (mph)	45			40	40	
Link Distance (ft)	1483			850	283	
Travel Time (s)	22.5			14.5	4.8	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	175	48	58	147	160	171
Shared Lane Traffic (%)						
Lane Group Flow (vph)	175	48	58	147	331	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	39.6%			ICU Level of Service A		
Analysis Period (min)	15					

Capacity Analysis 2011 PM Conditions



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	251	41	241	153	50	239
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	175		0	210	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25	100		25	50	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850	0.948			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1766	0	1770	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1766	0	1770	1863
Link Speed (mph)	45		40			40
Link Distance (ft)	1049		283			914
Travel Time (s)	15.9		4.8			15.6
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	273	45	262	166	54	260
Shared Lane Traffic (%)						
Lane Group Flow (vph)	273	45	428	0	54	260
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 49.3% ICU Level of Service A

Analysis Period (min) 15

Capacity Analysis 2011 PM Conditions



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	175	53	85	218	237	253
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	175	210			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25	100	50			25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850			0.930	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	1863	1732	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1770	1863	1732	0
Link Speed (mph)	45			40	40	
Link Distance (ft)	1483			850	283	
Travel Time (s)	22.5			14.5	4.8	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	190	58	92	237	258	275
Shared Lane Traffic (%)						
Lane Group Flow (vph)	190	58	92	237	533	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	52.4%			ICU Level of Service A		
Analysis Period (min)	15					

Capacity Analysis 2031 AM Conditions



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	111	99	368	316	76	253
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	175		0	210	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25	100		25	50	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850	0.938			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1747	0	1770	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1747	0	1770	1863
Link Speed (mph)	45		40			40
Link Distance (ft)	1049		283			914
Travel Time (s)	15.9		4.8			15.6
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	121	108	400	343	83	275
Shared Lane Traffic (%)						
Lane Group Flow (vph)	121	108	743	0	83	275
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 59.0% ICU Level of Service B

Analysis Period (min) 15

Capacity Analysis 2031 AM Conditions



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	397	147	42	287	231	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	175	210			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25	100	50			25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850			0.950	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	1863	1770	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1770	1863	1770	0
Link Speed (mph)	45			40	40	
Link Distance (ft)	1483			850	283	
Travel Time (s)	22.5			14.5	4.8	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	432	160	46	312	251	146
Shared Lane Traffic (%)						
Lane Group Flow (vph)	432	160	46	312	397	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	55.7%			ICU Level of Service B		
Analysis Period (min)	15					

Capacity Analysis

2031 Mid-Day Conditions



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	154	56	172	154	42	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	175		0	210	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25	100		25	50	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850	0.936			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1744	0	1770	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1744	0	1770	1863
Link Speed (mph)	45		40			40
Link Distance (ft)	1049		283			914
Travel Time (s)	15.9		4.8			15.6
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	167	61	187	167	46	197
Shared Lane Traffic (%)						
Lane Group Flow (vph)	167	61	354	0	46	197
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	40.3%
Analysis Period (min)	15
	ICU Level of Service A

Capacity Analysis

2031 Mid-Day Conditions



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	178	48	58	148	162	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	175	210			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25	100	50			25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850			0.930	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	1863	1732	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1770	1863	1732	0
Link Speed (mph)	45			40	40	
Link Distance (ft)	1483			850	283	
Travel Time (s)	22.5			14.5	4.8	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	193	52	63	161	176	188
Shared Lane Traffic (%)						
Lane Group Flow (vph)	193	52	63	161	364	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	42.3%
ICU Level of Service	A
Analysis Period (min)	15

Capacity Analysis 2031 PM Conditions



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	277	45	265	169	55	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	175		0	210	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25	100		25	50	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850	0.947			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1764	0	1770	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1764	0	1770	1863
Link Speed (mph)	45		40			40
Link Distance (ft)	1049		283			914
Travel Time (s)	15.9		4.8			15.6
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	301	49	288	184	60	286
Shared Lane Traffic (%)						
Lane Group Flow (vph)	301	49	472	0	60	286
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 52.9% ICU Level of Service A

Analysis Period (min) 15

Capacity Analysis 2031 PM Conditions



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	193	58	93	241	261	279
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	175	210			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25	100	50			25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850			0.930	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	1863	1732	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1770	1863	1732	0
Link Speed (mph)	45			40	40	
Link Distance (ft)	1483			850	283	
Travel Time (s)	22.5			14.5	4.8	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	210	63	101	262	284	303
Shared Lane Traffic (%)						
Lane Group Flow (vph)	210	63	101	262	587	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	56.7%			ICU Level of Service B		
Analysis Period (min)	15					

APPENDIX D: Signal Warrant Analysis

Southeastern Engineering, Inc

2009 Conditions

Butner Road & Stonewall Tell Road

Study Name : 2009 Conditions @ 40

Study Date : 11/19/09

Page No. : 1

Signal Warrants - Summary

Major Street Approaches

Eastbound: 3261

Number of Lanes: 1
Approach Speed: 40
Total Approach Volume: 2,781

Westbound: 2940

Number of Lanes: 1
Approach Speed: 40
Total Approach Volume: 2,287

Minor Street Approaches

Northbound: 2901

Number of Lanes: 1

Total Approach Volume: 2,581

Southbound: 2808

Number of Lanes: 1

Total Approach Volume: 2,271

Warrant Summary (Urban values apply.)

Warrant 1 - Eight Hour Vehicular Volumes	Not Satisfied
Warrant 1A - Minimum Vehicular Volume	Not Satisfied
Required volumes reached for 1 hours, 8 are needed	
Warrant 1B - Interruption of Continuous Traffic	Not Satisfied
Required volumes reached for 1 hours, 8 are needed	
Warrant 1 A&B - Combination of Warrants	Not Satisfied
Required volumes reached for 1 hours, 8 are needed	
Warrant 2 - Four Hour Volumes	Not Satisfied
Number of hours (1) volumes exceed minimum < minimum required (4).	
Warrant 3 - Peak Hour	Not Evaluated
Warrant 3A - Peak Hour Volumes	Not Evaluated
Warrant 3B - Peak Hour Delay	Not Evaluated
Warrant 4 - Pedestrian Volumes	Not Evaluated
Warrant 5 - School Crossing	Not Evaluated
Warrant 6 - Coordinated Signal System	Not Evaluated
Warrant 7 - Crash Experience	Not Satisfied
Number of accidents (0) is less than minimum (5). Volume minimums are not met.	
Warrant 8 - Roadway Network	Not Evaluated

