Chalkville Road/ Chalkville Mountain Road Traffic Study

Trussville, Alabama

Advance Planning, Programming, and Logical Engineering (APPLE) Program

Prepared for:



City of Trussville



Prepared by:



January, 2023

CHALKVILLE ROAD/CHALKVILLE MOUNTAIN ROAD TRAFFIC STUDY TRUSSVILLE, ALABAMA

Advance Planning, Programming, and Logical Engineering (APPLE) Program

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INTRODUCTION

This report documents the results of a project to perform a traffic study of Chalkville Road, Chalkville Mountain Road, and Sweeney Hollow Road in the City of Trussville and Jefferson County, Alabama. Limits of the project extend from the intersection of Poplar Street to the intersection of Tyler Loop Road. A general vicinity map is shown in Figure 1.

The purposes of this study are to:

- Document existing traffic conditions within the corridor, including the following elements:
 - Existing traffic counts
 - o Existing traffic signal coordination programming
 - o Existing drive times
 - o Existing intersection capacity analyses
- Project future year traffic conditions within the corridor, including the following elements:
 - o Historical traffic growth trends
 - o Transportation demand model output
 - o 2045 traffic projections
 - o Planned and programmed roadway improvements
 - o 2045 intersection capacity analyses
- Test various improvement concepts on Chalkville Road/Chalkville Mountain Road, including:
 - o The need for a third southbound through lane on Chalkville Mountain Road north of I-59
 - The need for a second northbound through lane on Chalkville Road south of I-59
 - o The need for a triple left turn lane exiting the I-59 northbound ramp
 - o The need for a double left turn lane on Service Road
- Document specific project outcomes, including:
 - o Conceptual design of proposed improvements

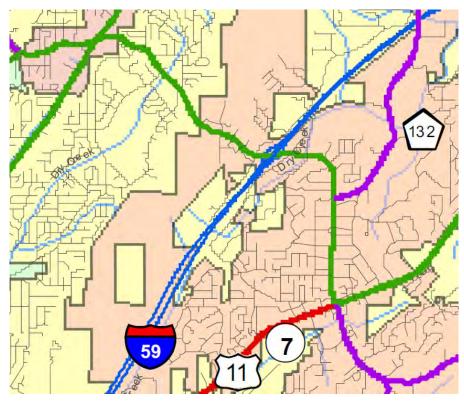
BACKGROUND INFORMATION

Study Corridor

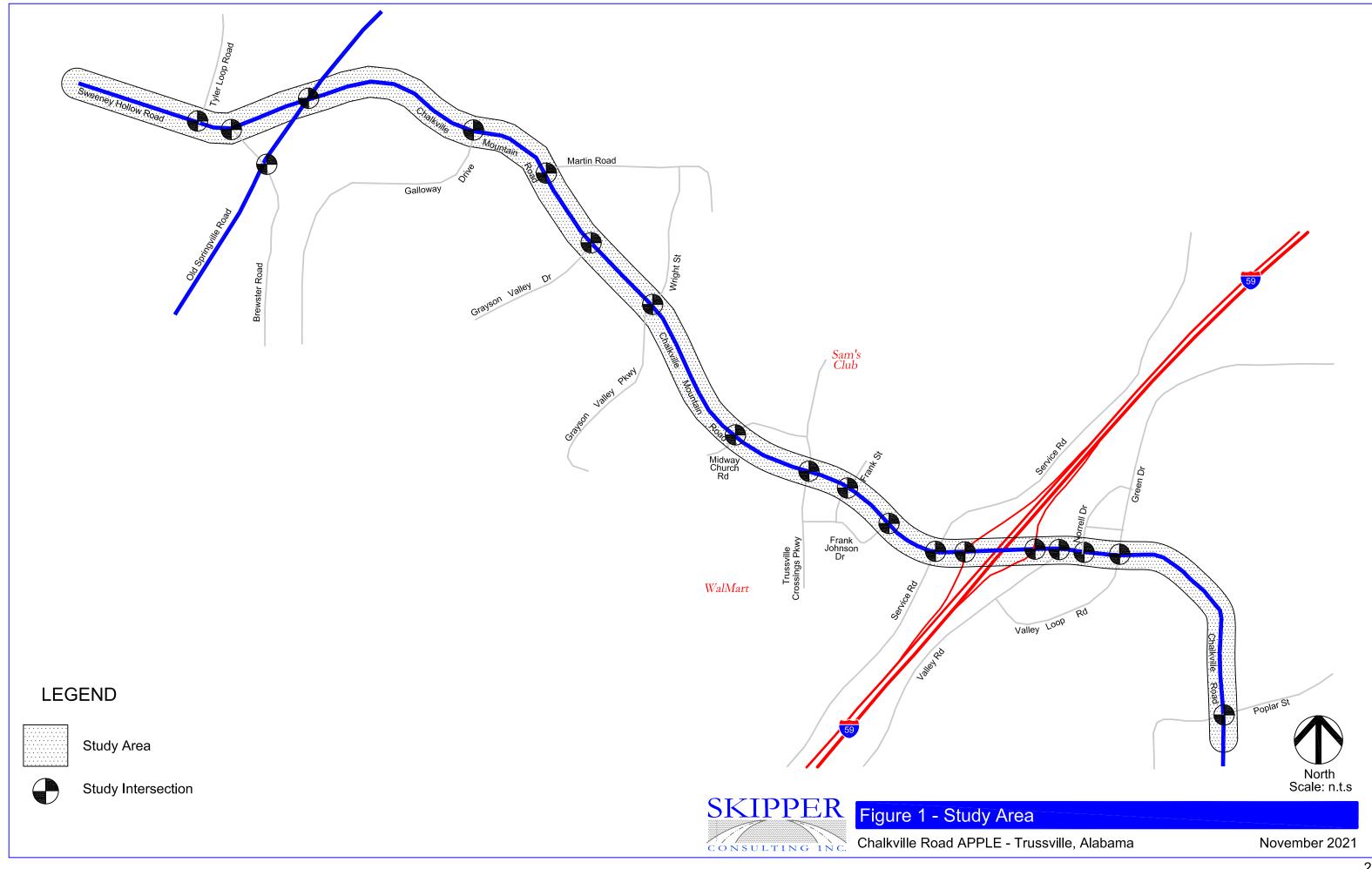
The study limits for the project are as follows:

 Chalkville Road, Chalkville Mountain Road, and Sweeney Hollow Road from Poplar Street to Tyler Loop Road, a distance of approximately 3.2 miles

South of I-59, Chalkville Road is a two to three lane undivided urban minor arterial roadway with a posted speed limit of 30 miles per hour. North of I-59, Chalkville Mountain Road is a four lane median divided urban minor arterial roadway with a posted speed limit of 40 miles per hour. Sweeney Hollow Road is a two to three lane urban minor arterial roadway between Old Springville Road and Tyler Loop Road. I-59 is a four lane median divided freeway with a posted speed limit of 70 miles per hour. Poplar Street is a two lane major collector roadway with a posted speed limit of 25 miles per hour. Old Springville Road is a two to three lane urban minor arterial roadway. All other roadways within the study area are local roads.



Functional Classification Map (Source: Alabama Department of Transportation)



Study Intersections

The intersections included for detailed study are as follows:

- Chalkville Road at Poplar Street/Rockridge Avenue (signalized)
- Chalkville Road at Green Drive/Pineview Road (signalized)
- Chalkville Road at Norrell Drive (side street stop)
- Chalkville Road at Valley Road (side street stop)
- Chalkville Road at I-59 Northbound Ramps (signalized)
- Chalkville Mountain Road at I-59 Southbound Ramps (signalized)
- Chalkville Mountain Road at Service Road (signalized)
- Chalkville Mountain Road at Frank Johnson Drive (signalized)
- Chalkville Mountain Road at Frank Street/Frank Johnson Drive (signalized)
- Chalkville Mountain Road at Trussville Crossings Parkway (signalized)
- Chalkville Mountain Road at Midway Church Road (signalized)
- Chalkville Mountain Road at Wright Street/Grayson Valley Parkway (signalized)
- Chalkville Mountain Road at Grayson Valley Drive (signalized)
- Chalkville Mountain Road at Martin Road (signalized)
- Chalkville Mountain Road at Galloway Drive (signalized)
- Old Springville Road at Chalkville Mountain Road/Sweeney Hollow Road (signalized)
- Sweeney Hollow Road at Brewster Road (signalized)
- Sweeney Hollow Road at Tyler Loop Road (signalized)
- Old Springville Road at Brewster Road (signalized)

EXISTING CONDITIONS ANALYSIS

Intersection Turning Movement Traffic Counts

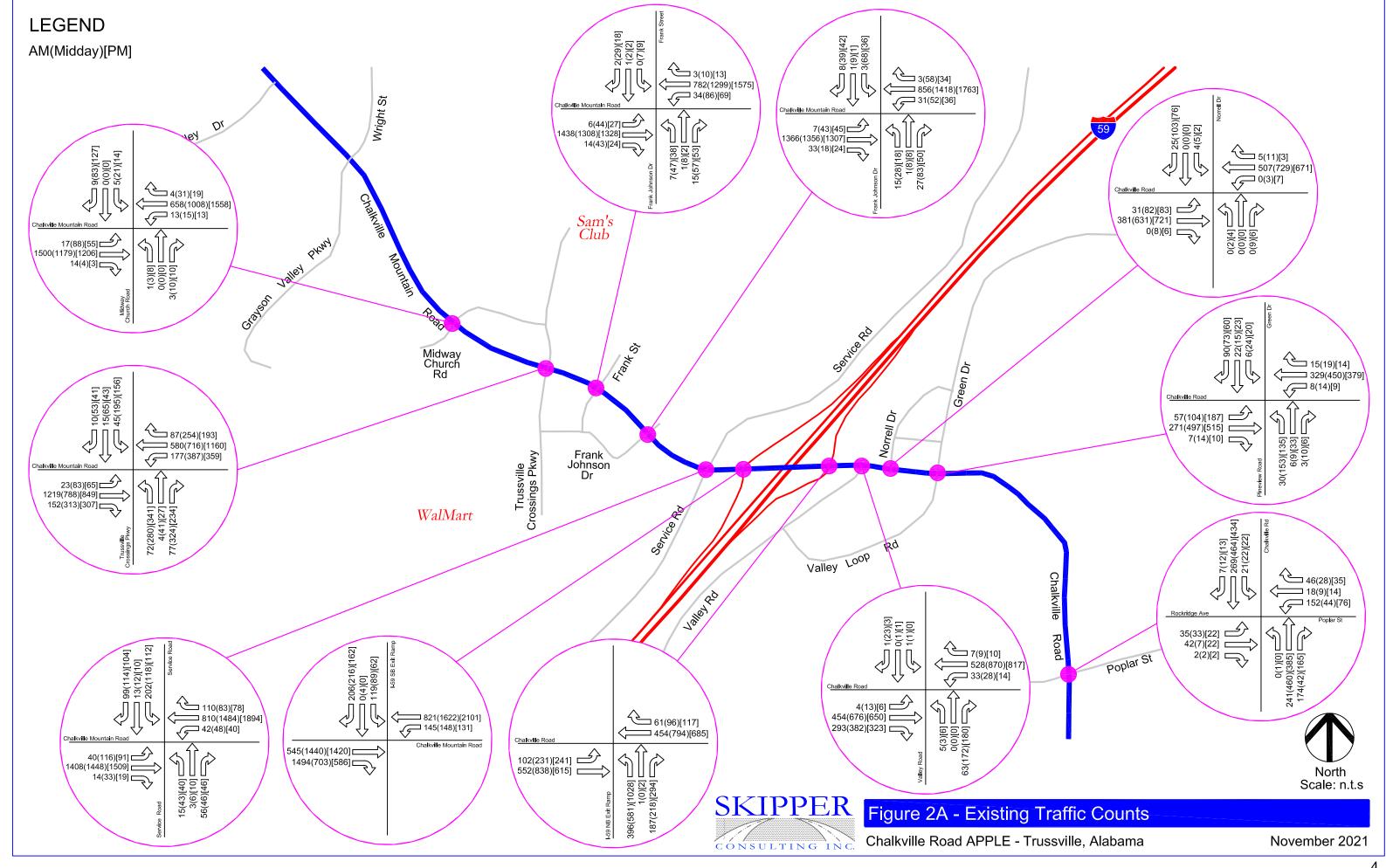
Intersection turning movement traffic counts were performed at the study intersections during the periods of Tuesday to Wednesday, October 6 to 14, 2020, Wednesday, September 22, 2021, Tuesday to Thursday, September 28 to 30, 2021, Tuesday to Wednesday, October 5 to 6, 2021, and Tuesday, October 12, 2021 during the hours of 7:00 to 9:00 a.m., 11:00 a.m. to 1:00 p.m., and 4:00 to 6:00 p.m. by Traffic Data, LLC and Jefferson County Roads and Transportation. The traffic count data is included in Appendix A. Peak hour turning movement traffic counts are shown in Figures 2A-2B.

