

Section 3E:

Gay Street Corridor



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INTRODUCTION

This section documents the results of traffic operations evaluations for the Gay Street Corridor from Drake Avenue to Samford Avenue in Auburn, Alabama. The intersections analyzed in this corridor include:

- Gay Street at Drake Avenue
- Gay Street at Opelika Road
- Gay Street at Mitcham Avenue
- Gay Street at Glenn Avenue
- Gay Street at Magnolia Avenue
- Gay Street at Thach Avenue
- Gay Street at Miller Avenue
- Gay Street at Samford Avenue

The locations of the study intersections along the Gay Street Corridor are illustrated in **Figure 1**. To accomplish the traffic operations evaluations for the Gay Street Corridor, the following tasks were undertaken:

- existing peak hour turning movement counts were conducted for the study intersections;
- drive times were collected for the morning and afternoon commuter peak periods;
- capacity analyses were conducted for the study intersections;
- arterial capacity analyses were conducted for Gay Street;
- current traffic operational deficiencies were identified;
- projections for ten (10) year growth in traffic through the corridor were developed; and
- geometric and traffic control improvements were developed for the study intersections to address traffic operational and safety deficiencies for existing and projected ten (10) year conditions.

Sources of information used in this section include: The City of Auburn, Alabama; the Institute of Transportation Engineers; American Association of State Highway and Transportation Officials; the

Manual on Uniform Traffic Control Devices; the Transportation Research Board; and the files and field reconnaissance efforts of Skipper Consulting, Inc.

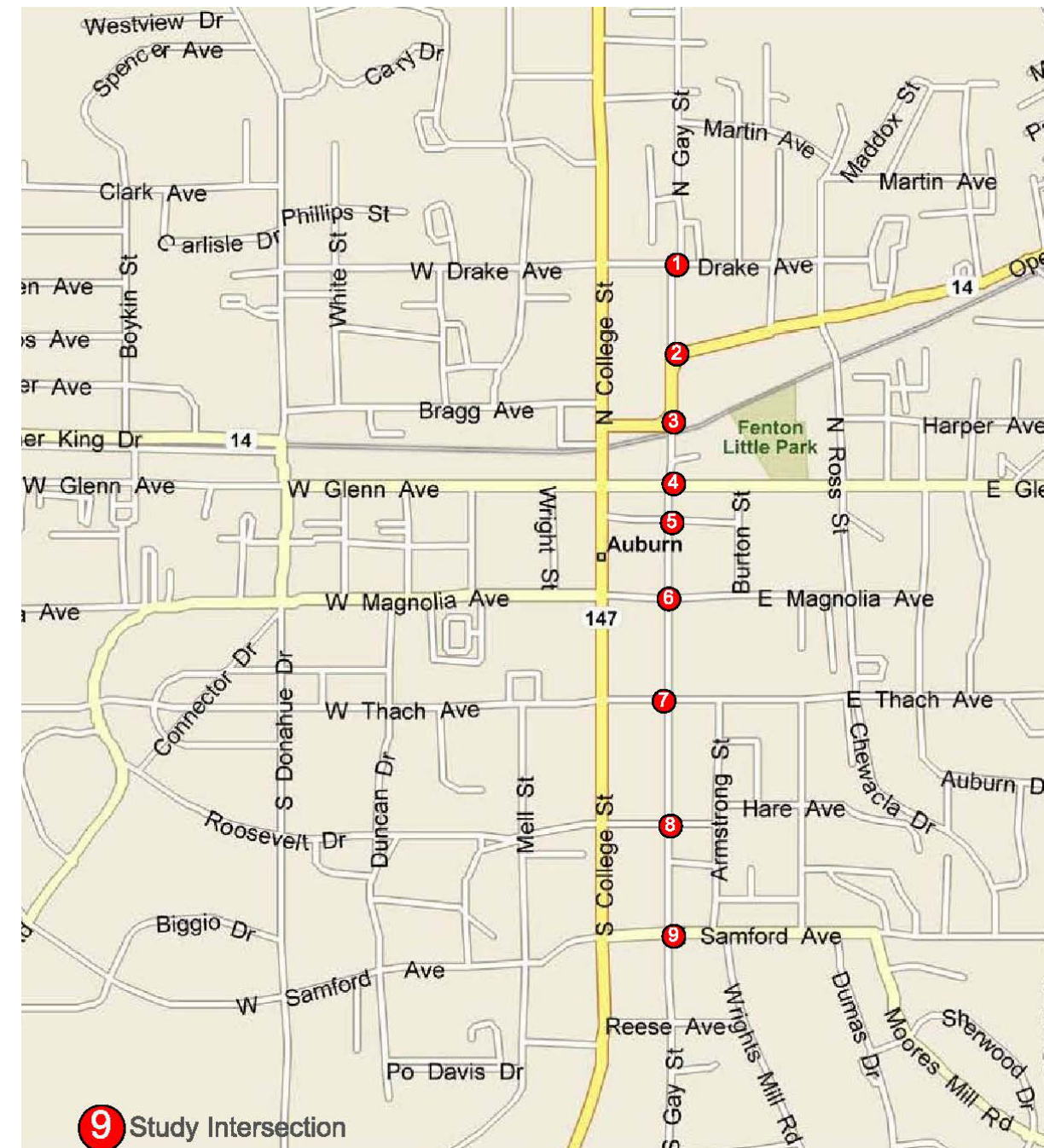


Figure 1
Gay Street Corridor and Study Intersections

BACKGROUND INFORMATION

Study Area Roadways

The Gay Street Corridor from Drake Avenue to Samford Avenue passes along the eastern edge of the downtown business district. Gay Street is classified as minor arterial from Samford Avenue to Opelika Road and a collector from Opelika Road to Drake Avenue. This segment of Gay Street is approximately 1.0 mile in length. Characteristics of the roadways within the Gay Street Corridor are summarized in

Table 1.

