THE UNIVERSITY OF
ALABAMA AT BIRMINGHAM

Road Diet/Complete Streets—Phase I Traffic Study

Prepared for:

The University of Alabama at Birmingham
Birmingham, Alabama

The Regional Planning Commission of Greater Birmingham
Birmingham, Alabama

RPCGB
REGIONAL PLANNING COMMISSION
OF GREATER BIRMINGHAM

Prepared by:

SKIPPER
CONSULTING INC.

SEPTEMBER 2016

Road Diet Complete Streets—
Phase 1 Traffic Study

The University of Alabama at Birmingham

Prepared for:

The University of Alabama at Birmingham

801 6th Avenue South

Birmingham, Alabama 35294

The Regional Planning Commission of Greater Birmingham

2 20th Street North, Suite 1200

Birmingham, Alabama 35203

Prepared by:

Skipper Consulting, Inc.

3466 Vann Road, Suite 100

Birmingham, Alabama 35235

(205) 655-8855 main line

(205) 655-8825 fax

www.skipperinc.com

ALABAMA
REGISTERED
No. 20061
PROFESSIONAL
ENGINEER
RICHARD LYN CAUDLE

SIGNED: Richard Caudle

DATE: 9/26/16

SEPTEMBER 2016

Table of Contents

List of Figures

INTRODUCTION

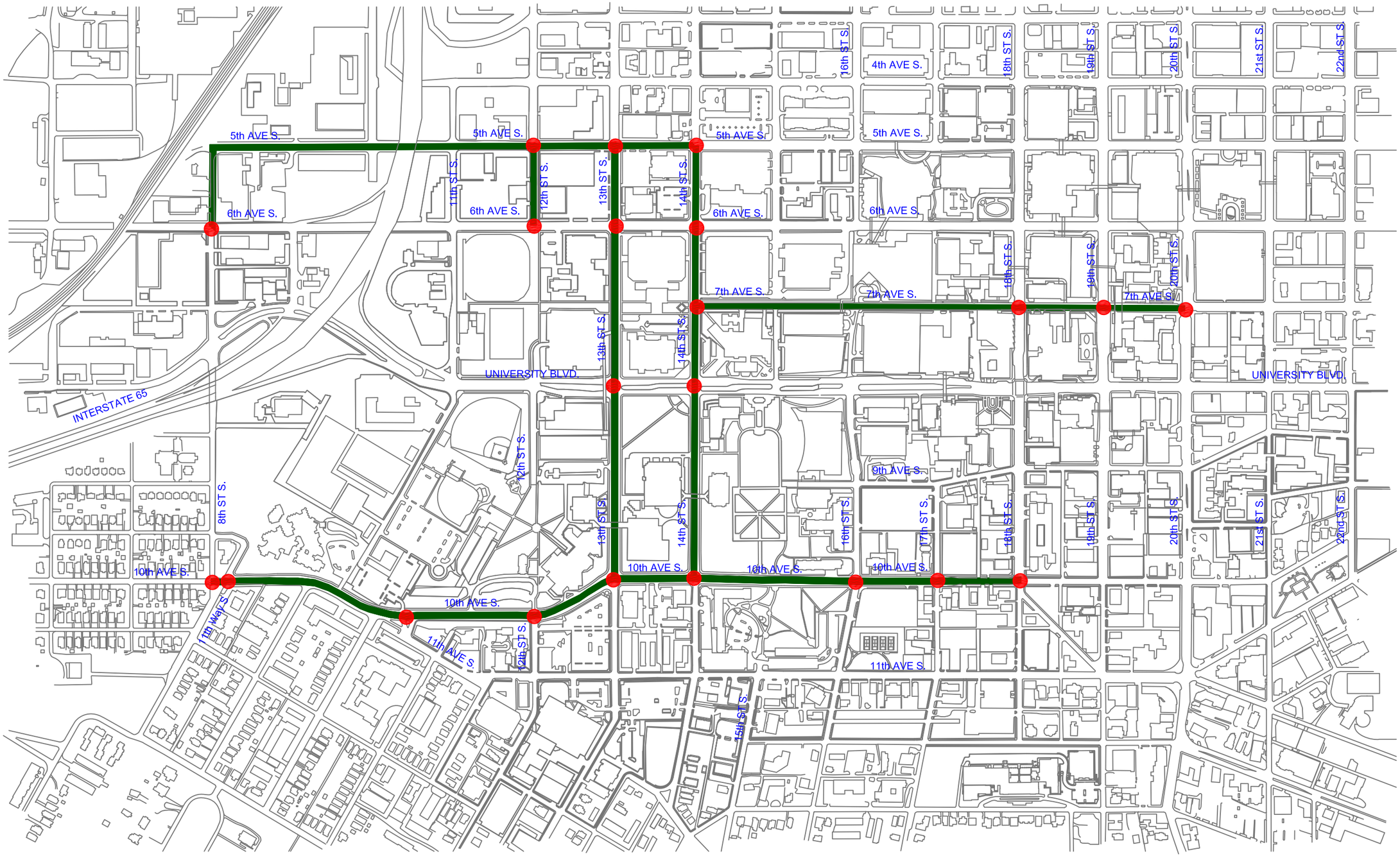
This report documents a traffic study performed to support the development of various road diet/complete streets projects on the campus of the University of Alabama at Birmingham. The proposed projects would perform work within the current right-of-way and largely within the limits of existing curb lines of existing roadways to provide travel lanes for vehicular traffic and bicycle traffic, as well as dedicated features for on-street parking and transit provisions. In general, the proposed projects involve conversion of general purpose vehicle through lanes to bicycle lanes, vehicle turning lanes, and on-street parking. The following roadways were included in this study effort:

- 5th Avenue South/8th Street South from 6th Avenue South to 14th Street South
- 7th Avenue South from 14th Street South to 20th Street South
- 10th Avenue South from 8th Street South to 18th Street South
- 12th Street South from 5th Avenue South to 6th Avenue South
- 13th Street South from 5th Avenue South to 10th Avenue South
- 14th Street South from 5th Avenue South to 10th Avenue South

The locations of the study corridors are depicted in Figure 1.

Capacity analyses of the proposed projects includes both daily roadway segment capacity analyses at locations on each of the study corridors and peak hour intersection capacity analyses at critical study area intersections. Intersections which are included in the peak hour intersection capacity analyses are shown in Figure 1.

Design concepts for the proposed road diets are included in the report entitled “Road Diet/Complete Streets Concept Study – Phase I” published by ALTA Planning + Engineering in association with Skipper Consulting for this study effort.



Study Intersection

Study Corridor

North
Scale: n.t.s

SKIPPER CONSULTING INC.

Figure 1 - Study Corridors and Intersections

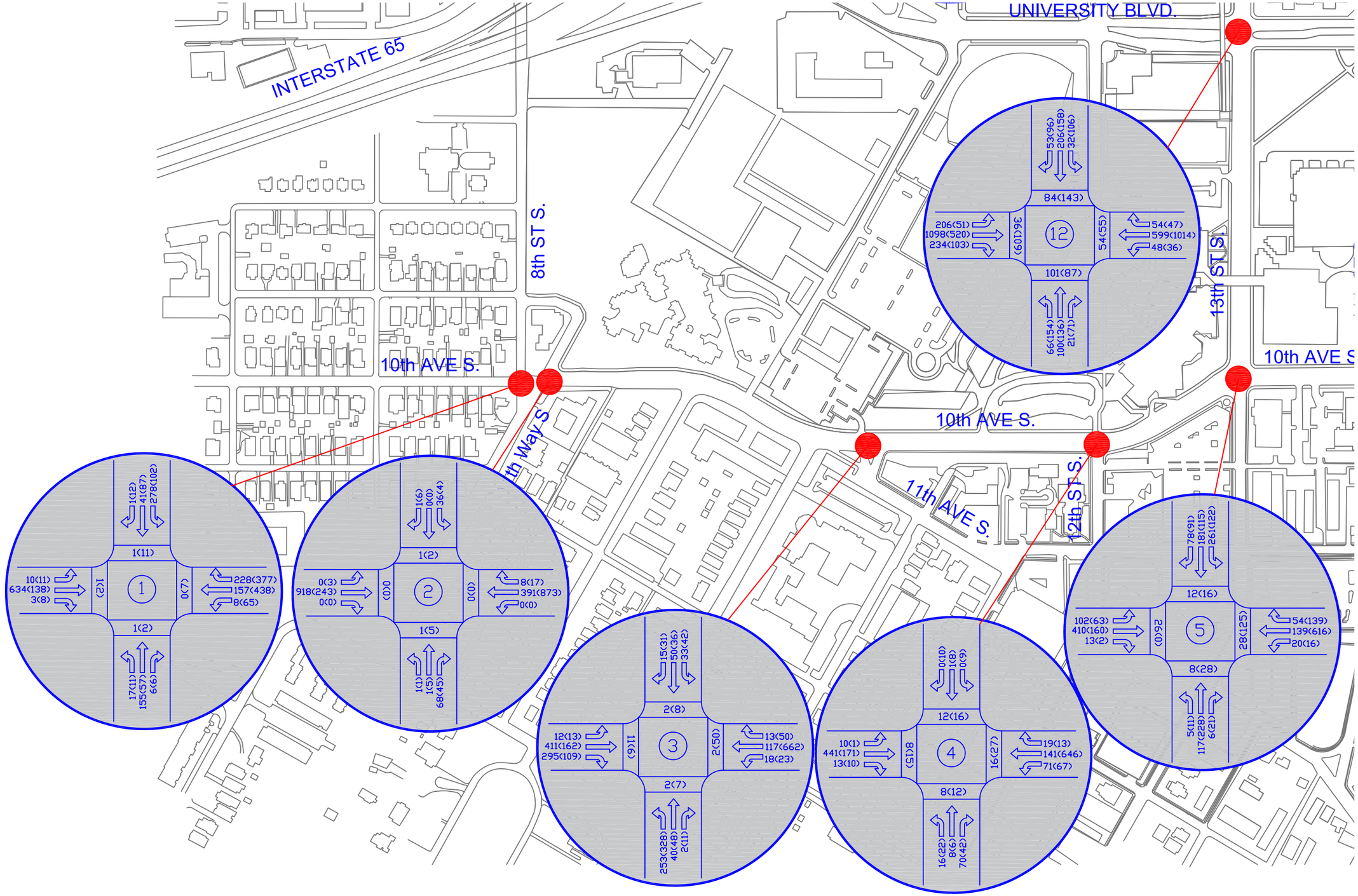
UAB Road Diet/Complete Streets - Phase 1

EXISTING INTERSECTION TURNING MOVEMENT TRAFFIC COUNTS

Existing intersection turning movement traffic counts were performed at the study intersections by Traffic Data, LLC on behalf of Skipper Consulting, Inc. during the months of November, 2015, January, 2016 and March, 2016 during the time periods of 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. on typical weekdays. Intersections counted were as follows:

- 5th Avenue South at 14th Street South
- 5th Avenue South at 13th Street South
- 5th Avenue South at 12th Street South
- 6th Avenue South at 12th Street South
- 6th Avenue South at 13th Street South
- 6th Avenue South at 14th Street South
- 6th Avenue South at 8th Street South
- 7th Avenue South at 14th Street South
- 7th Avenue South at 18th Street South
- 7th Avenue South at 19th Street South
- 7th Avenue South at 20th Street South
- University Boulevard at 13th Street South
- University Boulevard at 14th Street South
- 10th Avenue South at 8th Street South
- 10th Avenue South at 11th Way South
- 10th Avenue South at 11th Avenue South
- 10th Avenue South at 12st Street South
- 10th Avenue South at 13th Street South
- 10th Avenue South at 14th Street South
- 10th Avenue South at 16th Street South
- 10th Avenue South at 17th Street South
- 10th Avenue South at 18th Street South

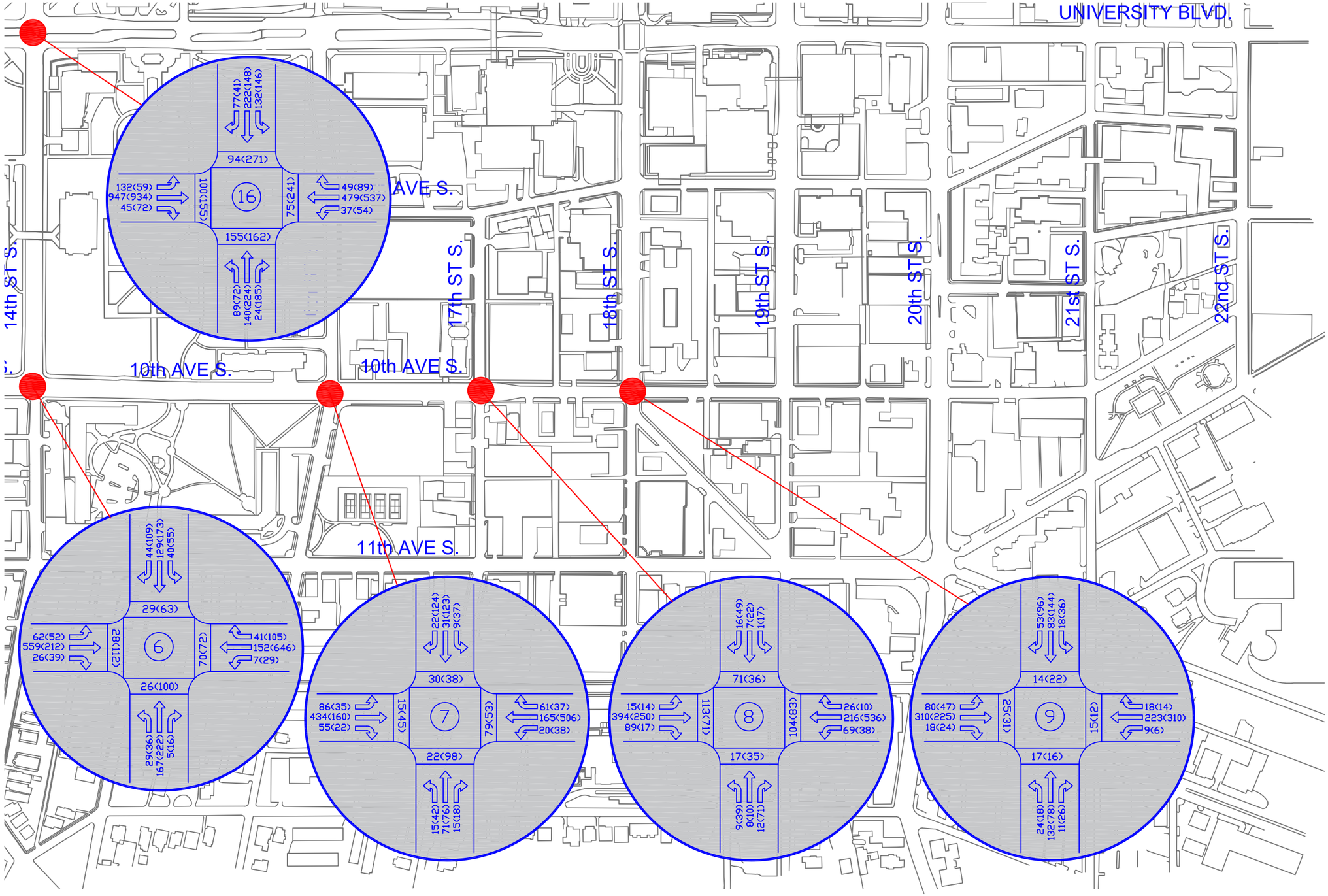
Using the counts, a.m. and p.m. peak hours of traffic flow were determined. The a.m. and p.m. peak hour intersection turning movement traffic counts are depicted in Figures 2A through 2D.



North
Scale: n.t.s

SKIPPER CONSULTING INC.

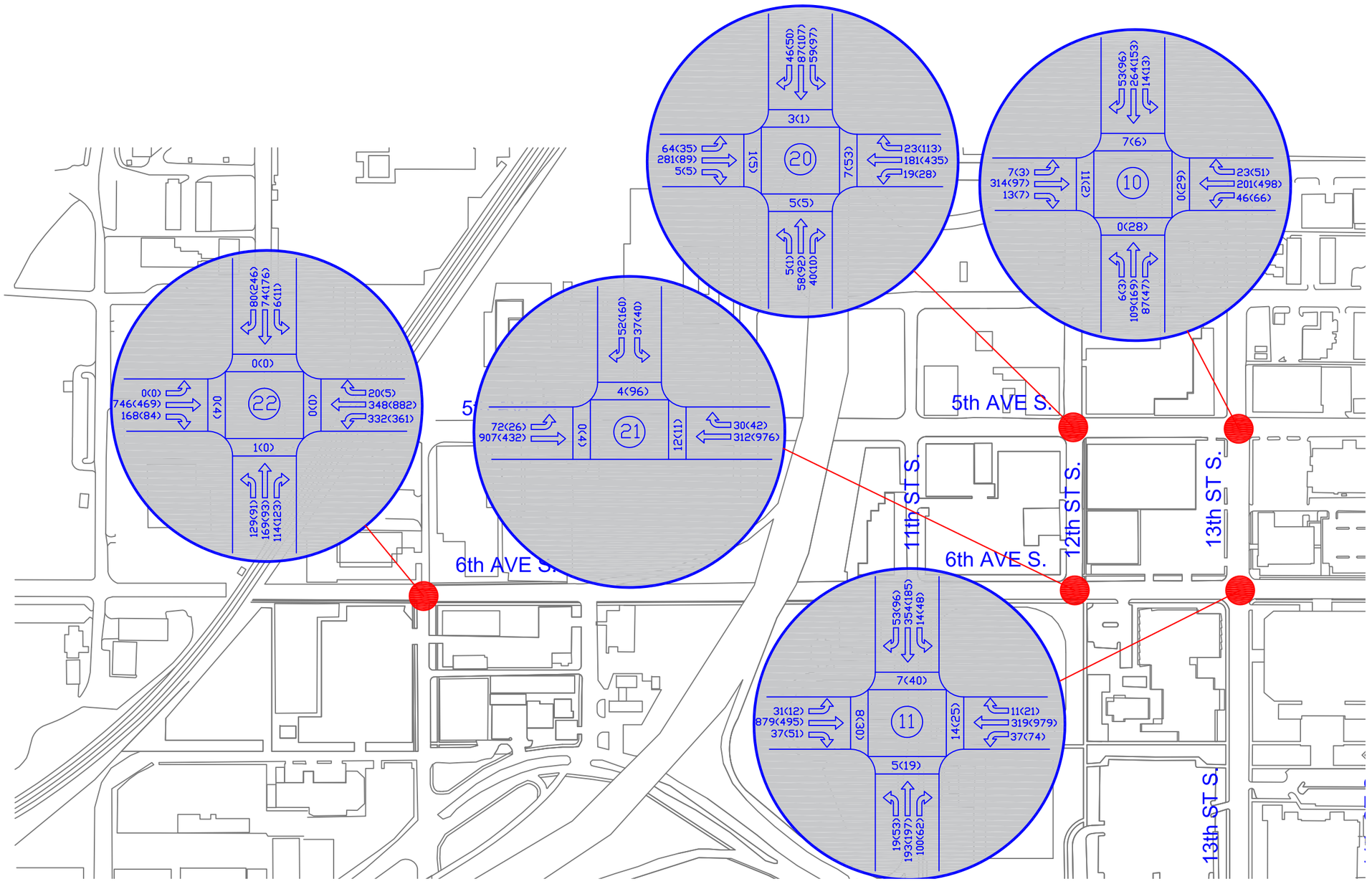
Figure 2A - Existing Turning Movement Traffic Counts



North
Scale: n.t.s

SKIPPER CONSULTING INC.

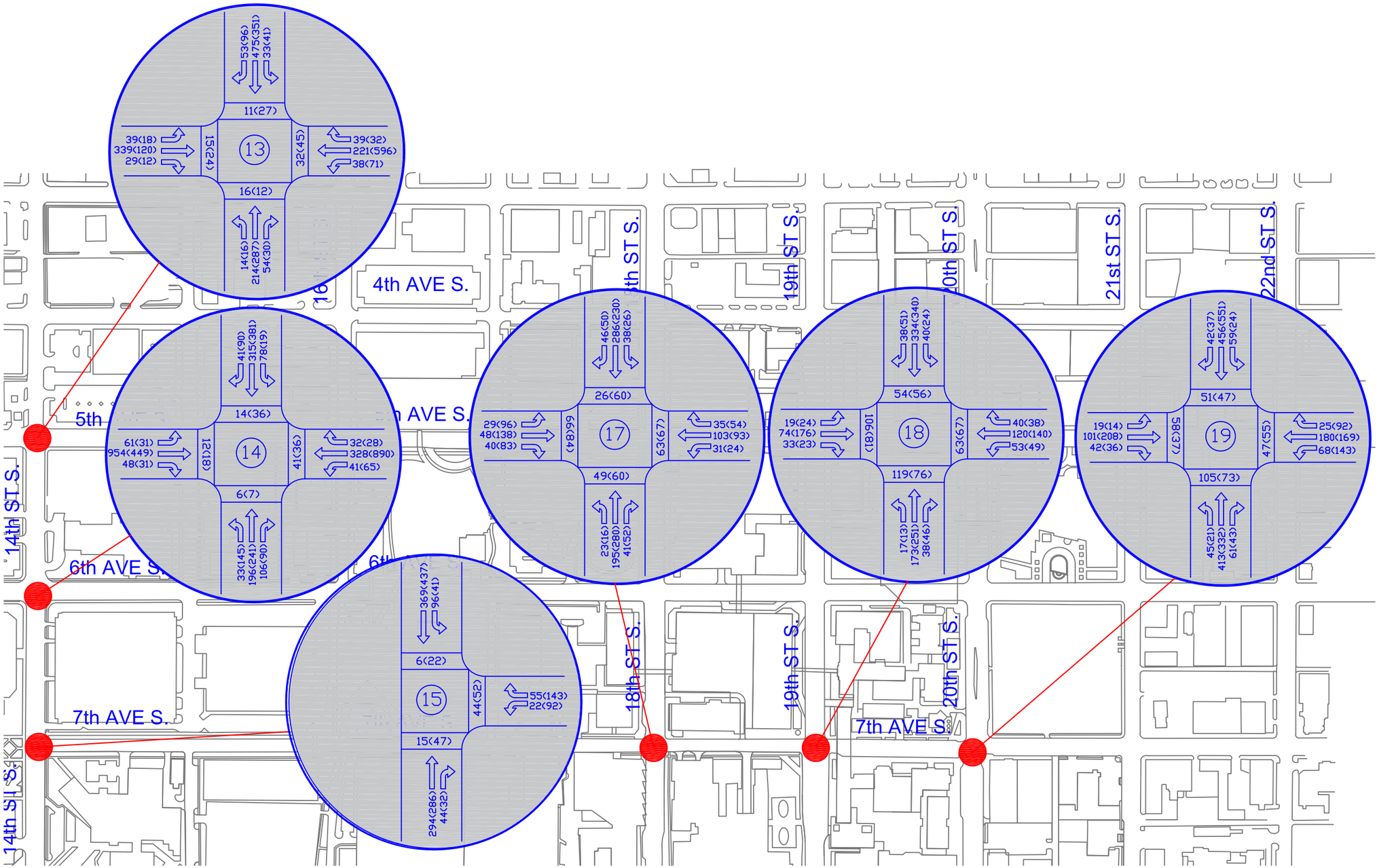
Figure 2B - Existing Turning Movement Traffic Counts