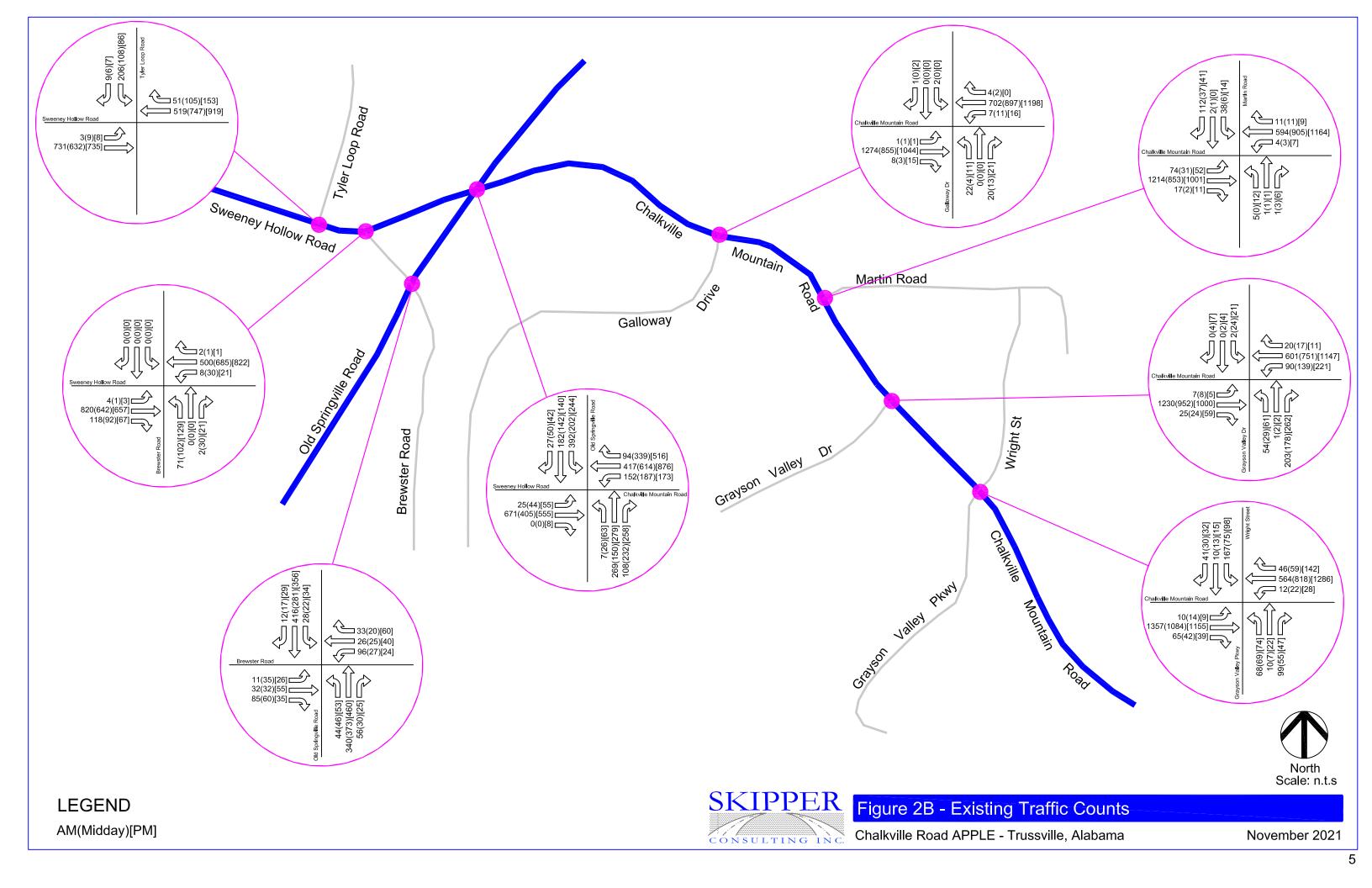
Machine Traffic Counts

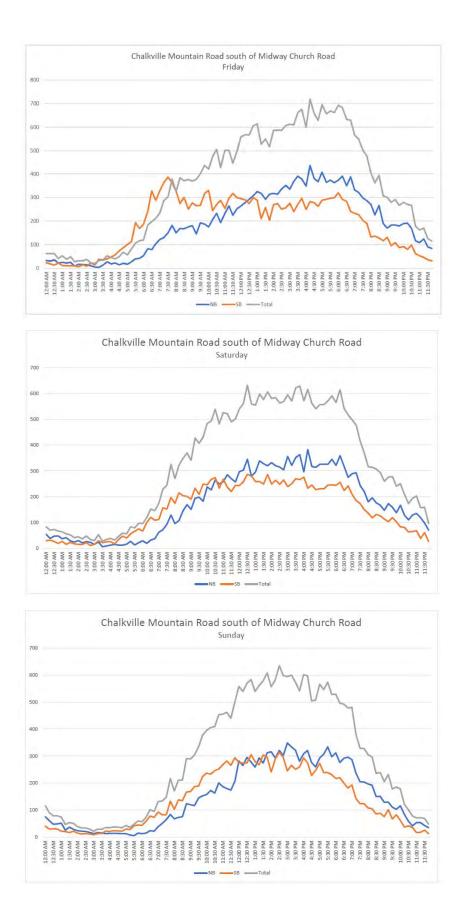
Existing machine traffic counts were performed at the following locations for seventy-two (72) continuous hours during the period Friday to Sunday, October 16 to 18, 2020 and October 23 to 25, 2020, by Traffic Data, LLC on behalf of Skipper Consulting, Inc.:

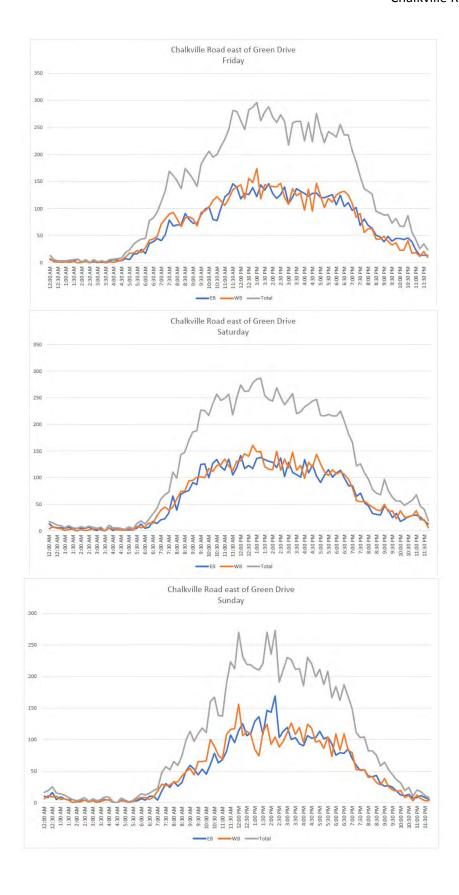
- Chalkville Mountain Road south of Midway Church Road
- Chalkville Road east of Green Drive

The machine traffic count data is included in Appendix B. Graphs of the traffic count data are shown on page 6.









Existing Traffic Signal Coordination Timings

Traffic signals on Chalkville Road/Chalkville Mountain Road from Green Drive to Martin Road are controlled by a time base coordination traffic signal system with GPS time clocks. The timing was developed and implements in 2015. The existing traffic signal coordination timings are shown in Table 1. The existing time clock is shown in Table 2. Note that the programming was developed for the intersection of Chalkville Mountain Road at Galloway Drive, but was never implemented due to incompatibility of the existing fire station preemption connector and the new controller.

Table 1
Existing Traffic Signal Coordination Timings

			Ġ	reen D	rive						
Pattern	DSO	Cycle	1	2	3	4	5	6	7	8	Offset
Off	1-1-1	120	0	93	0	27	15	78	0	27	10
Midday	2-1-1	120	0	90	0	30	15	75	0	30	100
Saturday	2-2-1	130	0	100	0	30	15	85	0	30	8
AM	3-1-1	150	0	125	0	25	17	108	0	25	41
PM	4-1-1	160	0	130	0	30	15	115	0	30	88
			I-5	9 NB R	amps	3				_	
Pattern	DSO	Cycle	1	2	3	4					Offset
Off	1-1-1	120	22	63	0	35					26
Midday	2-1-1	120	25	55	0	40					3
Saturday	2-2-1	130	22	63	0	45					30
AM	3-1-1	150	22	88	0	40					58
PM	4-1-1	160	24	51	0	85					141
			1-5	9 SB R	amps						
Pattern	DSO	Cycle	1	2	3	4					Offset
Off	1-1-1	120	25	70	0	25					14
Midday	2-1-1	120	25	68	0	27					117
Saturday	2-2-1	130	22	78	0	30					2
AM	3-1-1	150	25	90	0	35					43
PM	4-1-1	160	40	85	0	35					121
			S	ervice F	Road						
Pattern	DSO	Cycle	1	2	3	4	5	6	7	8	Offset
Off	1-1-1	120	20	70	0	30	15	75	0	30	119
Midday	2-1-1	120	20	68	0	32	15	73	0	32	106
Saturday	2-2-1	130	20	70	0	40	15	75	0	40	5
AM	3-1-1	150	15	95	0	40	22	88	0	40	32
PM	4-1-1	160	25	90	0	45	17	98	0	45	115

Table 1 (continued)
Existing Traffic Signal Coordination Timings

			Frank	k Johnse	on Dr	ive						
Pattern	DSO	Cycle	1	2	3	4	5	6	7	8	Offset	
Off	1-1-1	120	22	68	0	30	15	75	0	30	1	
Midday	2-1-1	120	25	60	0	35	15	70	0	35	103	
Saturday	2-2-1	130	25	70	0	35	15	80	0	35	126	
AM	3-1-1	150	18	102	0	30	15	105	0	30	17	
PM	4-1-1	160	35	85	0	40	15	105	0	40	122	
	Frank Street											
Pattern	DSO	Cycle	1	2	3	4	5	6	7	8	Offset	
Off	1-1-1	120	20	73	0	27	15	78	0	27	2	
Midday	2-1-1	120	20	73	0	27	15	78	0	27	106	
Saturday	2-2-1	130	20	75	0	35	15	80	0	35	124	
AM	3-1-1	150	15	113	0	22	15	113	0	22	2	
PM	4-1-1	160	15	110	0	35	22	103	0	35	131	
	Trussville Crossings Parkway											
Pattern	DSO	Cycle	1	2	3	4	5	6	7	8	Offset	
Off	1-1-1	120	25	48	25	22	15	58	25	22	0	
Midday	2-1-1	120	28	42	25	25	15	55	25	25	0	
Saturday	2-2-1	130	30	50	30	20	15	65	30	20	0	
AM	3-1-1	150	22	86	22	20	15	93	22	20	0	
PM	4-1-1	160	38	62	35	25	15	85	30	30	0	
		ı	Midw	ay Chu	rch R	oad						
Pattern	DSO	Cycle	1	2	3	4	5	6	7	8	Offset	
Off	1-1-1	120	15	75	0	30	20	70	0	30	119	
Midday	2-1-1	120	15	80	0	25	20	75	0	25	111	
Saturday	2-2-1	130	15	85	0	30	20	80	0	30	128	
AM	3-1-1	150	17	103	0	30	17	103	0	30	134	
PM	4-1-1	160	15	105	0	40	25	95	0	40	159	
		Wright St	reet/	'Grayso	n Va	lley P	arkw	ay				
Pattern	DSO	Cycle	1	2	3	4	5	6	7	8	Offset	
Off	1-1-1	90	0	65	0	25	0	65	0	25	0	
Midday	2-1-1	100	0	70	0	30	0	70	0	30	10	
Saturday	2-2-1	100	0	75	0	25	0	75	0	25	2	
AM	3-1-1	150	0	120	0	30	0	120	0	30	103	
PM	4-1-1	160	0	120	0	40	0	120	0	40	30	