Table 1 - Corridor Roadway Characteristics

| Roadway | Parking | # of Lanes | Travel Direction | Travel Speeds (mph) | Classification |
|--|-------------------|------------|------------------|---------------------|----------------|
| Gay Street (Samford Ave. to Thach Ave.) | None | 2 | North/South | 25 | Minor Arterial |
| Gay Street (Thach Ave. to Glenn Ave.) | Parallel & Angled | 3 | North/South | 25 | Minor Arterial |
| Gay Street (Glenn Avenue to Opelika Rd.) | None | 3 | North/South | 25 | Minor Arterial |
| Gay Street (Opelika Rd. to Drake Ave.) | None | 2 | North/South | 25 | Collector |
| Drake Avenue | None | 2 | East/West | 25 | Collector |
| Opelika Road | None | 3 | East/West | 30 | Minor Arterial |
| Mitcham Avenue | None | 3 | East/West | 25 | Minor Arterial |
| Glenn Avenue | None | 4 | East/West | 30 | Minor Arterial |
| Magnolia Avenue | Angled | 2 | East/West | 25 | Collector |
| Thach Avenue | None | 2 | East/West | 25 | Collector |
| Miller Avenue | None | 2 | East/West | 25 | Collector |
| Samford Avenue | None | 2 | East/West | 25 | Minor Arterial |

Peak Hour Traffic Counts

Morning (7:00-9:00 am) and afternoon (4:00-6:00 pm) peak hour turning movement counts were conducted along the Gay Street Corridor at study intersections during the months of January and February 2018. Traffic count data utilized for the analyses of these intersections is summarized in **Figure 2.**

Peak Period Observations

Observations of traffic operations were conducted within the Gay Street Corridor during the morning and afternoon peak periods. The following items were noted in these observations:

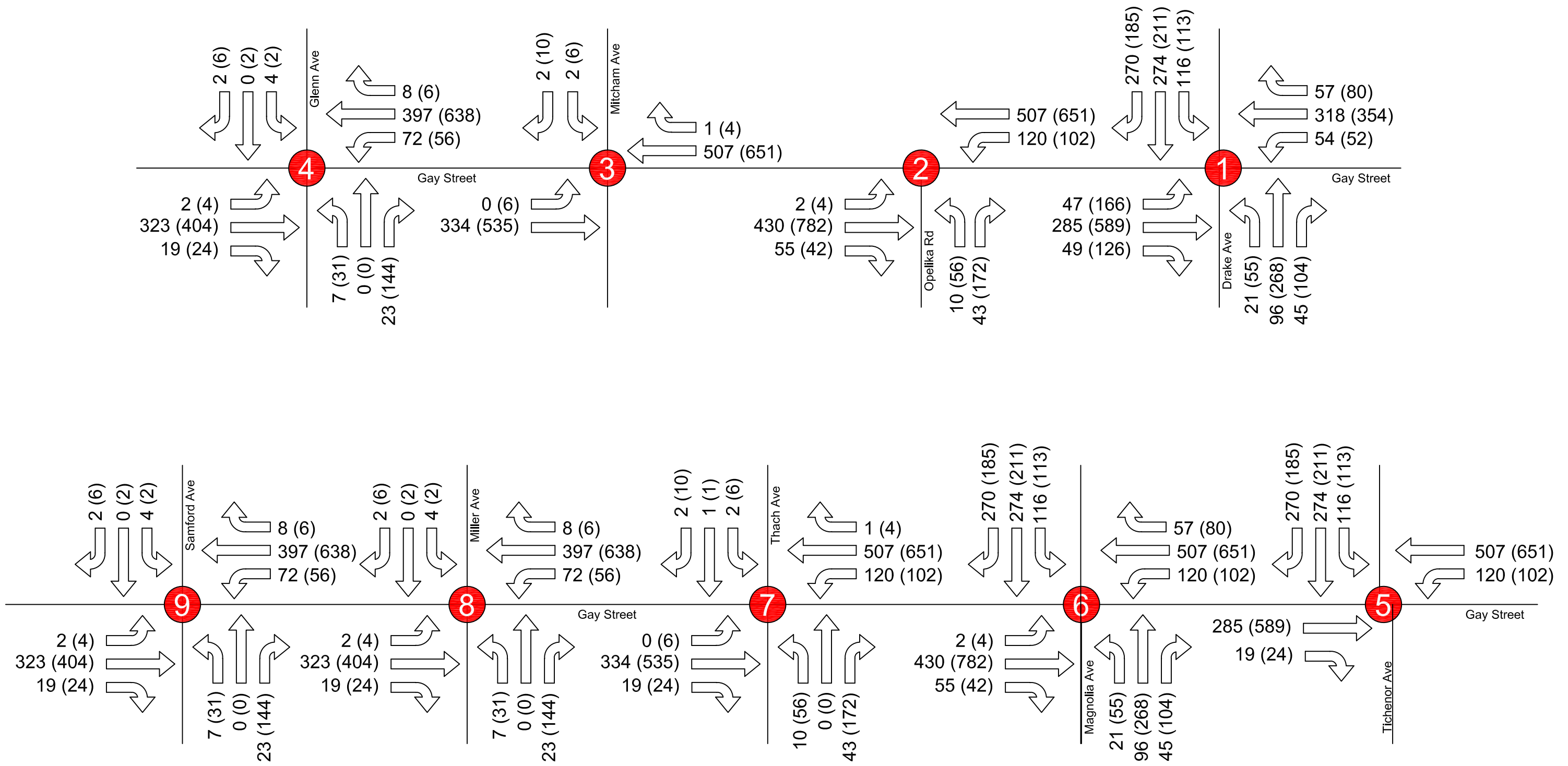
- There were some conflicts observed between vehicles that were angle parked along the west side of Gay Street between Tichenor Avenue and Magnolia Avenue and southbound traffic along Gay Street. The conflicts occurred when the cars that were unparking backed into the southbound travel lanes.