North
Scale: n.t.s

SKIPPER CONSULTING INC.

Figure 2C - Existing Turning Movement Traffic Counts



North
Scale: n.t.s

SKIPPER CONSULTING INC.

Figure 2D - Existing Turning Movement Traffic Counts

EXISTING MACHINE COUNTS

Existing twenty-four (24) hour weekday machine traffic counts were performed at nine (9) locations on the study corridors by Traffic Data, LLC on behalf of Skipper Consulting, Inc. during the months of November 2015, January, 2016, and March, 2016. Traffic counts included speed and vehicle classification. The locations of the machine counts were as follows:

- 10th Avenue South west of 12th Street South
- 10th Avenue South west of 15th Street South
- 13th Street South north of University Boulevard
- 13th Street South south of University Boulevard
- 14th Street South south of 6th Avenue South
- 14th Street South south of University Boulevard
- 7th Avenue South east of 14th Street South
- 5th Avenue South west of 13th Street South
- 12th Street South north of 6th Avenue South

The machine traffic count data is summarized in Table 1.

Table 1
Machine Count Summary

Location: A
Roadway: 10th Ave S west of 12th St S

	Daily Volume		AM Peak Hour Volume		PM Peak Hour Volume		85th %tile Speed		Classification Day 1				Day 2			
	Day 1	Day 2	Day 1	Day 2	Day 1	Day 2	Day 1	Day 2	PV	Buses	LT	HT	PV	Buses	LT	HT
Eastbound	3036	3028	411	473	238	217	36	36	95%	2%	1%	1%	95%	2%	1%	1%
Westbound	3788	3479	184	164	609	591	36	36	96%	1%	1%	1%	97%	1%	1%	1%
Total	6824	6507	595	637	847	808										

Location: B
Roadway: 10th Ave S west of 15th St S

	Daily Volume		AM Peak Hour Volume		PM Peak Hour Volume		85th %tile Speed		Classification Day 1				Day 2			
	Day 1	Day 2	Day 1	Day 2	Day 1	Day 2	Day 1	Day 2	PV	Buses	LT	HT	PV	Buses	LT	HT
Eastbound	4476	3993	605	560	337	263	36	36	95%	1%	2%	2%	96%	1%	2%	2%
Westbound	2521	3145	229	213	330	502	37	36	96%	1%	2%	1%	95%	1%	3%	1%
Total	6997	7138	834	773	667	765										

Location: C
Roadway: 13th St S north of University Blvd

	Daily Volume		AM Peak Hour Volume		PM Peak Hour Volume		85th %tile Speed		Classification Day 1				Day 2			
	Day 1	Day 2	Day 1	Day 2	Day 1	Day 2	Day 1	Day 2	PV	Buses	LT	HT	PV	Buses	LT	HT
Northbound	2860	2777	303	278	229	273	33	32	93%	2%	3%	3%	93%	2%	2%	2%
Southbound	2548	2679	261	238	248	226	33	32	92%	2%	2%	3%	92%	2%	2%	3%
Total	5408	5456	564	516	477	499										

Location: D
Roadway: 13th St S south of University Blvd

	Daily Volume		AM Peak Hour Volume		PM Peak Hour Volume		85th %tile Speed		Classification Day 1				Day 2			
	Day 1	Day 2	Day 1	Day 2	Day 1	Day 2	Day 1	Day 2	PV	Buses	LT	HT	PV	Buses	LT	HT
Northbound	3447	2876	276	239	342	310	31	31	95%	1%	2%	3%	93%	1%	2%	4%
Southbound	3898	3815	365	319	279	295	30	30	93%	2%	1%	4%	92%	2%	1%	4%
Total	7345	6691	641	558	621	605										

Location: E
Roadway: 14th St S south of 6th Ave S

	Daily Volume		AM Peak Hour Volume		PM Peak Hour Volume		85th %tile Speed		Classification Day 1				Day 2			
	Day 1	Day 2	Day 1	Day 2	Day 1	Day 2	Day 1	Day 2	PV	Buses	LT	HT	PV	Buses	LT	HT
Northbound	2543	4461	321	293	342	344	28	28	91%	2%	3%	3%	90%	3%	3%	4%
Southbound	4411	4496	437	406	428	430	32	32	95%	1%	2%	2%	95%	1%	3%	2%
Total	6954	8957	758	699	770	774										

Location: F
Roadway: 14th St S south of University Blvd

	Daily Volume		AM Peak Hour Volume		PM Peak Hour Volume		85th %tile Speed		Classification Day 1				Day 2			
	Day 1	Day 2	Day 1	Day 2	Day 1	Day 2	Day 1	Day 2	PV	Buses	LT	HT	PV	Buses	LT	HT
Northbound	3483	3512	236	235	276	276	36	36	94%	1%	2%	2%	95%	1%	2%	2%
Southbound	2486	3300	204	236	310	315	33	35	91%	2%	3%	4%	93%	1%	3%	3%
Total	5969	6812	440	471	586	591										

Location: G
Roadway: 7th Ave S east of 14th St S

	Daily Volume		AM Peak Hour Volume		PM Peak Hour Volume		85th %tile Speed		Classification Day 1				Day 2			
	Day 1	Day 2	Day 1	Day 2	Day 1	Day 2	Day 1	Day 2	PV	Buses	LT	HT	PV	Buses	LT	HT
Eastbound	1109	1143	126	124	94	97	30	29	88%	1%	9%	2%	96%	1%	2%	1%
Westbound	1811	1690	142	121	217	205	37	32	78%	1%	20%	0%	96%	1%	3%	1%
Total	2920	2833	268	245	311	302										

Location: H
Roadway: 5th Ave S west of 13th St S

	Daily Volume		AM Peak Hour Volume		PM Peak Hour Volume		85th %tile Speed		Classification Day 1				Day 2			
	Day 1	Day 2	Day 1	Day 2	Day 1	Day 2	Day 1	Day 2	PV	Buses	LT	HT	PV	Buses	LT	HT
Eastbound	1740	1862	292	294	107	106	34	33	94%	3%	2%	1%	94%	3%	2%	1%
Westbound	3166	3250	187	161	524	459	36	36	95%	1%	2%	2%	95%	1%	2%	2%
Total	4906	5112	479	455	631	565										

Location: I
Roadway: 12th St S north of 6th Ave S

	Daily Volume		AM Peak Hour Volume		PM Peak Hour Volume		85th %tile Speed		Classification Day 1				Day 2			
	Day 1	Day 2	Day 1	Day 2	Day 1	Day 2	Day 1	Day 2	PV	Buses	LT	HT	PV	Buses	LT	HT
Northbound	784	761	97	76	81	95	28	28	89%	6%	3%	2%	90%	6%	3%	1%
Southbound	1309	1409	106	119	165	156	29	29	95%	1%	4%	1%	94%	2%	3%	1%
Total	2093	2170	203	195	246	251										

Classification Key:
PV - Passenger Vehicles (motorcycles, passenger vehicles, vehicles with small trailers)
Buses
LT - light trucks; trucks without separate trailers
HT - heavy trucks; trucks with a separate trailer

PARKING INVENTORY

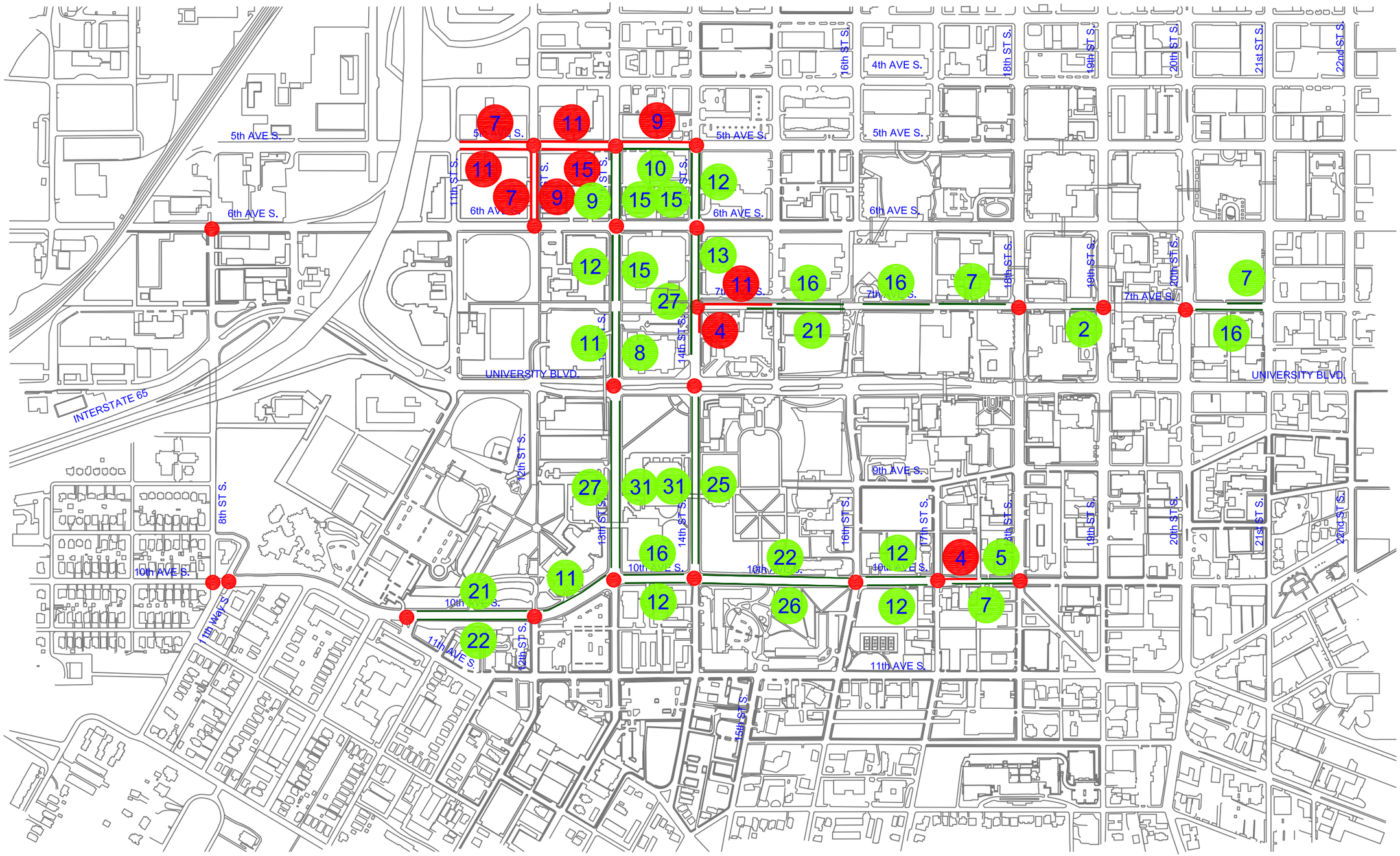
An inventory of on-street parking was performed on the study area roadways. This inventory is depicted in Figure 3.

