

**PRE-MEETING AGENDA
MOUNTAIN BROOK CITY COUNCIL**

**CITY HALL PRE-COUNCIL ROOM (A106)
56 CHURCH STREET
MOUNTAIN BROOK, AL 35213**

SEPTEMBER 26, 2016, 5:45 P.M.

1. Crestline Traffic and Pedestrian Study-Richard Caudle of Skipper Consultants (See attached information.)
2. Executive session.



Crestline Village Traffic Study

Mountain Brook, Alabama

Prepared for:

The City of Mountain Brook

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September 2016



SIGNED: *Richard Lynn Caudle*

DATE: 9/23/16

Introduction

This report documents a traffic study performed to assess existing vehicular traffic operations and pedestrian crossings at three locations within Crestline Village in the City of Mountain Brook, Alabama.

The three areas which are analyzed in this report are as follows:

- Area #1 - Vine Street Pedestrian Crossing and Piggly Wiggly Access
- Area #2 – The Intersection of Vine Street at Dexter Avenue
- Area #3 - Church Street Pedestrian Crossings

The locations of the three areas are depicted in Figure 1.

The general scope of work for each area included conducting traffic counts, performing observations, analyzing counts, traffic flow and pedestrian flow, and developing recommendations.

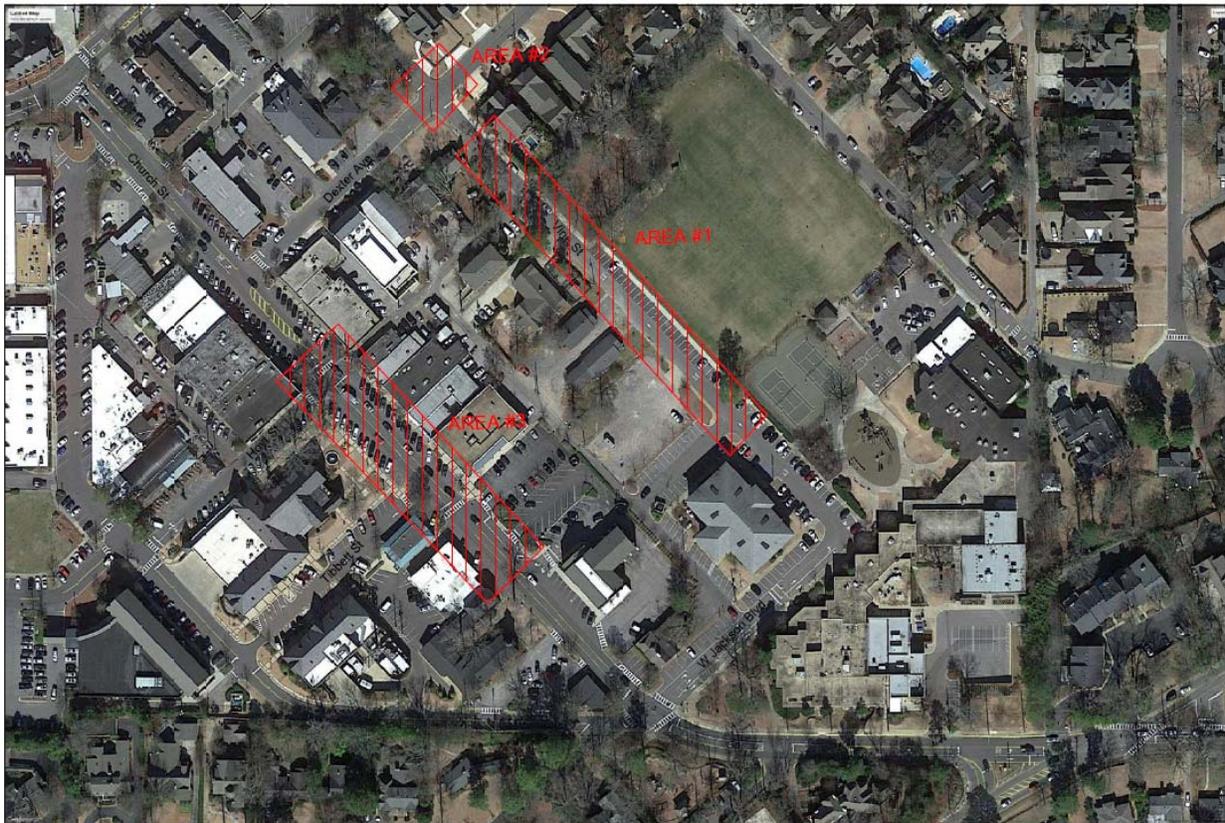


Figure 1 - Site Location Map

Crestline Village Traffic Study - Mountain Brook, Alabama

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Area #1 - Vine Street Pedestrian Crossing and Piggly Wiggly Access

