TRAFFIC IMPACT ANALYSIS

for

Trafalgar Planned Development

City of Bryan, Texas

Prepared

for

The Summit Crossing

June 2, 2017

By

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consulting engineers
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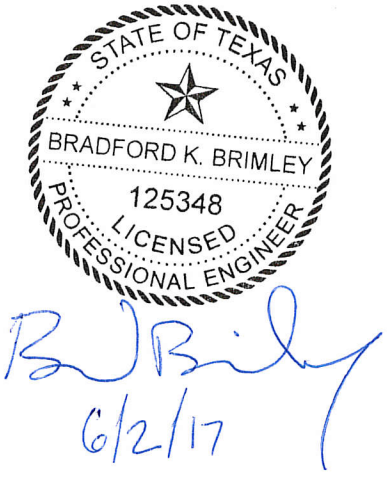

Bradford K. Brimley, Ph.D., P.E.

TRAFFIC IMPACT ANALYSIS
for
Trafalgar Development
In the City of Bryan, Texas

EXECUTIVE SUMMARY

Trafalgar is a proposed planned development located along Boonville Road (FM 158) southeast of the intersection at Briarcrest Drive (FM 1179), across from Allen Academy and the Miramont Country Club. The planned development is to be divided into separate areas. Area 1 is intended for commercial development, with an emphasis on retail uses. Area 2 is intended for mixed-use commercial/retail and multi-family residential development. Area 1 (commercial) covers approximately 20 acres. Area 2 (mixed-use commercial and residential) covers approximately 22 acres. The intended commercial uses are not known at this time. It is expected that the development process will be slower for the commercial areas compared to the multi-family residential portion. Though the development is not intended to be completed in phases, this report evaluates the traffic impacts as if the development were split into two phases, with the multi-family residential portion completed first. This allows the effects of the multi-family residential area to be isolated from the commercial portion.

The objectives of this traffic impact analysis (TIA) were to evaluate traffic operations at the two signalized intersections near the development (at Briarcrest Drive on Boonville Road and at Woodcrest Drive on Boonville Road), and at five unsignalized intersections surrounding the development. The following conditions were evaluated:

- Existing – 2017
- Background – 2019
- Phase 1 (Residential) – 2019
- Background – 2022
- Full Build (Residential + Commercial) – 2022
- Full Build 2022 – Mitigated
- Alternative 1

In addition to the analyses, this report discusses guidelines for access into the proposed development.

Intersection Capacity Analysis Findings

The initial analysis of the Full Build (2022) scenario assumed the commercial area would fully develop with retail uses. In the Full Build (2022) scenario, the intersection of Briarcrest Drive at Boonville Road was forecasted to operate at LOS E during the PM Peak Hour, a deterioration from LOS D in the Background (2022) scenario. To mitigate the unstable level of service, it was proposed to limit the intensity of the commercial development from fully retail-oriented to include office use that adds fewer trips to the network. When half of the commercial areas have an office use (that applies a smaller trip generation rate than general retail), the intersection operates at LOS D in the PM Peak Hour.

Several scenarios show the minor approaches of the unsignalized intersections operating at LOS F in existing and future conditions. Mitigations were not investigated for these locations

because the effects are contained on-site and do not pose a safety or operational concern on the arterials (Boonville Road or Briarcrest Drive).

Recommendations

This study used a conservative approach to evaluate future traffic operations based on an intense amount of development. The ultimate development may be less intense than what is assumed here. This study assumed there would be five access points to the entire development. Two full accesses on Boonville Road correspond with existing median openings (and previously constructed left-turn lanes). An additional access on Boonville Road is intended at the residential area to exclusively allow right-turn movements. On Green Valley Drive, one access is provided at Creekridge Street (to the residential area) and one access is provided at the 10-acre commercial area closer to Briarcrest Drive.

Since the intersection of Boonville Road at Briarcrest Drive is forecasted to operate at LOS E with the Full Build of the development as originally proposed (full retail use in the commercial areas) it is recommended that the commercial areas not develop exclusively with general retail uses. Some lighter uses (such as offices) should be included.

It is recommended that Area 2 allow trips to and from the multi-family development to use the full access at Miramont Boulevard and execute left-turns to and from Boonville Road. This cross-access between commercial and residential portions of the area is important for connectivity and providing route options for motorists.

It is recommended that left-turn and right-turn lanes be delineated on Green Valley Drive at Briarcrest Drive as part of the commercial development of Area 1. As the width of the pavement is approximately 36 feet, it is possible that this would only require pavement markings. With such a wide cross-section, motorists tend to create makeshift turn lanes. Pavement markings would formally encourage a separation of traffic turning in different directions, increasing safety and efficiency.

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INTRODUCTION

Trafalgar is a proposed planned development located along Boonville Road (FM 158) near the intersection of Briarcrest Drive (FM 1179), across from Allen Academy and the Miramont Country Club. An aerial map of the area is shown in **Figure 1**. Area 1 is intended for commercial development, with an emphasis on retail uses. Area 2 is intended for mixed-use commercial/retail and multi-family residential development. Area 1 (commercial) covers approximately 20 acres. Area 2 (mixed-use commercial and residential) covers approximately 22 acres. **Figure 2** identifies the land use assumptions of the different areas with proposed development. A concept plan is provided in the Appendix. The intended commercial uses are not known at this time. It is expected that the development process will be slower for the commercial areas compared to the multi-family residential portion. Though the development is not intended to be completed in phases, this report evaluates the traffic impacts as if the development were split into two phases, with the multi-family residential portion completed first. This allows the effects of the multi-family residential area to be isolated from the commercial portion.

The objectives of this traffic impact analysis (TIA) were to evaluate traffic operations at the two signalized intersections near the development (at Briarcrest Drive on Boonville Road and at Woodcrest Drive on Boonville Road), and at five unsignalized intersections surrounding the development. The following conditions were evaluated:

- Existing – 2017
- Background – 2019
- Phase 1 (Residential) – 2019
- Background – 2022
- Full Build (Residential + Commercial) – 2022

In addition to the analyses, this report discusses guidelines for access into the proposed development.

STUDY APPROACH

This study used a conservative approach to evaluate future traffic operations based on development appropriate for the proposed zoning. The ultimate development may be less intense than what is assumed here. This study assumed there would be five access points to the entire development. Two full accesses on Boonville Road correspond with existing median openings (and previously constructed left-turn lanes). An additional access on Boonville Road is intended for Area 2 to exclusively allow right-turn movements. On Green Valley Drive, one access is provided at Creekridge Street (to the mixed-use area) and one access is provided to Area 1 (the 10-acre commercial area closer to Briarcrest Drive).

The study identifies the impacts of the proposed development by evaluating traffic operations at existing and proposed intersections under existing, future, and proposed conditions. The existing conditions are evaluated based on data collected in 2017. Multiple future conditions are evaluated:

- Background (2019)
- Phase 1 (2019), which adds only residential development in Area 2
- Background (2022)
- Full Build (2022), which includes both the residential and commercial additions.

The Background traffic is determined by growing the existing traffic at a 4% annual rate. This growth rate is aggressive, but it is consistent with increases in traffic observed in data collected annually by TxDOT at locations near the proposed development. It is expected that the residential portion will be developed in two years and the commercial portion developed in five years. Thus the Background, Phase 1, and Full Build analyses represent conditions in 2019 and 2022. The change between operations for the Background (2019) and Phase 1 conditions represent the impact of the residential portion; the change between operations for the Background (2022) and Full Build conditions represent the impact of the entire development.

TRAFALGAR AERIAL MAP			
SCALE:	N/A	DATE:	MAY 2017
JOB NO.:	BB17138	DWG. FILE:	FIGURE #1

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TRAFALGAR
LAND USE ASSUMPTIONS

SCALE: N/A	DATE: MAY 2017
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STUDY AREA

Figure 3 identifies the roads surrounding the development with intersections evaluated in the study. The following sections summarize the conditions at and near the proposed development, including the surrounding development and road network.

AREA DEVELOPMENT

The proposed Trafalgar Subdivision is located on approximately 55 acres of undeveloped land on the southeast corner of Boonville Road at Briarcrest Drive. The planned development is to be subdivided into three different areas as shown in the land use assumptions of **Figure 2** and the concept plan in the Appendix. Approximately 22 acres will be designated for residential use, intended for multi-family development targeted at young professionals. Approximately 20 acres are to have commercial use in two separate areas. The remaining 10.6 acres are to be reserved as open space.

Phase 1 in this study is the development of 22 acres into a multi-family residential complex, with trip generation characterized by low-rise apartments. For trip generation, this TIA conservatively assumes a density of 20 apartment units per acre, for a total of 440 apartments. Actual development will likely be less intense, depending on how the site plan designates areas for parking, on-site circulation, and open use.

The second phase of the study adds 20 acres for commercial development in Areas 1 and 2. It is unknown at this time what types of establishments will occupy the commercial areas. For trip generation, this TIA will use generic and conservative trip generation rates for commercial development. One of the most conservative and generic land use assumptions for trip generation in the Institute of Transportation Engineers (ITE) Trip Generation Manual is Shopping Center (Land Use 820), which encompasses several different types of retailers. An assumption that trips will be retail oriented is conservative since the areas may develop with some commercial uses that generate less traffic, such as business offices. It is assumed the floor area ratio of the commercial development will be 30% of the designated area.

Nearby existing development includes Wheeler Ridge, Miramont Country Club, Allen Academy, the Oak Forest Estates, and the Bryan Town Center. There are several single family lots in Miramont and Oak Forest that likely will be occupied by 2019. Trip ends to and from these locations will be added to the Background (2019) and Background (2022) traffic. The location most impacted by new traffic from Miramont will be the signalized intersection of Woodcrest Drive at Boonville Road. Phasing at this intersection will change with the recent extension of Woodcrest Drive to the north that is not currently open to traffic. It is likely to be open by 2019.

EXISTING STREETS AND INTERSECTIONS

Boonville Road (FM 158) is a four-lane divided road with a speed limit of 50 mph in the vicinity of the study area. Boonville Road is identified as a Super Arterial in the City's Thoroughfare Plan. Median openings are provided on Boonville Road at Allen Academy and at Miramont Boulevard. **Allen Academy** has a driveway that intersects Boonville Road 850 ft from **Briarcrest Drive**.

Briarcrest Drive (FM 1179) is a four-lane Major Arterial in the City's Thoroughfare Plan and has a two-way left-turn lane in the vicinity of the proposed development. The speed limit on Briarcrest Drive is 45 mph.

Miramont Boulevard is the main entrance to the Miramont Country Club. The road has a boulevard-style cross section at the intersection of Boonville Road, with a 40-ft median separating entering and exiting traffic. The speed limit is 30 mph.

Woodcrest Drive provides local access to the Wheeler Ridge subdivision. Woodcrest Drive has recently been extended to the north beyond **Boonville Road;** however, the road is not yet opened to public travel. The speed limit is 30 mph.

Green Valley Drive provides local access to the Wheeler Ridge subdivision. The speed limit is 30 mph. Extending from Green Valley Drive is a short segment of Creekridge Street, which may provide access to the planned development.

Traffic counts were collected during the AM and PM Peak Hours at the following locations:

- Boonville Road at Briarcrest Drive
- Boonville Road at Allen Academy (Proposed Access #1)
- Boonville Road at Miramont Boulevard (Proposed Access #2)
- Boonville Road at Woodcrest Drive
- Briarcrest Drive at Green Valley Drive
- Woodcrest Drive at Green Valley Drive

FUTURE STREETS AND PROPOSED ACCESSES

The analyses of this report assume that three accesses are provided on Boonville Road, two at existing median openings for Allen Academy and for Miramont Boulevard, and one east of Miramont Boulevard that provides right-in right-out access to the residential portion of the development. It is assumed that there will be two accesses to the proposed development from Green Valley Drive, one for the commercial portion that fronts Briarcrest Drive, and one for the residential portion that connects at Creekridge Street.

This report includes analyses of traffic operations at all intersections surrounding the development where traffic counts were collected. In addition to these locations, analyses were conducted at the following proposed accesses not included with the existing intersections:

- Boonville Road at Proposed Access #3
- Green Valley Drive at Proposed Access #4
- Green Valley Drive at Creekridge Street (Proposed Access #5)

Figure 4 identifies the Existing AM and PM Peak Hour traffic volumes.

TRAFALGAR EXISTING & PROPOSED ROAD NETWORK			
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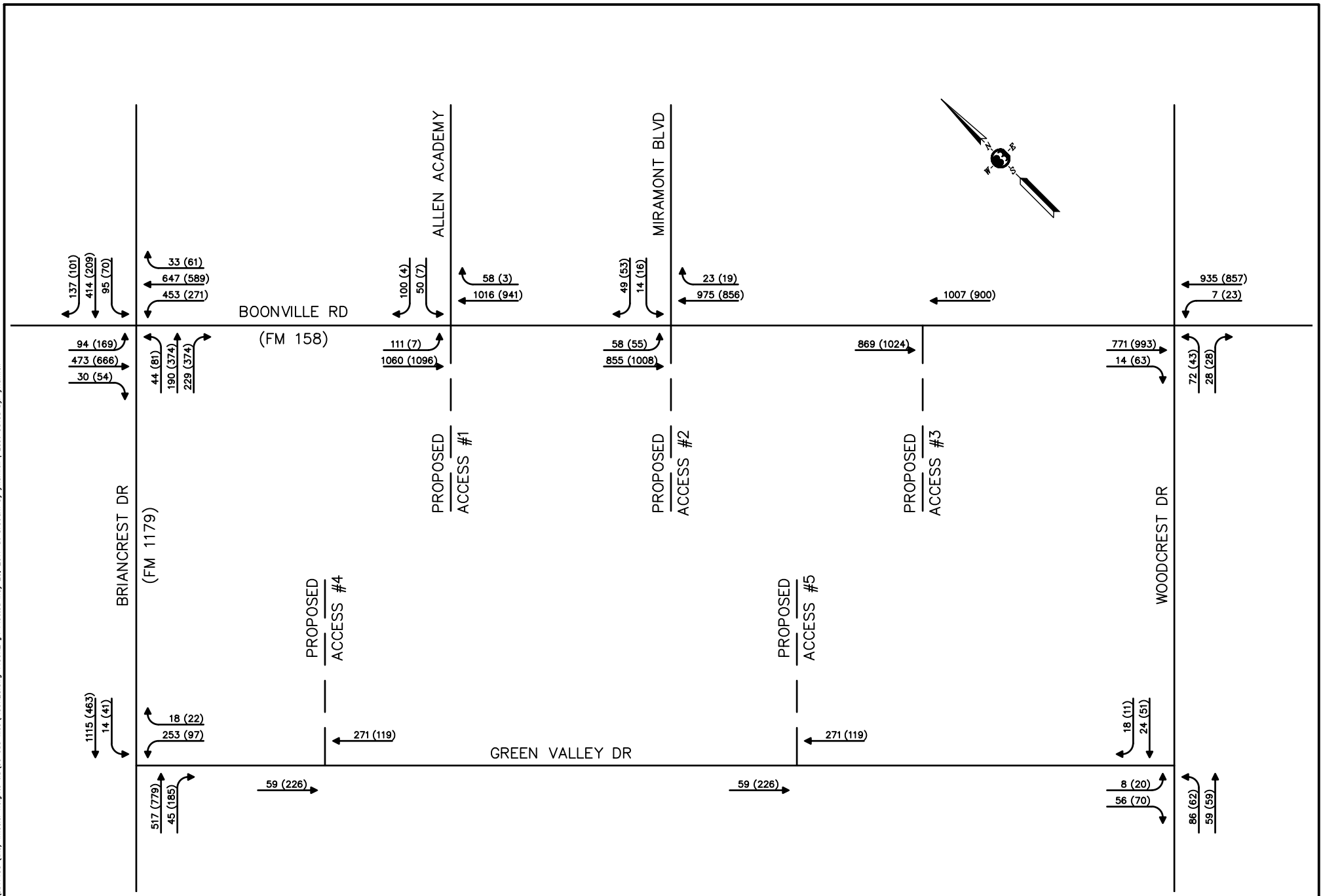

LEGEND
XXX A.M. PEAK HOUR
(XXX) P.M. PEAK HOUR

TRAFALGAR

PEAK HOUR VOLUMES - EXISTING (2017)

SCALE:	N/A	DATE:	MAY 2017
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TRIP GENERATION

Vehicle trips to and from the proposed development were estimated for the areas shown in **Figure 2**. The areas are:

- Area 1: General Commercial, 9.95 Acres
- Area 2: Mixed-Use: 22 Acres Multifamily Residential and 10.2 Acres General Commercial
- Area 3: Conservation area, 10.58 Acres

Trip ends for each area were estimated using the land use intensity assumptions stated previously; specifically, that the residential portion (part of Area 2, developed with Phase 1) would have a density of 20 dwelling units per acre and that the commercial portions (Area 1 and the remainder of Area 2, developed with Phase 2) would have a floor area ratio of 30%. There are no forecasted trips associated with Area 3. Trip generation rates from the ITE Trip Generation Manual, shown in **Table 1**, were used to forecast the trips to and from the development. **Table 2** applies the trip generation rates and units to calculate the trips to and from the development during the AM and PM Peak Hours.