TRANSIT ROUTES AND STOPS

UAB runs an on-campus transit system known as Blazer Express. The routes utilize several of the existing study area roadways, including:

- 5th Avenue South from 8th Street South to 14th Street South
- 7th Avenue South from 18th Street South to 19th Street South
- 10th Avenue South from 11th Avenue South to 17th Street South
- 8th Street South from 5th Avenue to 6th Avenue South
- 12th Street South from 5th Avenue South to 6th Avenue South
- 13th Street South from 5th Avenue South to 6th Avenue South
- 14th Street South from 5th Avenue South to 6th Avenue South
- 14th Street South from University Boulevard to 10th Avenue South

The Blazer Express route map, stop locations, and schedule are shown in Figure 4.



Study Intersection

Metered Spaces

Unmetered Spaces

North
Scale: n.t.s

SKIPPER CONSULTING INC.

Figure 3 - On-Street Parking Inventory

North
Scale: n.t.s

SKIPPER CONSULTING INC.

Figure 4 - Transit Routes and Stops

EXISTING DAILY ROADWAY SEGMENT CAPACITY ANALYSIS

Existing daily roadway segment capacity analyses were performed for the study area roadways to determine existing levels of service using the existing daily traffic counts conducted for this project and a level of service chart calculated using daily roadway capacities developed by the Alabama Department of Transportation. The results of the daily roadway segment capacity analysis are shown in Table 2.

EXISTING PEAK HOUR INTERSECTION CAPACITY ANALYSIS

Existing peak hour intersection capacity analyses were performed for the study area intersections using the methodology of analysis included in the 2010 *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 "C" or better is desirable, with a level of service "D" considered acceptable during peak hours of traffic flow. The results of the existing peak hour intersection capacity analyses for the study area intersections are summarized in Tables 3A-3E.

Table 2
Existing Daily Roadway Capacity Analysis

Roadway	*Location*	*Classification*		*Lanes*	*Count*	*Capacity*	*LOS*
10th Ave S	west of 12th St S	Collector	Undivided	4	6,824	26,200	A
10th Ave S	west of 15th St S	Collector	Undivided	4	7,138	26,200	A
13th St S	north of University Blvd	Collector	Undivided	4	5,456	26,200	A
13th St S	south of University Blvd	Collector	Undivided	4	7,345	26,200	A
14th St S	south of 6th Ave S	Collector	Undivided	4	8,957	26,200	A
14th St S	south of University Blvd	Collector	Undivided	4	6,812	26,200	A
7th Ave S	east of 14th St S	Local	Undivided	2	2,920	16,600	A
5th Ave S	west of 13th St S	Collector	Undivided	4	5,112	26,200	A
12th St S	north of 6th Ave S	Collector	Undivided	2	2,170	16,600	A

Level of Service Chart

Functional Classification	*Number of Lanes*	*Maximum Daily Flow Rate Related to Level of Service*					
		A	*B*	*C*	*D*	*E*	*F*
Freeway	4	23,800	34,000	42,160	51,000	68,000	>68,000
	6	35,700	51,000	63,240	76,500	102,000	>102,000
	8	47,600	68,000	84,320	102,000	136,000	>136,000
	10	59,500	85,000	105,400	127,500	170,000	>170,000
Expressway	4	17,500	25,000	31,000	37,500	50,000	>50,000
	6	26,250	37,500	46,500	56,250	75,000	>75,000
	8	35,000	50,000	62,000	75,000	100,000	>100,000
Arterial (Divided)	2	7,700	11,000	13,640	16,500	22,000	>22,000
	4	11,865	16,950	21,018	25,425	33,900	>33,900
	6	17,500	25,000	31,000	37,500	50,000	>50,000
	8	25,760	36,800	45,632	55,200	73,600	>73,600
Arterial (Undivided)	2	6,230	8,900	11,036	13,350	17,800	>17,800
	4	10,850	15,500	19,220	23,250	31,000	>31,000
	6	16,030	22,900	28,396	34,350	45,800	>45,800
	8	22,085	31,550	39,122	47,325	63,100	>63,100
Collector (Divided)	2	7,280	10,400	12,896	15,600	20,800	>20,800
	4	9,975	14,250	17,670	21,375	28,500	>28,500
	6	14,700	21,000	26,040	31,500	42,000	>42,000
Collector (Undivided)	2	5,810	8,300	10,292	12,450	16,600	>16,600
	4	9,170	13,100	16,244	19,650	26,200	>26,200
	6	13,545	19,350	23,994	29,025	38,700	>38,700

Table 3A
Existing Intersection Capacity Analysis
10th Avenue South Corridor

Intersection	*Approach*	*Level of Service*	
		AM Peak	*PM Peak*
10th Ave S at 8th St S	8th St S Northbound	B (19)	A (10)
	8th St S Southbound	E (74)	B (11)
	10th Ave S Eastbound	E (56)	A (6)
	10th Ave S Westbound	B (10)	A (9)
	Overall Intersection	***D (43)***	***A (9)***
10th Ave S at 11th Way S	11th Way S Northbound	D (47)	D (51)
	Parking Lot Southbound	C (21)	B (17)
	10th Ave S Eastbound	B (11)	B (14)
	10th Ave S Westbound	B (18)	A (5)
	Overall Intersection	***C (22)***	***B (20)***
10th Ave S at 12th St S	12th St S Northbound	B (16)	C (25)
	Parking Lot Southbound	B (15)	C (24)
	10th Ave S Eastbound	B (18)	A (5)
	10th Ave S Westbound	A (10)	A (3)
	Overall Intersection	***B (15)***	***A (6)***
10th Ave S at 13th St S	13th St S Northbound	B (14)	C (24)
	13th St S Southbound	D (41)	C (32)
	10th Ave S Eastbound	A (8)	B (19)
	10th Ave S Westbound	B (10)	C (35)
	Overall Intersection	***B (20)***	***C (30)***
10th Ave S at 14th St S	14th St S Northbound	B (17)	C (21)
	14th St S Southbound	D (41)	B (18)
	10th Ave S Eastbound	B (13)	B (17)
	10th Ave S Westbound	B (18)	B (12)
	Overall Intersection	***B (19)***	***B (15)***
10th Ave S at 16th St S	16th St S Northbound	C (29)	C (26)
	16th St S Southbound	C (29)	D (37)
	10th Ave S Eastbound	A (8)	B (16)
	10th Ave S Westbound	A (5)	B (15)
	Overall Intersection	***B (11)***	***C (22)***
10th Ave S at 17th St S	17th St S Northbound	D (33)	F (87)
	17th St S Southbound	C (23)	F (55)
	10th Ave S Eastbound	A (0)	A (1)
	10th Ave S Westbound	A (4)	A (1)
	Overall Intersection	***--***	***--***
10th Ave S at 18th St S	18th St S Northbound	B (17)	B (20)
	18th St S Southbound	B (17)	C (21)
	10th Ave S Eastbound	D (37)	B (17)
	10th Ave S Westbound	B (16)	B (13)
	Overall Intersection	***C (25)***	***B (18)***

(number in parenthesis is average control delay per vehicle)

Table 3B
Existing Intersection Capacity Analysis
5th Avenue South/12th Street South Corridor

Intersection	*Approach*	*Level of Service*	
		AM Peak	*PM Peak*
5th Ave S at 12th St S	12th St S Northbound	D (53)	C (31)
	12th St S Southbound	D (39)	D (38)
	5th Ave S Eastbound	A (6)	A (5)
	5th Ave S Westbound	A (2)	A (6)
	Overall Intersection	***B (18)***	***B (16)***
5th Ave S at 13th St S	13th St S Northbound	A (3)	A (8)
	13th St S Southbound	B (16)	B (15)
	5th Ave S Eastbound	B (12)	B (13)
	5th Ave S Westbound	A (10)	A (5)
	Overall Intersection	***B (11)***	***A (8)***
5th Ave S at 14th St S	14th St S Northbound	B (11)	A (6)
	14th St S Southbound	B (15)	B (12)
	5th Ave S Eastbound	B (13)	B (14)
	5th Ave S Westbound	B (19)	C (31)
	Overall Intersection	***B (14)***	***B (19)***
6th Ave S at 8th St S	8th St S Northbound	D (43)	D (37)
	8th St S Southbound	C (28)	C (33)
	6th Ave S Eastbound	C (23)	B (18)
	6th Ave S Westbound	B (18)	A (9)
	Overall Intersection	***C (26)***	***B (19)***
6th Ave S at 12th St S	12th St S Southbound	E (75)	D (45)
	6th Ave S Eastbound	B (11)	A (7)
	6th Ave S Westbound	A (1)	B (11)
	Overall Intersection	***B (14)***	***B (14)***

(number in parenthesis is average control delay per vehicle)