Southeastern Engineering, Inc

2009 Conditions

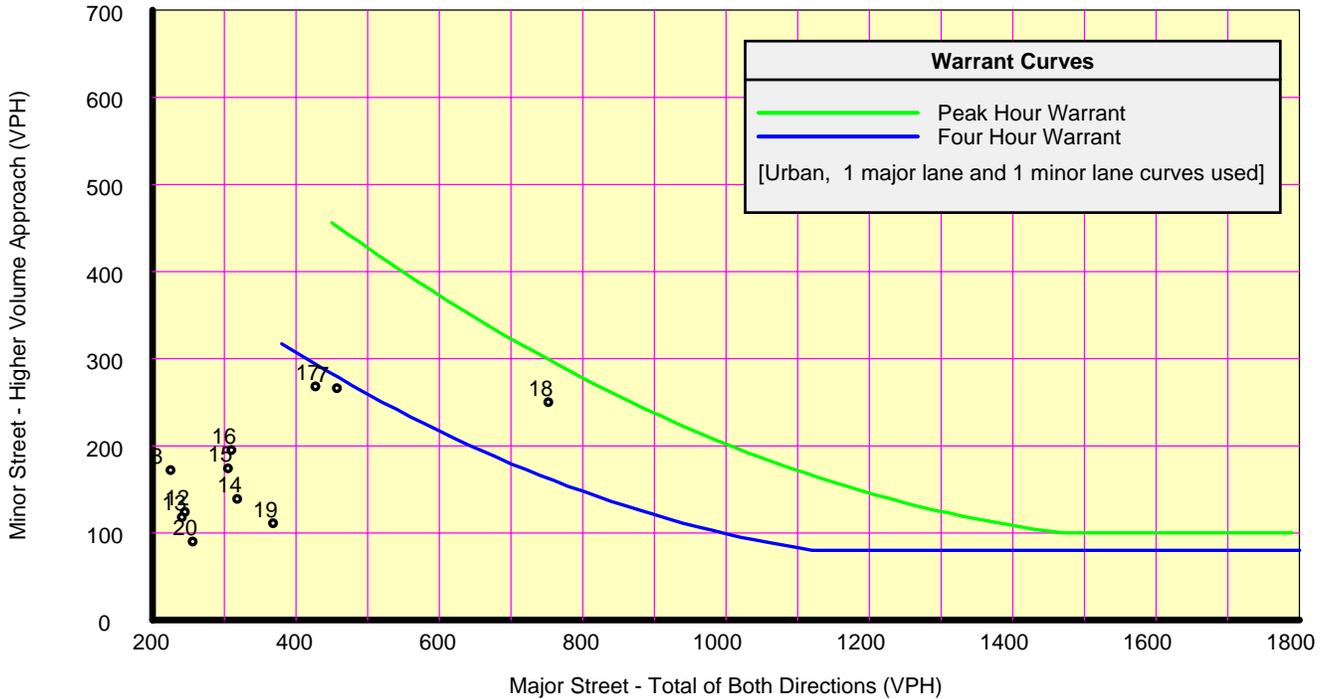
Butner Road & Stonewall Tell Road

Study Name : 2009 Conditions @ 40

Study Date : 11/19/09

Page No. : 2

Signal Warrants - Summary



Analysis of 8-Hour Volume Warrants:

Hour Begin	Major Total	Higher Minor Vol	Dir	War-1A			War-1B			War-1A&B		
				Major Crit	Minor Crit	Meets?	Major Crit	Minor Crit	Meets?	Major Crit	Minor Crit	Meets?
00:00	24	24	NB	500-No	150-No	---	750-No	75-No	---	600-No	120-No	---
01:00	12	18	NB	500-No	150-No	---	750-No	75-No	---	600-No	120-No	---
02:00	15	5	NB	500-No	150-No	---	750-No	75-No	---	600-No	120-No	---
03:00	16	12	NB	500-No	150-No	---	750-No	75-No	---	600-No	120-No	---
04:00	16	19	SB	500-No	150-No	---	750-No	75-No	---	600-No	120-No	---
05:00	60	38	NB	500-No	150-No	---	750-No	75-No	---	600-No	120-No	---
06:00	166	95	NB	500-No	150-No	---	750-No	75-Yes	Minor	600-No	120-No	---
07:00	457	266	NB	500-No	150-Yes	Minor	750-No	75-Yes	Minor	600-No	120-Yes	Minor
08:00	225	172	SB	500-No	150-Yes	Minor	750-No	75-Yes	Minor	600-No	120-Yes	Minor
09:00	145	112	NB	500-No	150-No	---	750-No	75-Yes	Minor	600-No	120-No	---
10:00	159	103	NB	500-No	150-No	---	750-No	75-Yes	Minor	600-No	120-No	---
11:00	189	104	NB	500-No	150-No	---	750-No	75-Yes	Minor	600-No	120-No	---
12:00	245	124	NB	500-No	150-No	---	750-No	75-Yes	Minor	600-No	120-Yes	Minor
13:00	241	118	SB	500-No	150-No	---	750-No	75-Yes	Minor	600-No	120-No	---
14:00	318	139	SB	500-No	150-No	---	750-No	75-Yes	Minor	600-No	120-Yes	Minor
15:00	305	174	NB	500-No	150-Yes	Minor	750-No	75-Yes	Minor	600-No	120-Yes	Minor
16:00	310	195	SB	500-No	150-Yes	Minor	750-No	75-Yes	Minor	600-No	120-Yes	Minor
17:00	427	268	NB	500-No	150-Yes	Minor	750-No	75-Yes	Minor	600-No	120-Yes	Minor
18:00	752	250	NB	500-Yes	150-Yes	Both	750-Yes	75-Yes	Both	600-Yes	120-Yes	Both
19:00	368	111	SB	500-No	150-No	---	750-No	75-Yes	Minor	600-No	120-No	---
20:00	256	90	NB	500-No	150-No	---	750-No	75-Yes	Minor	600-No	120-No	---
21:00	161	84	NB	500-No	150-No	---	750-No	75-Yes	Minor	600-No	120-No	---
22:00	130	57	NB	500-No	150-No	---	750-No	75-No	---	600-No	120-No	---
23:00	71	31	NB	500-No	150-No	---	750-No	75-No	---	600-No	120-No	---

Southeastern Engineering, Inc

2011 Conditions

Butner Road & Stonewall Tell Road

Study Name : 2011 Conditions @ 40

Study Date : 11/23/09

Page No. : 1

Signal Warrants - Summary

Major Street Approaches

Eastbound: 3327

Number of Lanes: 1
Approach Speed: 40
Total Approach Volume: 2,505

Westbound: 2999

Number of Lanes: 1
Approach Speed: 40
Total Approach Volume: 2,342

Minor Street Approaches

Northbound: 2959

Number of Lanes: 1

Total Approach Volume: 2,621

Southbound: 2864

Number of Lanes: 1

Total Approach Volume: 2,306

Warrant Summary (Urban values apply.)