Table 1. Trip Generation Rates

Area	ITE Land Use	Description	Acres	Density	Number of Units	AM Peak	PM Peak
						Rate/ Unit	Rate/ Unit
Area 1	820	Retail (1,000 GSF)	9.95	30%	130 ksf	0.96	3.71
Area 2	820	Retail (1,000 GSF)	10.20	30%	133 ksf	0.96	3.71
Area 2	221	Low-Rise Apartments	22	20/Acre	440	0.51	0.62

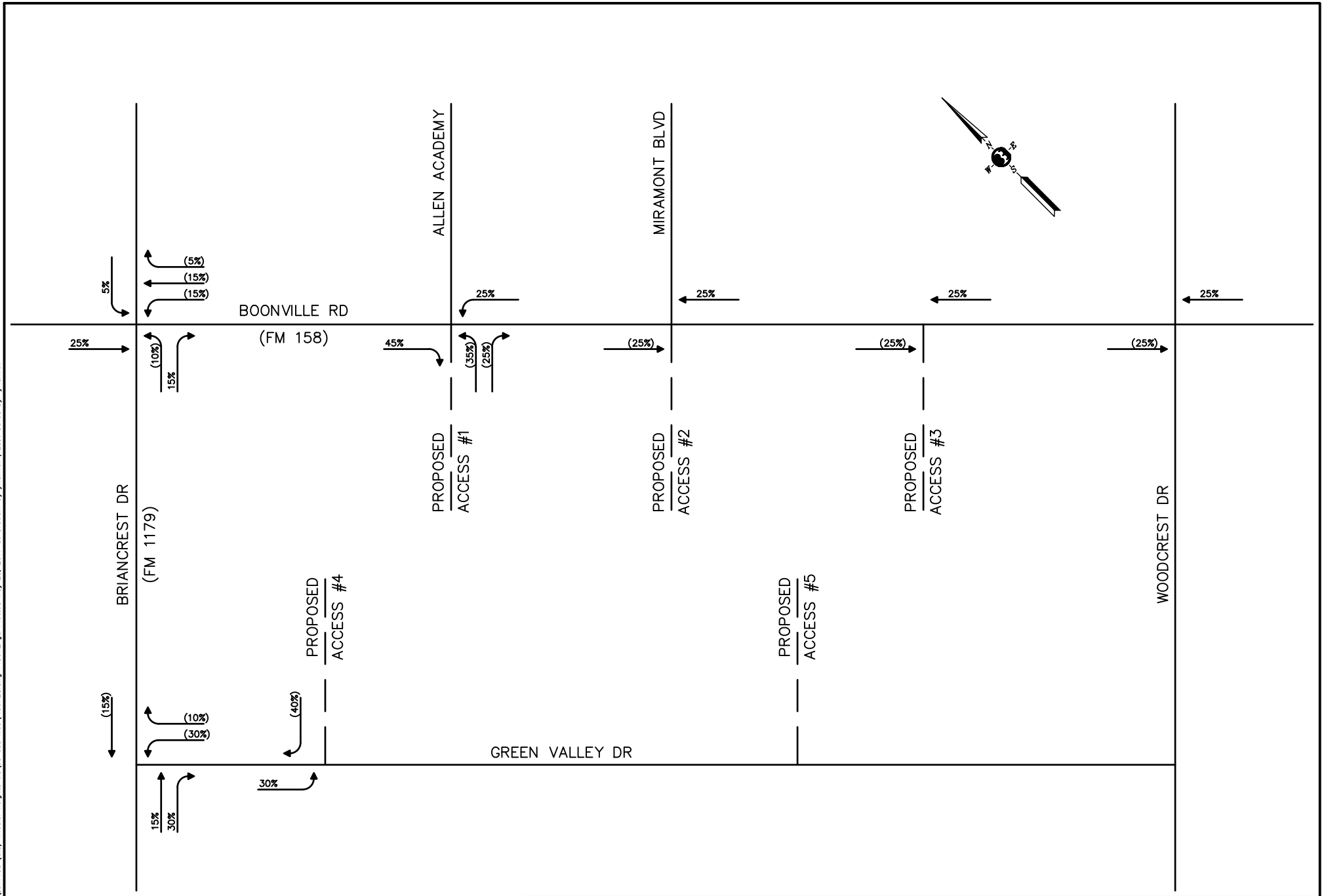
Table 2. Trip Generation Summary

Area	AM Peak Hour					PM Peak Hour				
	Total	% Enter	Enter	% Exit	Exit	Total	% Enter	Enter	% Exit	Exit
Area 1	125	62	78	38	47	482	48	231	52	251
Area 2	128	62	79	38	49	493	48	237	52	256
Area 2	202	21	42	79	160	255	65	166	35	89
Total	449	-	196	-	253	1,230	-	634	-	596

TRIP DISTRIBUTION

Vehicle trips are distributed throughout the road network based on the access points of the defined area, the use of cross-accesses between the different areas, the direction of local and regional attractors, and the observed existing traffic volumes. The ability to execute left-turns at access points has a significant role in determining where vehicles will enter and exit. The following figures show the trip distribution assumptions for each block:

- **Figure 5**: Trip Distribution – Area 1 (9.9 Acres General Commercial)
- **Figure 6**: Trip Distribution – Area 2 Commercial (10.2 Acres)
- **Figure 7**: Trip Distribution – Area 2 Multifamily Residential (22.0 Acres)



LEGEND
XX% INBOUND
(XX%) OUTBOUND

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TRIP DISTRIBUTION - AREA #1

SCALE:	N/A	DATE:	MAY 2017
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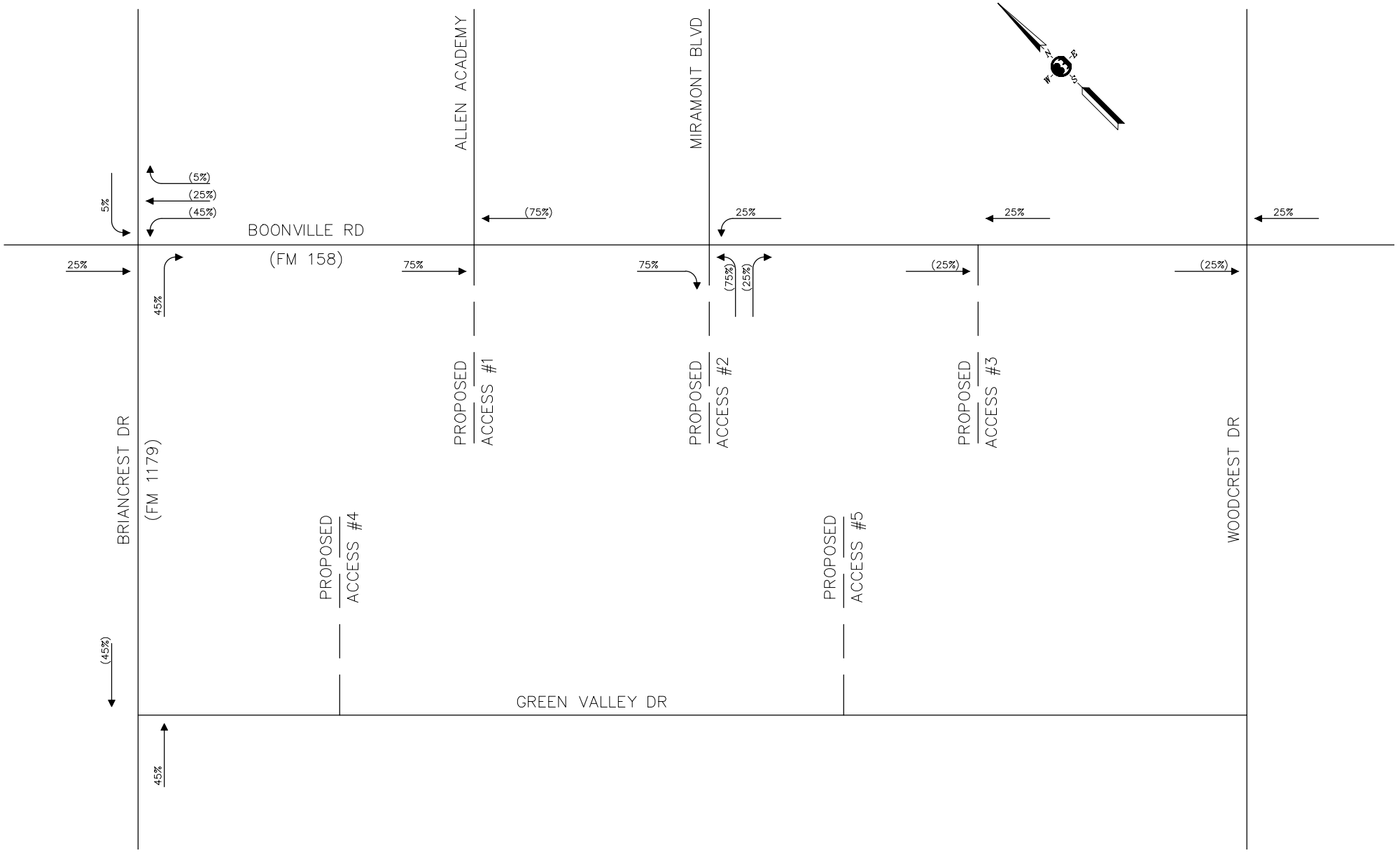

LEGEND
XX% INBOUND
(XX%) OUTBOUND

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TRIP DISTRIBUTION - AREA #2 COMMERCIAL

SCALE:	N/A	DATE:	MAY 2017
JOB NO.:	BB17138	DWG. FILE:	FIGURE #6

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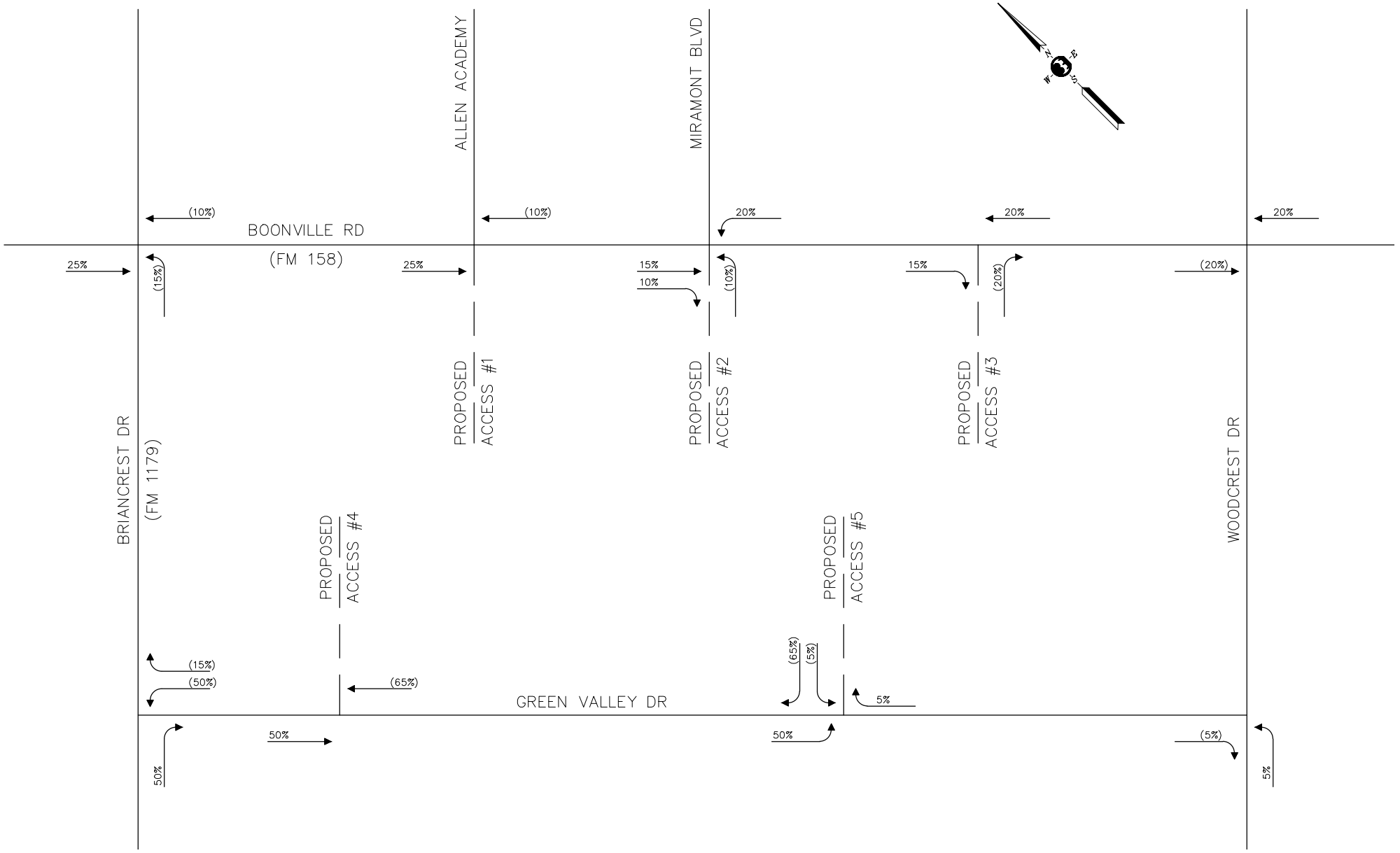

LEGEND
XX% INBOUND
(XX%) OUTBOUND

TRAFALGAR

TRIP DISTRIBUTION - AREA #2 RESIDENTIAL

SCALE:	N/A	DATE:	MAY 2017
JOB NO.:	BB17138	DWG. FILE:	FIGURE #7

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FORECASTED TRAFFIC VOLUMES

SITE TRAFFIC VOLUMES

Site volumes represent the traffic expected to be generated by the areas described previously. **Figure 8** shows the AM and PM Peak Hour traffic volumes forecasted to be generated by the development, applying the trip generation forecasts to the trip distribution assumptions.

FUTURE TRAFFIC VOLUMES

Existing 2017 traffic volumes were increased by an annual growth rate of 4.0% to the year 2019 for the Background (2019) and Background (2022) scenarios, corresponding with the timelines for completing Phase 1 and Phase 2 (Full Build). The 4.0% rate was selected based on a review of historic traffic volumes collected by TxDOT at multiple locations along Boonville Road and Briarcrest Drive.