Table 1 (continued)
Existing Traffic Signal Coordination Timings

	Grayson Valley Drive										
Pattern	DSO	Cycle	1	2	3	4	5	6	7	8	Offset
Off	1-1-1	90	20	45	0	25	0	65	0	25	0
Midday	2-1-1	100	20	58	0	22	0	78	0	22	0
Saturday	2-2-1	100	20	55	0	25	0	75	0	25	0
AM	3-1-1	150	20	95	0	35	0	115	0	35	94
PM	4-1-1	160	40	85	0	35	0	125	0	35	25
			٨	1artin F	Road						
Pattern	DSO	Cycle	1	2	3	4	5	6	7	8	Offset
Off	1-1-1	90	0	68	0	22	0	68	0	22	5
Midday	2-1-1	100	0	78	0	22	0	78	0	22	9
Saturday	2-2-1	100	0	78	0	22	0	78	0	22	97
AM	3-1-1	150	0	120	0	30	0	120	0	30	97
PM	4-1-1	160	0	130	0	30	0	130	0	30	39
			Ga	lloway	Drive	2					
Pattern	DSO	Cycle	1	2	3	4	5	6	7	8	Offset
Off	1-1-1	90	0	68	0	22	0	68	0	22	88
Midday	2-1-1	100	0	78	0	22	0	78	0	22	6
Saturday	2-2-1	100	0	78	0	22	0	78	0	22	0
AM	3-1-1	150	0	125	0	25	0	125	0	25	94
PM	4-1-1	160	0	130	0	30	0	130	0	30	38

Table 2
Existing Time Clock

Day(s) of Week	Time	Dial	Split	Offset	Pattern
	0000	0	0	4	Free
	0545	1	1	1	Off
	0645	3	1	1	AM
	0830	1	1	1	Off
Monday to Thursday	1115	2	1	1	Midday
mursday	1530	4	1	1	PM
	1815	2	1	1	Midday
	1945	1	1	1	Off
	2145	0	0	4	Free
	0000	0	0	4	Free
	0545	1	1	1	Off
	0645	3	1	1	AM
	0830	1	1	1	Off
Friday	1030	2	1	1	Midday
	1530	4	1	1	PM
	1915	2	1	1	Midday
	2045	1	1	1	Off
	2300	0	0	4	Free
	0000	0	0	4	Free
	0715	1	1	1	Off
	0915	2	1	1	Midday
Saturday	1145	2	2	1	Saturday
	1845	2	1	1	Midday
	2045	1	1	1	Off
	2300	0	0	4	Free
	0000	0	0	4	Free
	0745	1	1	1	Off
Sunday	1045	2	1	1	Midday
	1800	1	1	1	Off
	1945	0	0	4	Free

Existing Drive Times

Existing drive times were performed on Chalkville Road/Chalkville Mountain Road from Midway Church Road to Green Drive on Wednesday, October 14, 2020 during the a.m., midday, and p.m. peak hours of traffic flow. The existing drive time summary is shown in Table 3.

Table 3
Existing Drive Time Summary

Date	Direction	Start Time	End Time	Elapsed Time (HH:MM:SS)	Elapsed Time (sec)	Distance (miles)	Distance (feet)	Speed (ft/s)	Speed (mph)
				AM PEAK					
10/14/2020	southbound	7:00:17	7:02:04	0:01:47	107	1.14	6019	56	38
10/14/2020	southbound	7:08:20	7:10:02	0:01:42	102	1.13	5966	58	40
10/14/2020	southbound	7:14:20	7:16:57	0:02:37	157	1.14	6019	38	26
10/14/2020	southbound	7:21:49	7:24:22	0:02:33	153	1.14	6019	39	27
10/14/2020	southbound	7:43:18	7:45:03	0:01:45	105	1.14	6019	57	39
10/14/2020	southbound	7:49:22	7:51:46	0:02:24	144	1.13	5966	41	28
10/14/2020	southbound	8:14:44	8:16:41	0:01:57	117	1.14	6019	51	35
								average	33
10/14/2020	northbound	7:03:04	7:05:51	0:02:47	167	1.10	5808	35	24
10/14/2020	northbound	7:11:02	7:13:21	0:02:19	139	1.09	5755	41	28
10/14/2020	northbound	7:18:16	7:20:30	0:02:14	134	1.11	5861	44	30
10/14/2020	northbound	7:25:25	7:28:20	0:02:55	175	1.11	5861	33	23
10/14/2020	northbound	7:46:10	7:47:51	0:01:41	101	1.11	5861	58	39
10/14/2020	northbound	7:52:41	7:56:11	0:03:30	210	1.14	6019	29	19
10/14/2020	northbound	8:17:47	8:20:46	0:02:59	179	1.16	6125	34	23
								average	27
				MIDDAY PEAK					
10/14/2020	southbound	11:00:49	11:03:43	0:02:54	174	1.16	6125	35	24
10/14/2020	southbound	11:15:45	11:19:40	0:03:55	235	1.20	6336	27	18
10/14/2020	southbound	11:25:41	11:29:41	0:04:00	240	1.19	6283	26	18
10/14/2020	southbound	11:35:15	11:38:46	0:03:31	211	1.15	6072	29	20
10/14/2020	southbound	11:45:40	11:49:39	0:03:59	239	1.25	6600	28	19
								average	20
10/14/2020	northbound	11:07:33	11:10:31	0:02:58	178	1.08	5702	32	22
10/14/2020	northbound	11:20:38	11:24:05	0:03:27	207	1.10	5808	28	19
10/14/2020	northbound	11:30:33	11:33:42	0:03:09	189	1.10	5808	31	21
10/14/2020	northbound	11:39:56	11:43:37	0:03:41	221	1.16	6125	28	19
10/14/2020	northbound	11:50:23	11:55:46	0:05:23	323	1.15	6072	19	13
								average	19

Table 3 (continued)
Existing Drive Time Summary

Date	Direction	Start Time	End Time	Elapsed Time (HH:MM:SS)	Elapsed Time (sec)	Distance (miles)	Distance (feet)	Speed (ft/s)	Speed (mph)		
	PM PEAK										
10/14/2020	southbound	16:01:32	16:05:34	0:04:02	242	1.24	6547	27	18		
10/14/2020	southbound	16:15:41	16:18:29	0:02:48	168	1.16	6125	36	25		
10/14/2020	southbound	16:28:55	16:31:47	0:02:52	172	1.13	5966	35	24		
10/14/2020	southbound	16:39:48	16:42:37	0:02:49	169	1.14	6019	36	24		
10/14/2020	southbound	16:49:43	16:53:46	0:04:03	243	1.17	6178	25	17		
10/14/2020	southbound	17:01:05	17:03:51	0:02:46	166	1.14	6019	36	25		
								average	22		
10/14/2020	northbound	16:06:47	16:14:11	0:07:24	444	1.25	6600	15	10		
10/14/2020	northbound	16:19:28	16:27:24	0:07:56	476	1.36	7181	15	10		
10/14/2020	northbound	16:33:01	16:38:21	0:05:20	320	1.31	6917	22	15		
10/14/2020	northbound	16:43:31	16:48:15	0:04:44	284	1.17	6178	22	15		
10/14/2020	northbound	16:54:49	16:59:35	0:04:46	286	1.29	6811	24	16		
10/14/2020	northbound	17:04:58	17:10:02	0:05:04	304	1.19	6283	21	14		
								average	13		

Existing Peak Hour Intersection Capacity Analyses

Existing peak hour intersection capacity analyses were performed for the study intersections using the method of analysis included in the 2000 *Highway Capacity Manual*, published by the Transportation Research Board. Capacities are expressed as levels of service, and range from a level of service "A" (highest quality of service) to a level of service "F" (jammed conditions). As a general rule, operation at a level of service "D" or better is considered acceptable. Operation at a level of service "E" is considered operating at capacity. Operation at a level of service "F" is considered failing. The results of the peak hour intersection capacity analyses are included in Appendix C and are summarized in Table 4.

Table 4
Existing Intersection Capacity Analysis

			Level of	Service
Intersection	Approach	Movement	AM Peak	PM Peak
	Chalkville Road Eastbound	Left-Through-Right	А	А
Chalkville Road at Poplar Street/ Rockridge Avenue	Chalkville Road Westbound	Left-Through-Right	А	А
	Rockridge Avenue Northbound	Left-Through-Right	В	В
	Poplar Street Southbound	Left-Through-Right	С	В
		Overall intersection	В	Α
Chalkville Road at Green Drive/ Pineview Road	Chalkville Road	Left	Α	Α
	Eastbound	Through-Right	Α	Α
	Eastboullu	Overall approach	Α	Α
	Chalkville Road Westbound	Left-Through-Right	Α	В
	Pineview Road Northbound	Left-Through-Right	F	F
	Green Drive Southbound	Left-Through-Right	Е	D
		С	С	
	Chalkville Road Eastbound	Left	Α	А
Chalkville Road at	Chalkville Road Westbound	Left		А
Norrell Drive	Driveway Northbound	Left-Through-Right	Α	E
	Norrell Drive	Left	С	E
	Southbound	Through-Right	В	С
	Southbound	Overall approach	В	С
	Chalkville Road Eastbound	Left	А	А
Chalkville Road at Valley Road	Chalkville Road Westbound	Left	Α	А
	Valley Road Northbound	Right	В	В
	Driveway Southbound	Left-Through-Right	С	С

Table 4 (continued)
Existing Intersection Capacity Analysis

Intersection	Annragch	Movement	Level of	Service
mtersection	Approach	wovement	AM Peak	PM Peak
	Challerilla Dand	Left	Α	D
	Chalkville Road Eastbound	Through	Α	С
	Eastboullu	Overall approach	Α	С
Chalkville Road at I-59	Chalkville Road Westbound	Through-Right	В	D
Northbound Ramps	L CO Nouthhaum d Domana	Left	Е	D
	I-59 Northbound Ramps Northbound	Right	D	С
	Northbound	Overall approach	Ε	D
		Overall intersection	С	D
Chalkville Road at I-59	Chalkville Road Eastbound	Through-Right	D	F
	Chalkville Road	Left	D	С
	Westbound	Through	Α	В
Southbound Ramps	Westboulld	Overall approach	Α	В
Southboulla Namps	I-59 Southbound Ramps	Left	E	E
	Southbound	Right	E	F
	Southbound	Overall approach	Ε	Ε
		D	F	
	Chalkville Mountain Road	Left	В	С
	Eastbound	Through-Right	D	В
	Lastbourid	Overall approach	С	В
	Chalkville Mountain Road	Left	D	Α
	Westbound	Through-Right	С	Α
Chalkville Mountain	vvestbouriu	Overall approach	С	Α
Road at Service Road	Service Road	Left	D	E
Nodu at Jei vice Nodu	Northbound	Through-Right	F	E
	INOLUIDOUTIU	Overall approach	F	Ε
		Left	F	F
	Service Road Southbound	Through-Right	D	E
		Overall approach	F	Ε
		Overall intersection	F	В