Travel Time

GPS-based Travel time runs were performed on Gay Street from Drake Avenue to Samford Avenue on Monday, April 23, 2018. Travel time runs were performed during the a.m., midday, and p.m. peak periods of traffic flow. Six runs were performed in each direction during each time period. The results of the travel time runs are shown in **Table 2.**

Table 2 – Travel Time Runs

| AM Peak | | | | Midday Peak | | | | PM Peak | | | |
|------------|------|--------------|------------|-------------|------|--------------|------------|------------|------|--------------|------------|
| Start Time | Dir. | Elapsed Time | Avg. Speed | Start Time | Dir. | Elapsed Time | Avg. Speed | Start Time | Dir. | Elapsed Time | Avg. Speed |
| 7:00 | SB | 5:18 | 12.4 | 11:00 | NB | 4:36 | 14.3 | 4:00 | NB | 5:29 | 12.1 |
| 7:07 | NB | 3:37 | 18.0 | 11:06 | SB | 6:14 | 10.6 | 4:06 | SB | 4:35 | 14.4 |
| 7:11 | SB | 3:42 | 17.8 | 11:14 | NB | 6:39 | 9.9 | 4:12 | NB | 5:02 | 13.1 |
| 7:15 | NB | 4:01 | 16.4 | 11:21 | SB | 5:13 | 12.8 | 4:18 | SB | 5:05 | 13.0 |
| 7:20 | SB | 7:37 | 8.7 | 11:28 | NB | 4:49 | 13.7 | 4:24 | NB | 3:32 | 18.6 |
| 7:28 | NB | 4:31 | 14.5 | 11:33 | SB | 5:51 | 11.6 | 4:28 | SB | 5:52 | 11.2 |
| 7:34 | SB | 6:16 | 10.7 | 11:40 | NB | 3:32 | 18.5 | 4:35 | NB | 6:39 | 9.9 |
| 7:41 | NB | 6:37 | 10.4 | 11:45 | SB | 6:19 | 10.4 | 4:43 | SB | 6:41 | 9.8 |
| 7:48 | SB | 5:43 | 11.6 | 11:53 | NB | 6:28 | 10.2 | 4:51 | NB | 5:54 | 11.2 |
| 7:55 | NB | 4:55 | 13.5 | 12:00 | SB | 6:48 | 9.7 | 4:57 | SB | 6:54 | 9.6 |
| 8:01 | SB | 4:22 | 15.1 | 12:08 | NB | 5:04 | 13.0 | 5:05 | NB | 10:11 | 6.7 |
| 8:06 | NB | 4:14 | 15.6 | 12:15 | SB | 4:53 | 13.6 | 5:16 | SB | 8:08 | 8.3 |



**Figure 2 - Existing Traffic Volumes
Gay Street Corridor
Auburn, Alabama**



LEGEND

- AM(PM) Peak Hour Volumes
- Study Intersection

Scale: Not to Scale
Date: 10/19/18

EXISTING CONDITIONS ANALYSES

Existing Intersection Capacity Analysis

Capacity analyses for peak hour conditions at the study intersections along the Gay Street Corridor were conducted for the morning and afternoon peak hour periods using methods outlined in the *Highway Capacity Manual, 2010*. According to methods of the *Highway Capacity Manual*, capacity is expressed as levels of service ranging from “A” (best) through “F” (worst). In general, a level of service “C” is considered desirable while a level of service “D” is considered acceptable during peak hour operations. Results of these capacity analyses for existing conditions are summarized in **Table 3**.

As shown in **Table 3**, all study intersections evaluated along the Gay Street Corridor operate at acceptable levels of service for both peak periods tested.