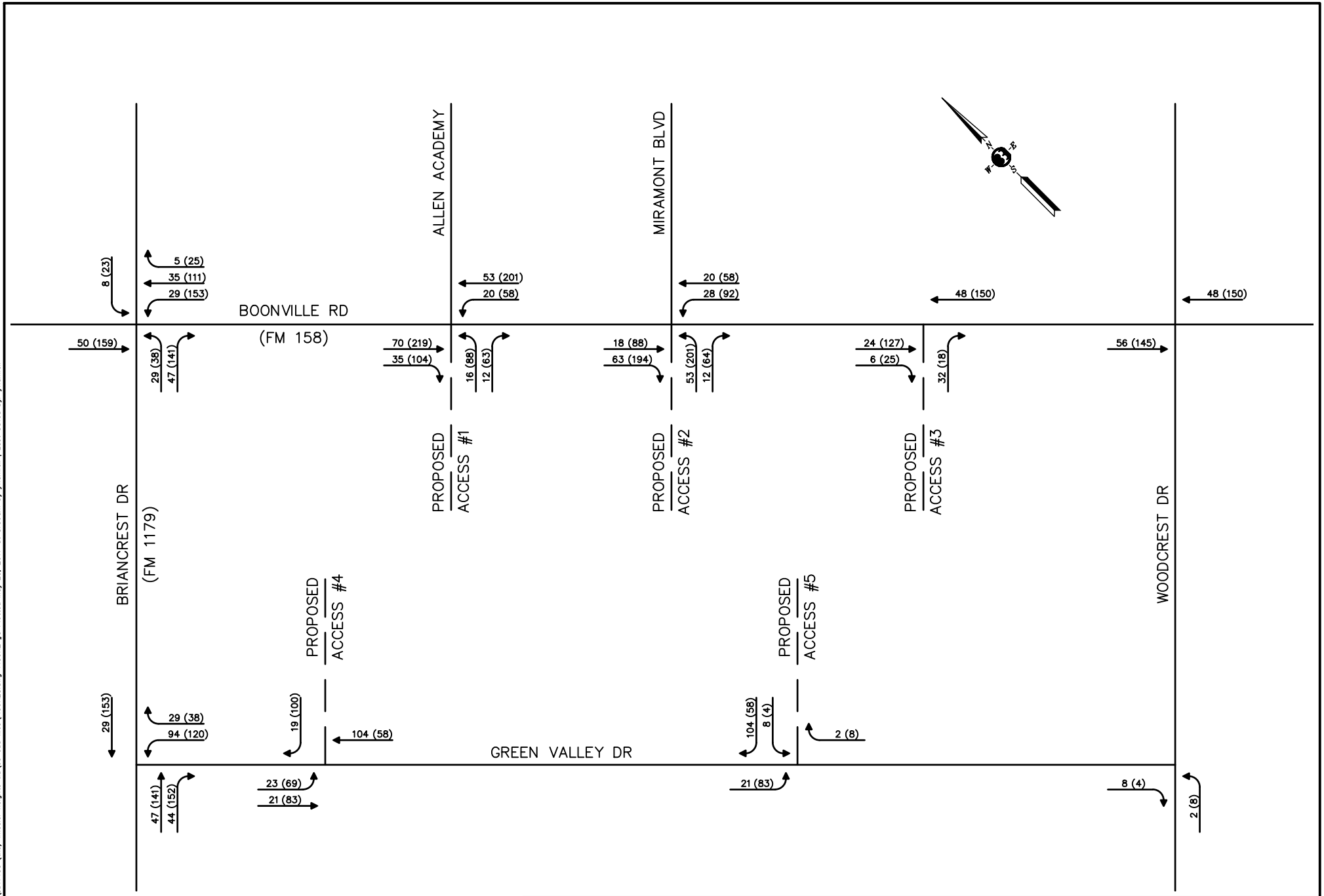
Figure 9 shows the Peak Hour volumes for the Background – 2019 conditions. Since the Background – 2022 volumes do not include traffic associated with the Trafalgar Subdivision, the Background conditions serve as a baseline for identifying the impacts of the proposed development. **Figure 10** shows the Peak Hour volumes for the Phase 1 – 2019 conditions. **Figure 11** shows the Peak Hour volumes for the Background – 2022 conditions, which serve as a baseline for identifying the traffic impacts of the development.

TOTAL TRAFFIC VOLUMES

Figure 12 depicts the "total volumes" anticipated to occur along the road network within the study area for the design year of 2022. The total volumes combine the site generated volumes from the proposed Trafalgar Subdivision and the volumes from the Background (2022) conditions.

TOTAL TRAFFIC VOLUMES – ALTERNATIVE 1 (NO RESIDENTIAL-COMMERCIAL CROSS ACCESS)

The original concept plan for assessing traffic impacts of the development assumes that the residential portion of Area 2 has access to Boonville Road at Miramont Drive, where inbound and outbound left-turns can be executed. However, if there is no cross access between the residential and commercial portions, outbound residential-based trips intended for northbound on Boonville Road and inbound residential-based trips from the south on Boonville Road will include U-turns along Boonville Road. A scenario showing the traffic impacts if cross-access is not provided is investigated as Alternative 1. **Figure 13** shows the total traffic volumes for the development with the assumption of residential trips limited to access at Creekridge Street on Green Valley Drive and at Access #3 (right-in right-out) on Boonville Road.



LEGEND
XXX A.M. PEAK HOUR
(XXX) P.M. PEAK HOUR

TRAFALGAR
SITE GENERATED VOLUMES

SCALE:	N/A	DATE:	MAY 2017
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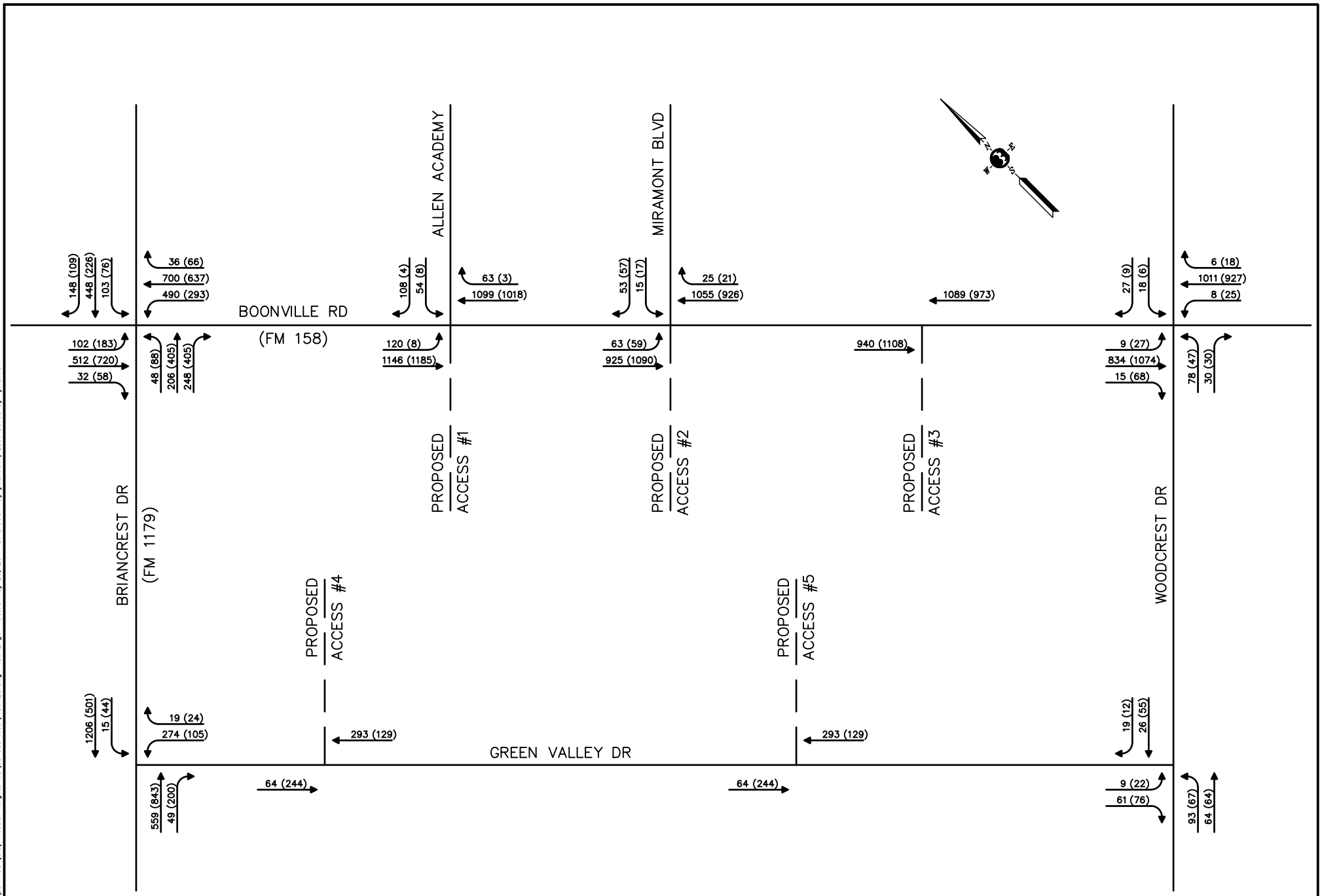

LEGEND
XXX A.M. PEAK HOUR
(XXX) P.M. PEAK HOUR

TRAFALGAR

PEAK HOUR VOLUMES - BACKGROUND (2019)

SCALE: N/A	DATE: MAY 2017
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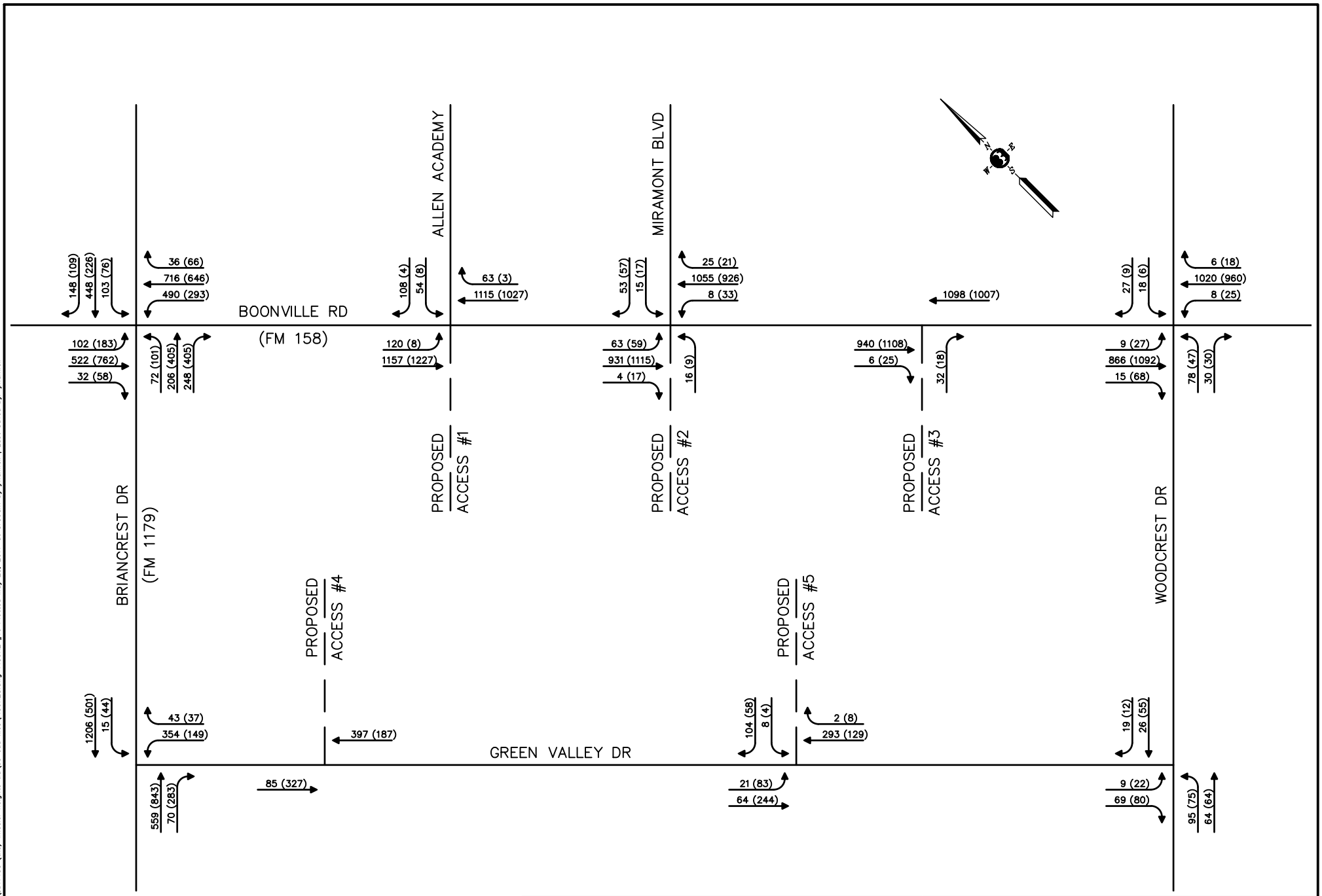

LEGEND
XXX A.M. PEAK HOUR
(XXX) P.M. PEAK HOUR

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PEAK HOUR VOLUMES - PHASE 1 (2019)

SCALE:	N/A	DATE:	MAY 2017
JOB NO.:	BB17138	DWG. FILE:	FIGURE #10

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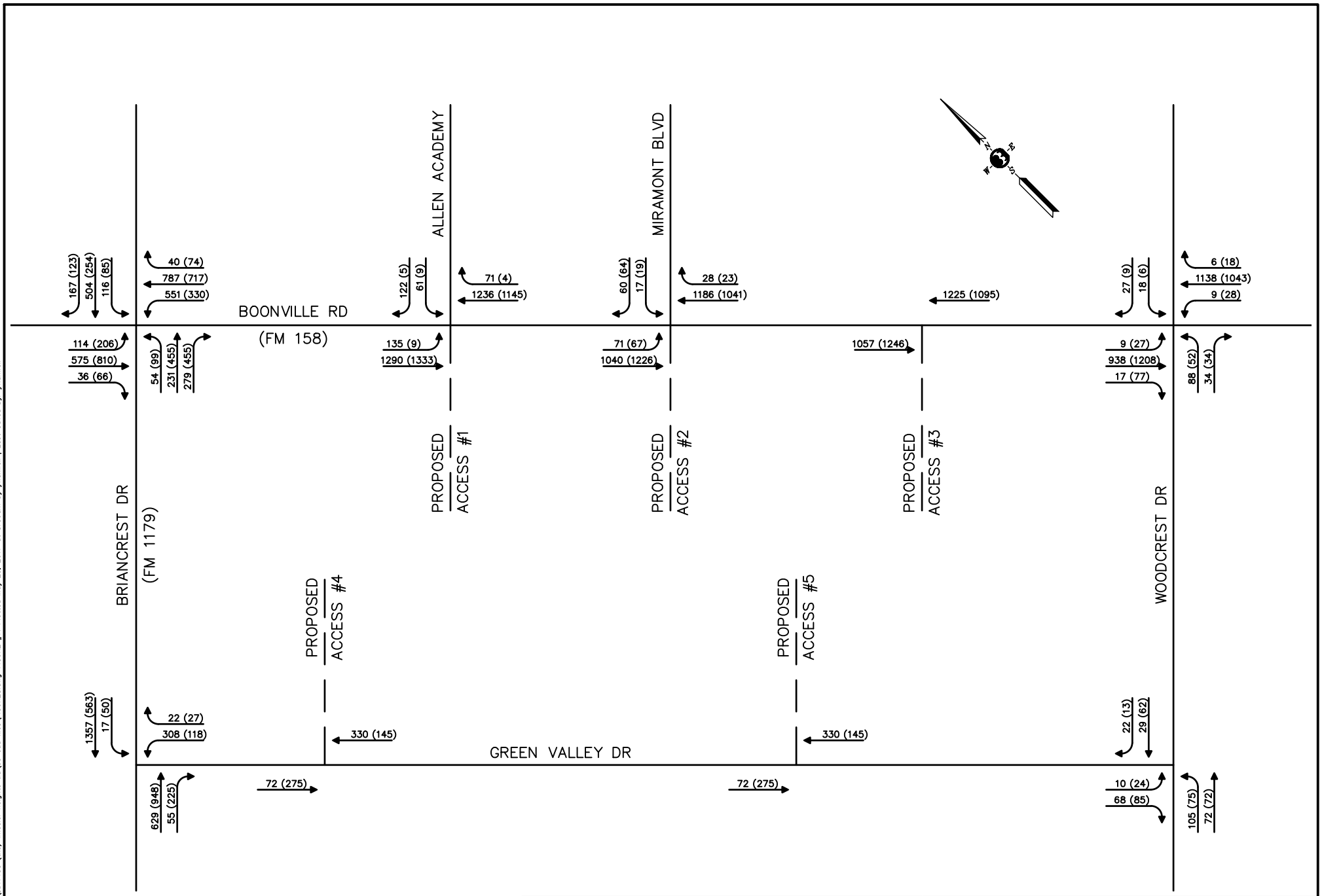

LEGEND
XXX A.M. PEAK HOUR
(XXX) P.M. PEAK HOUR

TRAFALGAR

PEAK HOUR VOLUMES - BACKGROUND (2022)