Table 4 (continued)
Existing Intersection Capacity Analysis

la tama a ati a sa	A source well	Managara	Level of	Service
Intersection	Approach	Movement	AM Peak	PM Peak
		Left	А	Α
	Chalkville Mountain Road	Through	Α	А
	Eastbound	Right	Α	Α
		Overall approach	Α	Α
	Chalkville Mountain Road Westbound	Left	Α	Α
Chalkville Mountain		Through-Right	Α	Α
Road at Frank	Westbound	Overall approach	Α	Α
Johnston Drive	Frank Johnston Drive Northbound	Left-Through-Right	E	E
	Champing Canton	Left	E	F
	Shopping Center Driveway Southbound	Through-Right	E	E
	Driveway Southbound	Overall approach	Ε	F
		Overall intersection	Α	Α
		Left	А	А
	Chalkville Mountain Road	Through	Α	В
	Eastbound	Right	Α	В
		Overall approach	Α	В
	Chalkville Mountain Road	Left	В	Α
Chalkville Mountain	Westbound	Through-Right	Α	Α
Road at Frank Street	Westboulld	Overall approach	Α	Α
	Frank Street Northbound	Left-Through-Right	E	F
		Left		E
	Frank Street Southbound	Through-Right	E	E
		Overall approach	Ε	Ε
		Overall intersection	Α	В

Table 4 (continued)
Existing Intersection Capacity Analysis

	A	Marramant	Level of	Service
Intersection	Approach	Movement	AM Peak	PM Peak
		Left	E	Е
	Chalkville Mountain Road Eastbound	Through	В	С
		Right	В	D
		Overall approach	В	С
		Left	D	E
	Chalkville Mountain Road	Through	Α	В
Chalkville Mountain	Westbound	Right	В	С
Road at Trussville		Overall approach	В	С
Crossings Parkway/		Left	E	E
Trussville Crossings Boulevard	Trussville Crossings	Through	Е	Е
	Parkway Northbound	Right	E	Е
		Overall approach	Ε	Ε
	Trussville Crossings Boulevard Southbound	Left	E	E
		Through	E	E
		Right	E	Е
		Overall approach	Ε	Ε
		Overall intersection	С	D
		Left	E	E
	Chalkville Mountain Road	Through	Α	Α
	Eastbound	Right	Α	Α
		Overall approach	Α	Α
Chalkville Mountain		Left	Е	F
Road at Midway	Chalkville Mountain Road	Through	Α	Α
Church Road/	Westbound	Right	Α	Α
Trussville Crossings		Overall approach	Α	Α
Boulevard	Midway Church Road Northbound	Left-Through-Right	E	E
	Truccyillo Croccines	Left	E	E
	Trussville Crossings Boulevard Southbound	Through-Right	Е	E
	Boulevalu Soutiibouliu	Overall approach	Ε	Ε
		Overall intersection	Α	Α

Table 4 (continued)
Existing Intersection Capacity Analysis

Interception	Amaranah	Movement	Level of	Service
Intersection	Approach	Movement	AM Peak	PM Peak
	Chall the Manager David	Left	В	Α
	Chalkville Mountain Road Eastbound	Through-Right	С	Α
	Eastbound	Overall approach	С	Α
	Challerilla Marratain Dand	Left	В	Α
Clastin illa Manustri	Chalkville Mountain Road Westbound	Through-Right	В	Α
Chalkville Mountain	vvestbound	Overall approach	В	Α
Road at Wright	Craycon Valley Barkway	Left	D	E
Street/Grayson Valley Parkway	Grayson Valley Parkway Northbound	Through-Right	D	E
Parkway	Northbound	Overall approach	D	Ε
	Muight Ctus at	Left	D	F
	Wright Street Southbound	Through	С	Е
	Southbound	Overall approach	D	F
		Overall intersection	С	В
	Chalkville Mountain Road Eastbound	Left	Α	В
		Through-Right	Α	В
		Overall approach	Α	В
	Chalkville Mountain Road	Left	А	В
Chalkville Mountain		Through-Right	А	В
Road at Grayson	Westbound	Overall approach	Α	В
Valley Drive	Coordan Vallari Daire	Left	Е	D
	Grayson Valley Drive	Through-Right	Е	D
	Northbound	Overall approach	Е	D
	Driveway Southbound	Left-Through-Right	Е	D
		Overall intersection	В	В
	Challavilla Marratain Deset	Left	Α	Α
	Chalkville Mountain Road	Through-Right	Α	Α
	Eastbound	Overall approach	Α	Α
	Challavilla Marvataia Decel	Left	Α	Α
Challed to Marriage 1	Chalkville Mountain Road	Through-Right	Α	Α
Chalkville Mountain	Westbound	Overall approach	Α	Α
Road at Martin Road	Driveway Northbound	Left-Through-Right	E	Е
	Martin Road Southbound	Left	E	Е
		Through-Right	Е	Е
		Overall approach	Ε	Е
		Overall intersection	Α	Α

Table 4 (continued)
Existing Intersection Capacity Analysis

			Level of	Service
Intersection	Approach	Movement	AM Peak	PM Peak
	Chalkville Mountain Road Eastbound	Left-Through-Right	А	А
	Chalkville Mountain Road	Left	Α	Α
Chalkville Mountain	Westbound	Through-Right	Α	Α
Road at Galloway	Westbound	Overall approach	Α	Α
Drive	Galloway Drive Northbound	Left- Through-Right	E	E
	Fire Station Driveway Southbound	Left- Through-Right	E	E
		Overall intersection	Α	Α
	Sweeney Hollow Road	Left	В	С
	Eastbound	Through-Right	С	В
	Eastboalla	Overall approach	С	В
	Chalkville Mountain Road Westbound	Left	С	В
		Through	С	E
Chalkville Mountain		Right	В	В
Road/Sweeney		Overall approach	С	D
Hollow Road at Old		Left	С	С
Springville Road	Old Springville Road	Through	С	D
Springvine Rodu	Northbound	Right	С	С
		Overall approach	С	D
	Old Springville Road	Left	F	F
	Southbound	Through-Right	В	С
	Southbound	Overall approach	Ε	Ε
		Overall intersection	С	D
	Sweeney Hollow Road	Left	С	D
	Eastbound	Through-Right	Α	Α
	Lastboulla	Overall approach	Α	Α
	Sweeney Hollow Road	Left	В	В
Sweeney Hollow Road	Westbound	Through-Right	В	E
at Brewster Road	vvestadunu	Overall approach	В	Ε
	Brewster Road Northbound	Left-Through-Right	С	С
	Driveway Southbound	Left- Through-Right	Α	Α
		Overall intersection	В	С

Table 4 (continued) Existing Intersection Capacity Analysis

Interception	Annuanah	Management	Level of Service		
Intersection	Approach	Movement	AM Peak	PM Peak	
	Sweepey Hellow Boad	Left	Α	В	
	Sweeney Hollow Road Eastbound	Through	С	С	
	Lastbound	Overall approach	С	С	
Sweeney Hollow Road	Sweeney Hollow Road	Through	Α	Α	
· ·	Westbound	Right	Α	Α	
at Tyler Loop Road	vvestbound	Overall approach	Α	Α	
	Tyler Loop Road Southbound	Left-Right	С	С	
		В	В		
	Brewster Road Eastbound	Left- Through-Right	В	В	
	Brewster Road Westbound	Left- Through-Right	В	В	
Old Coning will a Dand	Old Companilla Dand	Left	А	Α	
Old Springville Road at Brewster Road	Old Springville Road Northbound	Through-Right	В	Α	
at Brewster Road	Northbound	Overall approach	В	Α	
	Old Springvilla Boad	Left	А	Α	
	Old Springville Road Southbound	Through-Right	В	Α	
	Southbound	Overall approach	В	Α	
		Overall intersection	В	Α	

FUTURE 2045 CONDITIONS ANALYSIS

Planned and Programmed Roadway Improvements

The current Transportation Improvement Program (TIP) FY 2020-2023, the 2045 Regional Transportation Plan (fiscally-constrained) and local roadway plans were reviewed for projects within the study area. Table 5 lists all planned and programmed projects within the study area through 2045.

Table 5
Planned and Programmed Roadway Improvements

FY2020-2023 Transportation Improvement Program									
Roadway	Lir	nits	Scope	Phase	FY	Funds	Comments		
Chalkville Road	at Green Drive	/Pineview Road	Signalization	UT	2019	\$960,000	portion of Jefco TOPICS 7 - complete		
				CN	2023	\$6.56 million			
I-59	I-459	Chalkville Road	Widening 4- 6 lanes	CN	2021	\$5 million			
I-59	Chalkville Road	St. Clair County Line	Pavement Rehab	PE	2019	\$300,000	under construction		
		2045 Regio	nal Transport	ation Pla	n				
Roadway	Lir	nits	Scope	Phase	FY	Funds	Comments		
Birmingham Northern Beltline	State Route 75	I-59	6 lane freeway	CN	2035	\$534.7 million			
I-59	I-459	Chalkville Road	Widening 4- 6 lanes	CN	2024	\$5 million	in current TIP		
I-59	I-459	Chalkville Road	Widening 6- 8 lanes	CN	2030	\$44.8 million			
			Local Projects	-	-				
Roadway	Limits		Scope	Phase	FY	Funds	Comments		
Chalkville Road	Valley Road	Boulder Drive	Widening – 1 lane	CN	2024	unknown	Under design by Jefferson County		

The Jefferson County project on Chalkville Road proposes to widen Chalkville Road from a two-lane to a three-lane cross section from Green Drive/Pineview Road to Boulder Drive and add one westbound through lane from Green Drive/Pineview Road to the beginning of the five lane section near Valley Road.

Historic Traffic Growth

An analysis was performed to determine the historical rate of traffic growth on roadways with the study area. Traffic count information from the Alabama Department of Transportation was obtained for the years 2014 through 2020 for Chalkville Road/Chalkville Mountain Road and I-59 in the vicinity of the study area. This information was analyzed to determine the rate of traffic growth in the area. The traffic count information and analysis is shown in Table 6.

Table 6
Historical Traffic Growth

	Chalkville Road/Chalkville Mountain Road				I-59							
Year		f Midway th Road	west	of I-59	east	of I-59		of Poplar treet	_	f Chalkville oad	-	f Chalkville Poad
	ADT	Per Year Growth	ADT	Per Year Growth	ADT	Per Year Growth	ADT	Per Year Growth	ADT	Per Year Growth	ADT	Per Year Growth
2014	28120		38470						60320		41130	
2015	30590	8.8%	38470	0.0%	16490		12430		61880	2.6%	41010	-0.3%
2016	31340	2.5%	39410	2.4%	16890	2.4%	12730	2.4%	63060	1.9%	41790	1.9%
2017	30850	-1.6%	39460	0.1%	16650	-1.4%	12730	0.0%	64120	1.7%	42450	1.6%
2018	33057	7.2%	41129	4.2%	16000	-3.9%	13404	5.3%	64906	1.2%	45259	6.6%
2019	34195	3.4%	42545	3.4%	16551	3.4%	13866	3.4%	64618	-0.4%	48473	7.1%
2020	32124	-6.1%	39969	-6.1%	15549	-6.1%	13026	-6.1%	57307	-11.3%	46831	-3.4%
average		2.4%		0.7%		-1.1%		1.0%		-0.7%		2.3%
overall		2.4%		0.6%		-1.1%		1.0%		-0.8%%		2.3%
	Average of all count stations: +0.8% per year								-			
			Av	erage of the	overall ra	ite at all cou	nt station	s: +0.7% per	year			

Regional Transportation Demand Model

The regional transportation demand model for the Birmingham area (maintained by the Regional Planning Commission of Greater Birmingham) was used to estimate future growth in traffic in the study area. Base year 2015 calibrated traffic volumes were compared to future year 2045 traffic forecasts for Chalkville Road and Chalkville Mountain Road. The output traffic volumes from the transportation demand model are shown in Figure 3. An analysis of the projected traffic growth in the study area based on the transportation demand model is included in Table 7.

It should be noted that the regional traffic demand model includes a segment of the Birmingham Northern Belltine from I-59 to I-65. This project has a tendency to decrease the growth in traffic volumes on Chalkville Mountain Road north of I-59.