Warrant 1 - Eight Hour Vehicular Volumes	Not Satisfied
Warrant 1A - Minimum Vehicular Volume	Not Satisfied
Required volumes reached for 0 hours, 8 are needed	
Warrant 1B - Interruption of Continuous Traffic	Not Satisfied
Required volumes reached for 0 hours, 8 are needed	
Warrant 1 A&B - Combination of Warrants	Not Satisfied
Required volumes reached for 0 hours, 8 are needed	
Warrant 2 - Four Hour Volumes	Not Satisfied
Number of hours (0) volumes exceed minimum < minimum required (4).	
Warrant 3 - Peak Hour	Not Evaluated
Warrant 3A - Peak Hour Volumes	Not Evaluated
Warrant 3B - Peak Hour Delay	Not Evaluated
Warrant 4 - Pedestrian Volumes	Not Evaluated
Warrant 5 - School Crossing	Not Evaluated
Warrant 6 - Coordinated Signal System	Not Evaluated
Warrant 7 - Crash Experience	Not Satisfied
Number of accidents (-1) is less than minimum (5). Volume minimums are not met.	
Warrant 8 - Roadway Network	Not Evaluated

Southeastern Engineering, Inc

2011 Conditions

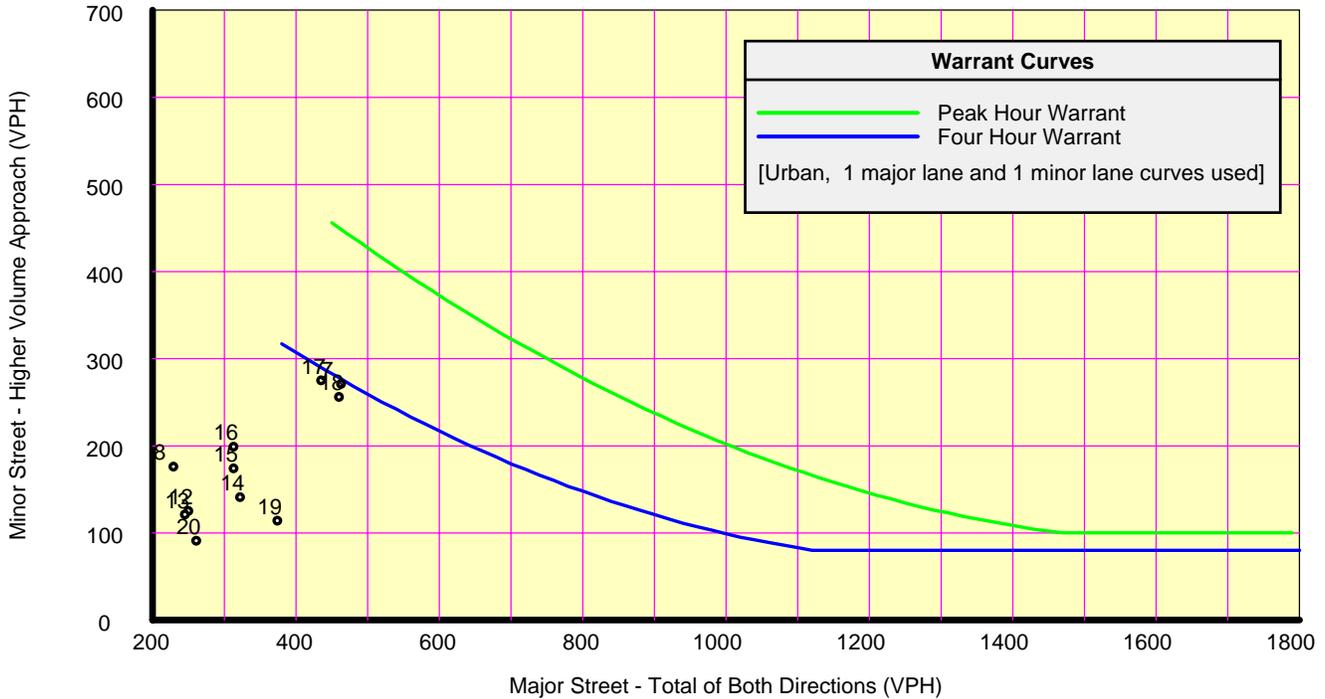
Butner Road & Stonewall Tell Road

Study Name : 2011 Conditions @ 40

Study Date : 11/23/09

Page No. : 2

Signal Warrants - Summary



Analysis of 8-Hour Volume Warrants:

Hour Begin	Major Total	Higher Minor Vol	Dir	War-1A			War-1B			War-1A&B		
				Major Crit	Minor Crit	Meets?	Major Crit	Minor Crit	Meets?	Major Crit	Minor Crit	Meets?
00:00	24	24	NB	500-No	150-No	---	750-No	75-No	---	600-No	120-No	---
01:00	12	18	NB	500-No	150-No	---	750-No	75-No	---	600-No	120-No	---
02:00	15	5	NB	500-No	150-No	---	750-No	75-No	---	600-No	120-No	---
03:00	16	12	NB	500-No	150-No	---	750-No	75-No	---	600-No	120-No	---
04:00	16	13	NB	500-No	150-No	---	750-No	75-No	---	600-No	120-No	---
05:00	60	38	NB	500-No	150-No	---	750-No	75-No	---	600-No	120-No	---
06:00	168	96	NB	500-No	150-No	---	750-No	75-Yes	Minor	600-No	120-No	---
07:00	463	271	NB	500-No	150-Yes	Minor	750-No	75-Yes	Minor	600-No	120-Yes	Minor
08:00	229	176	SB	500-No	150-Yes	Minor	750-No	75-Yes	Minor	600-No	120-Yes	Minor
09:00	147	113	NB	500-No	150-No	---	750-No	75-Yes	Minor	600-No	120-No	---
10:00	161	103	NB	500-No	150-No	---	750-No	75-Yes	Minor	600-No	120-No	---
11:00	193	106	NB	500-No	150-No	---	750-No	75-Yes	Minor	600-No	120-No	---
12:00	250	125	NB	500-No	150-No	---	750-No	75-Yes	Minor	600-No	120-Yes	Minor
13:00	245	121	SB	500-No	150-No	---	750-No	75-Yes	Minor	600-No	120-Yes	Minor
14:00	322	141	SB	500-No	150-No	---	750-No	75-Yes	Minor	600-No	120-Yes	Minor
15:00	313	174	NB	500-No	150-Yes	Minor	750-No	75-Yes	Minor	600-No	120-Yes	Minor
16:00	313	199	SB	500-No	150-Yes	Minor	750-No	75-Yes	Minor	600-No	120-Yes	Minor
17:00	435	275	NB	500-No	150-Yes	Minor	750-No	75-Yes	Minor	600-No	120-Yes	Minor
18:00	460	256	NB	500-No	150-Yes	Minor	750-No	75-Yes	Minor	600-No	120-Yes	Minor
19:00	374	114	SB	500-No	150-No	---	750-No	75-Yes	Minor	600-No	120-No	---
20:00	261	91	NB	500-No	150-No	---	750-No	75-Yes	Minor	600-No	120-No	---
21:00	166	86	NB	500-No	150-No	---	750-No	75-Yes	Minor	600-No	120-No	---
22:00	132	59	NB	500-No	150-No	---	750-No	75-No	---	600-No	120-No	---
23:00	72	32	NB	500-No	150-No	---	750-No	75-No	---	600-No	120-No	---