SCALE:	N/A	DATE:	MAY 2017
JOB NO.:	BB17138	DWG. FILE:	FIGURE #11

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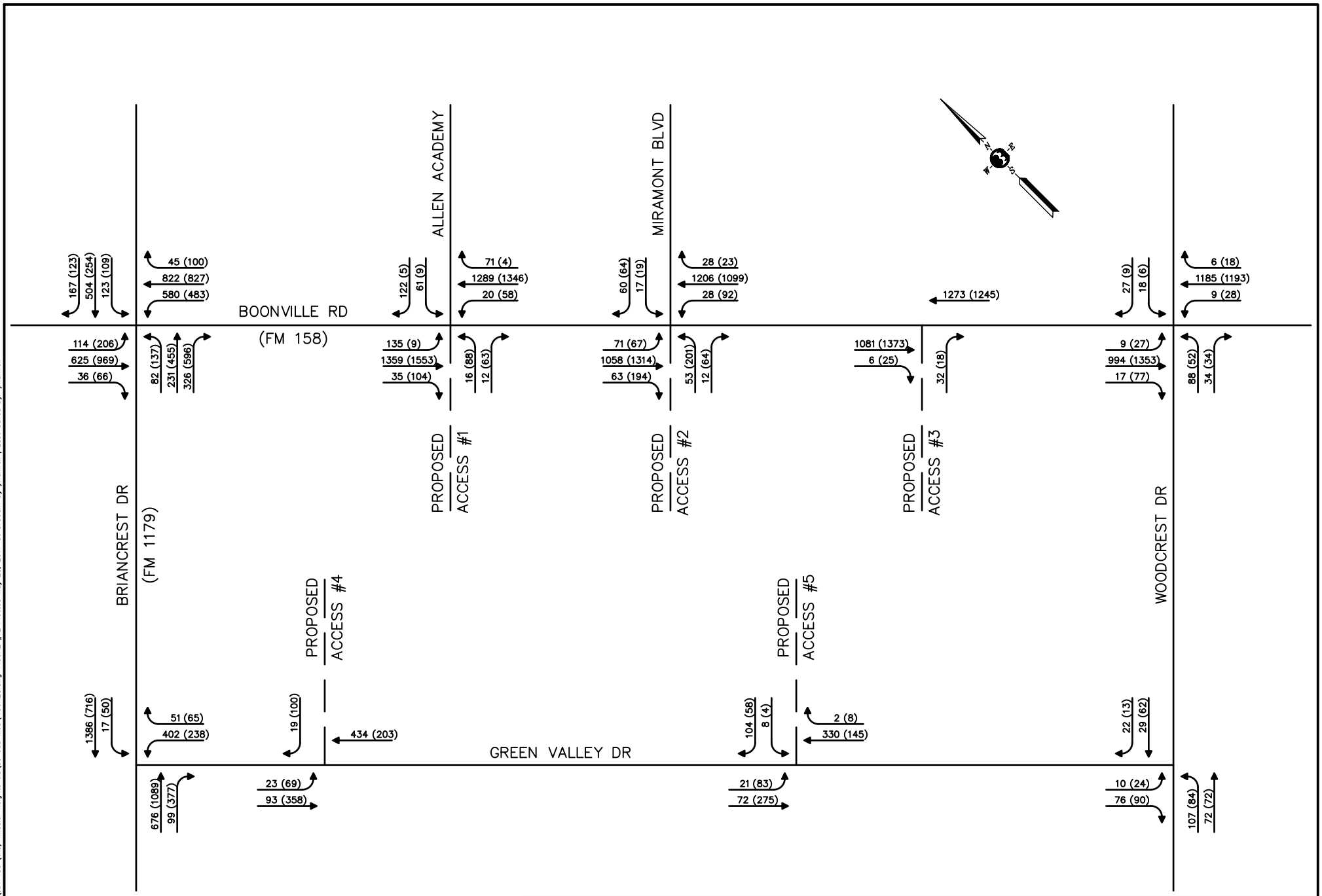

LEGEND
XXX A.M. PEAK HOUR
(XXX) P.M. PEAK HOUR

TRAFALGAR

PEAK HOUR VOLUMES - FULL BUILD (2022)

SCALE:	N/A	DATE:	MAY 2017
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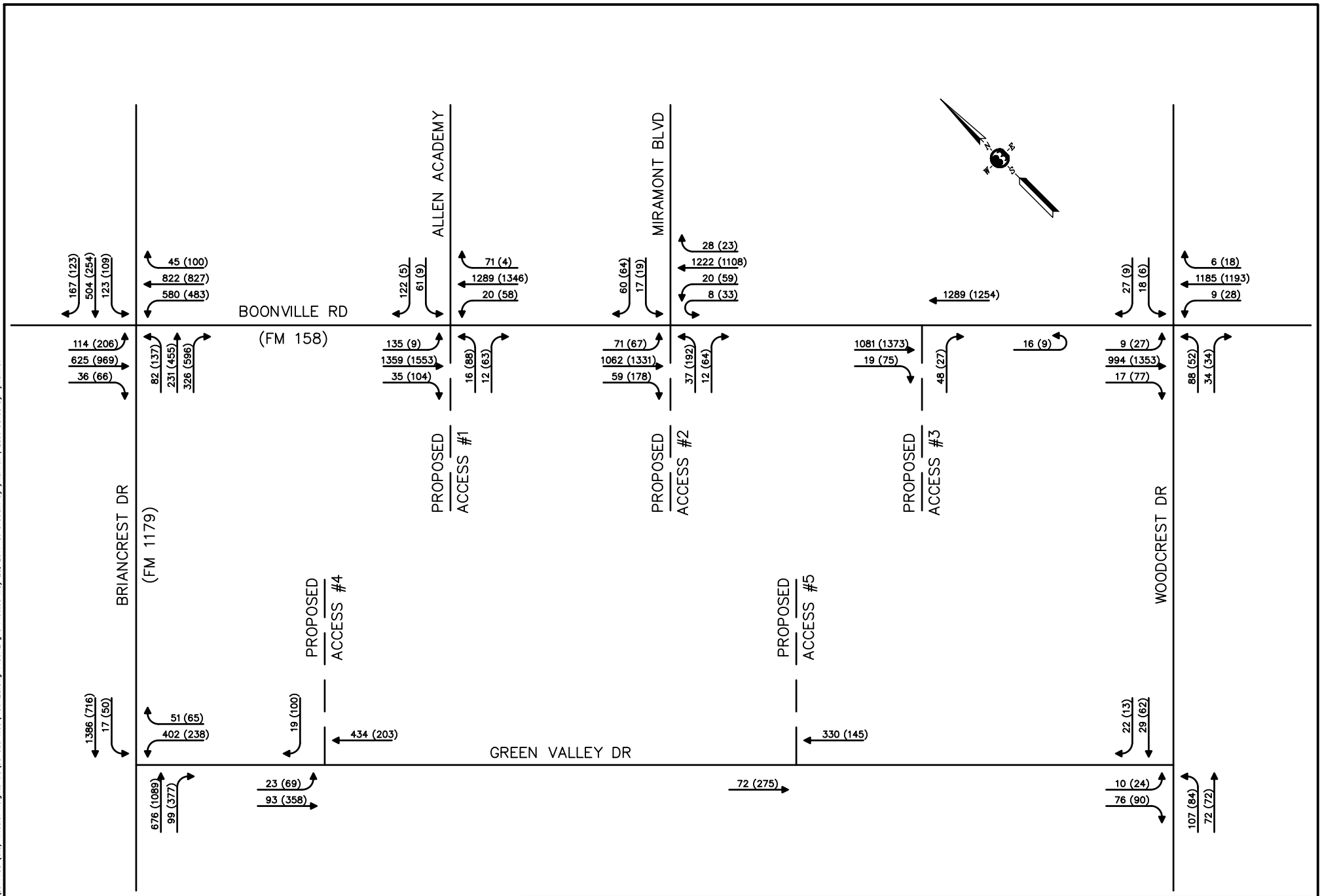

LEGEND
XXX A.M. PEAK HOUR
(XXX) P.M. PEAK HOUR

TRAFALGAR

ALTERNATIVE 1 PEAK HOUR VOLUMES

SCALE:	N/A	DATE:	MAY 2017
JOB NO.:	BB17138	DWG. FILE:	FIGURE #13

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INTERSECTION CAPACITY ANALYSIS

Level of Service (LOS) analyses of the traffic operations were performed at the study intersections. Analyses of the intersections were conducted utilizing SYNCHRO software, which applies Highway Capacity Manual methods. Signal phasing and timing parameters were obtained by the City of Bryan for the two signalized intersections along Boonville Road. The findings of the capacity analyses with the resulting delay and levels of service are summarized by intersection approach in the following tables:

- **Table 3.** AM Peak Hour Level of Service
- **Table 4.** PM Peak Hour Level of Service

Copies of the software printouts and a description of the various levels of service have been included in the Appendix. Typically, the desirable levels of service are "A" through "D." Levels of service "E" and "F" are considered undesirable.

Figure 14 summarizes the findings of the intersection capacity analysis, showing the level of service at each study intersection.

EXISTING – 2017

The two signalized intersections currently operate at an acceptable level of service during the AM and PM Peak Hours. During the AM Peak Hour, the Allen Academy driveway operates at a LOS F for the southbound movement. During the PM Peak Hour, it operates at LOS E. All approaches at the other stop-controlled intersections operate at LOS D or better during both the AM and PM Peak Hours.

BACKGROUND – 2019

Traffic volumes were increased by 4% per year for two years to obtain the Background (2019) traffic volumes. The intersection capacity analysis shows both signalized intersections are forecasted to continue operating at an acceptable level of service (LOS C or LOS D) during the AM and PM Peak Hours. During the AM Peak Hour, the Allen Academy driveway continues to operate at LOS F. During the PM Peak Hour, operations at that driveway are forecasted to deteriorate to LOS F. The westbound approach of Green Valley Drive at Briarcrest Drive is forecasted to operate at LOS E during the PM Peak Hour.

PHASE 1 – 2019

Phase 1 traffic includes the residential portion of the Trafalgar development. During the AM Peak Hour, Phase 1 traffic experiences LOS E operations at the intersection of Miramont Boulevard on Boonville Road. Additionally, the westbound approach at the intersection of Briarcrest Drive at Green Valley Drive deteriorates to LOS F with the addition of Phase 1 traffic during the AM Peak Hour. During the PM Peak Hour, Phase 1 traffic exiting at Miramont Boulevard experiences LOS F operations. The addition of traffic at the intersection of Green Valley Drive at Briarcrest Drive results in LOS F for the westbound (exiting) traffic during the PM Peak Hour.

BACKGROUND – 2022

Traffic volumes were increased by 4% per year for five years (from 2017) to obtain the Background (2022) traffic volumes. During both Peak Hours in 2022, the signalized intersection

of Boonville Road at Briarcrest Drive is forecasted to operate at LOS D and the intersection of Woodcrest Drive at Boonville Road is forecasted to operate at LOS C. The driveway at Allen Academy is forecasted to operate at LOS F during the AM and PM Peak Hours. Also, the westbound approach at the intersection of Briarcrest Drive at Green Valley Drive is forecasted to operate at LOS F during both AM and PM Peak Hours.

FULL BUILD – 2022

The Full Build (2022) scenario adds traffic generated by the proposed Trafalgar development to the forecasted background traffic that is grown at a 4% annual rate for five years. The signalized intersection of Briarcrest Drive at Boonville Road is forecasted to operate at LOS E during the PM Peak Hour, with an average of 60 seconds of delay per vehicle. Operations at Allen Academy are forecasted to still fail, and the exiting traffic at Miramont Boulevard experiences a deterioration in level of service to LOS E for the southbound approach. The northbound approach operates at LOS F. Traffic exiting onto Briarcrest Drive from Green Valley Drive is forecasted to experience LOS F operations during the AM and PM Peak Hours.

FULL BUILD – 2022 – MITIGATED

The analyses conducted so far include conservative assumptions for dense residential development and intense commercial development. The residential development is assumed to include 20 apartment units per acre, and the commercial development is assumed to be retail-oriented with a floor area ratio of 0.33. The trip generation rate used for the commercial analyses was “Shopping Center”, which has one of the highest trip generation rates of commercial uses. As the intersection of Briarcrest Drive at Boonville Road was forecasted to operate at LOS E during the PM Peak Hour under the Full Build (2022) conditions, a proposed mitigation measure is to reduce the intensity of the commercial development so that half of the area has a retail use and the other half is office. The analysis of the mitigated conditions is therefore based on assuming 50% of the area has a Shopping Center trip generation rate and the other 50% has a trip generation rate based on ITE land use 750 “Office Park”. Summaries of the new trip generation assumptions are provided in the Appendix. The trip distribution assumptions remain the same as before and shown in **Figure 5** and **Figure 6**.

With the revised assumption for development intensity, the intersection of Briarcrest Drive at Boonville Road is forecasted to operate at LOS D during both AM and PM Peak Hours, an improvement from LOS E during the PM Peak. The proposed mitigation results in no other change in level of service at any other intersection.

FULL BUILD ALTERNATIVE 1 (REDISTRIBUTION) – 2022

Alternative 1 assumes trips associated with the multifamily residential area cannot use the full access with left-turns at Miramont Boulevard. Residential-based trips which would have used Miramont Boulevard are redistributed so that any vehicle previously turning left at Miramont Boulevard would perform a U-turn along Boonville Road as the Access #3 driveway is expected to allow only right-in right-out movements. This redistribution of movements impacts only Miramont Boulevard and Access #3 as analyzed in this study. Though there is a large decrease in delay for vehicles exiting at Miramont Boulevard, there is no change in LOS at either location.

Table 3. AM Peak Hour Level of Service

Scenario	Eastbound			Westbound			Northbound			Southbound			INT
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Boonville Road at Briarcrest Drive[1]													
Existing (2017)		D			D			B			C		D
		50.7			45.4			16.1			26.1		37.4
Background (2019)		D			D			B			D		D
		54.3			48.9			16.3			27.7		39.9
Phase 1 (2019)		D			D			B			C		D
		53.2			48.5			17.0			28.4		39.7
Background (2022)		**E**			D			B			C		D
		66.9			54.9			16.9			31.5		45.9
Full Build (2022)		**E**			D			B			D		D
		66.8			53.1			18.1			35.8		46.1
Full Build 2022 Mitigated		**E**			D			B			D		D
		67.4			51.3			18.1			37.6		45.8
Boonville Road at Allen Academy[2]													
Existing (2017)	B	-			-			-			**F**		-
	12.2	-			-			-			**130**		-
Background (2019)	B	-			-			-			**F**		-
	12.9	-			-			-			**186**		-
Phase 1 (2019)	B	-			-			-			**F**		-
	13.2	-			-			-			**204**		-
Background (2022)	B	-			-			-			**F**		-
	14.8	-			-			-			**>300**		-
Full Build (2022)	C	-		B	-			**F**			**F**		-
	15.2	-		11.9	-			**>300**			**>300**		-
Full Build 2022 Mitigated	B	-		B	-			**F**			**F**		-
	14.9	-		12.7	-			**>300**			**>300**		-
Boonville Road at Miramont Boulevard[2]													
Existing (2017)	A	-			-			-			C		-
	8.7	-			-			-			16.9		-
Background (2019)	A	-			-			-			C		-
	8.9	-			-			-			20.0		-
Phase 1 (2019)	A	-			-			**E**			C		-
	8.9	-			-			**41.8**			21.4		-
Background (2022)	A	-			-			-			D		-
	9.5	-			-			-			34.9		-
Full Build (2022)	A	-		B	-			**F**			**E**		-
	9.5	-		11.7	-			**227**			**47.8**		-
Alternative 1 (2022)	A	-		B	-			**F**			**E**		-
	9.7	-		12.7	-			**112**			**43.1**		-
Full Build 2022 Mitigated	A	-		B	-			**F**			**F**		-
	9.5	-		12.3	-			**271**			**56.4**		-
Boonville Road at Proposed Access #3[2]													
Phase 1 (2019)		-			-			B			-		-
		-			-			12.7			-		-
Full Build (2022)		-			-			B			-		-
		-			-			13.7			-		-
Full Build 2022 Mitigated		-			-			B			-		-
		-			-			13.6			-		-
Alternative 1 (2022)		-			-			B			-		-
		-			-			14.1			-		-

Note: [1] Signalized, [2] Unsignalized; Letters are level of service; numbers are average seconds of delay per vehicle.

Table 3. AM Peak Hour Level of Service (Continued)

Scenario	Eastbound			Westbound			Northbound			Southbound			INT
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Boonville Road at Woodcrest Drive[1]													
Existing (2017)		C			C			B			-		C
		22.8			22.9			12.1			-		22.3
Background (2019)		C			D			B			A		C
		31.1			37.5			11.9			7.7		32.8
Phase 1 (2019)		C			D			B			A		C
		31.7			37.5			12.0			7.7		33.1
Background (2022)		C			C			B			A		C
		28.5			34.7			13.6			8.2		30.4
Full Build (2022)		C			C			B			A		C
		27.6			33.0			14.3			8.3		29.2
Full Build 2022 Mitigated		C			C			B			A		C
		26.1			31.8			14.6			8.4		28.1
Briarcrest Drive at Green Valley Drive[2]													
Existing (2017)		-			D			-		A	-		-
		-			26.0			-		8.5	-		-
Background (2019)		-			D			-		A	-		-
		-			33.1			-		8.7	-		-
Phase 1 (2019)		-			**F**			-		A	-		-
		-			**61.0**			-		8.8	-		-
Background (2022)		-			**F**			-		A	-		-
		-			**58.8**			-		8.9	-		-
Full Build (2022)		-			**F**			-		A	-		-
		-			**161**			-		9.3	-		-
Full Build 2022 Mitigated		-			**F**			-		A	-		-
		-			**290**			-		9.5	-		-
Green Valley Drive at Proposed Access #4[2]													
Full Build (2022)	A	-		-			-			B			-
	8.4	-		-			-			11.3			-
Full Build 2022 Mitigated	A	-		-			-			B			-
	8.4	-		-			-			11.2			-
Green Valley Drive at Creekridge Street[2]													
Phase 1 (2019)	A	-		-			-			B			-
	8.0	-		-			-			11.1			-
Full Build (2022)	A	-		-			-			B			-
	8.1	-		-			-			11.6			-
Full Build 2022 Mitigated	A	-		-			-			B			-
	8.1	-		-			-			11.6			-
Green Valley Drive at Woodcrest Drive[2]													
Existing (2017)		A		-			A	-		-			-
		9.0		-			7.5	-		-			-
Background (2019)		A		-			A	-		-			-
		9.0		-			7.5	-		-			-
Phase 1 (2019)		A		-			A	-		-			-
		9.1		-			7.5	-		-			-
Background (2022)		A		-			A	-		-			-
		9.2		-			7.5	-		-			-
Full Build (2022)		A		-			A	-		-			-
		9.2		-			7.5	-		-			-
Full Build 2022 Mitigated		A		-			A	-		-			-
		9.2		-			7.5	-		-			-

Note: [1] Signalized, [2] Unsignalized; Letters are level of service; numbers are average seconds of delay per vehicle.