Table 3C
Existing Intersection Capacity Analysis
7th Avenue South Corridor

Intersection	*Approach*	*Level of Service*	
		AM Peak	*PM Peak*
7th Ave S at 14th St S	14th St S Northbound	A (3)	A (6)
	14th St S Southbound	A (3)	A (5)
	7th Ave S Westbound	D (37)	D (43)
	Overall Intersection	***A (6)***	***B (15)***
7th Ave S at 18th St S	18th St S Northbound	B (17)	C (25)
	18th St S Southbound	B (19)	C (24)
	7th Ave S Eastbound	A (8)	A (10)
	7th Ave S Westbound	A (9)	B (12)
	Overall Intersection	***B (15)***	***B (18)***
7th Ave S at 19th St S	19th St S Northbound	B (13)	B (18)
	19th St S Southbound	B (14)	B (19)
	7th Ave S Eastbound	B (18)	B (17)
	7th Ave S Westbound	D (41)	B (20)
	Overall Intersection	***C (21)***	***B (19)***
7th Ave S at 20th St S	20th St S Northbound	B (14)	B (13)
	20th St S Southbound	B (13)	B (14)
	7th Ave S Eastbound	B (14)	C (20)
	7th Ave S Westbound	B (19)	C (22)
	Overall Intersection	***B (15)***	***B (17)***

(number in parenthesis is average control delay per vehicle)

Table 3D
Existing Intersection Capacity Analysis
13th Street South Corridor

Intersection	*Approach*	*Level of Service*	
		AM Peak	*PM Peak*
13th St S at 5th Ave S	13th St S Northbound	A (3)	A (8)
	13th St S Southbound	B (16)	B (15)
	5th Ave S Eastbound	B (12)	B (13)
	5th Ave S Westbound	A (10)	A (5)
	Overall Intersection	***B (11)***	***A (8)***
13th St S at 6th Ave S	13th St S Northbound	C (22)	B (19)
	13th St S Southbound	C (20)	B (16)
	6th Ave S Eastbound	A (10)	B (12)
	6th Ave S Westbound	A (8)	A (10)
	Overall Intersection	***B (14)***	***B (13)***
13th St S at University Blvd	13th St S Northbound	C (28)	D (36)
	13th St S Southbound	C (27)	D (36)
	University Blvd Eastbound	B (18)	B (14)
	University Blvd Westbound	B (17)	B (13)
	Overall Intersection	***B (20)***	***B (20)***
13th St S at 10th Ave S	13th St S Northbound	B (14)	C (24)
	13th St S Southbound	D (41)	C (32)
	10th Ave S Eastbound	A (8)	B (19)
	10th Ave S Westbound	B (10)	C (35)
	Overall Intersection	***B (20)***	***C (30)***

(number in parenthesis is average control delay per vehicle)

Table 3E
Existing Intersection Capacity Analysis
14th Street South Corridor

Intersection	*Approach*	*Level of Service*	
		AM Peak	*PM Peak*
14th St S at 5th Ave S	14th St S Northbound	B (11)	A (6)
	14th St S Southbound	B (15)	B (12)
	5th Ave S Eastbound	B (13)	B (14)
	5th Ave S Westbound	B (19)	C (31)
	Overall Intersection	***B (14)***	***B (19)***
14th St S at 6th Ave S	14th St S Northbound	B (13)	C (27)
	14th St S Southbound	B (14)	B (13)
	6th Ave S Eastbound	B (13)	A (10)
	6th Ave S Westbound	B (13)	B (18)
	Overall Intersection	***B (13)***	***B (17)***
14th St S at 7th Ave S	14th St S Northbound	A (3)	A (6)
	14th St S Southbound	A (3)	A (5)
	7th Ave S Westbound	D (37)	D (43)
	Overall Intersection	***A (6)***	***B (15)***
14th St S at University Blvd	14th St S Northbound	C (22)	D (40)
	14th St S Southbound	C (35)	D (51)
	University Blvd Eastbound	B (16)	B (18)
	University Blvd Westbound	B (14)	B (14)
	Overall Intersection	***B (19)***	***C (26)***
14th St S at 10th Ave S	14th St S Northbound	B (17)	C (21)
	14th St S Southbound	D (41)	B (18)
	10th Ave S Eastbound	B (13)	B (17)
	10th Ave S Westbound	B (18)	B (12)
	Overall Intersection	***B (19)***	***B (15)***

(number in parenthesis is average control delay per vehicle)

PROPOSED ROAD DIET/COMPLETE STREETS PROJECT

The following list describes the proposed road diet/complete streets project for each study corridor:

10th Avenue South Corridor

Existing Roadway Width	60 feet typical (varies in some locations)
Vehicle Cross Section	2-11' Through Lanes and 1-11' Center Turn Lane
Bicycle Cross Section	2-6' Bicycle Lanes
Parking Cross Section	2-7-1/2' Parking Lanes
Specific Changes	Install traffic signal at 17th Street South
	Eliminate eastbound right turn lane at 17th Street South

5th Avenue South Corridor

Existing Roadway Width	60 feet
Vehicle Cross Section	2-12' General Purpose Lanes
Transit Cross Section	2-12' Bus Only Lanes
Bicycle Cross Section	2-6' Bicycle Lanes
Parking Cross Section	No on-street parking

12th Street South Corridor

Existing Roadway Width	50 feet
Vehicle Cross Section	2-11' Through Lanes and 1-11' Center Turn Lane
Bicycle Cross Section	2-6' Bicycle Lanes with 2-1/2' Buffer Areas
Parking Cross Section	No on-street parking
Specific Changes	Eliminate southbound right turn lane at 6th Avenue South

7th Avenue South Corridor

Existing Roadway Width	40 feet typical (varies in some locations)
Vehicle Cross Section	2-11' General Purpose Lanes
Bicycle Cross Section	2-5-1/2' Bicycle Lanes
Parking Cross Section	1-7' Parking Lane
Specific Changes	Eliminate westbound right turn lane at 14th Street South
	Eliminate eastbound right turn lane at 18th Street South
	Eliminate westbound right turn lane at 19th Street South
	Eliminate eastbound right turn lane at 20th Street South

13th Street South Corridor

Existing Roadway Width	60 feet
Vehicle Cross Section	2-11’ Through Lanes and 1-11’ Center Turn Lane
Bicycle Cross Section	2-6’ Bicycle Lanes
Parking Cross Section	2-7-1/2’ Parking Lanes
Specific Changes	Eliminate southbound right turn lane at 10th Avenue South

14th Street South Corridor

Existing Roadway Width	60 feet
Vehicle Cross Section	2-11’ Through Lanes and 1-11’ Center Turn Lane
Bicycle Cross Section	2-6’ Bicycle Lanes
Parking Cross Section	2-7-1/2’ Parking Lanes
Specific Changes	Eliminate southbound right turn lane at 10th Avenue South

DAILY ROADWAY SEGMENT CAPACITY ANALYSIS WITH PROJECT

Future daily roadway segment capacity analyses were performed for the study area roadways to determine levels of service with the proposed road diet projects in place using the existing daily traffic counts conducted for this project and a level of service chart calculated using daily roadway capacities developed by the Alabama Department of Transportation. The results of the future daily roadway segment capacity analysis are shown in Table 4.

PEAK HOUR INTERSECTION CAPACITY ANALYSIS WITH PROJECT

Future peak hour intersection capacity analyses with the road diet projects in place were performed for the study area intersections using the methodology of analysis included in the 2010 *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 "C" or better is desirable, with a level of service "D" considered acceptable during peak hours of traffic flow. The results of the future peak hour intersection capacity analyses for the study area intersections are summarized in Tables 5A-5E.

The proposed road diet project for 10th Avenue South includes a proposed traffic signal at the intersection of 10th Avenue South at 17th Street South. A traffic signal warrants study was performed for the intersection 10th Avenue South at 17th Street South using existing traffic counts and pedestrian counts from 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. The results of the traffic signal warrant study are shown in Figure 5. As shown, traffic signalization is warranted at the intersection of 10th Avenue South at 17th Street South using both the four hour and one hour pedestrian volume warrants.

Table 4
Existing and Future Daily Roadway Capacity Analysis

Roadway	Location	Existing Cross Section						Proposed Cross Section			
		Classification		Lanes	Count	Capacity	LOS	Classification		Lanes	Count
10th Ave S	west of 12th St S	Collector	Undivided	4	6,824	26,200	A	Collector	Divided	3	6,824
10th Ave S	west of 15th St S	Collector	Undivided	4	7,138	26,200	A	Collector	Divided	3	7,138
13th St S	north of University Blvd	Collector	Undivided	4	5,456	26,200	A	Collector	Divided	3	5,456
13th St S	south of University Blvd	Collector	Undivided	4	7,345	26,200	A	Collector	Divided	3	7,345
14th St S	south of 6th Ave S	Collector	Undivided	4	8,957	26,200	A	Collector	Divided	3	8,957
14th St S	south of University Blvd	Collector	Undivided	4	6,812	26,200	A	Collector	Divided	3	6,812
7th Ave S	east of 14th St S	Local	Unidivided	2	2,920	16,600	A	Local	Unidivided	2	2,920
5th Ave S	west of 13th St S	Collector	Undivided	4	5,112	26,200	A	Collector	Undivided	2*	5,112
12th St S	north of 6th Ave S	Collector	Unidivided	2	2,170	16,600	A	Collector	Unidivided	2	2,170

* general purpose lanes

Level of Service Chart

Functional Classification	Lanes	Maximum Daily Flow Rate Related to Level of Service					
		A	B	C	D	E	F
Freeway	4	23,800	34,000	42,160	51,000	68,000	>68,000
	6	35,700	51,000	63,240	76,500	102,000	>102,000
	8	47,600	68,000	84,320	102,000	136,000	>136,000
	10	59,500	85,000	105,400	127,500	170,000	>170,000
Expressway	4	17,500	25,000	31,000	37,500	50,000	>50,000
	6	26,250	37,500	46,500	56,250	75,000	>75,000
	8	35,000	50,000	62,000	75,000	100,000	>100,000
Arterial (Divided)	2	7,700	11,000	13,640	16,500	22,000	>22,000
	4	11,865	16,950	21,018	25,425	33,900	>33,900
	6	17,500	25,000	31,000	37,500	50,000	>50,000
	8	25,760	36,800	45,632	55,200	73,600	>73,600
Arterial (Undivided)	2	6,230	8,900	11,036	13,350	17,800	>17,800
	4	10,850	15,500	19,220	23,250	31,000	>31,000
	6	16,030	22,900	28,396	34,350	45,800	>45,800
	8	22,085	31,550	39,122	47,325	63,100	>63,100
Collector (Divided)	2	7,280	10,400	12,896	15,600	20,800	>20,800
	4	9,975	14,250	17,670	21,375	28,500	>28,500
	6	14,700	21,000	26,040	31,500	42,000	>42,000
Collector (Undivided)	2	5,810	8,300	10,292	12,450	16,600	>16,600
	4	9,170	13,100	16,244	19,650	26,200	>26,200
	6	13,545	19,350	23,994	29,025	38,700	>38,700

Table 5A
Existing and Future Intersection Capacity Analysis
10th Avenue South Corridor