Southeastern Engineering, Inc

2031 Conditions

Butner Road & Stonewall Tell Road

Study Name : 2031 Conditions @ 40

Study Date : 11/23/09

Page No. : 1

Signal Warrants - Summary

Major Street Approaches

Northbound: 7852

Number of Lanes: 1
Approach Speed: 0
Total Approach Volume: 6,960

Southbound: 7600

Number of Lanes: 1
Approach Speed: 0
Total Approach Volume: 6,137

Minor Street Approaches

Eastbound: 8826

Number of Lanes: 1

Total Approach Volume: 6,637

Westbound: 7957

Number of Lanes: 1

Total Approach Volume: 6,197

Warrant Summary (Urban values apply.)

Warrant 1 - Eight Hour Vehicular Volumes	Satisfied
Warrant 1A - Minimum Vehicular Volume	Satisfied
Required volumes reached for 13 hours, 8 are needed	
Warrant 1B - Interruption of Continuous Traffic	Not Satisfied
Required volumes reached for 6 hours, 8 are needed	
Warrant 1 A&B - Combination of Warrants	Satisfied
Required volumes reached for 8 hours, 8 are needed	
Warrant 2 - Four Hour Volumes	Satisfied
Number of hours (15) volumes exceed minimum >= minimum required (4).	
Warrant 3 - Peak Hour	Not Evaluated
Warrant 3A - Peak Hour Volumes	Not Evaluated
Warrant 3B - Peak Hour Delay	Not Evaluated
Warrant 4 - Pedestrian Volumes	Not Evaluated
Warrant 5 - School Crossing	Not Evaluated
Warrant 6 - Coordinated Signal System	Not Evaluated
Warrant 7 - Crash Experience	Not Satisfied
Number of accidents (-1) is less than minimum (5). Volume minimums are met.	
Warrant 8 - Roadway Network	Not Evaluated

Southeastern Engineering, Inc ⁷

2031 Conditions

Butner Road & Stonewall Tell Road

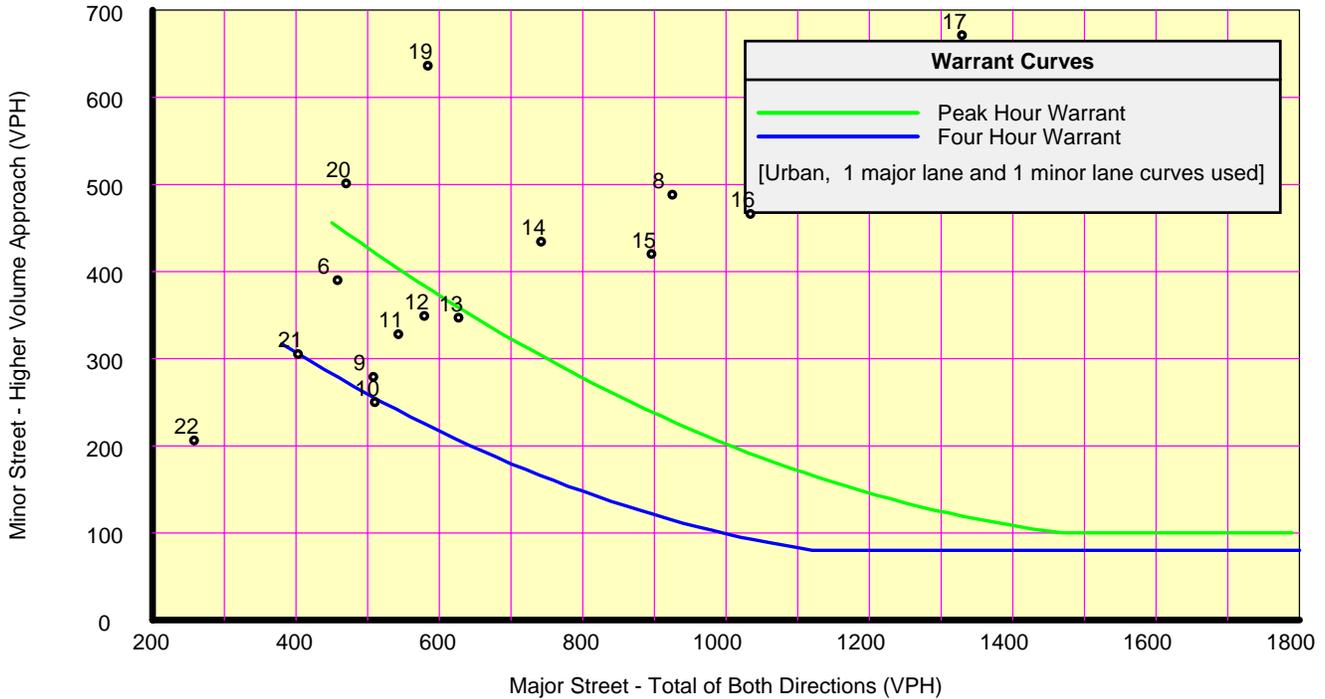
Study Name : 2031 Conditions @ 40

Study Date : 11/23/09

Page No. : 2

Signal Warrants - Summary

18



Analysis of 8-Hour Volume Warrants:

Hour Begin	Major Total	Higher Minor Vol	Dir	War-1A			War-1B			War-1A&B		
				Major Crit	Minor Crit	Meets?	Major Crit	Minor Crit	Meets?	Major Crit	Minor Crit	Meets?
00:00	90	36	WB	500-No	150-No	---	750-No	75-No	---	600-No	120-No	---
01:00	82	19	EB	500-No	150-No	---	750-No	75-No	---	600-No	120-No	---
02:00	22	21	WB	500-No	150-No	---	750-No	75-No	---	600-No	120-No	---
03:00	54	20	EB	500-No	150-No	---	750-No	75-No	---	600-No	120-No	---
04:00	57	30	EB	500-No	150-No	---	750-No	75-No	---	600-No	120-No	---
05:00	163	143	EB	500-No	150-No	---	750-No	75-Yes	Minor	600-No	120-Yes	Minor
06:00	458	390	EB	500-No	150-Yes	Minor	750-No	75-Yes	Minor	600-No	120-Yes	Minor
07:00	1,385	950	EB	500-Yes	150-Yes	Both	750-Yes	75-Yes	Both	600-Yes	120-Yes	Both
08:00	925	488	EB	500-Yes	150-Yes	Both	750-Yes	75-Yes	Both	600-Yes	120-Yes	Both
09:00	508	279	EB	500-Yes	150-Yes	Both	750-No	75-Yes	Minor	600-No	120-Yes	Minor
10:00	510	250	EB	500-Yes	150-Yes	Both	750-No	75-Yes	Minor	600-No	120-Yes	Minor
11:00	543	328	EB	500-Yes	150-Yes	Both	750-No	75-Yes	Minor	600-No	120-Yes	Minor
12:00	579	349	WB	500-Yes	150-Yes	Both	750-No	75-Yes	Minor	600-No	120-Yes	Minor
13:00	627	347	EB	500-Yes	150-Yes	Both	750-No	75-Yes	Minor	600-Yes	120-Yes	Both
14:00	742	434	EB	500-Yes	150-Yes	Both	750-No	75-Yes	Minor	600-Yes	120-Yes	Both
15:00	896	420	WB	500-Yes	150-Yes	Both	750-Yes	75-Yes	Both	600-Yes	120-Yes	Both
16:00	1,034	466	WB	500-Yes	150-Yes	Both	750-Yes	75-Yes	Both	600-Yes	120-Yes	Both
17:00	1,329	671	WB	500-Yes	150-Yes	Both	750-Yes	75-Yes	Both	600-Yes	120-Yes	Both
18:00	1,210	752	WB	500-Yes	150-Yes	Both	750-Yes	75-Yes	Both	600-Yes	120-Yes	Both
19:00	584	636	WB	500-Yes	150-Yes	Both	750-No	75-Yes	Minor	600-No	120-Yes	Minor
20:00	470	501	WB	500-No	150-Yes	Minor	750-No	75-Yes	Minor	600-No	120-Yes	Minor
21:00	403	305	WB	500-No	150-Yes	Minor	750-No	75-Yes	Minor	600-No	120-Yes	Minor
22:00	258	206	WB	500-No	150-Yes	Minor	750-No	75-Yes	Minor	600-No	120-Yes	Minor
23:00	168	131	WB	500-No	150-No	---	750-No	75-Yes	Minor	600-No	120-Yes	Minor



Butner Road at Stonewall Tell Road Intersection Improvements Project
Public Information Meeting Summary – January 21, 2010
Cliftondale Community Center

A total of 61 persons attended the first public information for the Butner Road at Stonewall Tell Road Intersection Improvements Project. The purpose of the meeting was to provide an overview of the project and present preliminary concepts for public feedback. Attendees were provided a project fact sheet and comment form after signing in. The meeting was opened by Earnest Slaughter with the Fulton County Public Works Department who welcomed the attendees and introduced County staff and the TY Lin consulting team. Mr. Slaughter provided a general project overview, purpose and schedule. The meeting was turned over to Bryan Lindsey, Project Manager, for TY Lin who explained the goal of the meeting and the preliminary concepts on display. Mr. Lindsey requested attendees to spend time at the displays and learn more about each of the four preliminary concepts. Inga Kennedy, Public Involvement Coordinator for the project, facilitated questions regarding process and the attendees dispersed to the displays. Attendees were encouraged to submit written feedback on the comment forms before leaving but were also provided the opportunity to submit additional comments prior to February 4, 2010 by direct mail, e-mail and facsimile. The following table summarizes the comments received by status of support:

1. Do you support the project?

SUPPORT STATUS	TOTAL COMMENTS	CONCEPT # 1	CONCEPT # 2	CONCEPT # 3	CONCEPT # 4	NO CONCEPT SELECTED
For	19	3	0	6	2	8
Against	4	0	0	0	0	4
Conditional	16	4	3	2	1	7
Uncommitted	3	1	0	0	0	2



Specific comments on this project by support categories:

For

Concept 1

- I support Concept 1; I think it will make a difference for the better. Other areas of concern in this area are: Jonesboro Rd. and Hwy. 92, Derrick Rd and South Fulton Parkway, Stonewall Tell and South Fulton Parkway (turning arrow at intersections)
- I think Concept 1 is the best plan for the intersection. Jones Road at 92 needs to be addressed also for safety reasons.
- Concept 1

Concept 2

No boxes checked for support

Concept 3

- Good idea...Need more sidewalks...I like Concept 3 because it maintains Butner and like the low impact on land and property owners.
- Concept 3 looks ok but would need to know the size of the traffic circle i.e. 1 or 2 lanes and all Concepts appear that some form of traffic control will be needed.
- I like Concept 3 and absolutely hate 1 and 2. I like 3 because it is the closest Concept to flow on Butner. The others have too many turns. Additionally I think there should be consideration to make the roundabout four legs with the fourth leg acting as a driveway to the gas station/Young's and not access to Stonewall.
- We need to get a traffic light installed but if that can be justified, we like option 3 best.
- I like Concepts 3 and 4 with the roundabouts. However, I don't like splitting off of the roads. With roundabouts at least the traffic will keep moving. Concepts 1 and 2 are out of the question.
- I am in favor of Concept 3.

Concept 4

- Project Concept 4, east leg with 3 way stop sign.
- I support either of the two roundabout plans for this intersection.



Against

- I did not like Concepts 3 and 4 which included the roundabouts. I am concerned with how to get to the businesses (gas station and store). Neither Concept show good consistency with entrance to the plaza. You mentioned an increase of accidents and injuries but no data was given to truly support use of funds for this project. Also, will there be a tax increase and what is the projected cost for each concept? I need more info as to why there is a need to make changes. I would support broadening streets and fixing potholes.
- I know that I hate the circles. I don't see how having two intersections is better than having one. No proposal looked helpful to me. Why don't we save tax dollars and keep the intersections as it is, but put up a traffic light. I like simple solutions.
- I am not in favor of any plans presented. All we need is a traffic light. An additional intersection will only create more problems and I don't like roundabouts.
- Traffic light should be all that is needed without damaging so much property. Two intersections is not a solution but another problem. I did not like any of the proposals. A roundabout is for people who are not disciplined enough to stop at a sign or light. Just remember, they will not yield in a roundabout either...sounds dangerous to me. Five foot sidewalks make me laugh – are you building them for the soccer people to park on?
- Sidewalks need to be extended to populated areas for whatever design is decided upon, consider keeping the traffic caution light.
- The light at South Fulton Parkway and Stonewall Tell Rd. needs more attention.