Table 4. PM Peak Hour Level of Service

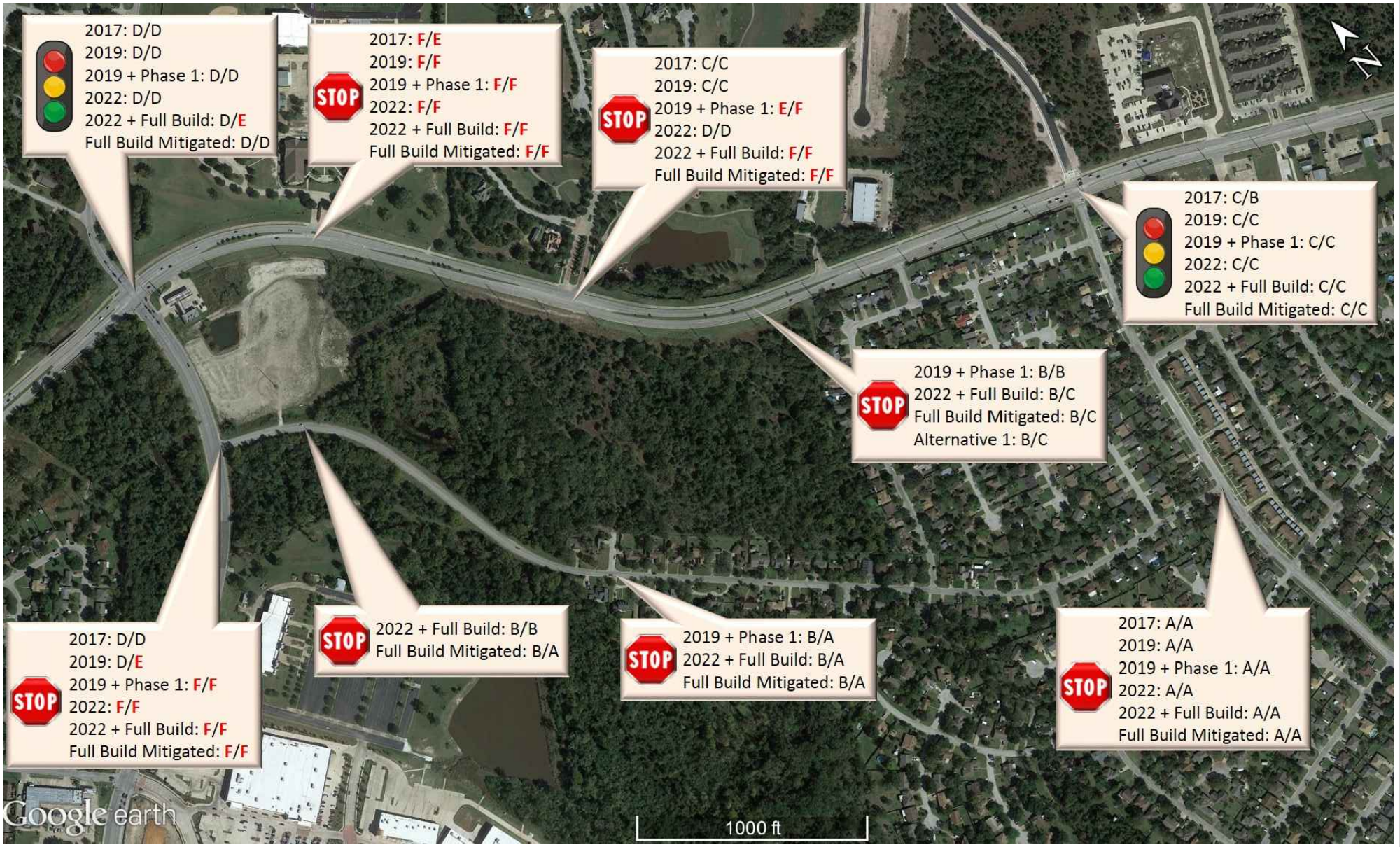
Scenario	Eastbound			Westbound			Northbound			Southbound			INT
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Boonville Road at Briarcrest Drive[1]													
Existing (2017)	D			D			C			C			D
	49.5			36.9			21.2			21.4			34.3
Background (2019)	D			D			C			C			D
	51.7			36.5			24.6			23.6			36.1
Phase 1 (2019)	D			C			C			C			D
	51.5			35.2			26.4			24.5			36.4
Background (2022)	**E**			D			C			C			D
	59.4			48.3			32.4			25.5			44.4
Full Build (2022)	**F**			**E**			D			C			**E**
	88.1			**55.6**			48.8			29.7			**60.1**
Full Build 2022 Mitigated	**E**			D			D			C			D
	76.9			49.8			42.7			28.9			53.2
Boonville Road at Allen Academy[2]													
Existing (2017)	B	-		-			-			**E**			-
	10.4	-		-			-			**46.1**			-
Background (2019)	B	-		-			-			**F**			-
	10.8	-		-			-			**61.4**			-
Phase 1 (2019)	B	-		-			-			**F**			-
	10.9	-		-			-			**61.5**			-
Background (2022)	B	-		-			-			**F**			-
	11.6	-		-			-			**91.1**			-
Full Build (2022)	B	-		C	-		**F**			**F**			-
	13.1	-		18.1	-		**>300**			**>300**			-
Full Build 2022 Mitigated	B	-		C	-		**F**			**F**			-
	12.8	-		15.4	-		**>300**			**266**			-
Boonville Road at Miramont Boulevard[2]													
Existing (2017)	A	-		-			-			C			-
	8.5	-		-			-			17.0			-
Background (2019)	A	-		-			-			C			-
	8.6	-		-			-			20.8			-
Phase 1 (2019)	B	-		-			**F**			D			-
	8.6	-		-			**77.7**			25.2			-
Background (2022)	A	-		-			-			D			-
	9.0	-		-			-			30.9			-
Full Build (2022)	A	-		C	-		**F**			**F**			-
	9.1	-		17.3	-		**>300**			**289**			-
Full Build 2022 Mitigated	A	-		C	-		**F**			**F**			
	9.1	-		15.2	-		**>300**			**133**			
Alternative 1 (2022)	A	-		C	-		**F**			**F**			-
	9.1	-		23.8	-		**>300**			**199**			-
Boonville Road at Proposed Access #3[2]													
Phase 1 (2019)	-			-			B			B			-
	-			-			13.7			-			-
Full Build (2022)	-			-			C			-			-
	-			-			15.9			-			-
Full Build 2022 Mitigated	-			-			C			-			-
	-			-			15.7			-			-
Alternative 1 (2022)	-			-			C			-			-
	-			-			16.8			-			-

Note: [1] Signalized, [2] Unsignalized; Letters are level of service; numbers are average seconds of delay per vehicle.

Table 3. PM Peak Hour Level of Service (Continued)

Scenario	Eastbound			Westbound			Northbound			Southbound			INT
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Boonville Road at Woodcrest Drive[1]													
Existing (2017)		B			C			B			-		B
		18.0			21.3			17.5			-		19.4
Background (2019)		C			C			B			B		C
		22.6			31.0			14.9			10.7		25.9
Phase 1 (2019)		C			C			B			B		C
		22.3			31.4			15.0			10.7		26.0
Background (2022)		C			C			B			B		C
		23.1			30.3			15.7			11.1		25.9
Full Build (2022)		C			C			B			B		C
		27.3			32.4			16.0			11.1		29.1
Full Build 2022 Mitigated		C			C			B			A		C
		26.7			31.9			16.0			11.1		28.6
Briarcrest Drive at Green Valley Drive[2]													
Existing (2017)		-			D			-		10.8		-	-
		-			27.9			-		B		-	-
Background (2019)		-			**E**			-		B		-	-
		-			**46.7**			-		11.4		-	-
Phase 1 (2019)		-			**F**			-		B		-	-
		-			**62.6**			-		11.9		-	-
Background (2022)		-			**F**			-		B		-	-
		-			**53.7**			-		12.4		-	-
Full Build (2022)		-			**F**			-		C		-	-
		-			**214**			-		15.7		-	-
Full Build 2022 Mitigated		-			**F**			-		B		-	-
		-			**145**			-		14.2		-	-
Green Valley Drive at Proposed Access #4[2]													
Full Build (2022)	A		-		-			-			B		-
	7.8		-		-			-			10.1		-
Full Build 2022 Mitigated	A		-		-			-			A		-
	7.8		-		-			-			9.9		-
Green Valley Drive at Creekridge Street[2]													
Phase 1 (2019)	A		-		-			-			A		-
	7.7		-		-			-			9.6		-
Full Build (2022)	A		-		-			-			A		-
	7.7		-		-			-			9.8		-
Full Build 2022 Mitigated	A		-		-			-			A		-
	7.7		-		-			-			9.8		-
Green Valley Drive at Woodcrest Drive[2]													
Existing (2017)		A			-		A		-		-		-
		9.4			-		7.5		-		-		-
Background (2019)		A			-		A		-		-		-
		9.5			-		7.5		-		-		-
Phase 1 (2019)		A			-		A		-		-		-
		9.6			-		7.5		-		-		-
Background (2022)		A			-		A		-		-		-
		9.7			-		7.5		-		-		-
Full Build (2022)		A			-		A		-		-		-
		9.8			-		7.5		-		-		-
Full Build 2022 Mitigated		A			-		A		-		-		-
		9.8			-		7.5		-		-		-

Note: [1] Signalized, [2] Unsignalized; Letters are level of service; numbers are average seconds of delay per vehicle.



TRAFALGAR LEVEL OF SERVICE SUMMARY			
SCALE:	N/A	DATE:	MAY 2017
JOB NO.:	BB17138	DWG. FILE:	FIGURE #14

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SUMMARY

This traffic study evaluated traffic operations at several locations surrounding the proposed Trafalgar Development, specifically at existing and proposed intersections on Boonville Road (FM 158), Briarcrest Drive (FM 1179), and Green Valley Drive. The proposed planned development is divided into three Areas. As shown in **Figure 2** and in the concept plan in the Appendix, Area 1 is to be developed exclusively with commercial uses Area 2 is to be developed with both multifamily and commercial uses. Area 3 will be preserved as conservation area that will not generate traffic. For the analyses of future conditions, existing traffic volumes were collected and forecasted to the design year of 2022 at a 4% annual growth rate.

Several scenarios were evaluated, including the Existing (2017) conditions, Background (2019) conditions, Phase 1 (2019) conditions, Background (2022) conditions, Full Build (2022) conditions, and Alternative 1 (2022) conditions. In Alternative 1, there is no cross-access provided between the residential and commercial portions of Area 2. In the Full Build (2022) conditions, the intersection of Briarcrest Drive at Boonville Road was forecasted to operate at LOS E. A mitigation scenario was investigated to address the unstable conditions. The mitigation was a different land use that reduced the number of trips generated by the commercial development. Rather than assuming the commercial areas would develop fully as retail space, a 50% split of retail and office park use was evaluated. The less-intense office park softened the effects of the development such that the intersection of Briarcrest Drive at Boonville Road was forecasted to operate at LOS D during both AM and PM Peak Hours.

In most of the scenarios evaluated, there are multiple minor approaches of unsignalized intersections that currently operate or were forecasted to operate at an undesirable level of service. Specific to the proposed planned development, the northbound left-turn movements at the Allen Academy and Miramont Boulevard intersections on Boonville Road are forecasted to operate at unstable or failing levels of service (LOS E and LOS F). The Full Build (2022) conditions, without any mitigation that reduces the intensity of the development, forecasts long delays and long queues (extending to 28 vehicles) exiting onto Boonville Road. There are also long delays and long queues forecasted on the westbound approach of Green Valley Drive at Briarcrest Drive. There are no long delays or significant queues of left-turning vehicles turning from Boonville Road or from Briarcrest Drive. This is important to note as it would be unsafe for vehicles to queue on either of those arterials. Realistically, such long delays and long queues of vehicles exiting the development would not occur as forecasted by the model. Because these locations are specific to left-turn movements, motorists would more likely change their route and execute a simpler right-turn, thus redistributing their trip to create a system equilibrium. As long as there is adequate access to alternative routes among the nearby arterials and collectors, it is unlikely that the actual on-site queueing and delays will be as long as forecasted.

RECOMMENDATIONS FOR TRAFFIC OPERATIONS

In the Full Build (2022) conditions, the intersection of Briarcrest Drive at Boonville Road was forecasted to operate at an undesirable, unstable level of service. An acceptable level of service is obtained by limiting the intensity of the development of the commercial areas. It is therefore recommended that the commercial areas not develop exclusively with general retail uses (with trip generation rates similar to the ITE Shopping Center land use). Some lighter uses (such as Office Park, as tested in this report) should be included. While this study investigated a 50% split of Shopping Center and Office Park, the findings of the intersection capacity analyses suggest that an acceptable level of service may still be obtained with a slightly larger proportion dedicated to retail. Subsequent analysis indicates that the intersection will operate at LOS D even if 60% of the commercial area is modeled with Shopping Center trip generation assumptions.

Conservative assumptions of floor area ratio for the commercial areas and the density of residential area were used. In addition to these conservative assumptions, there were no reductions applied from pass-by trips or from internal trip capture within the development. The report therefore presents a worst-case scenario, which means operations should be better than forecasted.

Regarding accesses, this report analyzed five points of access to the development: Two at existing median openings on Boonville Road, one limited access on Boonville Road, one at the existing Creekview Street on Green Valley Drive, and another access on Green Valley Drive closer to Briarcrest Drive. The full accesses on Boonville Road (at Allen Academy and at Miramont Boulevard) are forecasted to experience long delays and long queues. It is not recommended that the accesses be closed or signalized since there are not long queues of vehicles turning from Boonville Road. If additional signalization is to be considered in the future after development has occurred and a signal is warranted, Miramont Boulevard appears to be a prime location based on spacing between the other signals.

The analysis of the Alternative 1 scenario showed that there were minor differences in operating performance if the residential area does not have cross-access allowing use of the median opening at Miramont Boulevard. Although there is some reduced delay for the egress movement, the reduced access results in U-turns on Boonville Road that would otherwise not occur. As a four-lane divided arterial, Boonville Road is not wide enough to encourage safe U-turn movements. It is therefore recommended that the residential area have access to Boonville Road at Miramont Boulevard. This access is best provided by extending Creekview Street through the residential portion to connect to Boonville Road at Miramont Boulevard.

Signalization at the intersection of Green Valley Drive at Briarcrest Drive is not recommended despite the failing westbound approach. The distance between that intersection and Boonville Road is only 750 ft. However, it is recommended that left- and right-turn lanes be delineated at the westbound approach to reduce delay for the egressing vehicles. The existing cross section appears to be wide enough (36 feet) that additional pavement may not be necessary.

RECOMMENDATIONS FOR DESIGN CONCERNS

There are several guidelines that should be considered for granting access on Boonville Road.

RIGHT-TURN DECELERATION LANE

TxDOT guidelines in the *Access Management Manual* (*AMM*) indicate that a right-turn deceleration lane should be provided for vehicles turning right from Boonville Road if the right-turn volume is greater than 50 vehicles per hour. Based on the assumptions of this study, a right-turn deceleration lane would be recommended at the accesses provided at Allen Academy and at Miramont Boulevard (Access #1 and Access #2). Because this TIA investigates the traffic impacts of a potential development associated with a rezoning, the right-turn deceleration lanes should not be required at this time, but considered in the future upon site plan approval as the actual land use becomes known.

RIGHT-TURN ACCELERATION LANE

According to the AMM, an acceleration lane should be provided for vehicles turning from the development if the turning volume is greater than 200 vph. Based on the assumptions of this study, an acceleration lane will not be required at any location.