Current Conditions

Approval of the construction of the Piggly Wiggly required alteration of traffic flow in Area #1. Specifically, the following traffic operations are required:

- West Jackson Boulevard is one way northbound operation 24 hours a day, 7 days a week along its entire length from Church Street to Vine Street.
- Vine Street is one way westbound operation 24 hours a day, 7 days a week from West Jackson Boulevard to the western edge of the Board of Education building property.
- Vine Street is one way westbound operation during the period of 7:20 a.m. to 4:00 p.m. along its entire length from West Jackson Boulevard to Dexter Avenue on school days.
- Vine Street is two way operation at all other times from Dexter Avenue to the western edge of the Board of Education building property.

Traffic Counts

Vehicular and pedestrian traffic counts were performed at the intersection of Vine Street with the new access the Piggly Wiggly parking lot and the pedestrian crossing from the Piggly Wiggly to the Mountain Brook Athletic Fields on Wednesday, August 31, 2016 during the hours of 7:15 to 8:15 a.m., 12:00 to 1:00 p.m., 2:30 to 3:30 p.m., and 5:00 to 6:00 p.m. The traffic counts are depicted in Figure 2.

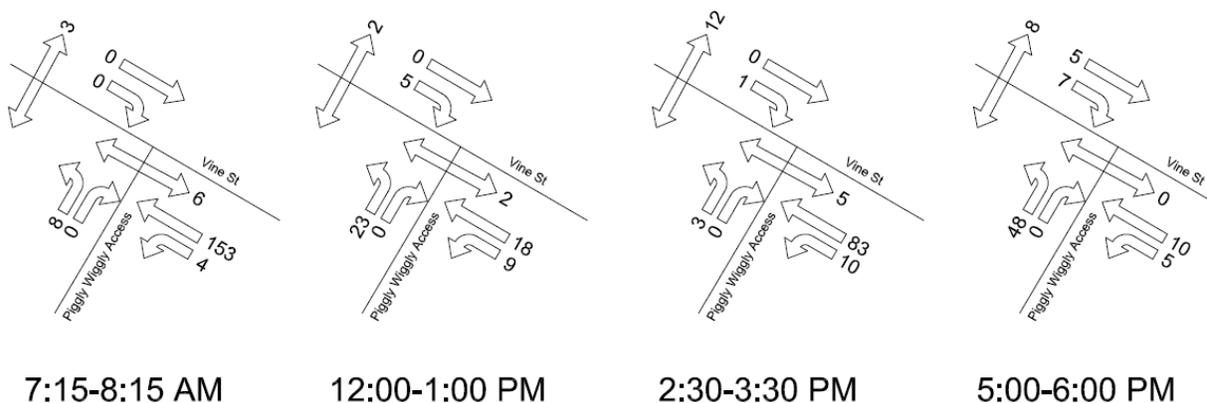


Figure 2 - Existing Traffic Counts - Area #1

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Observations

Observations of traffic and pedestrian flows in Area #1 were conducted on Saturday, September 10, 2016 from 10:30 to 11:30 a.m. This time period is the peak for combined traffic and pedestrian flows in the area due to activities at the Mountain Brook Athletic Fields. During the observation period, the following issues were noted:

- Vehicles failed to yield to pedestrians in the crosswalk two times during the observation period
- Vehicles traveled the wrong way on Vine Street east of the School Board driveway three times during the observation period

Recommendations

Based on the traffic flows and observations, the following recommendations are made concerning traffic and pedestrian flows within Area #1:

Recommendation #1 – Stripe out the areas on either side of the painted crosswalk on the Athletic Fields side of Vine Street. Vehicles parked in these areas block the ADA curb ramp and inhibit motorists' view of pedestrians as they begin to cross. The recommended striping pattern is shown in Figure 3. Two No Parking signs should also be posted on the fence in front of these striped-out areas.