Table 3 - Existing Intersection Levels of Service

| Intersection (traffic control) | Approach | Movement/Lane Group | Level of Service | |
|--|--------------------|---------------------|------------------|----------------|
| | | | A.M. Peak Hour | P.M. Peak Hour |
| Gay Street at Drake Ave (all-way stop) | EB Drake Ave. | Left/ Through/Right | B | B |
| | WB Drake Ave. | Left/ Through/Right | B | C |
| | NB Gay Street | Left/ Through/Right | A | B |
| | SB Gay Street | Left/ Through/Right | B | B |
| | Overall LOS | | | B |
| Gay Street at Opelika Road (traffic signal) | WB Opelika Road | Left | B | A |
| | | Right | A | A |
| | NB Gay Street | Through | B | B |
| | | Right | A | A |
| | SB Gay Street | Left | B | B |
| | | Through | B | B |
| Overall LOS | | | A | A |
| Gay Street At Mitcham Avenue (traffic signal) | EB Mitcham Ave. | Left/Through | B | B |
| | | Right | A | A |
| | NB Gay Street | Left | A | B |
| | | Through/Right | B | B |
| | SB Gay Street | Left | B | B |
| | | Through | B | C |
| Overall LOS | | | B | B |
| Gay Street at Glenn Ave (traffic signal) | EB Glenn Ave. | Left | C | B |
| | | Through/Right | C | C |
| | WB Glenn Avenue | Left | B | B |
| | | Through/Right | C | C |
| | NB Gay Street | Left | B | C |
| | | Through | C | C |
| | SB Gay Street | Right | C | C |
| Left | | B | C | |
| Overall LOS | | | C | C |
| Gay Street at Tichenor Avenue (side street stop) | EB Tichenor Ave. | Left | C | C |
| | | Right | B | B |
| | WB Tichenor Ave | - | - | - |
| | | - | - | - |
| | NB Gay Street | Through/Right | A | A |
| | SB Gay Street | Left | A | A |
| Through | | B | A | |
| Overall LOS | | | B | B |

Table 3 - Existing Intersection Levels of Service (cont.)

| Intersection (traffic control) | Approach | Movement/Lane Group | Level of Service | |
|---|--------------------|---------------------|-------------------|-------------------|
| | | | A.M. Peak Hour | P.M. Peak Hour |
| Gay Street at Magnolia Avenue (traffic signal) | EB Magnolia Ave. | Left | C | B |
| | | Through/Right | C | B |
| | WB Magnolia Ave | Left | C | B |
| | | Through/Right | C | B |
| | NB Gay Street | Left | B | A |
| | | Through/Right | B | B |
| | SB Gay Street | Left | B | B |
| | | Through | B | A |
| | | Right | B | B |
| | Overall LOS | | | B |
| Gay Street At Thach Avenue (traffic signal) | EB Thach Avenue | Left | B | C |
| | | Through | C | C |
| | | Right | A | A |
| | WB Thach Avenue | Left | B | C |
| | | Through/Right | C | D |
| | NB Gay Street | Left | B | B |
| | | Through/Right | C | C |
| | SB Gay Street | Left | B | B |
| | | Through | B | B |
| | | Right | A | A |
| Overall LOS | | | C | C |
| Gay Street At Miller Avenue (side street stop) | EB Miller Avenue | Left/ Through/Right | D | D |
| | WB Miller Avenue | Left/ Through/Right | C | C |
| | NB Gay Street | Left/ Through/Right | A | A |
| | SB Gay Street | Left/ Through/Right | A | A |
| Gay Street At Samford Avenue (traffic signal) | EB Samford Avenue | Left | B | C |
| | | Through/Right | B | C |
| | WB Samford Avenue | Left | A | C |
| | | Through/Right | B | C |
| | NB Gay Street | Left | B | B |
| | | Through/Right | B | B |
| | SB Gay Street | Left | B | B |
| | | Through/Right | B | B |
| Overall LOS | | | B | C |

Existing Arterial Segment Capacity Analysis

Arterial segment capacity analyses for peak hour conditions along the Gay Street Corridor were conducted for the morning and afternoon peak hour periods using methods outlined in the *Highway Capacity Manual, 2010*. Levels of service for the arterial analyses conducted for Gay Street are summarized in **Table 4**. Capacity printouts are provided in **Appendix B**.

Table 4 - Existing Arterial Segment Levels of Service

| Northbound Gay Street Arterial Analysis | | | | |
|---|-----------------|----------------|--------------------------------------|----------|
| From | To | Segment Length | Arterial Level of Service by Section | |
| | | | AM Peak | PM Peak |
| Samford Avenue | Thach Avenue | 0.40 | C | D |
| Thach Avenue | Magnolia Avenue | 0.17 | C | C |
| Magnolia Avenue | Glenn Avenue | 0.19 | D | D |
| Glenn Avenue | Mitcham Avenue | 0.10 | E | E |
| Mitcham Avenue | Opelika Road | 0.12 | D | D |
| Total Urban Street LOS | | | D | D |
| Southbound Gay Street Arterial Analysis | | | | |
| From | To | Segment Length | Arterial Level of Service by Section | |
| | | | AM Peak | PM Peak |
| Opelika Road | Mitcham Avenue | 0.12 | E | D |
| Mitcham Avenue | Glenn Avenue | 0.10 | F | F |
| Glenn Avenue | Magnolia Avenue | 0.19 | B | B |
| Magnolia Avenue | Thach Avenue | 0.17 | F | F |
| Thach Avenue | Samford Avenue | 0.40 | B | B |
| Total Urban Street LOS | | | D | D |

Table 4 indicates that the total urban street level of service along Gay Street would be a level of service “D” for each direction of travel during both the morning and afternoon peak hours. **Table 4** also indicates the following segments would operate at a level of service “E” or worse during one or both of the peak periods evaluated:

- Northbound Gay Street from Glenn Avenue to Mitcham Avenue.
- Southbound Gay Street from Opelika Road to Mitcham Avenue.
- Southbound Gay Street from Mitcham Avenue to Glenn Avenue.
- Southbound Gay Street from Magnolia Avenue to Thach Avenue

Existing Daily Roadway Segment Capacity Analysis

Roadway segment capacity analyses for daily traffic conditions along the Gay Street Corridor were performed using the daily capacity and level of service chart obtained from the Alabama Department of Transportation. This chart is included in **Table 5**. Levels of service for the daily roadway segment capacity analyses conducted for Gay Street are summarized in **Table 6**.