LEFT-TURN DECELERATION LANE

Left-turn deceleration lanes are already provided on Boonville Road at Allen Academy and at Miramont Boulevard. Queues for vehicles turning left into the proposed development are one vehicle or less in each scenario. Each left-turn lane on Boonville Road is long enough that queues of left-turning vehicles will not extend to the through lanes. On Briarcrest Drive, it is recommended that the two-way left-turn remain in place since it is used by vehicles turning left from Briarcrest Drive and allows vehicles turning left onto Briarcrest Drive from Green Valley Drive to split the left-turn into two stages.

DRIVEWAY ACCESS SPACING

The speed limit on Boonville Road is 50 mph. Based on guidelines in the *AMM*, the minimum driveway spacing for Boonville Road is 425 feet. The proposed accesses at Allen Academy and at Miramont Boulevard are far enough apart that an additional right-in right-out access could be provided between them and still meet the minimum spacing guideline. Additionally, there appears to be enough frontage of the property between Miramont Boulevard and Cedar Hill Drive that a second right-in right-out access could be provided for the residential area and still meet the minimum standard. Additional accesses will do little to address the poor operations for egress approaches; however, they split up some of the distribution of traffic on site. The speed limit on Briarcrest Drive is 45 mph. On Briarcrest Drive, the minimum driveway spacing is 360 feet. The distance between Green Valley Drive and the Exxon gas station driveway is 690 feet. If an additional driveway on Briarcrest Drive were to be constructed for Area 1, a variance from the *AMM* standards would be required.

APPROPRIATE CURB RETURN RADII

The TxDOT Roadway Design Manual recommends a curb return radius for the proposed driveways on Boonville Road to be a minimum of 25 feet. This corresponds to guidelines for new construction of minor cross streets.

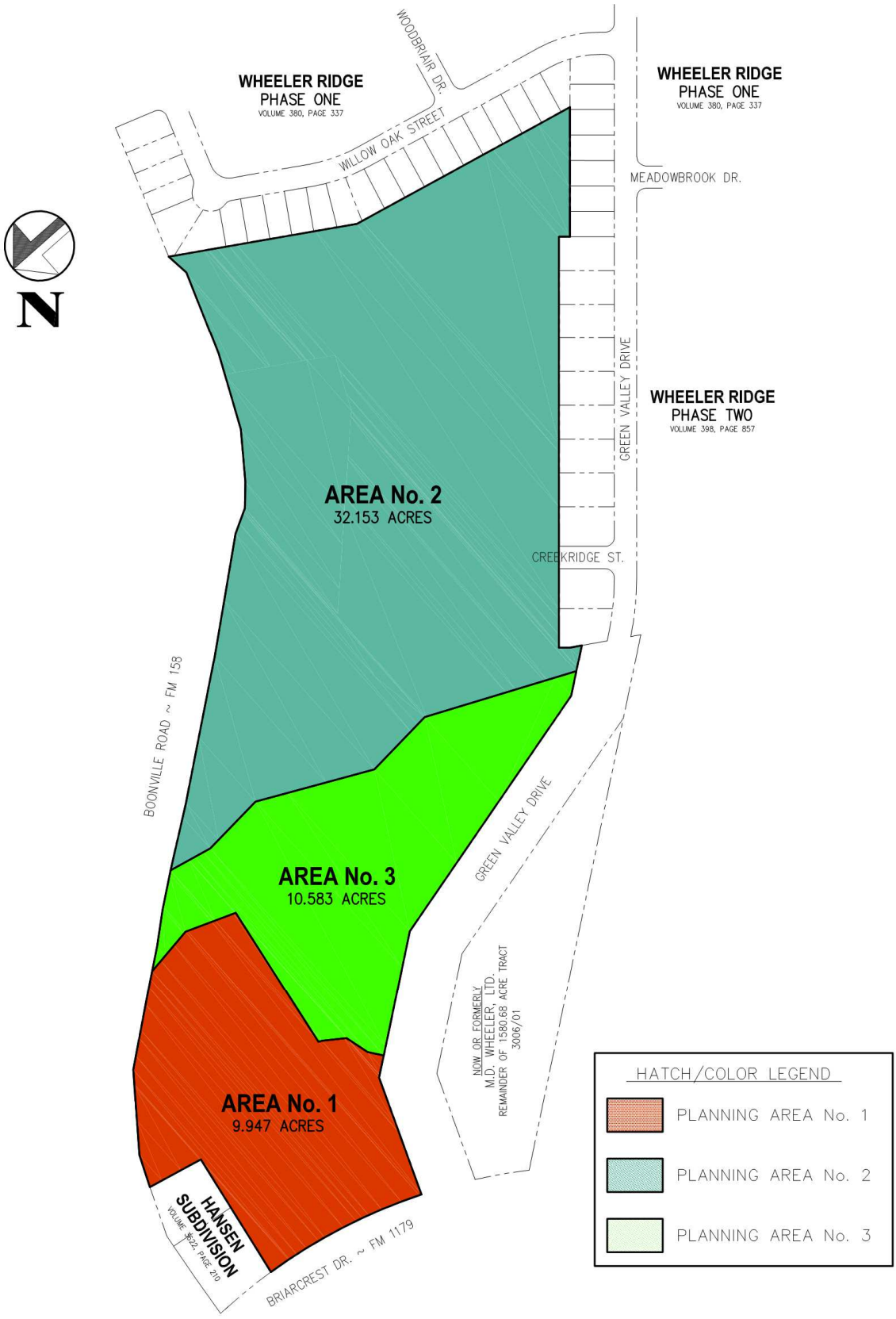
CONCLUSION

Thank you for this opportunity to assist in preparing a TIA for the Trafalgar Development. If there are any questions regarding the items discussed in this report, please do not hesitate to contact us.

APPENDIX

TRAFALGAR – PLANNED DEVELOPMENT MIXED-USE DISTRICT (PD-M)

TRAFALGAR – LAND USE PLAN



AM Counts

Data collected by the Texas A&M University ITE Student Chapter

1. Briarcrest Drive at Boonville Road | **Date: 4/26/2017 (Wednesday)** | **NB approach is along Briarcrest Drive**

Interval	NB				SB				EB				WB			
	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes
7:00-7:15	9	14	38	4	17	69	42	0	13	99	7	0	61	117	5	0
7:15-7:30	14	34	41	0	24	110	48	0	15	117	3	0	92	172	6	0
7:30-7:45	8	44	55	0	18	119	27	0	19	114	6	0	136	197	5	0
7:45-8:00	10	64	74	0	23	115	28	0	39	143	10	0	142	150	14	0
8:00-8:15	12	48	59	0	30	70	34	0	21	99	11	0	83	128	8	0
8:15-8:30	9	36	44	0	11	63	28	0	39	70	8	0	65	79	9	0
8:30-8:45	8	25	30	0	17	67	25	0	18	81	9	0	57	77	8	0
8:45-9:00	6	28	34	0	13	55	27	0	18	89	11	0	59	85	10	0

2. Briarcrest Drive at Green Valley Drive | **Date: 4/27/2017 (Thursday)** | **NB approach is along Briarcrest Drive**

Interval	NB				SB				EB				WB			
	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes
7:00-7:15	0	58	6	0	3	109	0	0	0	0	0	0	37	0	6	0
7:15-7:30	0	98	8	0	1	168	0	0	0	0	0	0	49	0	8	0
7:30-7:45	0	127	10	0	3	276	0	0	0	0	0	0	73	0	4	0
7:45-8:00	0	140	12	2	8	384	0	0	0	0	0	0	69	0	2	0
8:00-8:15	0	152	15	0	2	287	0	0	0	0	0	0	62	0	4	0
8:15-8:30	0	115	14	1	3	199	0	0	0	0	0	0	20	0	4	0
8:30-8:45	0	96	17	0	1	190	0	0	0	0	0	0	22	0	3	0
8:45-9:00	0	73	9	2	1	116	0	0	0	0	0	0	28	0	5	0

3. Green Valley Drive at Woodcrest Drive | **Date: 4/27/2017 (Thursday)** | **NB approach is along Woodcrest Drive**

Interval	NB				SB				EB				WB			
	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes
7:00-7:15	19	13	0	0	0	4	4	0	0	0	16	1	0	0	0	0
7:15-7:30	20	20	0	3	0	5	4	1	2	0	13	1	0	0	0	0
7:30-7:45	25	16	0	0	0	9	4	0	3	0	18	0	0	0	0	0
7:45-8:00	22	10	0	0	0	6	6	0	3	0	9	0	0	0	0	0
8:00-8:15	13	4	0	0	0	3	6	0	2	0	4	0	0	0	0	0
8:15-8:30	9	10	0	0	0	8	2	0	3	0	4	0	0	0	0	0
8:30-8:45	6	5	0	0	0	6	1	0	2	0	4	0	0	0	0	0
8:45-9:00	11	12	0	0	0	5	1	0	1	0	6	0	0	0	0	0

4. Boonville Road at Woodcrest Drive | **Date: 4/25/2017 (Tuesday)** | **NB approach is along Woodcrest Drive**

Interval	NB				SB				EB				WB			
	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes
7:00-7:15	19	0	8	0	0	0	0	0	0	142	5	0	0	179	0	0
7:15-7:30	18	0	14	1	0	0	0	1	0	179	3	0	2	254	0	0
7:30-7:45	19	0	7	0	0	0	0	0	0	178	0	0	1	278	0	0
7:45-8:00	16	0	5	0	0	0	0	0	0	218	7	0	2	254	0	0
8:00-8:15	19	0	2	0	0	0	0	0	0	196	4	0	2	149	0	0
8:15-8:30	2	0	4	0	0	0	0	1	0	154	5	0	0	135	0	0
8:30-8:45	3	0	6	1	0	0	0	0	0	98	5	0	4	136	0	0
8:45-9:00	7	0	3	0	0	0	0	0	0	112	5	0	2	147	0	0

5. Boonville Road at Miramont Boulevard | **Date: 4/25/2017 (Tuesday)** | **NB approach is along Boonville Road**

Interval	NB				SB				EB				WB			
	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes
7:00-7:15	0	188	4	0	10	157	0	0	0	0	0	0	1	0	8	0
7:15-7:30	0	238	7	1	11	195	0	1	0	0	0	0	0	0	11	0
7:30-7:45	0	309	4	0	15	195	0	0	0	0	0	0	2	0	11	0
7:45-8:00	0	257	7	1	18	244	0	0	0	0	0	0	6	0	13	0
8:00-8:15	0	171	5	0	14	221	0	0	0	0	0	0	6	0	14	0
8:15-8:30	0	138	5	0	8	169	0	0	0	0	0	0	4	0	9	0
8:30-8:45	0	140	3	0	11	112	0	0	0	0	0	0	4	0	12	0
8:45-9:00	0	133	4	0	8	124	0	0	0	0	0	0	4	0	14	0

6. Boonville Road at Allen Academy | **Date: 4/27/2017 (Thursday)** | **NB approach is along Boonville Road**

Interval	NB				SB				EB				WB			
	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes
7:00-7:15	0	157	0	0	3	176	0	1	0	0	0	0	0	0	0	0
7:15-7:30	0	275	4	0	5	248	0	0	0	0	0	0	1	0	3	0
7:30-7:45	0	328	12	0	15	247	0	0	0	0	0	0	7	0	13	0
7:45-8:00	0	226	22	0	67	328	0	0	0	0	0	0	16	0	47	1
8:00-8:15	0	187	20	0	24	237	0	0	0	0	0	0	26	0	37	0
8:15-8:30	0	149	3	1	4	167	0	0	0	0	0	0	1	0	4	0
8:30-8:45	0	147	1	0	3	131	0	0	0	0	0	0	0	0	3	0
8:45-9:00	0	144	0	0	5	175	0	0	0	0	0	0	1	0	0	0

PM Counts

Data collected by the Texas A&M University ITE Student Chapter

1. Briarcrest Drive at Boonville Road | **Date: 4/26/2017 (Wednesday)** | **NB approach is along Briarcrest Drive**

Interval	NB				SB				EB				WB			
	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes
7:00-7:15	15	67	75	0	19	51	27	0	17	164	15	0	64	125	5	1
7:15-7:30	14	67	91	0	15	34	14	0	35	152	22	0	55	122	11	0
7:30-7:45	18	63	83	0	15	47	22	0	29	139	19	0	61	143	19	0
7:45-8:00	18	57	71	0	13	57	26	0	26	145	11	0	49	124	14	0
8:00-8:15	17	100	86	0	14	59	26	0	42	156	13	0	75	182	15	0
8:15-8:30	19	91	111	0	19	47	23	0	45	203	15	0	57	148	12	0
8:30-8:45	21	104	77	0	22	51	31	0	47	166	7	0	55	153	17	0
8:45-9:00	24	79	100	0	15	52	21	0	35	141	19	0	84	106	17	0

2. Briarcrest Drive at Green Valley Drive | **Date: 4/26/2017 (Wednesday)** | **NB approach is along Briarcrest Drive**

Interval	NB				SB				EB				WB			
	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes
7:00-7:15	0	164	42	0	7	128	0	0	0	0	0	0	19	0	2	0
7:15-7:30	0	172	50	0	7	116	0	0	0	0	0	0	13	0	3	0
7:30-7:45	0	153	29	0	6	120	0	0	0	0	0	0	15	0	8	0
7:45-8:00	0	163	28	0	7	118	0	0	0	0	0	0	22	0	3	0
8:00-8:15	0	187	49	0	11	129	0	0	0	0	0	0	19	0	4	1
8:15-8:30	0	230	48	0	10	113	0	0	0	0	0	0	23	0	6	0
8:30-8:45	0	176	50	2	11	108	0	0	0	0	0	0	26	0	3	0
8:45-9:00	0	186	38	0	9	113	0	0	0	0	0	0	29	0	9	0

3. Green Valley Drive at Woodcrest Drive | **Date: 4/27/2017 (Thursday)** | **NB approach is along Woodcrest Drive**

Interval	NB				SB				EB				WB			
	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes
7:00-7:15	9	6	0	0	0	13	3	0	4	0	15	0	0	0	0	0
7:15-7:30	9	5	0	0	0	14	2	0	2	0	21	0	0	0	0	0
7:30-7:45	8	8	0	0	0	7	1	0	6	0	15	0	0	0	0	0
7:45-8:00	15	8	0	0	0	11	1	0	3	0	15	0	0	0	0	0
8:00-8:15	15	18	0	0	0	13	4	1	4	0	13	0	0	0	0	0
8:15-8:30	17	18	0	0	0	14	5	0	8	0	25	0	0	0	0	0
8:30-8:45	15	15	0	0	0	13	1	0	5	0	17	0	0	0	0	0
8:45-9:00	16	6	0	0	0	15	4	0	1	0	8	0	0	0	0	0

4. Boonville Road at Woodcrest Drive | **Date: 4/26/2017 (Wednesday)** | **NB approach is along Woodcrest Drive**

Interval	NB				SB				EB				WB			
	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes
7:00-7:15	12	0	2	0	0	0	0	0	0	211	21	0	3	146	0	0
7:15-7:30	10	0	3	0	0	0	0	0	0	223	16	1	1	156	0	0
7:30-7:45	13	0	6	0	0	0	0	0	0	207	12	0	3	193	0	0
7:45-8:00	12	0	2	0	0	0	0	0	0	203	17	1	0	171	0	0
8:00-8:15	11	0	7	1	0	0	0	0	0	230	15	0	6	262	0	0
8:15-8:30	9	0	8	0	0	0	0	0	0	304	20	0	7	212	0	0
8:30-8:45	10	0	8	0	0	0	0	0	0	232	20	0	7	207	0	0
8:45-9:00	13	0	5	0	0	0	0	0	0	227	8	0	3	176	0	0

5. Boonville Road at Miramont Boulevard | **Date: 4/27/2017 (Thursday)** | **NB approach is along Boonville Road**

Interval	NB				SB				EB				WB			
	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes
7:00-7:15	0	170	4	0	11	190	0	0	0	0	0	0	8	0	6	0
7:15-7:30	0	181	3	0	17	270	0	0	0	0	0	0	1	0	14	0
7:30-7:45	0	185	1	0	17	220	0	0	0	0	0	0	7	0	11	0
7:45-8:00	0	192	6	1	17	241	0	0	0	0	0	0	2	0	11	0
8:00-8:15	0	258	6	0	11	208	0	0	0	0	0	0	4	0	8	0
8:15-8:30	0	207	5	0	16	297	0	0	0	0	0	0	4	0	20	0
8:30-8:45	0	199	2	0	11	262	0	0	0	0	0	0	6	0	14	0
8:45-9:00	0	192	1	0	12	235	0	0	0	0	0	0	3	0	10	0

6. Boonville Road at Allen Academy | **Date: 4/27/2017 (Thursday)** | **NB approach is along Boonville Road**

Interval	NB				SB				EB				WB			
	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes	Left	Through	Right	Peds/Bikes
7:00-7:15	0	174	2	0	7	208	0	0	0	0	0	0	3	0	3	0
7:15-7:30	0	196	3	0	6	282	0	0	0	0	0	0	3	0	3	0
7:30-7:45	0	203	0	0	3	246	0	0	0	0	0	0	6	0	7	0
7:45-8:00	0	205	3	0	4	247	0	0	0	0	0	0	4	0	3	0
8:00-8:15	0	273	2	0	3	224	0	0	0	0	0	0	4	0	2	0
8:15-8:30	0	235	0	0	2	319	0	0	0	0	0	0	2	0	1	0
8:30-8:45	0	226	0	0	2	281	0	0	0	0	0	0	0	0	0	0
8:45-9:00	0	207	1	0	0	272	0	0	0	0	0	0	1	0	1	0

Trip Generation Summary

Alternative: Alternative 1
Phase:
Project: Trafalgar Subdivision

Open Date: 5/15/2017
Analysis Date: 5/15/2017

ITE	Land Use		Weekday AM Peak Hour of Adjacent Street Traffic				Weekday PM Peak Hour of Adjacent Street Traffic			
		*	Enter	Exit	Total		*	Enter	Exit	Total
221	Area 2 (Low-rise Apartments)		42	160	202			166	89	255
	440 Occupied Dwelling Units									
820	Area 1 (General Commercial)		78	47	125			231	251	482
	130 Gross Leasable Area 1000 SF									
820	Area 2 (General Commercial)		79	49	128			237	256	493
	133 Gross Leasable Area 1000 SF									
Unadjusted Volume			199	256	455			634	596	1230
Internal Capture Trips			3	3	6			113	113	226
Pass-By Trips			0	0	0			146	146	292
Volume Added to Adjacent Streets			196	253	449			375	337	712

Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 1 Percent

Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 18 Percent

* - Custom rate used for selected time period.