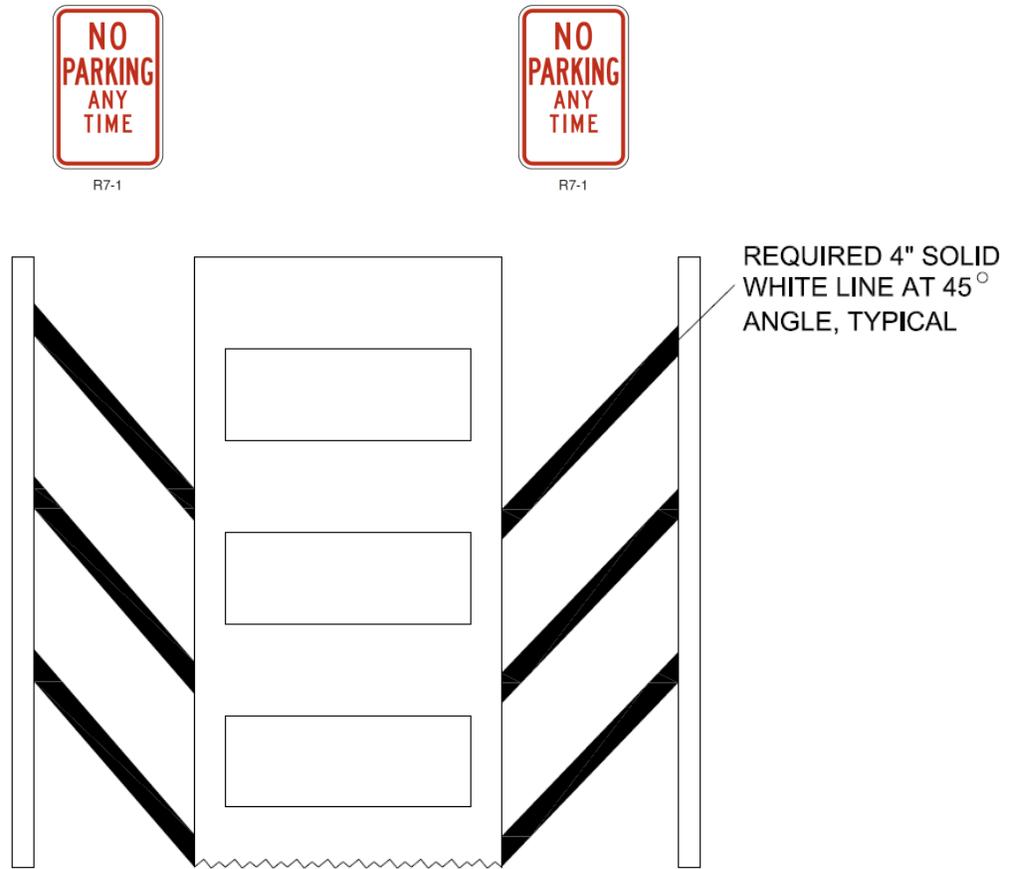


Figure 3 - Crosswalk Striping - Area #1

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Recommendation #2 – Exchange the two existing DO NOT ENTER signs on Vine Street with standard MUTCD R5-1 DO NOT ENTER signs (30"x30"), as illustrated on the following page:





R5-1

Recommendation #3 – Install a new sign assembly on the corner of Vine Street at the driveway to the Board of Education Building. The sign assembly should be on a square tubular post with signs as indicated on Figure 4. Also, install new DO NOT ENTER pavement markings as shown on Figure 4.