Table 5 – Daily Capacity and 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 6 – Existing Daily Roadway Segment Levels of Service

| Gay Street | | | | | |
|-----------------|----------------|------------------------|---------------|--------------|------------------------|
| From | To | Segment Length (miles) | Cross Section | Daily Volume | Roadway LOS by Segment |
| Drake Avenue | Opelika Road | 0.14 | 2 Lane | 5,176 | A |
| Magnolia Avenue | Thach Avenue | 0.16 | 3 Lane | 11,269 | C |
| Thach Avenue | Miller Avenue | 0.20 | 2 Lane | 11,818 | D |
| Miller Avenue | Samford Avenue | 0.17 | 2 Lane | 10,116 | C |

Right-Turn Lane Warrant Evaluations

Existing peak hour traffic volumes were compared with the turn lane warrant criteria outlined in the National Cooperative Highway Research Program (NCHRP) Report 457 *Evaluating Intersection Improvements: An Engineering Study Guide*, published by the Transportation Research Board. For evaluation purposes, the posted speed limit was utilized for roadways. Evaluations were conducted for the following approaches:

- Southbound Gay Street at Samford
- Northbound Gay Street at Thach Avenue
- Northbound Gay Street at Magnolia Avenue
- Southbound Gay Street at Glenn Avenue.
- Eastbound Glenn Avenue at Gay
- Southbound Gay Street at Miller Avenue
- Westbound Samford Avenue at Gay Street

The results of these comparisons indicate that none of the approaches that were evaluated warranted right turn lanes.

Intersection Crash Evaluation

Skipper Consulting, Inc. performed a citywide crash study for intersections and roadway segments maintained by the City of Auburn. The results of this crash study have been documented in a separate bound report. The citywide crash study included the study intersections along Gay Street. Screening procedures and crash analyses were conducted to determine any locations that are worthy of safety-based roadway improvements. The crash analysis indicated the following:

- The North Gay Street and Glenn Avenue intersection was identified with a moderate priority crash experience rating as part of the crash study. The predominant crash pattern at this intersection were rear-end crashes. Safety-based improvements were evaluated at this intersection due to the crash experience rating. After reviewing the existing signal timings, it was determined that the yellow clearance times were different than what is recommended based on the speeds and intersection geometry. Therefore, adjusting these timings is recommended.

EXISTING CONDITIONS ANALYSES WITH IMPROVEMENTS

Recommended Improvements

Roadway and traffic control improvements have been developed to help address capacity deficiencies identified in the capacity analyses conducted or traffic operational issues observed during peak periods along the Gay Street corridor. The following outlines the recommended improvements for existing conditions along Gay Street.

Gay Street Signal System

It is recommended that a coordinated traffic signal system be implemented on Gay Street from Opelika Road to Thach Avenue.

PROJECTED TRAFFIC GROWTH

Growth rates were calculated for the study roadways based on historical traffic volumes and growth trends. The historical growth rate calculated for roadways in the vicinity of Gay Street between Drake Avenue and Magnolia Avenue was 3.2% per year. The annual growth rate was applied for a ten (10) year period to result in an overall growth rate of 32% percent for study area traffic volumes. Existing peak hour traffic volumes were increased 32% to reflect ten (10) year projected traffic volumes for the Gay Street corridor. The historical growth rate calculated for roadways in the vicinity of Gay Street between Thach Avenue and Samford Avenue was 1.4% per year. The annual growth rate was applied for a ten (10) year period to result in an overall growth rate of 14% percent for study area traffic volumes. Existing peak hour traffic volumes were increased 14% to reflect ten (10) year projected traffic volumes for the Gay Street corridor. Future year traffic volumes are illustrated in **Figure 3**.

Analyses were conducted utilizing projected peak hour traffic volumes for the study area roadways and intersection to assess traffic operations within the corridor. Capacity deficiencies were identified for projected conditions to aid in development of potential roadway and traffic control improvements within the corridor to address capacity and traffic operations.

ANALYSES WITH PROJECTED TRAFFIC GROWTH

Analyses conducted for this scenario assumes projected traffic volumes for ten (10) years would be in place. The proposed coordinated signal system was also assumed to be in place.

Intersection Capacity Analysis with Projected Traffic Growth

Capacity analyses for projected ten (10) year peak hour conditions were conducted for the study intersections along the Gay Street Corridor using methods outlined in the *Highway Capacity Manual, 2010*. Results of these capacity analyses are summarized in **Table 7**.

As shown in **Table 7**, all study intersections evaluated along the Gay Street Corridor operate with overall acceptable levels of service for both peak periods evaluated. Some side streets and left-turn movements would operate at levels of service “E” primarily as a result of cycle length requirements for the coordinated signal system.