Source: Institute of Transportation Engineers, Trip Generation Manual 9th Edition, 2012

Detailed Land Use Data

For 130 Gross Leasable Area 1000 SF of Area 1 (General Commercial)

(820) Shopping Center

Project: Trafalgar Subdivision

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit
Weekday AM Peak Hour of Adjacent Street Traffic	125	0	0.96	0.1	9.05	1.31	310	62	38
Source : Trip Generation Manual 9th Edition									
Weekday PM Peak Hour of Adjacent Street Traffic	482	164	3.71	0.68	29.27	2.74	376	48	52
Source : Trip Generation Manual 9th Edition									

Detailed Land Use Data

For 133 Gross Leasable Area 1000 SF of Area 2 (General Commercial)

(820) Shopping Center

Project: Trafalgar Subdivision

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit
Weekday AM Peak Hour of Adjacent Street Traffic	128	0	0.96	0.1	9.05	1.31	310	62	38
Source : Trip Generation Manual 9th Edition									
Weekday PM Peak Hour of Adjacent Street Traffic	493	168	3.71	0.68	29.27	2.74	376	48	52
Source : Trip Generation Manual 9th Edition									

Source: Institute of Transportation Engineers, Trip Generation Manual 9th Edition, 2012

TRIP GENERATION 2014, TRAFFICWARE, LLC

Detailed Land Use Data

For 440 Occupied Dwelling Units of Area 2 (Low-rise Apartment)

(221) Low-Rise Apartment

Project: Trafalgar Subdivision

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit
Weekday AM Peak Hour of Adjacent Street Traffic	202	0	0.46	0.25	0.86	0.7	257	21	79
Source : Trip Generation Manual 9th Edition									
Weekday PM Peak Hour of Adjacent Street Traffic	255	0	0.58	0.38	0.93	0.77	257	65	35
Source : Trip Generation Manual 9th Edition									

Trip Generation Summary - Modified Commercial Areas to Mitigate Impacts

Alternative: Alternative 1
Phase:
Project: Trafalgar - Mitigated

Open Date: 5/22/2017
Analysis Date: 5/22/2017

ITE	Land Use		Weekday AM Peak Hour of Adjacent Street Traffic *	Enter	Exit	Total	Weekday PM Peak Hour of Adjacent Street Traffic *	Enter	Exit	Total
750	Area 1 Office			99	12	111		13	83	96
	65	Gross Floor Area 1000 SF								
750	Area 2 Office			101	12	113		14	84	98
	66	Gross Floor Area 1000 SF								
820	Area 1 Commercial			38	24	62		116	125	241
	65	Gross Leasable Area 1000 SF								
820	Area 2 Commercial			40	24	64		120	129	249
	67	Gross Leasable Area 1000 SF								
Unadjusted Volume				278	72	350		263	421	684
Internal Capture Trips				15	15	30		24	24	48
Pass-By Trips				0	0	0		79	79	158
Volume Added to Adjacent Streets				263	57	320		160	318	478

Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 9 Percent

Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 7 Percent

* - Custom rate used for selected time period.

Source: Institute of Transportation Engineers, Trip Generation Manual 9th Edition, 2012

Detailed Land Use Data

For 67 Gross Leasable Area 1000 SF of Area 2 Commercial

(820) Shopping Center

Project: Trafalgar - Mitigated

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit
Weekday AM Peak Hour of Adjacent Street Traffic	64	0	0.96	0.1	9.05	1.31	310	62	38
Source : Trip Generation Manual 9th Edition									
Weekday PM Peak Hour of Adjacent Street Traffic	249	85	3.71	0.68	29.27	2.74	376	48	52
Source : Trip Generation Manual 9th Edition									

Detailed Land Use Data

For 66 Gross Floor Area 1000 SF of Area 2 Office

(750) Office Park

Project: Trafalgar - Mitigated

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit
Weekday AM Peak Hour of Adjacent Street Traffic	113	0	1.71	0.6	5.89	1.46	362	89	11
Source : Trip Generation Manual 9th Edition									
Weekday PM Peak Hour of Adjacent Street Traffic	98	0	1.48	0.64	4.5	1.31	369	14	86
Source : Trip Generation Manual 9th Edition									

Detailed Land Use Data

For 65 Gross Leasable Area 1000 SF of Area 1 Commercial

(820) Shopping Center

Project: Trafalgar - Mitigated

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit
Weekday AM Peak Hour of Adjacent Street Traffic	62	0	0.96	0.1	9.05	1.31	310	62	38
Source : Trip Generation Manual 9th Edition									
Weekday PM Peak Hour of Adjacent Street Traffic	241	82	3.71	0.68	29.27	2.74	376	48	52
Source : Trip Generation Manual 9th Edition									

Detailed Land Use Data

For 65 Gross Floor Area 1000 SF of Area 1 Office

(750) Office Park

Project: Trafalgar - Mitigated

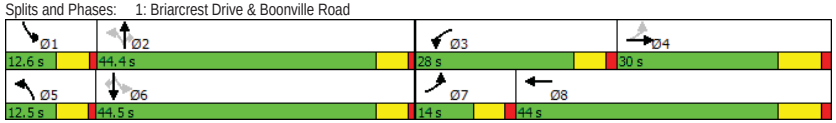
Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit
Weekday AM Peak Hour of Adjacent Street Traffic	111	0	1.71	0.6	5.89	1.46	362	89	11
Source : Trip Generation Manual 9th Edition									
Weekday PM Peak Hour of Adjacent Street Traffic	96	0	1.48	0.64	4.5	1.31	369	14	86
Source : Trip Generation Manual 9th Edition									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	473	30	453	647	33	44	190	229	95	414	137
Future Volume (vph)	94	473	30	453	647	33	44	190	229	95	414	137
Satd. Flow (prot)	1770	3507	0	3433	3514	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.327			0.950			0.298			0.546		
Satd. Flow (perm)	609	3507	0	3433	3514	0	555	1863	1583	1017	1863	1583
Satd. Flow (RTOR)		5			5				249			209
Lane Group Flow (vph)	102	547	0	492	739	0	48	207	249	103	450	149
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4						2		2	6		6
Total Split (s)	14.0	30.0		28.0	44.0		12.5	44.4	44.4	12.6	44.5	44.5
Total Lost Time (s)	6.0	7.5		6.0	7.5		5.5	5.5	5.5	5.5	5.5	5.5
Act Effct Green (s)	30.0	20.7		19.8	32.7		46.0	39.0	39.0	47.4	41.8	41.8
Actuated g/C Ratio	0.27	0.19		0.18	0.29		0.41	0.35	0.35	0.43	0.38	0.38
v/c Ratio	0.41	0.83		0.81	0.71		0.16	0.32	0.35	0.21	0.64	0.21
Control Delay	26.0	55.3		55.2	39.0		19.2	29.0	4.8	19.4	35.8	1.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.0	55.3		55.2	39.0		19.2	29.0	4.8	19.4	35.8	1.6
LOS	C	E		E	D		B	C	A	B	D	A
Approach Delay		50.7			45.4			16.1			26.1	
Approach LOS		D			D			B			C	
Queue Length 50th (ft)	43	201		178	246		20	113	0	43	286	0
Queue Length 95th (ft)	77	267		238	314		43	177	55	78	411	13
Internal Link Dist (ft)		748			813			681			771	
Turn Bay Length (ft)	165			250			225			130		300
Base Capacity (vph)	249	715		681	1160		306	653	717	481	700	725
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.77		0.72	0.64		0.16	0.32	0.35	0.21	0.64	0.21

Intersection Summary

Cycle Length: 115
Actuated Cycle Length: 111.1
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 37.4 — Intersection LOS: D
Intersection Capacity Utilization 75.0% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Briarcrest Drive & Boonville Road



Intersection

Int Delay, s/veh 9.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	111	863	0	0	966	58	0	0	0	50	0	100
Future Vol, veh/h	111	863	0	0	966	58	0	0	0	50	0	100
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	0	-	0	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	0	0	0
Mvmt Flow	121	938	0	0	1050	63	0	0	0	54	0	109

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1113	0	0	938	0	0	1704	-	469	1792	-	557
Stage 1	-	-	-	-	-	-	1179	-	-	1082	-	-
Stage 2	-	-	-	-	-	-	525	-	-	710	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	-	6.94	7.5	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.5	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.5	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32	3.5	-	3.3
Pot Cap-1 Maneuver	623	-	-	726	-	-	59	0	541	~ 52	0	479
Stage 1	-	-	-	-	-	-	202	0	-	236	0	-
Stage 2	-	-	-	-	-	-	504	0	-	395	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	623	-	-	726	-	-	39	-	541	~ 44	-	479
Mov Cap-2 Maneuver	-	-	-	-	-	-	39	-	-	~ 44	-	-
Stage 1	-	-	-	-	-	-	163	-	-	190	-	-
Stage 2	-	-	-	-	-	-	390	-	-	318	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0	0	129.6
HCM LOS			A	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	-	623	-	-	726	-	-	44	479
HCM Lane V/C Ratio	-	-	0.194	-	-	-	-	-	1.235	0.227
HCM Control Delay (s)	0	0	12.2	-	-	0	-	-	$ 359.5	14.7
HCM Lane LOS	A	A	B	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	-	-	0.7	-	-	0	-	-	5.2	0.9

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	58	855	0	0	975	23	0	0	0	14	0	49
Future Vol, veh/h	58	855	0	0	975	23	0	0	0	14	0	49
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	140	-	-	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	63	929	0	0	1060	25	0	0	0	15	0	53

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1085	0	0	929	0	0	1585	-	465	1663	2127	542
Stage 1	-	-	-	-	-	-	1055	-	-	1072	1072	-
Stage 2	-	-	-	-	-	-	530	-	-	591	1055	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	-	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	*1033	-	-	732	-	-	*181	0	544	*148	*64	*691
Stage 1	-	-	-	-	-	-	*241	0	-	*651	*571	-
Stage 2	-	-	-	-	-	-	*651	0	-	*460	*301	-
Platoon blocked, %	1	-	-		-	-	1			1	1	1
Mov Cap-1 Maneuver	*1033	-	-	732	-	-	*159	-	544	*141	*60	*691
Mov Cap-2 Maneuver	-	-	-	-	-	-	*159	-	-	*141	*60	-
Stage 1	-	-	-	-	-	-	*226	-	-	*612	*571	-
Stage 2	-	-	-	-	-	-	*601	-	-	*432	*283	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	0	16.9
HCM LOS			A	C

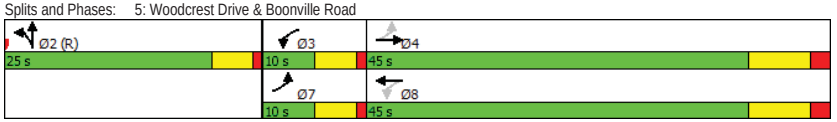
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	* 1033	-	-	732	-	-	370
HCM Lane V/C Ratio	-	-	0.061	-	-	-	-	-	0.185
HCM Control Delay (s)	0	0	8.7	-	-	0	-	-	16.9
HCM Lane LOS	A	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	-	-	0.2	-	-	0	-	-	0.7

Notes
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	771	14	7	935	0	72	0	28	0	0	0
Future Volume (vph)	0	771	14	7	935	0	72	0	28	0	0	0
Satd. Flow (prot)	1863	3529	0	1770	3539	0	1770	1583	0	1863	1863	0
Flt Permitted				0.201			0.950					
Satd. Flow (perm)	1863	3529	0	374	3539	0	1770	1583	0	1863	1863	0
Satd. Flow (RTOR)		3						217				
Lane Group Flow (vph)	0	853	0	8	1016	0	78	30	0	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA		Split	NA				
Protected Phases	7	4		3	8		2	2				
Permitted Phases	4			8								
Total Split (s)	10.0	45.0		10.0	45.0		25.0	25.0				
Total Lost Time (s)	5.0	8.0		5.0	8.0		5.0	5.0				
Act Effct Green (s)		29.8		34.8	31.8		35.2	35.2				
Actuated g/C Ratio		0.37		0.44	0.40		0.44	0.44				
v/c Ratio		0.65		0.03	0.72		0.10	0.04				
Control Delay		22.8		9.7	23.0		16.7	0.1				
Queue Delay		0.0		0.0	0.0		0.0	0.0				
Total Delay		22.8		9.7	23.0		16.7	0.1				
LOS		C		A	C		B	A				
Approach Delay		22.8			22.9			12.1				
Approach LOS		C			C			B				
Queue Length 50th (ft)		176		2	224		22	0				
Queue Length 95th (ft)		224		7	212		61	0				
Internal Link Dist (ft)		1459			1360			1378			922	
Turn Bay Length (ft)				175			100					
Base Capacity (vph)		1633		249	1691		778	818				
Starvation Cap Reductn		0		0	0		0	0				
Spillback Cap Reductn		0		0	0		0	0				
Storage Cap Reductn		0		0	0		0	0				
Reduced v/c Ratio		0.52		0.03	0.60		0.10	0.04				

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 22.3	Intersection LOS: C
Intersection Capacity Utilization 42.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: Woodcrest Drive & Boonville Road



Intersection	
Int Delay, s/veh	4.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	253	18	445	45	14	883
Future Vol, veh/h	253	18	445	45	14	883
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	-	-	200	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	275	20	484	49	15	960

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1018	266	0	0	533	0
Stage 1	508	-	-	-	-	-
Stage 2	510	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	~ 233	732	-	-	1031	-
Stage 1	569	-	-	-	-	-
Stage 2	568	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 230	732	-	-	1031	-
Mov Cap-2 Maneuver	430	-	-	-	-	-
Stage 1	569	-	-	-	-	-
Stage 2	560	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	26	0	0.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	430	732	1031	-
HCM Lane V/C Ratio	-	-	0.64	0.027	0.015	-
HCM Control Delay (s)	-	-	27.1	10.1	8.5	-
HCM Lane LOS	-	-	D	B	A	-
HCM 95th %tile Q(veh)	-	-	4.3	0.1	0	-

Notes
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	56	86	59	24	18
Future Vol, veh/h	8	56	86	59	24	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	61	93	64	26	20

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	287	36	46	0	-	0
Stage 1	36	-	-	-	-	-
Stage 2	251	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	703	1037	1562	-	-	-
Stage 1	986	-	-	-	-	-
Stage 2	791	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	659	1037	1562	-	-	-
Mov Cap-2 Maneuver	659	-	-	-	-	-
Stage 1	986	-	-	-	-	-
Stage 2	742	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	4.4	0
HCM LOS	A		