Intersection	Approach	Existing		Proposed	
		AM Peak	PM Peak	AM Peak	PM Peak
10th Ave S at 8th St S	8th St S Northbound	B (19)	A (10)	B (19)	A (10)
	8th St S Southbound	E (74)	B (11)	E (74)	B (11)
	10th Ave S Eastbound	E (56)	A (6)	E (56)	A (6)
	10th Ave S Westbound	B (10)	A (9)	B (10)	A (9)
	Overall Intersection	***D (43)***	***A (9)***	***D (43)***	***A (9)***
10th Ave S at 11th Way S	11th Way S Northbound	D (47)	D (51)	D (47)	D (51)
	Parking Lot Southbound	C (21)	B (17)	C (21)	B (17)
	10th Ave S Eastbound	B (11)	B (14)	B (14)	B (18)
	10th Ave S Westbound	B (18)	A (5)	C (21)	E (68)
	Overall Intersection	***C (22)***	***B (20)***	***C (23)***	***D (49)***
10th Ave S at 12th St S	12th St S Northbound	B (16)	C (25)	B (16)	C (25)
	Parking Lot Southbound	B (15)	C (24)	B (15)	C (24)
	10th Ave S Eastbound	B (18)	A (5)	C (33)	A (6)
	10th Ave S Westbound	A (10)	A (3)	B (15)	A (5)
	Overall Intersection	***B (15)***	***A (6)***	***C (26)***	***A (7)***
10th Ave S at 13th St S	13th St S Northbound	B (14)	C (24)	B (14)	C (24)
	13th St S Southbound	D (41)	C (32)	B (18)	C (23)
	10th Ave S Eastbound	A (8)	B (19)	C (20)	C (31)
	10th Ave S Westbound	B (10)	C (35)	B (13)	F (100)
	Overall Intersection	***B (20)***	***C (30)***	***B (18)***	***E (60)***
10th Ave S at 14th St S	14th St S Northbound	B (17)	C (21)	B (17)	C (21)
	14th St S Southbound	D (41)	B (18)	C (32)	C (21)
	10th Ave S Eastbound	B (13)	B (17)	D (52)	C (24)
	10th Ave S Westbound	B (18)	B (12)	C (24)	D (37)
	Overall Intersection	***B (19)***	***B (15)***	***D (38)***	***C (29)***
10th Ave S at 16th St S	16th St S Northbound	C (29)	C (26)	C (29)	B (17)
	16th St S Southbound	C (29)	D (37)	C (29)	C (30)
	10th Ave S Eastbound	A (8)	B (16)	A (8)	C (27)
	10th Ave S Westbound	A (5)	B (15)	A (5)	D (37)
	Overall Intersection	***B (11)***	***C (22)***	***B (11)***	***C (29)***
10th Ave S at 17th St S	17th St S Northbound	D (33)	F (87)	C (25)	C (30)
	17th St S Southbound	C (23)	F (55)	C (24)	C (28)
	10th Ave S Eastbound	A (0)	A (1)	B (16)	A (8)
	10th Ave S Westbound	A (4)	A (1)	A (9)	A (10)
	Overall Intersection	*--*	*--*	***B (14)***	***B (14)***
10th Ave S at 18th St S	18th St S Northbound	B (17)	B (20)	B (17)	B (20)
	18th St S Southbound	B (17)	C (21)	B (17)	C (21)
	10th Ave S Eastbound	D (37)	B (17)	C (22)	B (15)
	10th Ave S Westbound	B (16)	B (13)	B (16)	B (13)
	Overall Intersection	***C (25)***	***B (18)***	***B (19)***	***B (17)***

(number in parenthesis is average control delay per vehicle)
(yellow highlight shows areas of significant negative impact of proposed changes)

Table 5B
Existing and Future Intersection Capacity Analysis
5th Avenue South/12th Street South Corridor

Intersection	*Approach*	*Existing*		*Proposed*	
		AM Peak	*PM Peak*	*AM Peak*	*PM Peak*
5th Ave S at 12th St S	12th St S Northbound	D (53)	C (31)	D (53)	C (34)
	12th St S Southbound	D (39)	D (38)	D (39)	D (38)
	5th Ave S Eastbound	A (6)	A (5)	A (8)	A (5)
	5th Ave S Westbound	A (2)	A (6)	A (3)	B (14)
	Overall Intersection	***B (18)***	***B (16)***	***B (19)***	***C (20)***
5th Ave S at 13th St S	13th St S Northbound	A (3)	A (8)	A (3)	A (10)
	13th St S Southbound	B (16)	B (15)	B (19)	B (16)
	5th Ave S Eastbound	B (12)	B (13)	B (16)	B (14)
	5th Ave S Westbound	A (10)	A (5)	B (14)	C (34)
	Overall Intersection	***B (11)***	***A (8)***	***B (14)***	***C (24)***
5th Ave S at 14th St S	14th St S Northbound	B (11)	A (6)	B (12)	A (7)
	14th St S Southbound	B (15)	B (12)	B (19)	B (15)
	5th Ave S Eastbound	B (13)	B (14)	C (33)	B (16)
	5th Ave S Westbound	B (19)	C (31)	C (27)	F (268)
	Overall Intersection	***B (14)***	***B (19)***	***C (23)***	***F (125)***
6th Ave S at 8th St S	8th St S Northbound	D (43)	D (37)	D (49)	D (46)
	8th St S Southbound	C (28)	C (33)	C (31)	D (48)
	6th Ave S Eastbound	C (23)	B (18)	C (23)	C (23)
	6th Ave S Westbound	B (18)	A (9)	B (18)	B (13)
	Overall Intersection	***C (26)***	***B (19)***	***C (27)***	***C (25)***
6th Ave S at 12th St S	12th St S Southbound	E (75)	D (45)	E (69)	D (46)
	6th Ave S Eastbound	B (11)	A (7)	B (11)	A (8)
	6th Ave S Westbound	A (1)	B (11)	A (1)	B (12)
	Overall Intersection	***B (14)***	***B (14)***	***B (13)***	***B (15)***

(number in parenthesis is average control delay per vehicle)
(yellow highlight shows areas of significant negative impact of proposed changes)

Table 5C
Existing and Future Intersection Capacity Analysis
7th Avenue South Corridor

Intersection	*Approach*	*Existing*		*Proposed*	
		AM Peak	*PM Peak*	*AM Peak*	*PM Peak*
7th Ave S at 14th St S	14th St S Northbound	A (3)	A (6)	A (5)	A (4)
	14th St S Southbound	A (3)	A (5)	A (4)	A (8)
	7th Ave S Westbound	D (37)	D (43)	C (33)	D (44)
	Overall Intersection	***A (6)***	***B (15)***	***A (7)***	***B (15)***
7th Ave S at 18th St S	18th St S Northbound	B (17)	C (25)	B (17)	C (25)
	18th St S Southbound	B (19)	C (24)	B (19)	C (24)
	7th Ave S Eastbound	A (8)	A (10)	A (8)	B (11)
	7th Ave S Westbound	A (9)	B (12)	A (9)	B (10)
	Overall Intersection	***B (15)***	***B (18)***	***B (15)***	***B (18)***
7th Ave S at 19th St S	19th St S Northbound	B (13)	B (18)	B (13)	B (18)
	19th St S Southbound	B (14)	B (19)	B (14)	B (19)
	7th Ave S Eastbound	B (18)	B (17)	B (19)	B (17)
	7th Ave S Westbound	D (41)	B (20)	D (41)	C (24)
	Overall Intersection	***C (21)***	***B (19)***	***C (21)***	***B (19)***
7th Ave S at 20th St S	20th St S Northbound	B (14)	B (13)	B (14)	B (13)
	20th St S Southbound	B (13)	B (14)	B (13)	B (14)
	7th Ave S Eastbound	B (14)	C (20)	B (17)	C (23)
	7th Ave S Westbound	B (19)	C (22)	B (19)	C (23)
	Overall Intersection	***B (15)***	***B (17)***	***B (15)***	***B (18)***

(number in parenthesis is average control delay per vehicle)

Table 5D
Existing and Future Intersection Capacity Analysis
13th Street South Corridor

Intersection	*Approach*	*Existing*		*Proposed*	
		AM Peak	*PM Peak*	*AM Peak*	*PM Peak*
13th St S at 5th Ave S	13th St S Northbound	A (3)	A (8)	A (3)	A (10)
	13th St S Southbound	B (16)	B (15)	B (19)	B (16)
	5th Ave S Eastbound	B (12)	B (13)	B (16)	B (14)
	5th Ave S Westbound	A (10)	A (5)	B (14)	C (34)
	Overall Intersection	***B (11)***	***A (8)***	***B (14)***	***C (24)***
13th St S at 6th Ave S	13th St S Northbound	C (22)	B (19)	C (30)	C (22)
	13th St S Southbound	C (20)	B (16)	D (51)	C (24)
	6th Ave S Eastbound	A (10)	B (12)	A (10)	B (11)
	6th Ave S Westbound	A (8)	A (10)	A (8)	A (9)
	Overall Intersection	***B (14)***	***B (13)***	***C (22)***	***B (14)***
13th St S at University Blvd	13th St S Northbound	C (28)	D (36)	C (31)	E (58)
	13th St S Southbound	C (27)	D (36)	C (35)	D (43)
	University Blvd Eastbound	B (18)	B (14)	B (18)	B (14)
	University Blvd Westbound	B (17)	B (13)	B (17)	B (13)
	Overall Intersection	***B (20)***	***B (20)***	***C (21)***	***C (24)***
13th St S at 10th Ave S	13th St S Northbound	B (14)	C (24)	B (14)	C (24)
	13th St S Southbound	D (41)	C (32)	B (18)	C (23)
	10th Ave S Eastbound	A (8)	B (19)	C (20)	C (31)
	10th Ave S Westbound	B (10)	C (35)	B (13)	F (100)
	Overall Intersection	***B (20)***	***C (30)***	***B (18)***	***E (60)***

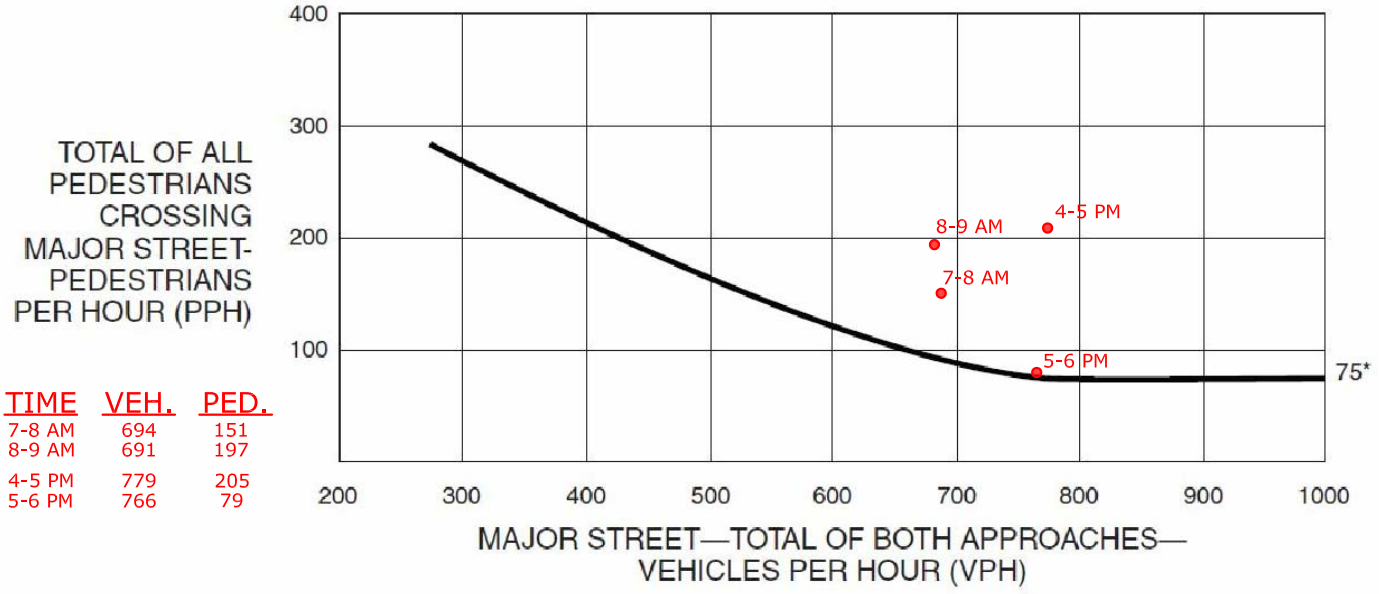
(number in parenthesis is average control delay per vehicle)
(yellow highlight shows areas of significant negative impact of proposed changes)