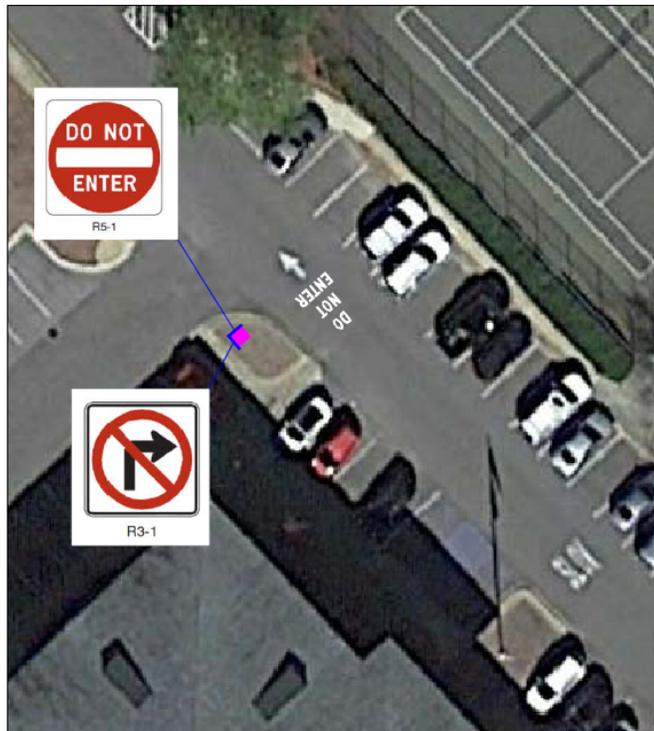


Figure 4 - Board of Education Parking - Area #1

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Recommendation #4 – Enforce existing No Parking signs on Vine Street.



Recommendation #5 – Continue No Parking pavement markings on Vine Street next to the sidewalk from the alley to Dexter Avenue and post No Parking signs behind the sidewalk.



R7-1

Area #2 – The Intersection of Vine Street at Dexter Avenue

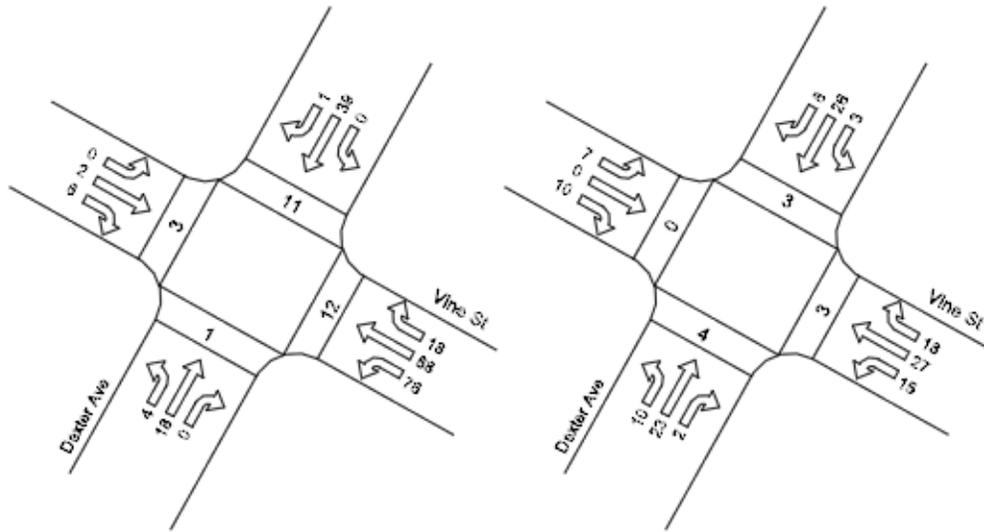
The intersection of Vine Street at Dexter Avenue was analyzed to determine the appropriate traffic control for the intersection. Prior to the Piggly Wiggly project, the intersection of Vine Street at Dexter Avenue was two-way stop controlled with the stop signs facing both approaches of Vine Street. The traffic impact study report prepared for the Piggly Wiggly demonstrated that the existing traffic control was not appropriate for the existing traffic flows at the intersection, and recommended that the traffic control be altered to a two way stop with the stop signs facing both of the Dexter Street approaches. The City of Mountain Brook adopted and implemented this recommendation. For this study, a re-examination of the traffic control at the intersection was performed to determine the appropriate traffic control for the intersection. Two alternatives were analyzed:

Alternative 1 – two way side street stop with stop signs facing Dexter Avenue (existing condition)