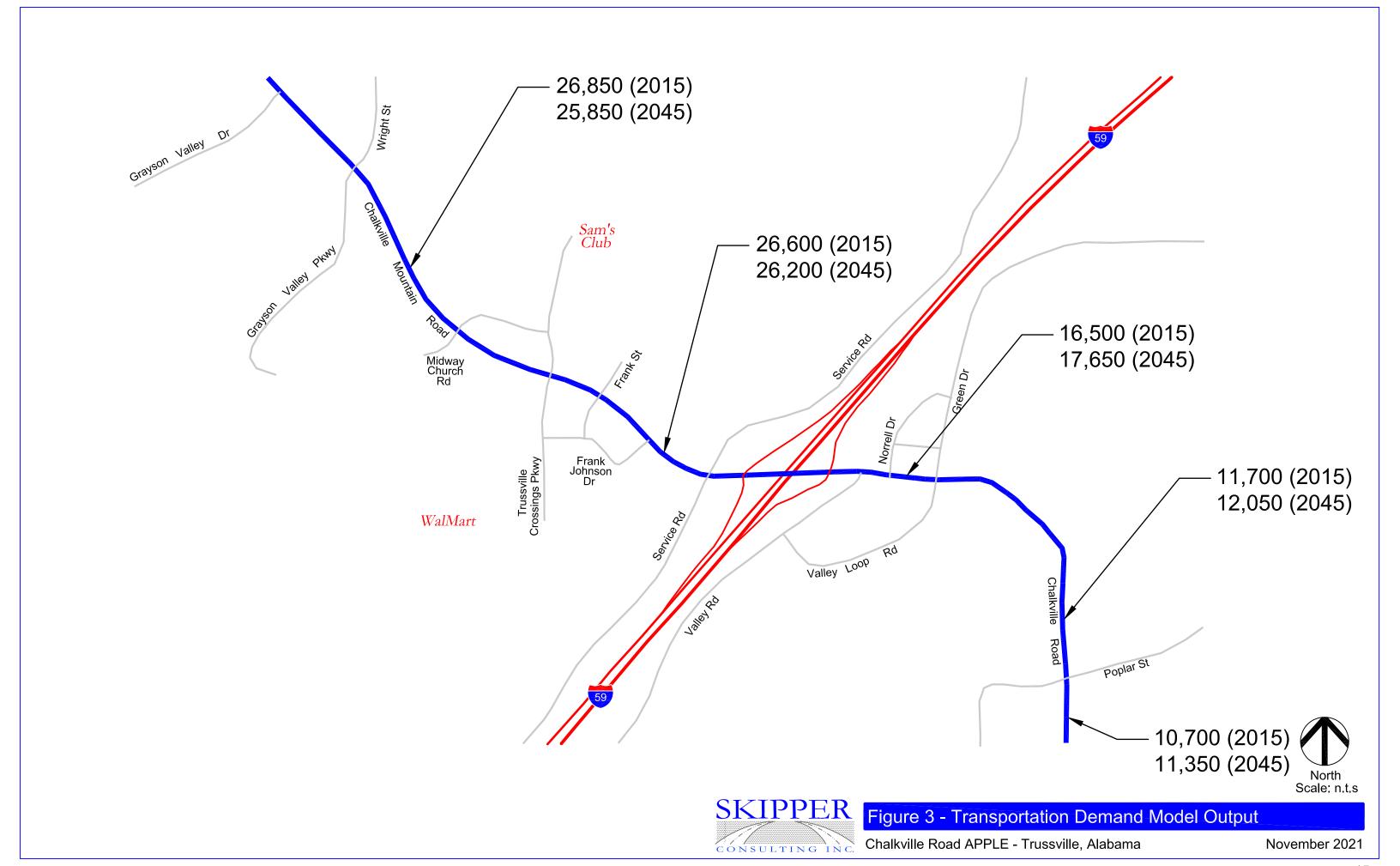
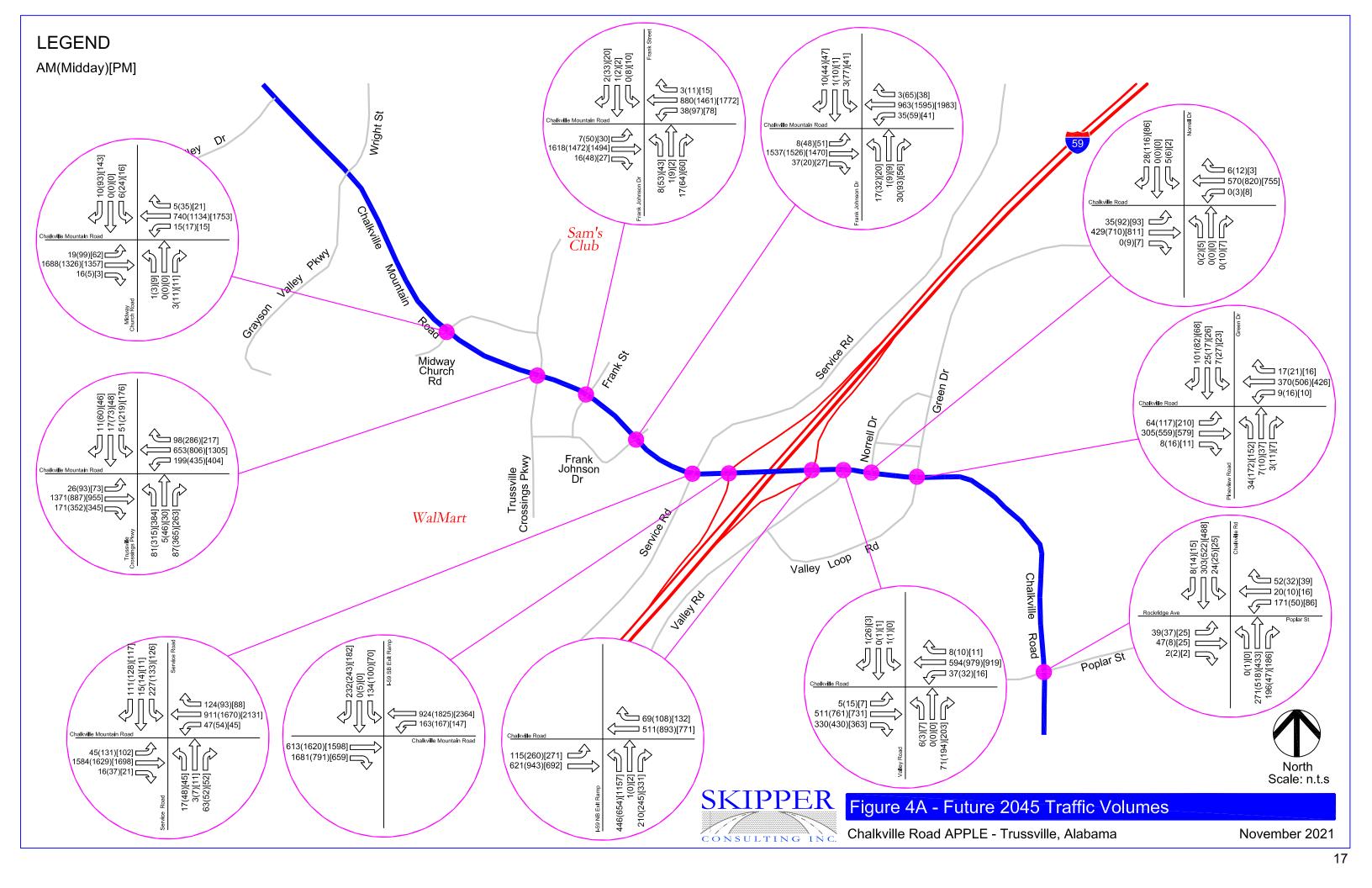


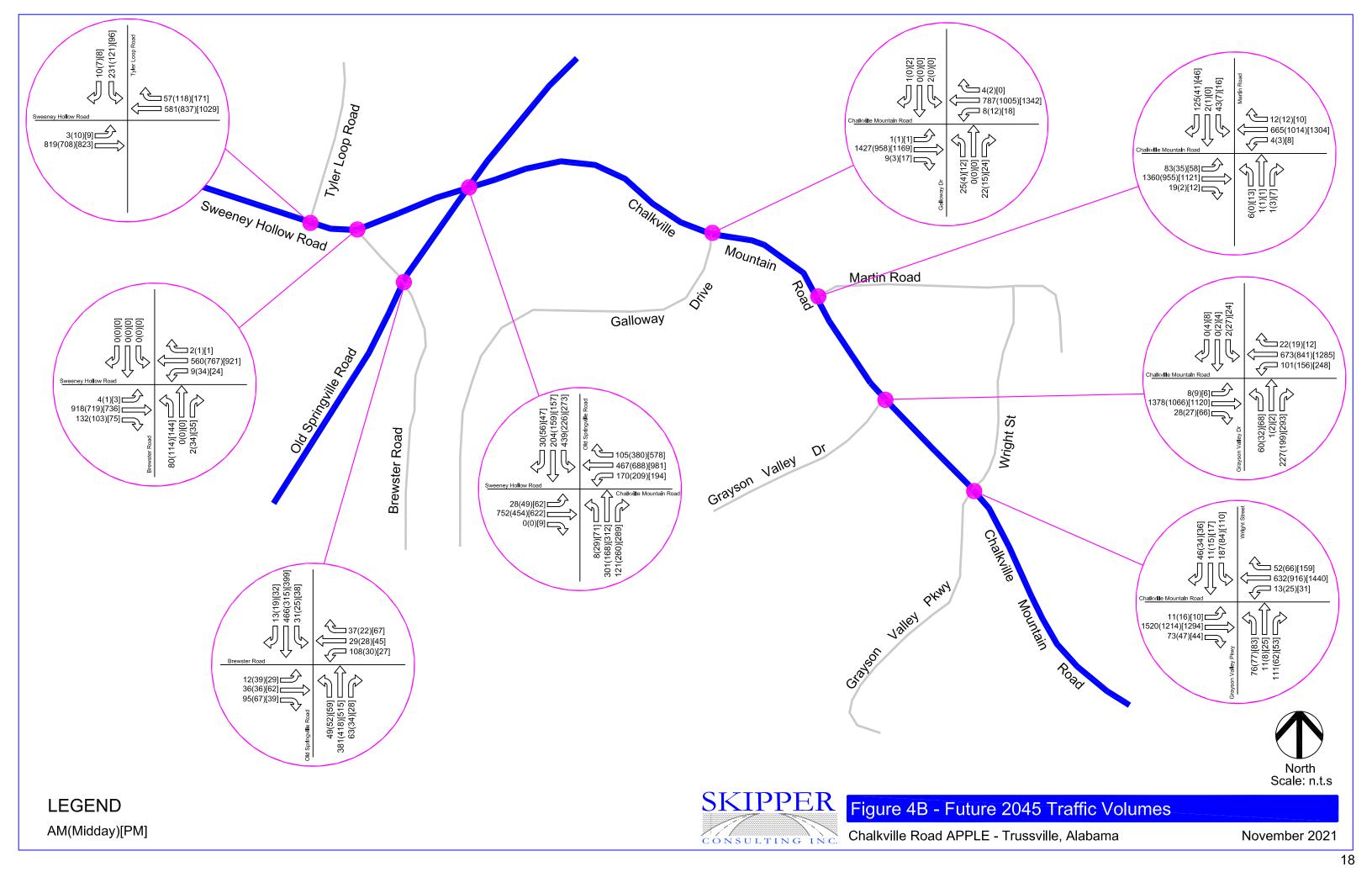
Table 7
Transportation Demand Model Growth

Roadway	Location	2015 Calibrated Volume	2045 Forecasted Volume	Percent Growth Per Year
Chalkville	At west end of study area	26,850	25,850	-0.0%
Mountain Road	North of I-59	26,600	26,200	-0.1%
	South of I-59	16,500	17,650	+0.2%
Chalkville Road	North of Poplar Street	11,700	12,050	+0.1%
	South of Poplar Street	10,700	11,350	+0.2%

Traffic Growth Forecast

Combining the results of the historical traffic growth and the traffic growth projected by the regional transportation demand model, a per year growth rate in traffic of +0.5% per year was calculated. The +0.5% per year historical traffic growth rate was applied to existing traffic counts to develop future year 2045 traffic volumes. The anticipated future traffic volumes in the year 2045 are shown in Figures 4A and 4B.