Conditional

- Do not like the idea of roundabouts. I feel this is a dangerous and unpractical option. Concept 1 seems to generate the most interest.
- In reviewing the maps, I am leaning more toward Concepts 1 and 2 as far as accommodating growth for this area.
- I'm in favor of the "2" four-way stop concept of Concept 1 and this seems to keep the integrity of the area as close to it is now. Concept 1 look to be safe for all modes of transportation. Make sure any concept keeps access to existing businesses.
- Off ramp signal would make Concept 1 work more efficient and Concept 4 needs more work.



- I'm in favor of the "2" four-way stop concept of Concept 1 and this seems to keep the integrity of the area as close to it is now. Concept 1 look to be safe for all modes of transportation. Make sure any concept keeps access to existing businesses.
- Concept 2 is a better choice at this time.
- From experience, I don't like the roundabouts. They are not going to work well for trucks that come through the neighborhood. I like Concept 2. Will there be traffic signals at the 3 way intersections?
- Because of the time factor to complete the project but I favor Concept 3.
- I like Concepts 3 and 4 with the roundabouts. However, I don't like splitting off of the roads. With roundabouts at least the traffic will keep moving. Concepts 1 and 2 are out of the question.
- Clearly something needs to be done but each concept has some shortcomings. Concept 2 is the worst; no left turn lane on SWT and no pedestrian crossings.
- My suggestions is that we need safety such as a light. Also, Butner Road needs to be four lanes with sidewalks.
- Traffic light is definitely a necessity for the safety of all, extend sidewalks and widen the roads.
- My support is dependent upon continuous traffic flow during the construction period. Butner Rd. is the only avenue for many in the community to reach major thoroughfares. Congestion on Butner would be detrimental and unacceptable.
- Need red light and all lanes should be wider to accommodate large size vehicles, trucks, vans, etc..
- Sidewalks from Camp Creek to Hwy. 92 on Butner Road and from Campbellton to South Fulton Parkway on Stonewall Tell.
- .No Concept presented solves all problems. Each concept creates another problem. If concern is with north bound SWT to west bound Butner, install a "jug handle" with left turn lane on northbound SWT (see sketch attached).

Uncommitted

- Not sure if any of the plans will completely solve the problem.
- All Concepts presented breaking a single-point problem (the current intersection) in a multi-point problem creating multiple intersections; I would prefer a solution that maintains a single point intersection utilizing either a traffic signal or round-about to control flow.



- Favor Concept 1 (first) but concerned about the stop sign. Favor Concept 3 (second choice) but concerned about turnabout.

2. How did you hear about the meeting?

- a. Radio - 0
- b. Newspaper - 0
- c. Signs - 20
- d. Word of Mouth - 7
- e. Other – Internet (1), Cliftondale E-mail (11), Cliftondale Meeting (5), County web site (1)

3. Was the location of the meeting convenient for you to attend?

- a. Yes – 40 (need more parking)
- b. No – 9

4. Was the time of the meeting convenient for you to attend?

- a. Yes - 40
- b. No – 1 (7 pm)

5. Do you understand the project after attending this meetings

- a. Yes - 38
- b. No – 1 (more information needed)
- c. Did not attend - 2

6. Please share your suggestions on improving the way Fulton County Public Works conducts public meetings:

- Needs to be more informative.
- The meetings should have been a forum to ask the community what they would like to see and how to see it developed instead of presenting 4 ideas and asking to choose; then present our ideas with your idea. Antonio Valenzuela should have respectfully attended this meeting.
- The meeting went fine.



- I appreciate each time Cliftdale is used as an informative meeting site; thanks.
- Future meetings should be singular to encourage idea sharing among all participants at once.
- This meeting concept is very good; it gives time and access to talk and discuss the project with project people.
- We need to hear from the homeowners and need many more meetings.
- Maybe send flyers out to local schools.
- Do an overview of the entire proposal and point out the pros and cons of each idea.
- At next meeting use the big screen on stage and give individual copies of all four concepts to each attendee. Present pros and cons of each concept and have a Q&A after each concept presentation. Put concepts on County web site and Cliftdale.org web site.
- Share more data such as the criteria for getting a traffic light and how today's traffic compares to the criteria.
- I feel we need a "full" meeting using the screen at our next meeting. Each design should be critiqued as a group so we all can hear each other's concerns and ideas.
- There are community members of Cliftdale that have been working on this project for years. I think their ideas should also be taken into consideration. They have been here working for the community strongly.
- The organizers should inform all people present as to how conceptual displays can be obtained (included with handout information versus call or e-mail someone).
- Also, I do not believe there was any discussion on accident history at this intersection.



Butner Road at Stonewall Tell Road Intersection Improvements

Public Meeting – June 15, 2010 Clifftondale Park Community Center

A total of 20 persons attended the second public information meeting for the Butner Road at Stonewall Tell Road Intersection Improvements Project. The purpose of the meeting was to provide the recommended alternative for the intersection based on the data collected from previous public outreach as well as technical