Alternative 2 – four way stop

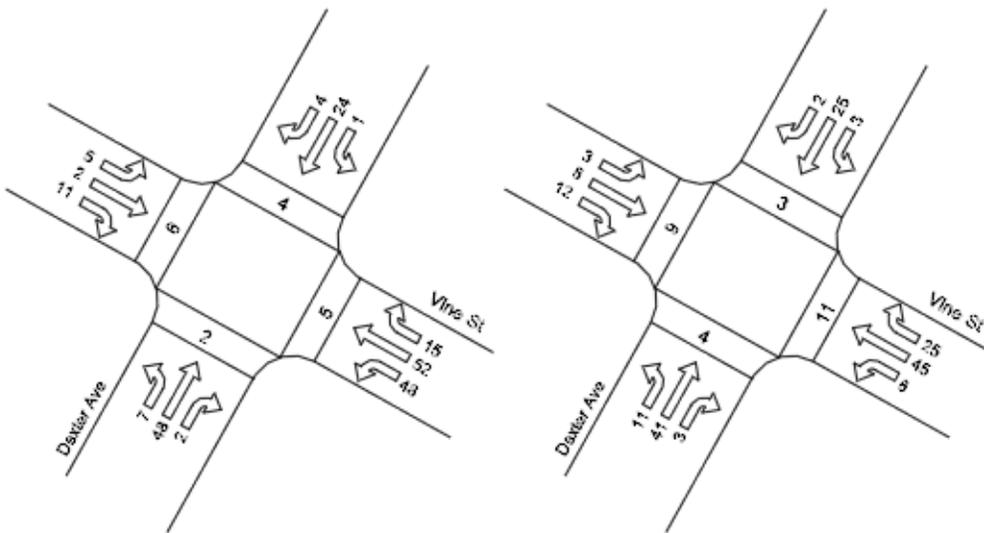
Traffic Counts

Vehicular and pedestrian traffic counts were performed at the intersection of Vine Street at Dexter Avenue on Wednesday, August 31, 2016 during the hours of 7:15 to 8:15 a.m., 12:00 to 1:00 p.m., 2:30 to 3:30 p.m., and 5:00 to 6:00 p.m. The traffic counts are depicted in Figure 5.



7:15-8:15 AM

12:00-1:00 PM



2:30-3:30 PM

5:00-6:00 PM



Figure 5 - Existing Traffic Counts - Vine Street at Dexter Avenue

Crestline Village Traffic Study - Mountain Brook, Alabama

September 2015



Observations

Observations of traffic and pedestrian flow were conducted at the intersection of Vine Street at Dexter Avenue on Wednesday, September 14 from 7:15 to 8:00 a.m. and 2:45 to 3:15 p.m. Observations included vehicles which stopped on Vine Street even though they had right-of-way, vehicles which failed to yield right-of-way on Dexter Avenue, and maximum queues on Vine Street westbound. The following is a summary of the observations:

7:15 – 8:00 AM

| | |
|---|------------------------------|
| Vehicles on Vine Street which stopped | 20 out of 163 vehicles (12%) |
| Vehicles on Dexter Avenue which failed to yield | 3 out of 47 vehicles (6%) |
| Maximum Queue on Vine Street Westbound | 4 vehicles |

2:45-3:15 PM

| | |
|---|-----------------------------|
| Vehicles on Vine Street which stopped | 15 out of 96 vehicles (16%) |
| Vehicles on Dexter Avenue which failed to yield | 0 out of 38 vehicles (0%) |
| Maximum Queue on Vine Street Westbound | 3 vehicles |

Microsimulation Model

A microsimulation model was prepared to test two alternative traffic control schemes for the intersection of Vine Street at Dexter Avenue:

Alternative 1 – two way side street stop with stop signs facing Dexter Avenue (existing condition)

Alternative 2 – four way stop

Comparisons were made for the a.m. peak period and the afternoon school peak period of traffic flow. The results are summarized in Table 1.