Future 2045 Peak Hour Intersection Capacity Analysis

Peak hour intersection capacity analyses were performed for future year 2045 traffic conditions. The results are included in Appendix D and are summarized in Table 8. Note that the Future 2045 intersection capacity analyses include optimized signal timings but do not include any roadway improvements.

Table 8
Future 2045 Intersection Capacity Analysis

linkous askia is	Annessah	Mouserset	Level of Service		
Intersection	Approach	Movement	AM Peak	PM Peak	
Chalkville Road at	Chalkville Road Eastbound	Left-Through-Right	В	А	
	Chalkville Road Westbound	Left-Through-Right	Α	А	
Poplar Street/ Rockridge Avenue	Rockridge Avenue Northbound	Left-Through-Right	В	В	
	Poplar Street Southbound	Left-Through-Right	С	В	
		Overall intersection	В	В	
	Chalkville Road	Left	Α	В	
	Eastbound	Through-Right	Α	В	
	Eastboullu	Overall approach	Α	В	
Chalkville Road at Green Drive/ Pineview	Chalkville Road Westbound	Left-Through-Right	Α	С	
Road	Pineview Road Northbound	Left-Through-Right	F	F	
	Green Drive Southbound Left-Through-Right		Е	D	
		Overall intersection	С	С	
	Chalkville Road Eastbound	Left	А	В	
Chalkville Road at	Chalkville Road Westbound	Left		А	
Norrell Drive	Driveway Northbound	Left-Through-Right	Α	F	
	Norrell Drive	Left	D	F	
	Southbound	Through-Right	В	С	
	Journbound	Overall approach	С	С	
	Chalkville Road Eastbound	Left	Α	В	
Chalkville Road at Valley Road	Chalkville Road Westbound	Left	В	А	
	Valley Road Northbound	Right	С	В	
	Driveway Southbound	Left-Through-Right	D	D	

Table 8 (continued) Future 2045 Intersection Capacity Analysis

			Level of	Service
Intersection	Approach	Movement	AM Peak	PM Peak
	Chalkville Road	Left	Α	F
	Eastbound	Through	Α	С
	Edstboulld	Overall approach	Α	D
Chalkville Road at I-59	Chalkville Road Westbound	Through-Right	В	D
Northbound Ramps	LEO Northhound Damns	Left	E	D
	I-59 Northbound Ramps Northbound	Right	D	С
	Northbound	Overall approach	Ε	D
		Overall intersection	С	D
	Chalkville Road Eastbound	Through-Right	F	F
	Chalkville Road Westbound	Left	D	С
Challadila Dandati FO		Through	Α	В
Chalkville Road at I-59		Overall approach	Α	В
Southbound Ramps	I-59 Southbound Ramps Southbound	Left	E	E
		Right	E	F
		Overall approach	Ε	Ε
		F	F	
	Chalkville Mountain Road	Left	Α	D
	Eastbound	Through-Right	С	В
	Lastbound	Overall approach	С	С
	Chalkville Mountain Road	Left	D	Α
	Westbound	Through-Right	С	Α
Chalkville Mountain	vvestbourid	Overall approach	С	Α
Road at Service Road	Service Road	Left	D	E
Nodu at Sci vice Nodu	Northbound	Through-Right	D	E
	Northboand	Overall approach	D	Ε
		Left	F	F
	Service Road Southbound	Through-Right	D	E
		Overall approach	Ε	E
		Overall intersection	С	В

Table 8 (continued) Future 2045 Intersection Capacity Analysis

latana atian	Annuanah	Managara	Level of	Service
Intersection	Approach	Movement	AM Peak	PM Peak
		Left	А	Α
	Chalkville Mountain Road	Through	А	А
	Eastbound	Right	Α	Α
		Overall approach	Α	Α
	Chalkville Mountain Road	Left	Α	Α
Chalkville Mountain	Westbound	Through-Right	Α	Α
Road at Frank	Westbound	Overall approach	Α	Α
Johnston Drive	Frank Johnston Drive Northbound	Through-Right A Overall approach A on Drive und Left-Through-Right E Center Through-Right E	E	
	Shopping Center Driveway Southbound	Left	E	F
		Through-Right	E	E
	Driveway Southbound	Overall approach	Ε	F
		Overall intersection	Α	В
		Left	Α	А
	Chalkville Mountain Road	Through	Α	В
	Eastbound	Right	Α	В
		Overall approach	Α	В
	Chalkville Mountain Road	Left	С	Α
Chalkville Mountain	Westbound	Through-Right	Α	А
Road at Frank Street	vvestbound	Overall approach	Α	Α
	Frank Street Northbound	Left-Through-Right	E	F
		Left		E
	Frank Street Southbound	Through-Right	E	E
		Overall approach	Ε	Ε
		Overall intersection	Α	В

Table 8 (continued)
Future 2045 Intersection Capacity Analysis

			Level of	Service
Intersection	Approach	Movement	AM Peak	PM Peak
		Left	Е	Е
	Chalkville Mountain Road	Through	В	С
	Eastbound	Right	А	С
		Overall approach	В	С
		Left	D	E
	Chalkville Mountain Road	Through	Α	В
Chalkville Mountain	Westbound	Right	В	С
Road at Trussville		Overall approach	В	С
Crossings Parkway/		Left	E	E
Trussville Crossings	Trussville Crossings	Through	E	E
Boulevard	Parkway Northbound	Right	E	E
		Overall approach	Ε	Ε
	Trussville Crossings Boulevard Southbound	Left	E	E
		Through	Ε	E
		Right	E	E
		Overall approach	Ε	Ε
		Overall intersection	С	D
		Left	E	Е
	Chalkville Mountain Road	Through	Α	Α
	Eastbound	Right	Α	Α
		Overall approach	Α	Α
Chalkville Mountain		Left	E	F
Road at Midway	Chalkville Mountain Road	Through	Α	А
Church Road/	Westbound	Right	Α	Α
Trussville Crossings		Overall approach	Α	Α
Boulevard	Midway Church Road Northbound	Left-Through-Right	E	E
	Trussville Crossings	Left	Е	E
	Boulevard Southbound	Through-Right	E	E
	Douieval a Southboulla	Overall approach	Ε	Ε
		Overall intersection	Α	Α

Table 8 (continued) Future 2045 Intersection Capacity Analysis

Interception	A	Mayamant	Level of	Service
Intersection	Approach			PM Peak
		Left	А	Α
	Chalkville Mountain Road Eastbound	Through-Right	С	А
	Eastboullu	Overall approach	С	Α
	Chalkville Mountain Road	Left	В	Α
Chalkville Mountain	Westbound	Through-Right	В	Α
Road at Wright	westbound	Overall approach	В	Α
Street/Grayson Valley	Grayson Valley Parkway	Left	D	Е
Parkway	Northbound	Through-Right	D	Е
raikway	Northboaria	Overall approach	D	Ε
	Wright Stroot	Left	D	F
	Wright Street Southbound	Through	D	Е
	Journbound	Overall approach	D	F
		Overall intersection	С	В
	Chalkville Mountain Road Eastbound	Left	Α	В
		Through-Right	В	С
		Overall approach	В	С
	Chalkville Mountain Road Westbound	Left	В	D
Chalkville Mountain		Through-Right	Α	В
Road at Grayson	Westbound	Overall approach	D D D C A B B A A A E E E E E E B B	В
Valley Drive	Grayson Valley Drive	Left	E	D
	Northbound	Through-Right	E	D
	Northboand	Overall approach	E	D
	Driveway Southbound	Left-Through-Right	E	D
		Overall intersection	В	С
	Chalkville Mountain Road	Left	Α	Α
	Eastbound	Through-Right	Α	Α
	Lastbuttu	Overall approach	Α	Α
	Chalkville Mountain Road	Left	Α	Α
Challeville Mountain	Westbound	Through-Right	Α	Α
Chalkville Mountain Road at Martin Road	westbound	Overall approach	Α	Α
Noau at Maltill Noau	Driveway Northbound	Left-Through-Right	E	E
		Left	Е	E
	Martin Road Southbound	Through-Right	E	E
		Overall approach	Ε	Ε
		Overall intersection	Α	Α

Table 8 (continued) Future 2045 Intersection Capacity Analysis

	A	0.4	Level of Service	
Intersection	Approach	Movement	AM Peak	PM Peak
	Chalkville Mountain Road Eastbound	Left-Through-Right	А	А
	Chalkville Mountain Road	Left	Α	А
Chalkville Mountain	Westbound	Through-Right	Α	А
Road at Galloway	vvestbound	Overall approach	Α	Α
Drive	Galloway Drive Northbound	Left- Through-Right	E	E
	Fire Station Driveway Southbound	Left- Through-Right	E	E
		Overall intersection	Α	Α
	Swoonoy Hollow Pood	Left	С	С
	Sweeney Hollow Road Eastbound	Through-Right	С	В
	Lastboullu	Overall approach Left Through	С	В
		Left	D	В
	Chalkville Mountain Road	Through Right Overall approach	С	E
Chalkville Mountain	Westbound		В	В
Road/Sweeney			С	D
Hollow Road at Old		Left	С	D
Springville Road	Old Springville Road	Through	D	F
Springville Rodu	Northbound	Right	С	D
		Overall approach	D	E
	Old Springville Road	Left	Е	F
	Southbound	Through-Right	В	D
	Southbound	Overall approach	D	Ε
		Overall intersection	D	D
	Sweeney Hollow Road	Left	D	D
	Eastbound	Through-Right	Α	Α
	Lastboullu	Overall approach	Α	Α
	Sweeney Hollow Road	Left	В	В
Sweeney Hollow Road	Westbound	Through-Right	В	E
at Brewster Road	vvestboullu	Overall approach	В	Е
	Brewster Road Northbound	Left-Through-Right	С	D
	Driveway Southbound	Left- Through-Right	Α	Α
		Overall intersection	В	D

Table 8 (continued) Future 2045 Intersection Capacity Analysis

Intonochion	Annuarah	Mayamant	Level of Service	
Intersection	Approach	Movement	AM Peak	PM Peak
	Cwaanay Hallay Baad	Left	Α	В
	Sweeney Hollow Road Eastbound	Through	С	С
	Lastboullu	Overall approach	С	С
Sweeney Hollow Road	Sweeney Hollow Road	Through	Α	А
at Tyler Loop Road	Westbound	Right	Α	Α
at Tyler Loop Road	vvestbound	Overall approach	Α	Α
	Tyler Loop Road Southbound	Left-Right	D	D
		Overall intersection	В	В
	Brewster Road Eastbound	Left- Through-Right	В	В
	Brewster Road Westbound	Left- Through-Right	С	В
Old Continue tille Deed	Old Code at the Board	Left	А	Α
Old Springville Road at Brewster Road	Old Springville Road Northbound	Through-Right	В	Α
at brewster Road	Northbourid	Overall approach	В	Α
	Old Springville Road	Left	A	А
	Southbound	Through-Right	В	Α
	Journbound	Overall approach	В	Α
		Overall intersection	В	Α

ANALYSIS OF IMPROVEMENTS

Improvement Concepts

The following improvement concepts were developed and tested:

- a third southbound through lane on Chalkville Mountain Road north of I-59 ending as an exclusive right turn onto the I-59 southbound entrance ramp
- a second northbound through lane on Chalkville Road south of I-59 beginning near Boulder Circle
- a double left turn lane on Service Road westbound and modification of the signal phasing to allow a protected left turn phase from Service Road southbound onto Chalkville Mountain Road
- a right turn from Chalkville Road northbound onto the I-59 northbound entrance ramp
- an exclusive left turn lane on Pineview Road and modification of the signal phasing to allow a protectedpermissive left turn from Pineview Road onto Chalkville Road

Drawings of the proposed improvements are included in Figure 5A-5N.

Future 2045 Peak Hour Intersection Capacity Analysis with Improvements

Peak hour intersection capacity analyses were performed for future year 2045 traffic conditions. The results are included in Appendix E and are summarized in Table 9.