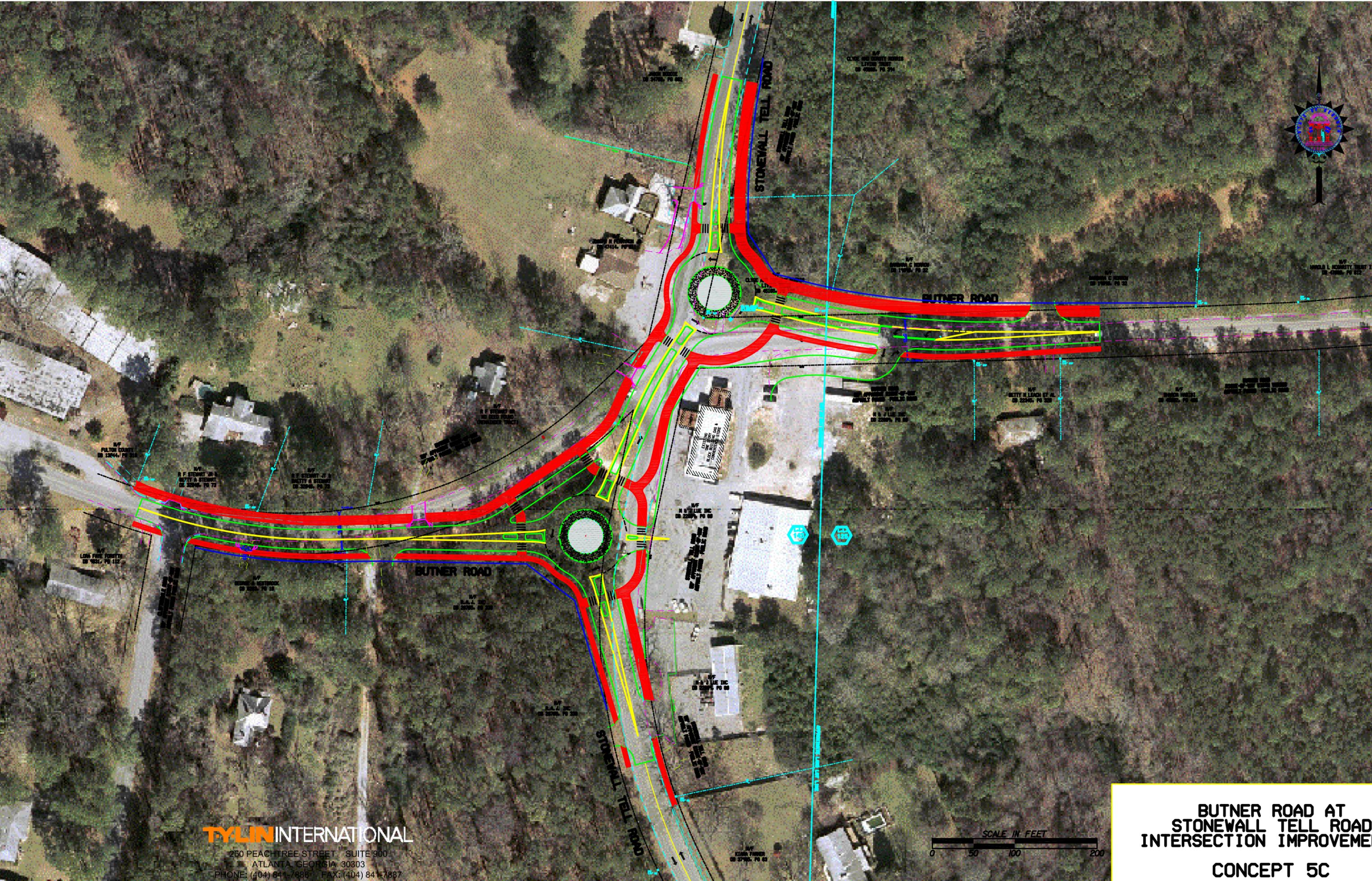
Attendees were provided a project fact sheet and comment form after signing in. The meeting was opened by Angela Parker with the Fulton County Public Works Department who welcomed the attendees and introduced County staff and the TY Lin consulting team. Ms. Parker provided an overview of the timeline and background for the project. The meeting was turned over to Bryan Lindsey, Project Manager, for TY Lin who gave a brief PowerPoint presentation on current status of the intersection and went into further detail on the preferred alternative. Inga Kennedy, Public Involvement Coordinator for the project, facilitated questions regarding the preferred alternative.

The following comments were provided:

Comments:

- ❖ I can see that a great deal of work has gone into this project however, I still want a traffic signal rather than the roundabout
- ❖ Considering the way folks drive in the area I can only see problems with a roundabout
- ❖ Would like the traffic signal explored a little more for the intersection. The way the roundabouts are presented they would hinder the businesses at this location
- ❖ If the traffic signal is out of the question can the access in and out for the businesses be explored more
- ❖ The animation was very good but as you know once you include the human factor things change- drivers with various knowledge, experience, ages and personalities will enter the picture
- ❖ Improvements are needed but the roundabouts are not the answer
- ❖ The visual has completely taken away the intersection and made it quite confusing by going through two roundabouts to make left hand turns
- ❖ Cost is another factor. Red lights and turn lanes are sufficient and much less confusing. I have experienced roundabouts and do not see them working well in this high traffic area

- ❖ Limited access may cause more congestion
- ❖ What is the time frame for completion of the roundabouts including construction
- ❖ 20 years from now there will be a new local subdivision that will definitely affect the current traffic flow for the intersection
- ❖ What warrants this project being looked at versus other more dangerous intersections such as State Route 92/ Ridge Road and State Route 92/ Butner Road Intersections
- ❖ The Butner Road/Stonewall Tell intersection has not had an accident in the last four years that I'm aware of
- ❖ What are the safety red flags for the project
- ❖ Are the roundabouts raised
- ❖ What are the criteria that warrants a traffic light
- ❖ Are there any other examples to reference for the dog bone design of a roundabout
- ❖ Stonewall Tell Road/ South Fulton Parkway has a traffic signal but it does not reduce travel time
- ❖ Maybe we can break the project into phases...traffic light now and later roundabouts
- ❖ I viewed the screening of the two roundabouts for the intersection mentioned above, and I can see that the accident occurrences will surely increase with the volume of traffic through this intersection and the uncertainty of drivers.
- ❖ Presently we have very few accidents
- ❖ Turn lanes and a red light would be more efficient and more cost effective.
- ❖ We certainly need improvements in this intersection, but Cliftondale has many other needs (Enon Road resurfacing for instance or a red light at Butner and Hwy 92) that should be considered for spending funds in the area.
- ❖ Will construction type trucks such as flat beds, concrete, large box trucks be able to maneuver through the intersection? This intersection accommodates more than cars.