Table 7 - Intersection Levels of Service w/Projected Traffic Growth

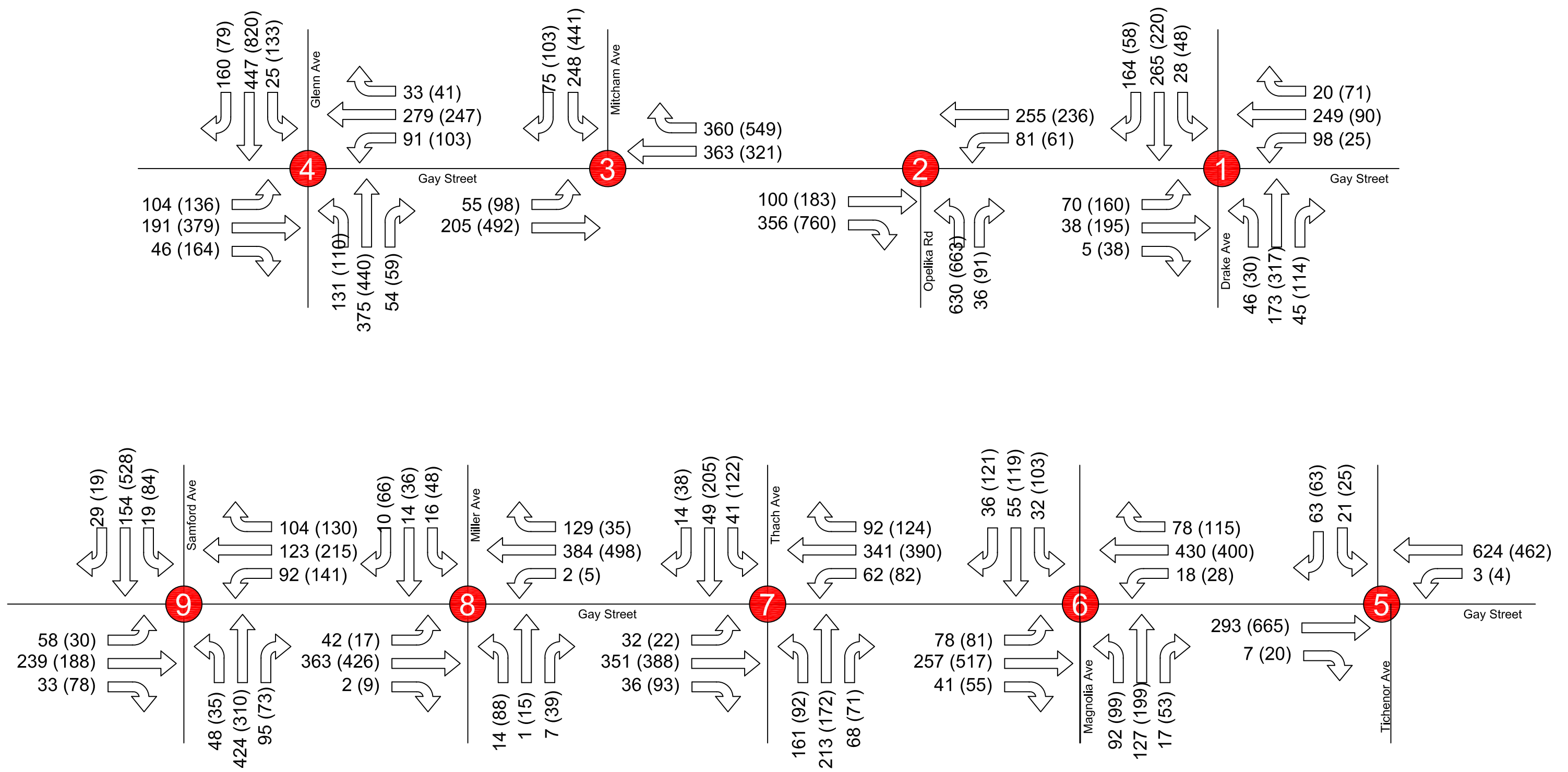
| Intersection (traffic control) | Approach | Movement/Lane Group | Level of Service | |
|---|-----------------|---------------------|------------------|----------------|
| | | | A.M. Peak Hour | P.M. Peak Hour |
| Gay Street at Drake Ave (all-way stop) | EB Drake Ave. | Left/ Through/Right | C | C |
| | WB Drake Ave. | Left/ Through/Right | C | D |
| | NB Gay Street | Left/ Through/Right | B | B |
| | SB Gay Street | Left/ Through/Right | C | C |
| Overall LOS | | | B | B |
| Gay Street at Opelika Road (traffic signal) | WB Opelika Road | Left | D | D |
| | | Right | A | A |
| | NB Gay Street | Through | B | C |
| | | Right | A | B |
| | SB Gay Street | Left | B | C |
| | Through | C | B | |
| Overall LOS | | | C | C |

Table 7 - Intersection Levels of Service w/Projected Traffic Growth (cont.)