Table 1
Microsimulation Model Comparison
Dexter Avenue at Vine Street

| <i>Peak Hour</i> | <i>Movement</i> | <i>Average Queue (number of vehicles)</i> | |
|---------------------|--------------------------|---|--|
| | | <i>Alternative 1 Dexter Avenue Stop</i> | <i>Alternative 2 Four Way Stop</i> |
| AM | Vine Street Eastbound | 0 | 1 |
| | Vine Street Westbound | 1 | 6 |
| | Dexter Avenue Northbound | 1 | 1 |
| | Dexter Avenue Southbound | 2 | 1 |
| Afternoon School | Vine Street Eastbound | 0 | 1 |
| | Vine Street Westbound | 0 | 3 |
| | Dexter Avenue Northbound | 1 | 2 |
| | Dexter Avenue Southbound | 1 | 1 |

Recommendations

Recommendation #1 – Convert the intersection of Vine Street at Dexter Avenue to a four way stop. Traffic volumes and microsimulation analyses indicate that the actual differential in traffic conditions between the existing two way stop and a four way stop scheme are not significantly different.

Recommendation #2 – Stripe a crosswalk crossing Dexter Avenue on the east side of Vine Street as shown in Figure 6.

Recommendation #3 – Remove yellow lines around No Parking areas in the vicinity of the intersection of Vine Street at Dexter Avenue. These lines cause drivers to shy away from the edge of the roadway and encroach in oncoming lanes.



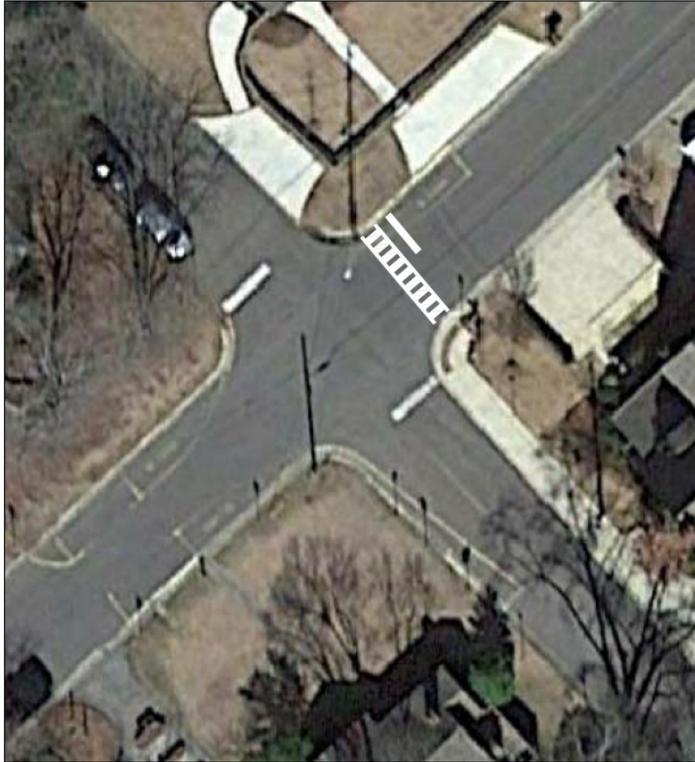


Figure 6 - Crosswalk Striping - Dexter Avenue

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Recommendation #4 – Install another one way sign with time limits on Vine Street southbound facing Dexter Avenue.



Area #3 - Church Street Pedestrian Crossings

Traffic Counts

Vehicular and pedestrian traffic counts were performed on Church Street at the pedestrian crossings located near Hoyt Street and Tibbett Street on Thursday, September 1, 2016 during the hours of 7:15 to 8:15 a.m., 12:00 to 1:00 p.m., 2:30 to 3:30 p.m., and 5:00 to 6:00 p.m. The traffic counts are depicted in Figure 7.