Table 9
Future 2045 Intersection Capacity Analysis with Improvements

	. ,		Level of Service	
Intersection	Approach	Movement	AM Peak	PM Peak
	Chalkville Road Eastbound	Left-Through-Right	В	А
Chalkville Road at	Chalkville Road Westbound	Left-Through-Right	Α	А
Poplar Street/ Rockridge Avenue	Rockridge Avenue Northbound	Left-Through-Right	В	В
	Poplar Street Southbound	Left-Through-Right	С	В
		Overall intersection	В	В
	Chalkville Road	Left	Α	В
	Eastbound	Through-Right	A	В
		Overall approach	A A	В
Chalkville Road at Green Drive/ Pineview	Chalkville Road Westbound	Left-Through-Right	Α	В
Road	Pineview Road	Left	E	E
Noau	Northbound	Through-Right	D	
	Northboaria	Through-Right Overall approach	E	D
	Green Drive Southbound	Left-Through-Right	E	F
		Overall intersection	В	С
	Chalkville Road Eastbound	Left	Α	А
Chalkville Road at	Chalkville Road Westbound	Left		А
Norrell Drive	Driveway Northbound	Left-Through-Right	Α	D
	Norrell Drive	Left	D	F
	Southbound	Through-Right	В	В
	Journbound	Overall approach	В	В
	Chalkville Road Eastbound	Left	А	А
Chalkville Road at Valley Road	Chalkville Road Westbound	Left	В	А
	Valley Road Northbound	Right	С	В
	Driveway Southbound	Left-Through-Right	D	С

Table 9 (continued)
Future 2045 Intersection Capacity Analysis with Improvements

Intonocation.	atomorph Manage		Level of	Service
Intersection	Approach	Movement	AM Peak	PM Peak
	Challerilla Dand	Left	А	Е
	Chalkville Road Eastbound	Through	А	С
	Eastboulla	Overall approach	Α	С
	Chalkville Road	Through	В	D
Chalkville Road at I-59	Westbound	Right	С	С
Northbound Ramps	Westbound	Overall approach	В	D
	I-59 Northbound Ramps	Left	E	D
	Northbound	Right	D	С
	Northbourid	Overall approach	Ε	D
		Overall intersection	AM Peak A A B C B E D	D
	61 11 11 6 1	Through	В	D
	Chalkville Road	Right	F	D
	Eastbound	Overall approach	F	D
		Left	Α	С
Chalkville Road at I-59		Through	Α	В
Southbound Ramps	d Ramps I-59 Southbound Ramps	Overall approach	Α	В
	1.50.6. 11.1	Left	E	Е
	Southbound Ramps Southbound	Right	E	F
	Southbound	Overall approach	Ε	Ε
		Overall intersection	F	С
	Challerilla Marrataia Dand	Left	А	D
	Chalkville Mountain Road Eastbound	Through-Right	В	С
	Eastboulla	Overall approach	В	С
	Chalkville Mountain Road	Left	Α	В
	Westbound	Through-Right	Α	С
Chalkville Mountain	westbound	Overall approach	Α	С
Road at Service Road	Service Road	Left	E	F
Noau at service Rodu	Northbound	Through-Right	E	Е
	ivoi tribouriu	Overall approach	E	Ε
		Left	E	E
	Service Road Southbound	Through-Right	D	D
		Overall approach	E	Ε
		Overall intersection	В	С

Table 9 (continued)
Future 2045 Intersection Capacity Analysis with improvements

lutamatian.			Level of Service	
Intersection	Approach	Movement	AM Peak	PM Peak
	Chalkville Mountain Road	Left	А	В
	Eastbound	Through-Right	Α	Α
	EdstDoulld	Overall approach	Α	Α
	Chalkville Mountain Road	Left	Α	Α
Chalkville Mountain	Westbound	Through-Right	Α	В
Road at Frank	westbould	Overall approach	Α	В
Johnston Drive	Frank Johnston Drive Northbound	Left-Through-Right	Е	Е
	Character Control	Left	Е	F
	Shopping Center Driveway Southbound	Through-Right E E	E	
	Driveway Southbound	Overall approach E		F
		Overall intersection	Α	В
	Chalkville Mountain Road	Left	Α	Α
	Eastbound	Through-Right	Α	В
	Eastboullu	Overall approach	Α	В
	Chalkville Mountain Road	Left	Α	Α
Chalkville Mountain	Westbound	Through-Right	Α	Α
Road at Frank Street	Westboulld	Overall approach	Α	Α
Noau at Frank Street	Frank Street Northbound	Left-Through-Right	E	F
		Left		E
	Frank Street Southbound	Through-Right	Е	E
		Overall approach	Ε	Ε
		Overall intersection	Α	В

Table 9 (continued)
Future 2045 Intersection Capacity Analysis with improvements

Internation	Annyoneh	Mayamant	Level of	Service	
Intersection	Approach	Right Overall approach Left Through Right Overall approach Right Overall intersection Left Through Right Right Right Right Right Right Right	AM Peak	PM Peak	
		Left	E	E	
	Chalkville Mountain Road	Through	В	С	
	Eastbound	Right	А	С	
		Overall approach	В	С	
		Left	Е	E	
	Chalkville Mountain Road	Through	В	С	
Chalkville Mountain	Westbound	Right	С	Е	
Road at Trussville		Overall approach	С	D	
Crossings Parkway/		Left	E	E	
Trussville Crossings	Trussville Crossings	Through	E	E	
Boulevard	Parkway Northbound	Right	E	E	
		Overall approach	Ε		
		Left	E	Е	
	Trussville Crossings	Through	Е		
	Boulevard Southbound	Right E			
		Overall approach	Ε	Ε	
		Overall intersection	С	D	
	Chalkville Mountain Road	Through	Α		
	Eastbound	Right	Α	Α	
		Overall approach	Α	Α	
Chalkville Mountain		Left	Е	F	
Road at Midway	Chalkville Mountain Road	Through	Α	А	
Church Road/	Westbound	Right	Α	Α	
Trussville Crossings		Overall approach	Α	Α	
Boulevard	Midway Church Road Northbound	Left-Through-Right	E	E	
	Trussville Crossings	Left	E	E	
	Boulevard Southbound	Through-Right	Е	E	
	Douieval a Southboulla	Overall approach	Ε	Е	
		Overall intersection	Α	Α	

Table 9 (continued)
Future 2045 Intersection Capacity Analysis with Improvements

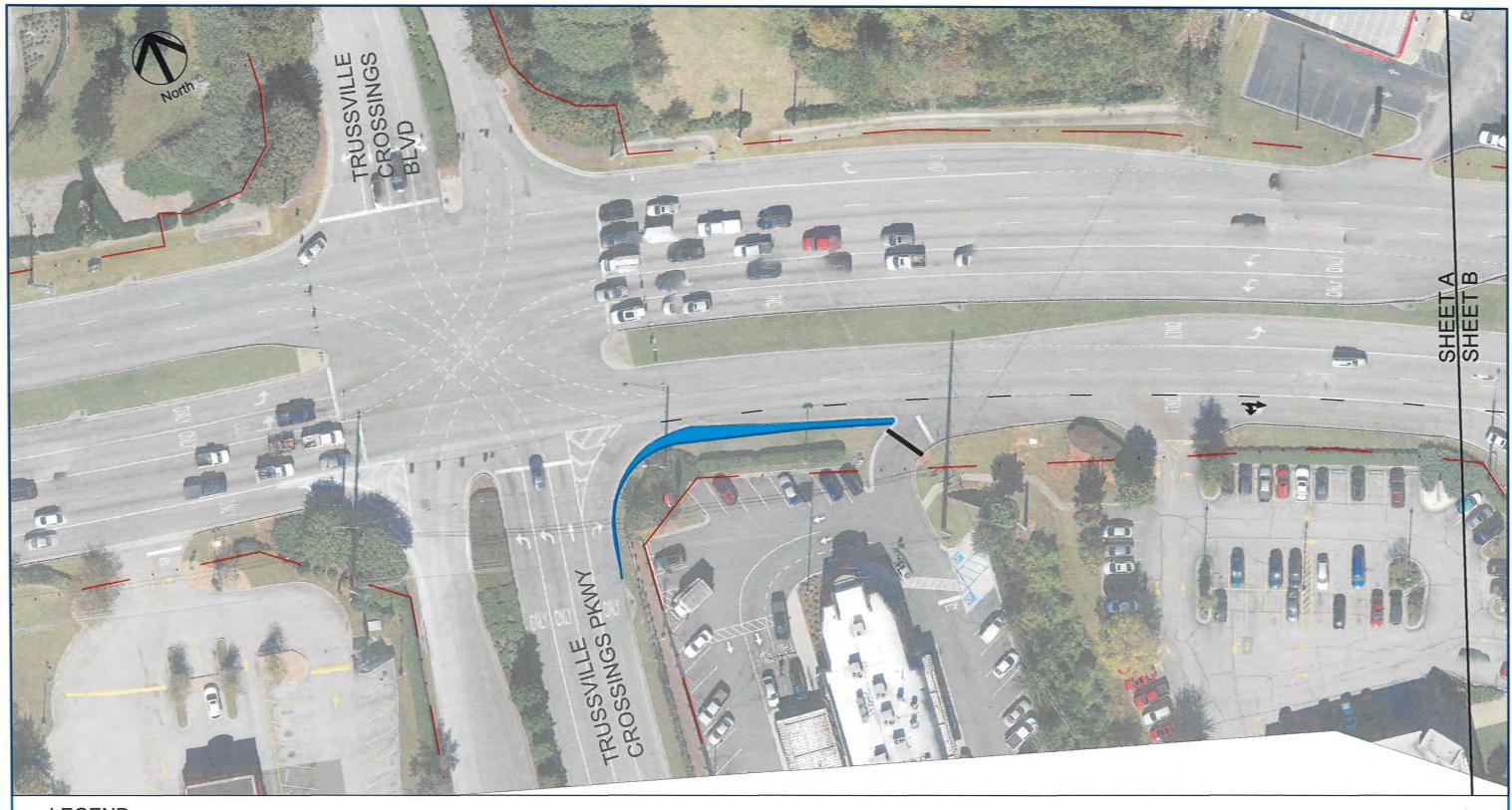
Interception	Annuanah	Managent	Level of	Service	
Intersection	Approach	iviovement	AM Peak	PM Peak	
	Chalkville Mountain Road	Left	Α	Α	
	Eastbound	Through-Right	С	Α	
	Lastboaria	Overall approach	С	Α	
	Chalkville Mountain Road	Left	В	Α	
Chalkville Mountain	Westbound	Through-Right	В	Α	
Road at Wright	vvestbourid	Overall approach	В	Α	
Street/Grayson Valley	Grayson Valley Parkway	Left	D	E	
Parkway	Northbound	Through-Right	D	E	
Tarkway	Northboand	LeftAAThrough-RightCAOverall approachCALeftBAThrough-RightBALeftDEThrough-RightDEOverall approachDELeftDFThroughDEOverall approachDFOverall intersectionCBLeftABThrough-RightBCLeftBDThrough-RightABOverall approachABLeftEDThrough-RightEDLeft-Through-RightEDLeftAAThrough-RightAAAAALeftAAThrough-RightAAAAALeftAAThrough-RightAALeft-Through-RightEELeftEEThrough-RightEELeftEEThrough-RightEELeftEEThrough-RightEELeftEE		Ε	
	Wright Street	Left	D	F	
	_	Through	D	E	
	Southboand			F	
		Overall intersection	С	В	
	Challwille Mountain Road	Through-Right B Overall approach B	В		
			С		
	Lastboaria		В	С	
	Challwille Mountain Road	Left	В	D	
Chalkville Mountain		Left B D Through-Right A B Overall approach A B			
Road at Grayson	Chalkville Mountain Road Eastbound Chalkville Mountain Road Westbound Chalkville Mountain Road Westla B Through-Right A Coverall approach A Left Through-Right E Coverall approach E Driveway Southbound Chalkville Mountain Road A Coverall approach A Left Coverall approach A Left Coverall approach A Left Coverall approach A Coverall approach A	Α	В		
Valley Drive	Grayson Valley Drive	Left	E	D	
	1	Through-Right	D		
	Northboaria	Overall approach	E	D	
	Driveway Southbound		Е	D	
		Left D Through D Overall approach D Overall intersection C Left A Through-Right B Overall approach B Left B Through-Right A Overall approach A Left E Through-Right E Overall approach E Left-Through-Right E Overall intersection B Left A Through-Right A Overall approach A Left A Left A Left A Through-Right A	В	С	
	Chalkville Mountain Road	Left	Α	Α	
	Eastbound	Through-Right	Α	Α	
	Lastboaria	Overall approach	Α	Α	
	Chalkville Mountain Road	Left	Α	Α	
Chalkville Mountain	Westbound		Α	Α	
Road at Martin Road	vvcstbouriu		Α	Α	
Noda de Ivial elli Noda	Driveway Northbound				
			Е	E	
	Martin Road Southbound		Е	E	
			Ε	Ε	
		Overall intersection	Α	Α	