| Intersection (traffic control) | Approach | Movement/Lane Group | Level of Service | |
|--|--------------------|---------------------|------------------|----------------|
| | | | A.M. Peak Hour | P.M. Peak Hour |
| Gay Street At Mitcham Avenue (traffic signal) | EB Mitcham Ave. | Left/Through | B | B |
| | | Right | A | A |
| | NB Gay Street | Left | A | B |
| | | Through/Right | B | B |
| | SB Gay Street | Left | B | B |
| | | Through | C | C |
| | | Right | B | B |
| Overall LOS | | | B | B |
| Gay Street at Glenn Ave (traffic signal) | EB Glenn Ave. | Left | C | C |
| | | Through/Right | C | D |
| | WB Glenn Avenue | Left | C | C |
| | | Through/Right | C | C |
| | NB Gay Street | Left | C | C |
| | | Through | C | D |
| | | Right | C | C |
| | SB Gay Street | Left | C | C |
| | | Through/Right | C | D |
| | Overall LOS | | | C |
| Gay Street at Tichenor Avenue (side street stop) | EB Tichenor Ave. | Left | D | D |
| | | Right | B | B |
| | WB Tichenor Ave | - | - | - |
| | | - | - | - |
| | NB Gay Street | Through/Right | A | A |
| | | Left | A | A |
| | SB Gay Street. | Through | B | A |
| | | Left | C | C |
| Overall LOS | | | C | C |
| Gay Street at Magnolia Avenue (traffic signal) | EB Magnolia Ave. | Left | C | C |
| | | Through/Right | C | D |
| | WB Magnolia Ave | Left | C | C |
| | | Through/Right | C | C |
| | NB Gay Street | Left | B | B |
| | | Through/Right | B | C |
| | SB Gay Street | Left | B | B |
| | | Through | C | C |
| | | Right | B | B |
| | Overall LOS | | | B |

Table 7 - Intersection Levels of Service w/Projected Traffic Growth (cont.)

| Intersection (traffic control) | Approach | Movement/Lane Group | Level of Service | |
|--|--------------------|---------------------|------------------|----------------|
| | | | A.M. Peak Hour | P.M. Peak Hour |
| Gay Street At Thach Avenue (traffic signal) | EB Thach Avenue | Left | C | C |
| | | Through | C | D |
| | | Right | C | B |
| | WB Thach Avenue | Left | C | C |
| | | Through/Right | C | D |
| | NB Gay Street | Left | B | C |
| | | Through/Right | C | C |
| | | Left | B | B |
| | SB Gay Street | Through | B | C |
| | | Right | B | B |
| Overall LOS | | | C | C |
| Gay Street At Miller Avenue (side street stop) | EB Miller Avenue | Left/ Through/Right | D | D |
| | WB Miller Avenue | Left/ Through/Right | C | C |
| | NB Gay Street | Left/ Through/Right | A | A |
| | SB Gay Street | Left/ Through/Right | A | A |
| | Overall LOS | | | B |
| Gay Street At Samford Avenue (traffic signal) | EB Samford Avenue | Left | C | C |
| | | Through/Right | C | C |
| | WB Samford Avenue | Left | C | C |
| | | Through/Right | B | C |
| | NB Gay Street | Left | B | B |
| | | Through/Right | C | B |
| | | Left | B | B |
| SB Gay Street | Through/Right | B | B | |
| | Overall LOS | | | C |



**Figure 3 - Ten (10) Year Forecasted Traffic Volumes
Gay Street Corridor
Auburn, Alabama**

LEGEND

- AM(PM) Peak Hour Volumes
- Study Intersection

Arterial Segment Capacity Analysis with Projected Traffic Growth

Arterial segment capacity analyses for peak hour conditions along the Gay Street Corridor were conducted for the morning and afternoon peak hour periods using methods outlined in the *Highway Capacity Manual, 2010*. Levels of service for the arterial analyses conducted for Gay Street are summarized in **Table 8**.

Table 8 - Arterial Segment Levels of Service w/Projected Traffic Growth

| Northbound Gay Street Arterial Analysis | | | | |
|---|-----------------|----------------|--------------------------------------|----------|
| From | To | Segment Length | Arterial Level of Service by Section | |
| | | | AM Peak | PM Peak |
| Samford Avenue | Thach Avenue | 0.40 | D | D |
| Thach Avenue | Magnolia Avenue | 0.17 | C | C |
| Magnolia Avenue | Glenn Avenue | 0.19 | D | D |
| Glenn Avenue | Mitcham Avenue | 0.10 | F | F |
| Mitcham Avenue | Opelika Road | 0.12 | D | D |
| Total Urban Street LOS | | | D | D |
| Southbound Gay Street Arterial Analysis | | | | |
| From | To | Segment Length | Arterial Level of Service by Section | |
| | | | AM Peak | PM Peak |
| Opelika Road | Mitcham Avenue | 0.12 | E | E |
| Mitcham Avenue | Glenn Avenue | 0.10 | F | F |
| Glenn Avenue | Magnolia Avenue | 0.19 | B | C |
| Magnolia Avenue | Thach Avenue | 0.17 | F | F |
| Thach Avenue | Samford Avenue | 0.40 | B | C |
| Total Urban Street LOS | | | D | D |

Table 8 indicates northbound Gay Street from Glenn Avenue to Mitcham Avenue would operate at a level of service “F” during the morning peak hour and afternoon peak hour. Southbound Opelika Road to Mitcham Avenue would operate at a level of service “E” during the morning peak hour and afternoon peak hour. Southbound Mitcham Avenue to Glenn Avenue and southbound Magnolia Avenue to Thach Avenue would operate at a level of service “F” during the morning peak hour and afternoon peak hour.

Daily Roadway Segment Capacity Analysis with Projected Traffic Growth

Roadway segment capacity analyses for future daily traffic conditions along the Gay Street Corridor were performed using the daily capacity and level of service chart obtained from the Alabama Department of Transportation. Levels of service for the daily roadway segment capacity analyses conducted for Gay Street are summarized in **Table 9**.