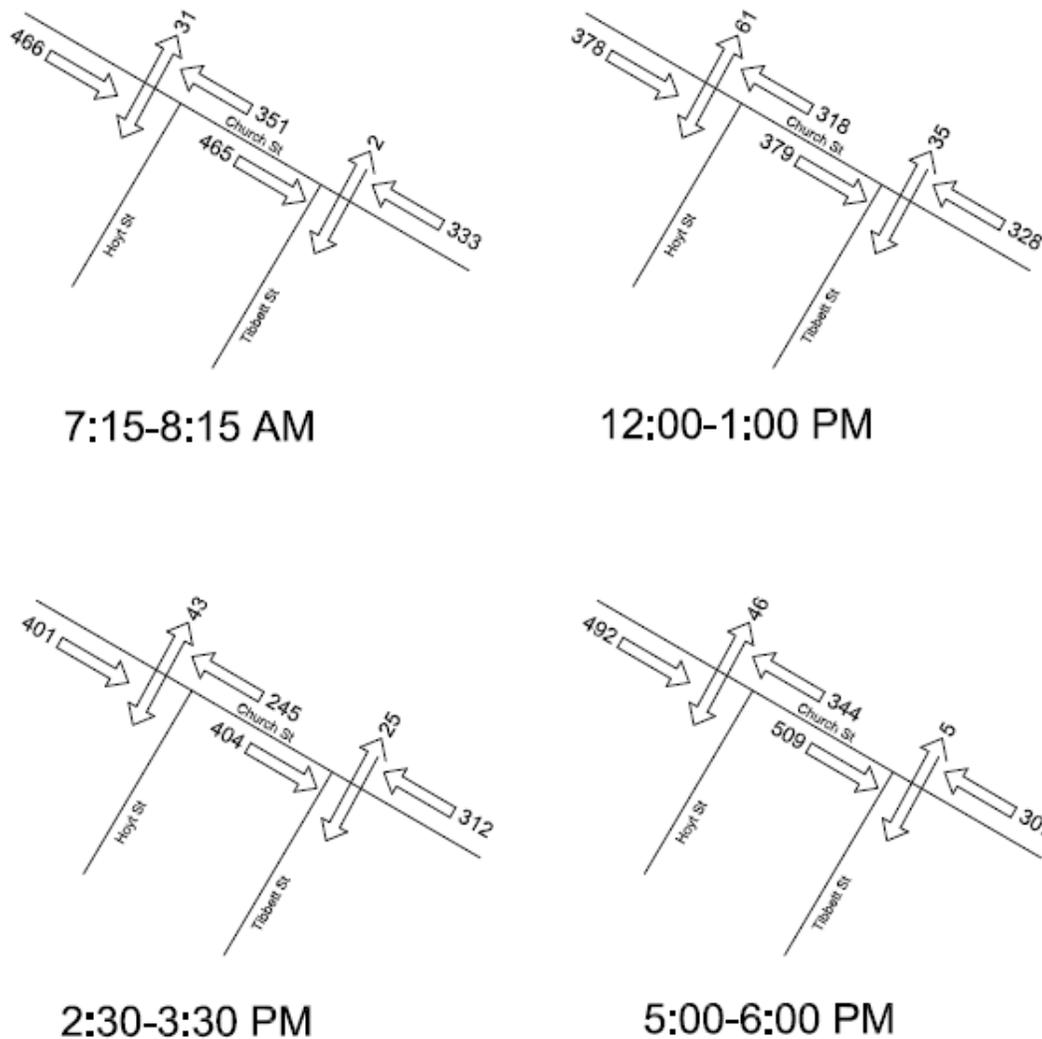


Figure 7 - Existing Traffic Counts - Area #3

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Crash Data

Existing crash data for the calendar year 2015 was obtained for Church Street from Euclid Avenue to Montevallo Road from the City of Mountain Brook Police Department. A total of 16 crashes were reported. No crashes involved pedestrians. The classification of crashes by type is as follows:

| | |
|------------------|---|
| Parking Maneuver | 6 |
| Rear End | 6 |
| Right Angle | 2 |
| Fixed Object | 2 |

Observations

Observations were conducted at the two pedestrian crossings on Church Street on Saturday, September 10, 2016 from 11:30 a.m. to 12:15 p.m. and on Monday, September 19, 2016 from 12:00 to 1:00 p.m. At the crosswalk near Tibbett Street, there was very little pedestrian activity noted and no significant conflicts were noted. At the Hoyt Street crosswalk, there were seven instances of drivers failing to yield to pedestrians in the crosswalk.

Recommendations

Recommendation #1 – At the crosswalk near Hoyt Street, upgrade flashing beacons with additional rapid rectangular flashing beacons which are activated by pedestrian actuation.