Table 5E
Existing and Future Intersection Capacity Analysis
14th Street South Corridor

Intersection	*Approach*	*Existing*		*Proposed*	
		AM Peak	*PM Peak*	*AM Peak*	*PM Peak*
14th St S at 5th Ave S	14th St S Northbound	B (11)	A (6)	B (12)	A (7)
	14th St S Southbound	B (15)	B (12)	B (19)	B (15)
	5th Ave S Eastbound	B (13)	B (14)	C (33)	B (16)
	5th Ave S Westbound	B (19)	C (31)	C (27)	F (268)
	Overall Intersection	***B (14)***	***B (19)***	***C (23)***	***F (125)***
14th St S at 6th Ave S	14th St S Northbound	B (13)	C (27)	B (16)	D (40)
	14th St S Southbound	B (14)	B (13)	B (18)	C (24)
	6th Ave S Eastbound	B (13)	A (10)	B (13)	B (12)
	6th Ave S Westbound	B (13)	B (18)	B (13)	B (18)
	Overall Intersection	***B (13)***	***B (17)***	***B (15)***	***C (23)***
14th St S at 7th Ave S	14th St S Northbound	A (3)	A (6)	A (5)	A (4)
	14th St S Southbound	A (3)	A (5)	A (4)	A (8)
	7th Ave S Westbound	D (37)	D (43)	C (33)	D (44)
	Overall Intersection	***A (6)***	***B (15)***	***A (7)***	***B (15)***
14th St S at University Blvd	14th St S Northbound	C (22)	D (40)	C (34)	E (75)
	14th St S Southbound	C (35)	D (51)	D (45)	F (290)
	University Blvd Eastbound	B (16)	B (18)	B (16)	B (18)
	University Blvd Westbound	B (14)	B (14)	B(14)	B (14)
	Overall Intersection	***B (19)***	***C (26)***	***C (23)***	***E (63)***
14th St S at 10th Ave S	14th St S Northbound	B (17)	C (21)	B (17)	C (21)
	14th St S Southbound	D (41)	B (18)	C (32)	C (21)
	10th Ave S Eastbound	B (13)	B (17)	D (52)	C (24)
	10th Ave S Westbound	B (18)	B (12)	C (24)	D (37)
	Overall Intersection	***B (19)***	***B (15)***	***D (38)***	***C (29)***

(number in parenthesis is average control delay per vehicle)
(yellow highlight shows areas of significant negative impact of proposed changes)

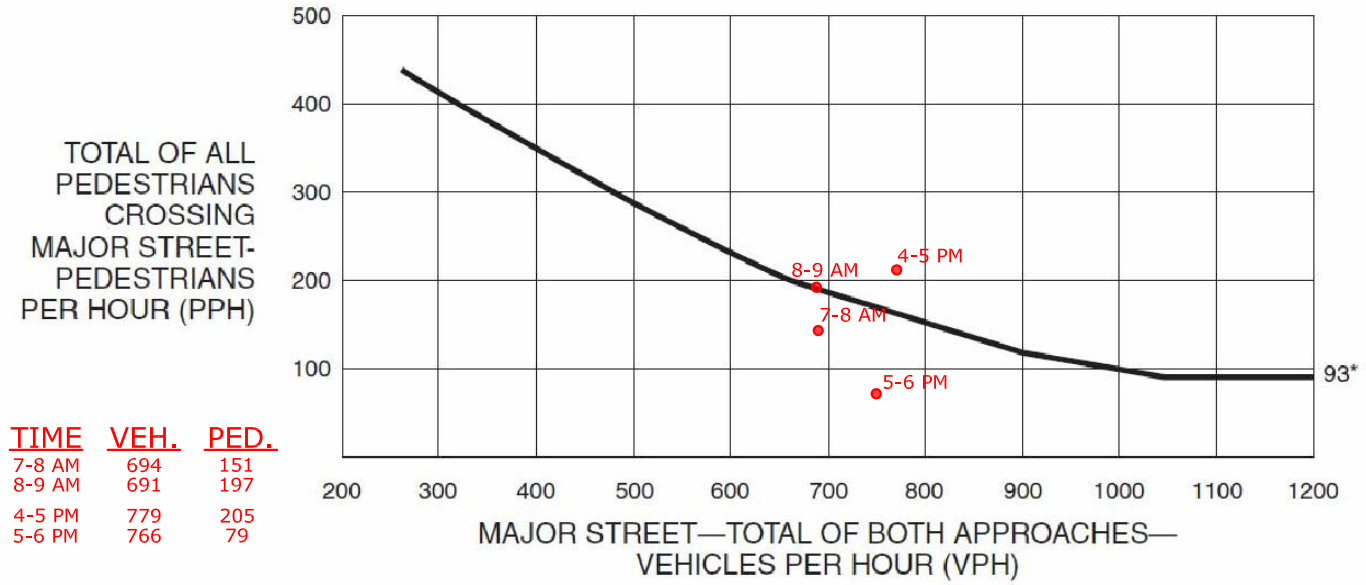
Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)



TIME	VEH.	PED.
7-8 AM	694	151
8-9 AM	691	197
4-5 PM	779	205
5-6 PM	766	79

*Note: 75 pph applies as the lower threshold volume.

Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



TIME	VEH.	PED.
7-8 AM	694	151
8-9 AM	691	197
4-5 PM	779	205
5-6 PM	766	79

*Note: 93 pph applies as the lower threshold volume.

NOTE: 85th Percentile Speed is 36 MPH

RECOMMENDED ADDITIONAL IMPROVEMENTS

Results of the peak hour intersection capacity analyses with the proposed road diet projects in place indicate that certain approaches would experience significant negative impacts in level of service and delay with the proposed projects in place. Therefore, additional improvements were developed to mitigate the negative impacts. The following is a listing of the additional recommended improvements required to mitigate significant negative traffic impacts:

10th Avenue South Corridor

- Add westbound right turn lane at 11th Way South
- Add westbound right turn lane 13th Street South
- Add eastbound right turn lane at 14th Street South
- Add westbound right turn lane at 16th Street South

13th Street South Corridor

- Add southbound right turn lane at 6th Avenue South
- Add northbound right turn lane at University Blvd

14th Street South Corridor

- Add northbound right turn lane at University Blvd
- Add southbound right turn lane at University Blvd

PEAK HOUR INTERSECTION CAPACITY ANALYSIS WITH RECOMMENDED IMPROVEMENTS

Future peak hour intersection capacity analyses with the road diet projects and additional recommended improvements in place were performed for the study area intersections using the methodology of analysis included in the 2010 *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 "C" or better is desirable, with a level of service "D" considered acceptable during peak hours of traffic flow. The results of the future peak hour intersection capacity analyses for the study area intersections are summarized in Tables 6A-6E.

Table 6A
Existing and Proposed Intersection Capacity Analysis
10th Avenue South Corridor

Intersection	Approach	Existing		Proposed		With Improvements	
		AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
10th Ave S at 8th St S	8th St S Northbound	B (19)	A (10)	B (19)	A (10)		
	8th St S Southbound	E (74)	B (11)	E (74)	B (11)		
	10th Ave S Eastbound	E (56)	A (6)	E (56)	A (6)		
	10th Ave S Westbound	B (10)	A (9)	B (10)	A (9)		
	Overall Intersection	***D (43)***	***A (9)***	***D (43)***	***A (9)***		
10th Ave S at 11th Way S	11th Way S Northbound	D (47)	D (51)	D (47)	D (51)	D (47)	D (51)
	Parking Lot Southbound	C (21)	B (17)	C (21)	B (17)	C (21)	B (17)
	10th Ave S Eastbound	B (11)	B (14)	B (14)	B (18)	B (14)	B (17)
	10th Ave S Westbound	B (18)	A (5)	C (21)	E (68)	B (20)	D (36)
	Overall Intersection	***C (22)***	***B (20)***	***C (23)***	***D (49)***	***C (23)***	***C (35)***
10th Ave S at 12th St S	12th St S Northbound	B (16)	C (25)	B (16)	C (25)		
	Parking Lot Southbound	B (15)	C (24)	B (15)	C (24)		
	10th Ave S Eastbound	B (18)	A (5)	C (33)	A (6)		
	10th Ave S Westbound	A (10)	A (3)	B (15)	A (5)		
	Overall Intersection	***B (15)***	***A (6)***	***C (26)***	***A (7)***		
10th Ave S at 13th St S	13th St S Northbound	B (14)	C (24)	B (14)	C (24)	B (14)	C (24)
	13th St S Southbound	D (41)	C (32)	B (18)	C (23)	B (18)	C (23)
	10th Ave S Eastbound	A (8)	B (19)	C (20)	C (31)	C (20)	B (19)
	10th Ave S Westbound	B (10)	C (35)	B (13)	F (100)	B (11)	D (41)
	Overall Intersection	***B (20)***	***C (30)***	***B (18)***	***E (60)***	***B (17)***	***C (31)***
10th Ave S at 14th St S	14th St S Northbound	B (17)	C (21)	B (17)	C (21)	B (17)	C (21)
	14th St S Southbound	D (41)	B (18)	C (32)	C (21)	C (32)	C (20)
	10th Ave S Eastbound	B (13)	B (17)	D (52)	C (24)	D (38)	C (24)
	10th Ave S Westbound	B (18)	B (12)	C (24)	D (37)	C (25)	D (39)
	Overall Intersection	***B (19)***	***B (15)***	***D (38)***	***C (29)***	***C (31)***	***C (29)***
10th Ave S at 16th St S	16th St S Northbound	C (29)	C (26)	C (29)	B (17)	C (29)	C (27)
	16th St S Southbound	C (29)	D (37)	C (29)	C (30)	C (29)	D (37)
	10th Ave S Eastbound	A (8)	B (16)	A (8)	C (27)	A (9)	B (18)
	10th Ave S Westbound	A (5)	B (15)	A (5)	D (37)	A (5)	C (26)
	Overall Intersection	***B (11)***	***C (22)***	***B (11)***	***C (29)***	***B (11)***	***C (27)***
10th Ave S at 17th St S	17th St S Northbound	D (33)	F (87)	C (25)	C (30)		
	17th St S Southbound	C (23)	F (55)	C (24)	C (28)		
	10th Ave S Eastbound	A (0)	A (1)	B (16)	A (8)		
	10th Ave S Westbound	A (4)	A (1)	A (9)	A (10)		
	Overall Intersection	***--***	***--***	***B (14)***	***B (14)***		
10th Ave S at 18th St S	18th St S Northbound	B (17)	B (20)	B (17)	B (20)		
	18th St S Southbound	B (17)	C (21)	B (17)	C (21)		
	10th Ave S Eastbound	D (37)	B (17)	C (22)	B (15)		
	10th Ave S Westbound	B (16)	B (13)	B (16)	B (13)		
	Overall Intersection	***C (25)***	***B (18)***	***B (19)***	***B (17)***		