Table 9 – Future Daily Roadway Segment Levels of Service

| Gay Street | | | | | |
|-----------------|----------------|------------------------|---------------|--------------|------------------------|
| From | To | Segment Length (miles) | Cross Section | Daily Volume | Roadway LOS by Segment |
| Drake Avenue | Opelika Road | 0.14 | 2 Lane | 5,901 | B |
| Magnolia Avenue | Thach Avenue | 0.16 | 3 Lane | 12,847 | C |
| Thach Avenue | Miller Avenue | 0.20 | 2 Lane | 13,473 | E |
| Miller Avenue | Samford Avenue | 0.17 | 2 Lane | 11,532 | D |

Right-Turn Lane Warrant Evaluations with Projected Traffic Growth

Projected peak hour traffic volumes were compared with the turn lane warrant criteria outlined in the National Cooperative Highway Research Program (NCHRP) Report 457 *Evaluating Intersection Improvements: An Engineering Study Guide*, published by the Transportation Research Board. Evaluations were conducted for the following approaches:

- Southbound Gay Street at Samford
- Northbound Gay Street at Thach Avenue
- Northbound Gay Street at Magnolia Avenue
- Southbound Gay Street at Glenn Avenue.
- Eastbound Glenn Avenue at Gay
- Southbound Gay Street at Miller Avenue
- Westbound Samford Avenue at Gay Street

The results of these comparisons indicate that none of the approaches that were evaluated warranted right turn lanes.

RECOMMENDED IMPROVEMENTS WITH PROJECTED TRAFFIC GROWTH

Based upon the analyses and evaluations conducted for the Gay Street Corridor for existing conditions and projected ten (10) year conditions, no additional recommendations are made to help improve traffic operations along the corridor at study intersections and to address any capacity or safety deficiencies identified.

PEDESTRIAN AND BICYCLE IMPROVEMENTS

ALTA recommendations for priority pedestrian and bicycle improvements on Gay Street include the following:

- Cross section from Drake Avenue to Opelika Road - Reduce travel lanes to 10 feet wide and stripe 5.5 foot bike lanes on both sides (**Figure 4**).
- Cross Section from Opelika Road to Mitcham Avenue - Remove center left turn lane and add 5.5 foot bike lanes to both sides of the roadway (**Figure 5**).
- Cross Section from Mitcham Avenue to Glenn Avenue – The City of Auburn has a project to improve this section of Gay Street as a part of an impending development (**Figure 6**). The proposed plan does not include bike lanes. The City should consider adding sharrows to this section of roadway.
- Cross Section from Glenn Avenue to Magnolia Avenue – Remove the northbound right turn lane at the intersection of Gay Street and Glenn Avenue and remove the southbound right-turn lane at the intersection of Gay Street and Magnolia Avenue. Restripe the roadway to include three 10 foot travel lanes and two 6 foot bike lanes (**Figure 7**).
- Cross section from Magnolia Avenue to Thach Avenue – Install sharrows only (**Figure 8**).
- Cross section from Thach Avenue to Miller Avenue – Restripe the roadway to have two 10 foot travel lanes and two five foot bike lanes (**Figure 9**).
- Cross section from Miller Avenue to Samford Avenue – Install sharrows only (**Figure 10**).

MITCHAM AVENUE

Mitcham Avenue extends between Gay Street and College Street and is located just north of the railroad. There are two intersections located along the Mitcham Avenue corridor. They are the intersections of Gay Street and Mitcham Avenue and College Street and Mitcham Avenue. The analysis for the intersection of Gay Street and Mitcham Avenue was performed as part of the Gay Street

corridor study and the analysis for the intersection College Street and Mitcham Avenue was included in the College Street corridor study.

Observations were conducted for the Mitcham Avenue during peak traffic periods. Extensive queues were observed at both intersections. Restriping Mitcham Avenue to include a center left turn lane the entire length of the roadway was evaluated. It was determined that a center left turn lane would not improve traffic operations along Mitcham Avenue for existing conditions or the projected ten (10) year conditions. Eastbound double left turn lanes were also evaluated at the intersection of Gay Street and Mitcham Avenue. It was determined that the double left turn lanes would interfere with the current plans for the section of Gay Street between Mitcham Avenue and Opelika Road.

TICHENOR AVENUE

Tichenor Avenue extends between Gay Street and College Street and is one-way eastbound. However, the first approximately 150 feet of the west end of Tichenor Avenue, which is between College Street and an alley is two-way. There are two intersections located along the Tichenor Avenue corridor. They are the intersections of Gay Street and Tichenor Avenue and College Street and Tichenor Avenue. The analysis for the intersection of Gay Street and Tichenor Avenue was performed as part of the Gay Street corridor study and the analysis for the intersection College Street and Tichenor Avenue was included in the College Street corridor study.

Tichenor Avenue was evaluated to determine if there are any benefits to the traveling public if it was converted to a two way street between Gay Street and College Street. Currently, Tichenor Avenue is approximately 32 feet wide with parking on both sides. If the roadway was converted to two way traffic, parking on one side of the street would have to be eliminated. This would result in the loss of a minimum of five parking spaces. Analysis indicated that the cost to convert Tichenor Avenue to a two-way street would exceed the benefit that the traveling public would gain. Therefore, it is recommended that Tichenor Avenue remain in its current configuration.