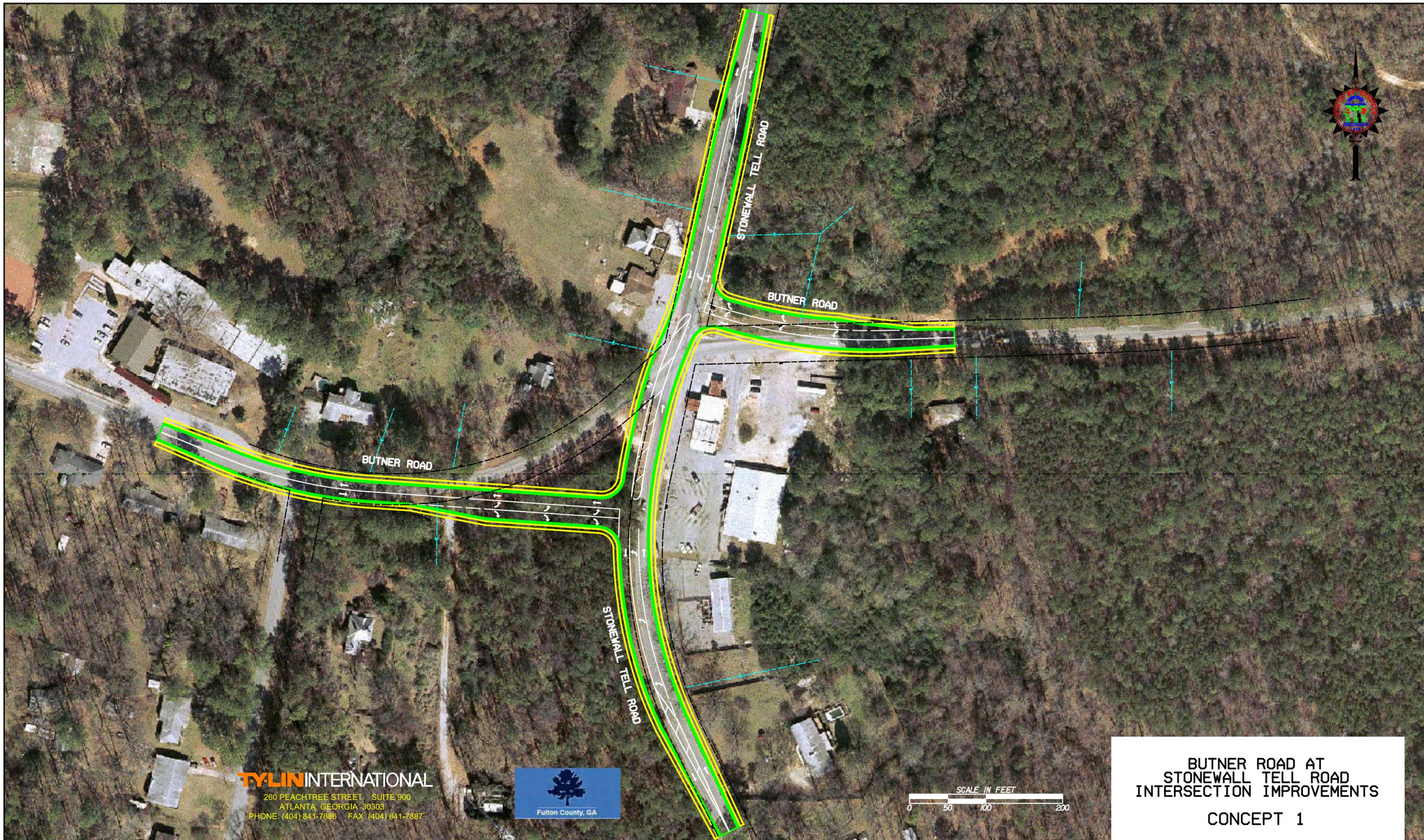


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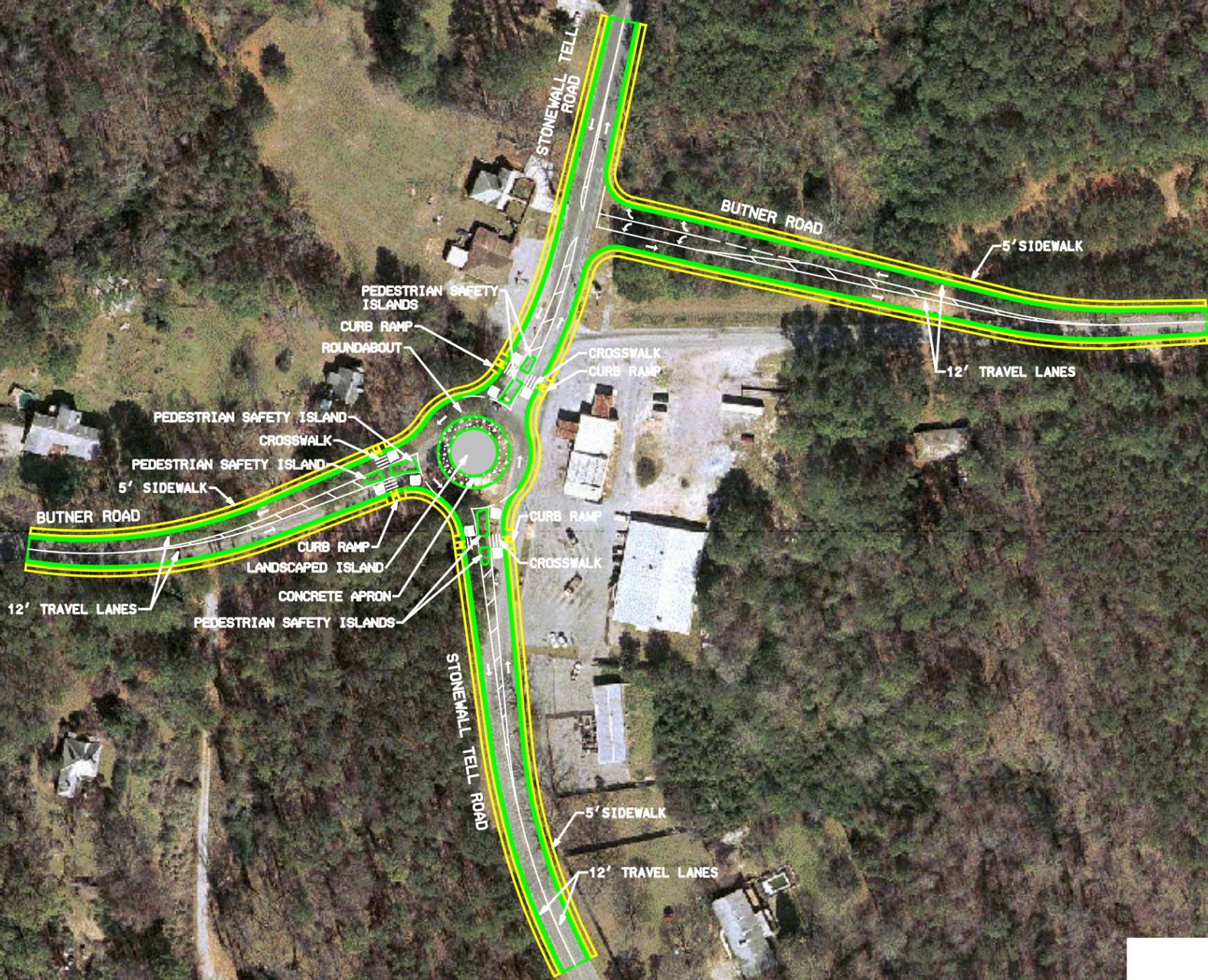
**BUTNER ROAD AT
STONEWALL TELL ROAD
INTERSECTION IMPROVEMENT
CONCEPT 5C**



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**BUTNER ROAD AT
STONEWALL TELL ROAD
INTERSECTION IMPROVEMENTS**
CONCEPT 1



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**BUTNER ROAD AT
STONEWALL TELL ROAD
INTERSECTION IMPROVEMENTS**
CONCEPT 4