(number in parenthesis is average control delay per vehicle)
(yellow highlight shows areas of significant negative impact of proposed changes)

Table 6B
Existing and Proposed Intersection Capacity Analysis
5th Avenue South/12th Street South Corridor

Intersection	*Approach*	*Existing*		*Proposed*	
		AM Peak	*PM Peak*	*AM Peak*	*PM Peak*
5th Ave S at 12th St S	12th St S Northbound	D (53)	C (31)	D (53)	C (34)
	12th St S Southbound	D (39)	D (38)	D (39)	D (38)
	5th Ave S Eastbound	A (6)	A (5)	A (8)	A (5)
	5th Ave S Westbound	A (2)	A (6)	A (3)	B (14)
	Overall Intersection	***B (18)***	***B (16)***	***B (19)***	***C (20)***
5th Ave S at 13th St S	13th St S Northbound	A (3)	A (8)	A (3)	A (10)
	13th St S Southbound	B (16)	B (15)	B (19)	B (16)
	5th Ave S Eastbound	B (12)	B (13)	B (16)	B (14)
	5th Ave S Westbound	A (10)	A (5)	B (14)	C (34)
	Overall Intersection	***B (11)***	***A (8)***	***B (14)***	***C (24)***
5th Ave S at 14th St S	14th St S Northbound	B (11)	A (6)	B (12)	A (7)
	14th St S Southbound	B (15)	B (12)	B (19)	B (15)
	5th Ave S Eastbound	B (13)	B (14)	C (33)	B (16)
	5th Ave S Westbound	B (19)	C (31)	C (27)	F (268)
	Overall Intersection	***B (14)***	***B (19)***	***C (23)***	***F (125)***
6th Ave S at 8th St S	8th St S Northbound	D (43)	D (37)	D (49)	D (46)
	8th St S Southbound	C (28)	C (33)	C (31)	D (48)
	6th Ave S Eastbound	C (23)	B (18)	C (23)	C (23)
	6th Ave S Westbound	B (18)	A (9)	B (18)	B (13)
	Overall Intersection	***C (26)***	***B (19)***	***C (27)***	***C (25)***
6th Ave S at 12th St S	12th St S Southbound	E (75)	D (45)	E (69)	D (46)
	6th Ave S Eastbound	B (11)	A (7)	B (11)	A (8)
	6th Ave S Westbound	A (1)	B (11)	A (1)	B (12)
	Overall Intersection	***B (14)***	***B (14)***	***B (13)***	***B (15)***

(number in parenthesis is average control delay per vehicle)
(yellow highlight shows areas of significant negative impact of proposed changes)

Table 6C
Existing and Proposed Intersection Capacity Analysis
7th Avenue South Corridor

Intersection	*Approach*	*Existing*		*Proposed*	
		AM Peak	*PM Peak*	*AM Peak*	*PM Peak*
7th Ave S at 14th St S	14th St S Northbound	A (3)	A (6)	A (5)	A (4)
	14th St S Southbound	A (3)	A (5)	A (4)	A (8)
	7th Ave S Westbound	D (37)	D (43)	C (33)	D (44)
	Overall Intersection	***A (6)***	***B (15)***	***A (7)***	***B (15)***
7th Ave S at 18th St S	18th St S Northbound	B (17)	C (25)	B (17)	C (25)
	18th St S Southbound	B (19)	C (24)	B (19)	C (24)
	7th Ave S Eastbound	A (8)	A (10)	A (8)	B (11)
	7th Ave S Westbound	A (9)	B (12)	A (9)	B (10)
	Overall Intersection	***B (15)***	***B (18)***	***B (15)***	***B (18)***
7th Ave S at 19th St S	19th St S Northbound	B (13)	B (18)	B (13)	B (18)
	19th St S Southbound	B (14)	B (19)	B (14)	B (19)
	7th Ave S Eastbound	B (18)	B (17)	B (19)	B (17)
	7th Ave S Westbound	D (41)	B (20)	D (41)	C (24)
	Overall Intersection	***C (21)***	***B (19)***	***C (21)***	***B (19)***
7th Ave S at 20th St S	20th St S Northbound	B (14)	B (13)	B (14)	B (13)
	20th St S Southbound	B (13)	B (14)	B (13)	B (14)
	7th Ave S Eastbound	B (14)	C (20)	B (17)	C (23)
	7th Ave S Westbound	B (19)	C (22)	B (19)	C (23)
	Overall Intersection	***B (15)***	***B (17)***	***B (15)***	***B (18)***

(number in parenthesis is average control delay per vehicle)

Table 6D
Existing and Proposed Intersection Capacity Analysis
13th Street South Corridor

Intersection	*Approach*	*Existing*		*Proposed*		*With Improvements*	
		AM Peak	*PM Peak*	*AM Peak*	*PM Peak*	*AM Peak*	*PM Peak*
13th St S at 5th Ave S	13th St S Northbound	A (3)	A (8)	A (3)	A (10)		
	13th St S Southbound	B (16)	B (15)	B (19)	B (16)		
	5th Ave S Eastbound	B (12)	B (13)	B (16)	B (14)		
	5th Ave S Westbound	A (10)	A (5)	B (14)	C (34)		
	Overall Intersection	***B (11)***	***A (8)***	***B (14)***	***C (24)***		
13th St S at 6th Ave S	13th St S Northbound	C (22)	B (19)	C (30)	C (22)	C (30)	C (22)
	13th St S Southbound	C (20)	B (16)	D (51)	C (24)	D (44)	C (23)
	6th Ave S Eastbound	A (10)	B (12)	A (10)	B (11)	A (10)	B (11)
	6th Ave S Westbound	A (8)	A (10)	A (8)	A (9)	A (8)	A (9)
	Overall Intersection	***B (14)***	***B (13)***	***C (22)***	***B (14)***	***C (21)***	***B (14)***
13th St S at University Blvd	13th St S Northbound	C (28)	D (36)	C (31)	E (58)	C (29)	D (54)
	13th St S Southbound	C (27)	D (36)	C (35)	D (43)	C (35)	D (40)
	University Blvd Eastbound	B (18)	B (14)	B (18)	B (14)	B (18)	B (14)
	University Blvd Westbound	B (17)	B (13)	B (17)	B (13)	B (17)	B (14)
	Overall Intersection	***B (20)***	***B (20)***	***C (21)***	***C (24)***	***C (21)***	***C (24)***
13th St S at 10th Ave S	13th St S Northbound	B (14)	C (24)	B (14)	C (24)	B (14)	C (24)
	13th St S Southbound	D (41)	C (32)	B (18)	C (23)	B (18)	C (23)
	10th Ave S Eastbound	A (8)	B (19)	C (20)	C (31)	C (20)	B (19)
	10th Ave S Westbound	B (10)	C (35)	B (13)	F (100)	B (11)	D (41)
	Overall Intersection	***B (20)***	***C (30)***	***B (18)***	***E (60)***	***B (17)***	***C (31)***

(number in parenthesis is average control delay per vehicle)
(yellow highlight shows areas of significant negative impact of proposed changes)

Table 6E
Existing and Proposed Intersection Capacity Analysis
14th Street South Corridor

Intersection	*Approach*	*Existing*		*Proposed*		*With Improvements*	
		AM Peak	*PM Peak*	*AM Peak*	*PM Peak*	*AM Peak*	*PM Peak*
14th St S at 5th Ave S	14th St S Northbound	B (11)	A (6)	B (12)	A (7)		
	14th St S Southbound	B (15)	B (12)	B (19)	B (15)		
	5th Ave S Eastbound	B (13)	B (14)	C (33)	B (16)		
	5th Ave S Westbound	B (19)	C (31)	C (27)	F (268)		
	Overall Intersection	***B (14)***	***B (19)***	***C (23)***	***F (125)***		
14th St S at 6th Ave S	14th St S Northbound	B (13)	C (27)	B (16)	D (40)		
	14th St S Southbound	B (14)	B (13)	B (18)	C (24)		
	6th Ave S Eastbound	B (13)	A (10)	B (13)	B (12)		
	6th Ave S Westbound	B (13)	B (18)	B (13)	B (18)		
	Overall Intersection	***B (13)***	***B (17)***	***B (15)***	***C (23)***		
14th St S at 7th Ave S	14th St S Northbound	A (3)	A (6)	A (5)	A (4)		
	14th St S Southbound	A (3)	A (5)	A (4)	A (8)		
	7th Ave S Westbound	D (37)	D (43)	C (33)	D (44)		
	Overall Intersection	***A (6)***	***B (15)***	***A (7)***	***B (15)***		
14th St S at University Blvd	14th St S Northbound	C (22)	D (40)	C (34)	E (75)	C (25)	D (50)
	14th St S Southbound	C (35)	D (51)	D (45)	F (290)	D (42)	D (45)
	University Blvd Eastbound	B (16)	B (18)	B (16)	B (18)	B (16)	B (18)
	University Blvd Westbound	B (14)	B (14)	B(14)	B (14)	B (14)	B (14)
	Overall Intersection	***B (19)***	***C (26)***	***C (23)***	***E (63)***	***C (21)***	***C)27)***
14th St S at 10th Ave S	14th St S Northbound	B (17)	C (21)	B (17)	C (21)	B (17)	C (21)
	14th St S Southbound	D (41)	B (18)	C (32)	C (21)	C (32)	C (20)
	10th Ave S Eastbound	B (13)	B (17)	D (52)	C (24)	D (38)	C (24)
	10th Ave S Westbound	B (18)	B (12)	C (24)	D (37)	C (25)	D (39)
	Overall Intersection	***B (19)***	***B (15)***	***D (38)***	***C (29)***	***C (31)***	***C (29)***

(number in parenthesis is average control delay per vehicle)
(yellow highlight shows areas of significant negative impact of proposed changes)