Table 9 (continued)
Future 2045 Intersection Capacity Analysis with Improvements

Intonochion	Annanah	Mayamant	Level of	Service
Intersection	Approach	Movement	AM Peak	PM Peak
	Chalkville Mountain Road Eastbound	Left-Through-Right	А	А
	Chalkville Mountain Road	Left	Α	Α
Chalkville Mountain	Westbound	Through-Right	Α	Α
Road at Galloway	vvestbouriu	Overall approach	Α	Α
Drive	Galloway Drive Northbound	Left- Through-Right	E	E
	Fire Station Driveway Southbound	Left- Through-Right	Е	E
		Overall intersection	Α	Α
	Sweeney Hollow Road	Left	С	С
	Eastbound	Through-Right Overall approach Left	С	В
	Lastbound		С	В
		Left	D	В
	Chalkville Mountain Road	Through Right Overall approach	С	E
Chalkville Mountain	Westbound		В	В
Road/Sweeney			С	D
Hollow Road at Old		Left	С	D
Springville Road	Old Springville Road	Through	D	F
epge	Northbound	Right	С	D
		Overall approach	D	E
	Old Springville Road	Left	E	F
	Southbound	Through-Right	В	D
	30411304114	Overall approach	D	Ε
		Overall intersection	D	D
	Sweeney Hollow Road	Left	D	D
	Eastbound	Through-Right	Α	Α
	Lustbouriu	Overall approach	Α	Α
	Sweeney Hollow Road	Left	В	В
Sweeney Hollow Road	Westbound	Through-Right	В	E
at Brewster Road		Overall approach	В	Ε
	Brewster Road Northbound	Left-Through-Right	С	D
	Driveway Southbound	Left- Through-Right	Α	Α
		Overall intersection	В	D

Table 9 (continued)
Future 2045 Intersection Capacity Analysis with Improvements

Interception	Annyanah	Management	Level of	Service
Intersection	Approach	Left A Through C Overall approach C Through A Right A Overall approach A Left-Right D Overall intersection B Left- Through-Right B Left- Through-Right B Left A Through-Right B Overall approach B Left A Through-Right B Overall approach B Left A Through-Right B	AM Peak	PM Peak
	Cwaanay Hallayy Baad	Left	А	В
	Sweeney Hollow Road Eastbound	Through	С	С
	Lastboullu	Overall approach	С	С
Sweeney Hollow Road	Sweeney Hellow Boad	Through	Α	Α
at Tyler Loop Road	Sweeney Hollow Road Westbound	Right	Α	Α
at Tyler Loop Road	westbound	Overall approach A		Α
	Tyler Loop Road Southbound	Left-Right	D	D
		Overall intersection	В	В
	Brewster Road Eastbound	Left- Through-Right	В	В
	Brewster Road Westbound	Left- Through-Right	С	В
Old Cominguille Deed	Old Code at the Board	Left	Α	Α
Old Springville Road at Brewster Road	Old Springville Road Northbound	Through-Right	В	Α
at Brewster Road	Northbound	Overall approach	В	Α
	Old Springville Boad	Left	Α	Α
	Old Springville Road Southbound	Through-Right	В	Α
	Journbound	Overall approach	В	Α
		Overall intersection	В	Α





Existing Bridge Rail New Edge of Pavement





Scale: 1:=50'

Figure 5A - Improvement Concept





Existing Bridge Rail New Edge of Pavement New Island



New Paving Existing ROW



Scale: 1:=50'



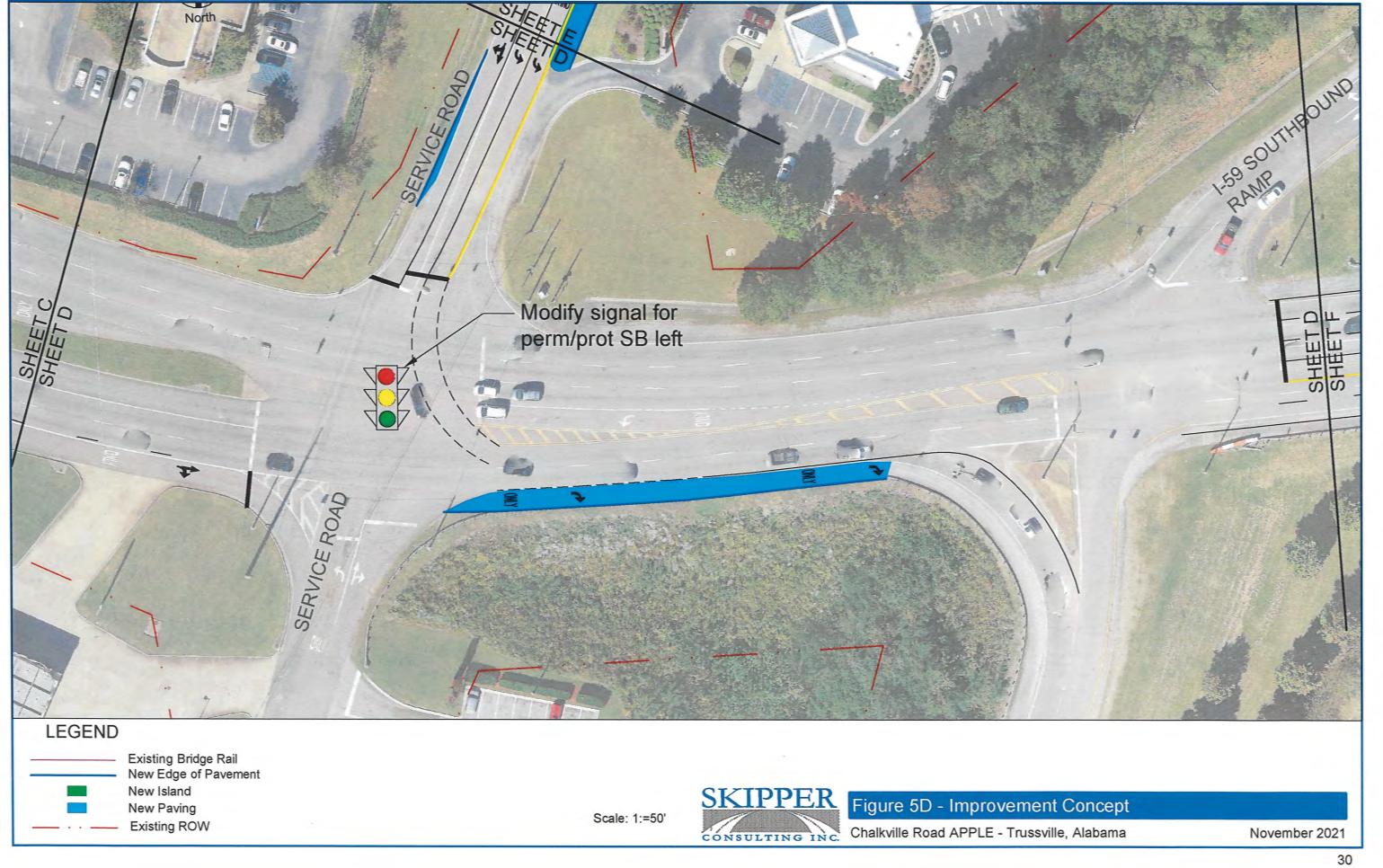


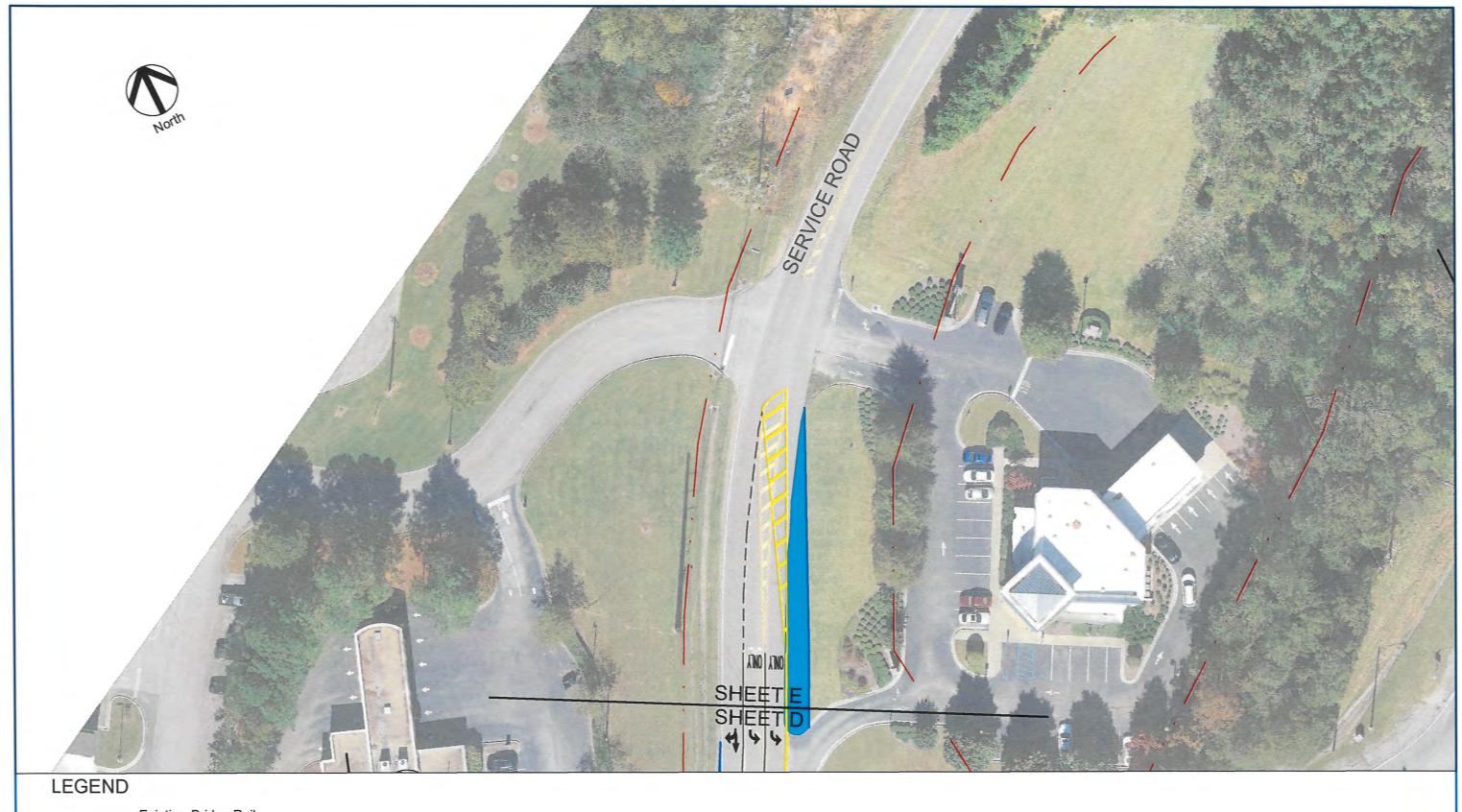
Existing Bridge Rail New Edge of Pavement

New Island New Paving Existing ROW



Scale: 1:=50'





Existing Bridge Rail New Edge of Pavement



New Island New Paving Existing ROW



Scale: 1:=50'