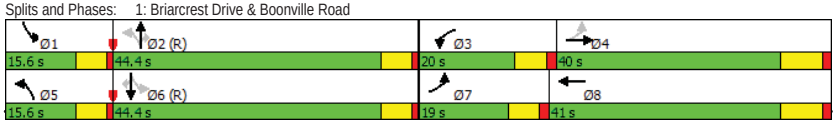
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1562	-	968	-	-
HCM Lane V/C Ratio	0.06	-	0.072	-	-
HCM Control Delay (s)	7.5	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.2	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	666	54	271	589	61	81	374	374	70	209	101
Future Volume (vph)	169	666	54	271	589	61	81	374	374	70	209	101
Satd. Flow (prot)	1770	3500	0	3433	3490	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.209			0.950			0.537			0.319		
Satd. Flow (perm)	389	3500	0	3433	3490	0	1000	1863	1583	594	1863	1583
Satd. Flow (RTOR)		7			9				392			145
Lane Group Flow (vph)	184	783	0	295	706	0	88	407	407	76	227	110
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4						2		2	6		6
Total Split (s)	19.0	40.0		20.0	41.0		15.6	44.4	44.4	15.6	44.4	44.4
Total Lost Time (s)	6.0	7.5		6.0	7.5		5.5	5.5	5.5	5.5	5.5	5.5
Act Effct Green (s)	44.4	30.7		13.5	32.1		52.4	44.3	44.3	52.4	44.3	44.3
Actuated g/C Ratio	0.37	0.26		0.11	0.27		0.44	0.37	0.37	0.44	0.37	0.37
v/c Ratio	0.65	0.87		0.76	0.75		0.18	0.59	0.49	0.21	0.33	0.16
Control Delay	33.0	53.4		48.4	32.1		19.6	37.0	5.7	20.1	31.0	2.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.0	53.4		48.4	32.1		19.6	37.0	5.7	20.1	31.0	2.5
LOS	C	D		D	C		B	D	A	C	C	A
Approach Delay		49.5			36.9			21.2			21.4	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	86	297		93	260		38	271	8	33	135	0
Queue Length 95th (ft)	136	375		#151	330		71	386	84	63	207	21
Internal Link Dist (ft)		748			813			681			771	
Turn Bay Length (ft)	165			250			225			130		300
Base Capacity (vph)	295	953		400	980		501	688	832	358	688	676
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.82		0.74	0.72		0.18	0.59	0.49	0.21	0.33	0.16

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green, Master Intersection
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 34.3 — Intersection LOS: C
Intersection Capacity Utilization 76.9% — ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Briarcrest Drive & Boonville Road



Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	1096	0	0	941	3	0	0	0	7	0	4
Future Vol, veh/h	7	1096	0	0	941	3	0	0	0	7	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	0	-	0	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	0	0	0
Mvmt Flow	8	1191	0	0	1023	3	0	0	0	8	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1026	0	0	1191	0	0	1718	-	596	1635	-	513
Stage 1	-	-	-	-	-	-	1207	-	-	1024	-	-
Stage 2	-	-	-	-	-	-	511	-	-	611	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	-	6.94	7.5	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.5	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.5	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32	3.5	-	3.3
Pot Cap-1 Maneuver	673	-	-	582	-	-	58	0	447	68	0	512
Stage 1	-	-	-	-	-	-	194	0	-	256	0	-
Stage 2	-	-	-	-	-	-	514	0	-	453	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	673	-	-	582	-	-	57	-	447	67	-	512
Mov Cap-2 Maneuver	-	-	-	-	-	-	57	-	-	67	-	-
Stage 1	-	-	-	-	-	-	192	-	-	253	-	-
Stage 2	-	-	-	-	-	-	510	-	-	448	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	0	46.1
HCM LOS			A	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	-	673	-	-	582	-	-	67	512
HCM Lane V/C Ratio	-	-	0.011	-	-	-	-	-	0.114	0.008
HCM Control Delay (s)	0	0	10.4	-	-	0	-	-	65.5	12.1
HCM Lane LOS	A	A	B	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	-	-	0	-	-	0	-	-	0.4	0

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	55	1008	0	0	856	19	0	0	0	16	0	53
Future Vol, veh/h	55	1008	0	0	856	19	0	0	0	16	0	53
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	140	-	-	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	60	1096	0	0	930	21	0	0	0	17	0	58

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	951	0	0	1096	0	0	1680	-	548	1608	2156	476
Stage 1	-	-	-	-	-	-	1215	-	-	941	941	-
Stage 2	-	-	-	-	-	-	465	-	-	667	1215	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	-	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1096	-	-	633	-	-	*119	0	480	142	56	*745
Stage 1	-	-	-	-	-	-	*192	0	-	698	613	-
Stage 2	-	-	-	-	-	-	*702	0	-	414	252	-
Platoon blocked, %	1	-	-		-	-	1			1	1	1
Mov Cap-1 Maneuver	1096	-	-	633	-	-	*105	-	480	136	53	*745
Mov Cap-2 Maneuver	-	-	-	-	-	-	*105	-	-	136	53	-
Stage 1	-	-	-	-	-	-	*181	-	-	660	613	-
Stage 2	-	-	-	-	-	-	*648	-	-	391	238	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	0	17.4
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	1096	-	-	633	-	-	365
HCM Lane V/C Ratio	-	-	0.055	-	-	-	-	-	0.205
HCM Control Delay (s)	0	0	8.5	-	-	0	-	-	17.4
HCM Lane LOS	A	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	-	-	0.2	-	-	0	-	-	0.8

Notes
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	993	63	23	857	0	43	0	28	0	0	0
Future Volume (vph)	0	993	63	23	857	0	43	0	28	0	0	0
Satd. Flow (prot)	1863	3507	0	1770	3539	0	1770	1583	0	1863	1863	0
Flt Permitted				0.112			0.950					
Satd. Flow (perm)	1863	3507	0	209	3539	0	1770	1583	0	1863	1863	0
Satd. Flow (RTOR)		10						165				
Lane Group Flow (vph)	0	1147	0	25	932	0	47	30	0	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA				
Protected Phases	7	4		3	8		5	2				
Permitted Phases	4			8			2					
Total Split (s)	10.0	80.0		12.0	82.0		28.0	28.0				
Total Lost Time (s)	5.0	8.0		5.0	8.0		5.0	5.0				
Act Effct Green (s)		52.0		62.1	59.1		47.9	47.9				
Actuated g/C Ratio		0.43		0.52	0.49		0.40	0.40				
v/c Ratio		0.75		0.13	0.54		0.07	0.04				
Control Delay		18.0		11.7	21.5		28.6	0.1				
Queue Delay		0.0		0.0	0.0		0.0	0.0				
Total Delay		18.0		11.7	21.5		28.6	0.1				
LOS		B		B	C		C	A				
Approach Delay		18.0			21.3			17.5				
Approach LOS		B			C			B				
Queue Length 50th (ft)		145		8	232		24	0				
Queue Length 95th (ft)		150		17	227		59	0				
Internal Link Dist (ft)		1459			1360			1378			922	
Turn Bay Length (ft)				175			100					
Base Capacity (vph)		2108		199	2183		706	731				
Starvation Cap Reductn		0		0	0		0	0				
Spillback Cap Reductn		0		0	0		0	0				
Storage Cap Reductn		0		0	0		0	0				
Reduced v/c Ratio		0.54		0.13	0.43		0.07	0.04				

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 67 (56%), Referenced to phase 2:NBTL and 6:, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 19.4	Intersection LOS: B
Intersection Capacity Utilization 46.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: Woodcrest Drive & Boonville Road

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	97	22	779	185	41	463
Future Vol, veh/h	97	22	779	185	41	463
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	105	24	847	201	45	503

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1288	524	0	0	1048	0
Stage 1	947	-	-	-	-	-
Stage 2	341	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	156	498	-	-	660	-
Stage 1	337	-	-	-	-	-
Stage 2	692	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	145	498	-	-	660	-
Mov Cap-2 Maneuver	259	-	-	-	-	-
Stage 1	337	-	-	-	-	-
Stage 2	645	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	27.9	0	0.9
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	284	660	-
HCM Lane V/C Ratio	-	-	0.455	0.068	-
HCM Control Delay (s)	-	-	27.9	10.8	-
HCM Lane LOS	-	-	D	B	-
HCM 95th %tile Q(veh)	-	-	2.2	0.2	-

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	70	62	59	51	11
Future Vol, veh/h	20	70	62	59	51	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	76	67	64	55	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	260	61	67	0	-	0
Stage 1	61	-	-	-	-	-
Stage 2	199	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	729	1004	1535	-	-	-
Stage 1	962	-	-	-	-	-
Stage 2	835	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	696	1004	1535	-	-	-
Mov Cap-2 Maneuver	696	-	-	-	-	-
Stage 1	962	-	-	-	-	-
Stage 2	797	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	3.8	0
HCM LOS	A		

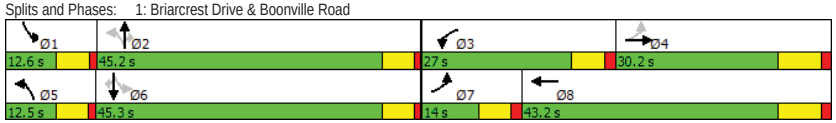
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1535	-	914	-	-
HCM Lane V/C Ratio	0.044	-	0.107	-	-
HCM Control Delay (s)	7.5	0	9.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	511	32	489	699	35	47	205	247	102	447	148
Future Volume (vph)	101	511	32	489	699	35	47	205	247	102	447	148
Satd. Flow (prot)	1770	3507	0	3433	3514	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.277			0.950			0.255			0.524		
Satd. Flow (perm)	516	3507	0	3433	3514	0	475	1863	1583	976	1863	1583
Satd. Flow (RTOR)		5			5				268			209
Lane Group Flow (vph)	110	590	0	532	798	0	51	223	268	111	486	161
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4						2		2	6		6
Total Split (s)	14.0	30.2		27.0	43.2		12.5	45.2	45.2	12.6	45.3	45.3
Total Lost Time (s)	6.0	7.5		6.0	7.5		5.5	5.5	5.5	5.5	5.5	5.5
Act Effct Green (s)	31.0	21.7		20.2	34.1		46.8	39.8	39.8	48.1	42.5	42.5
Actuated g/C Ratio	0.27	0.19		0.18	0.30		0.41	0.35	0.35	0.42	0.38	0.38
v/c Ratio	0.48	0.87		0.87	0.75		0.18	0.34	0.37	0.24	0.70	0.22
Control Delay	28.6	59.1		61.3	40.7		19.5	29.5	4.7	19.7	38.0	2.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.6	59.1		61.3	40.7		19.5	29.5	4.7	19.7	38.0	2.1
LOS	C	E		E	D		B	C	A	B	D	A
Approach Delay		54.3			48.9			16.3			27.7	
Approach LOS		D			D			B			C	
Queue Length 50th (ft)	47	222		198	274		21	122	0	47	316	0
Queue Length 95th (ft)	83	#311		#283	347		44	189	56	82	447	20
Internal Link Dist (ft)		748			813			681			771	
Turn Bay Length (ft)	165			250			225			130		300
Base Capacity (vph)	230	707		636	1112		276	653	729	464	698	724
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.83		0.84	0.72		0.18	0.34	0.37	0.24	0.70	0.22

Intersection Summary

Cycle Length: 115
Actuated Cycle Length: 113.3
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 39.9 — Intersection LOS: D
Intersection Capacity Utilization 78.9% — ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Briarcrest Drive & Boonville Road



Intersection

Int Delay, s/veh 12.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	111	936	0	0	1048	58	0	0	0	50	0	100
Future Vol, veh/h	111	936	0	0	1048	58	0	0	0	50	0	100
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	0	-	0	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	0	0	0
Mvmt Flow	121	1017	0	0	1139	63	0	0	0	54	0	109

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1202	0	0	1017	0	0	1829	-	509	1921	-	601
Stage 1	-	-	-	-	-	-	1259	-	-	1171	-	-
Stage 2	-	-	-	-	-	-	570	-	-	750	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	-	6.94	7.5	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.5	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.5	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32	3.5	-	3.3
Pot Cap-1 Maneuver	576	-	-	678	-	-	48	0	509	~ 42	0	448
Stage 1	-	-	-	-	-	-	181	0	-	208	0	-
Stage 2	-	-	-	-	-	-	474	0	-	374	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	576	-	-	678	-	-	30	-	509	~ 35	-	448
Mov Cap-2 Maneuver	-	-	-	-	-	-	30	-	-	~ 35	-	-
Stage 1	-	-	-	-	-	-	143	-	-	164	-	-
Stage 2	-	-	-	-	-	-	359	-	-	295	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0	0	186.3
HCM LOS			A	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	-	576	-	-	678	-	-	35	448
HCM Lane V/C Ratio	-	-	0.209	-	-	-	-	-	1.553	0.243
HCM Control Delay (s)	0	0	12.9	-	-	0	-	-	$ 527.8	15.6
HCM Lane LOS	A	A	B	-	-	A	-	-	F	C
HCM 95th %tile Q(veh)	-	-	0.8	-	-	0	-	-	5.9	0.9

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	924	0	0	1054	24	0	0	0	15	0	52
Future Vol, veh/h	62	924	0	0	1054	24	0	0	0	15	0	52
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	140	-	-	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	67	1004	0	0	1146	26	0	0	0	16	0	57

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1172	0	0	1004	0	0	1712	-	502	1796	2298	586
Stage 1	-	-	-	-	-	-	1139	-	-	1159	1159	-
Stage 2	-	-	-	-	-	-	573	-	-	637	1139	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	-	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	*982	-	-	686	-	-	*147	0	515	*117	*45	*657
Stage 1	-	-	-	-	-	-	*214	0	-	*619	*543	-
Stage 2	-	-	-	-	-	-	*619	0	-	*432	*274	-
Platoon blocked, %	1	-	-		-	-	1			1	1	1
Mov Cap-1 Maneuver	*982	-	-	686	-	-	*128	-	515	*111	*42	*657
Mov Cap-2 Maneuver	-	-	-	-	-	-	*128	-	-	*111	*42	-
Stage 1	-	-	-	-	-	-	*199	-	-	*577	*543	-
Stage 2	-	-	-	-	-	-	*566	-	-	*403	*255	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	0	20
HCM LOS			A	C

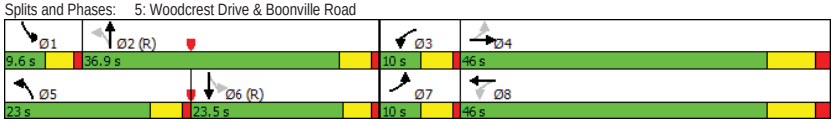
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	* 982	-	-	686	-	-	313
HCM Lane V/C Ratio	-	-	0.069	-	-	-	-	-	0.233
HCM Control Delay (s)	0	0	8.9	-	-	0	-	-	20
HCM Lane LOS	A	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	-	-	0.2	-	-	0	-	-	0.9

Notes
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	833	15	7	1011	6	77	0	30	18	0	27
Future Volume (vph)	9	833	15	7	1011	6	77	0	30	18	0	27
Satd. Flow (prot)	1770	3529	0	1770	3536	0	1770	1583	0	1770	1583	0
Flt Permitted	0.107			0.177			0.549			0.736		
Satd. Flow (perm)	199	3529	0	330	3536	0	1023	1583	0	1371	1583	0
Satd. Flow (RTOR)		2			1			247			294	
Lane Group Flow (vph)	10	921	0	8	1106	0	84	33	0	20	29	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Total Split (s)	10.0	46.0		10.0	46.0		23.0	36.9		9.6	23.5	
Total Lost Time (s)	5.0	8.0		5.0	8.0		5.0	5.0		4.5	4.5	
Act Effct Green (s)	41.4	37.4		41.4	37.4		50.1	46.0		24.7	19.0	
Actuated g/C Ratio	0.40	0.36		0.40	0.36		0.49	0.45		0.24	0.19	
v/c Ratio	0.06	0.72		0.04	0.86		0.12	0.04		0.06	0.05	
Control Delay	15.9	31.3		15.4	37.7		16.5	0.1		18.6	0.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.9	31.3		15.4	37.7		16.5	0.1		18.6	0.2	
LOS	B	C		B	D		B	A		B	A	
Approach Delay		31.1			37.5			11.9			7.7	
Approach LOS		C			D			B			A	
Queue Length 50th (ft)	4	260		3	336		28	0		6	0	
Queue Length 95th (ft)	12	338		10	432		65	0		23	0	
Internal Link Dist (ft)		1459			1360			1378			922	
Turn Bay Length (ft)	180			175			100			100		
Base Capacity (vph)	156	1340		203	1342		693	846		353	532	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.06	0.69		0.04	0.82		0.12	0.04		0.06	0.05	

Intersection Summary	
Cycle Length: 102.5	
Actuated Cycle Length: 102.5	
Offset: 77.5 (76%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 32.8	Intersection LOS: C
Intersection Capacity Utilization 49.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: Woodcrest Drive & Boonville Road



Intersection	
Int Delay, s/veh	5.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	273	19	480	48	15	953
Future Vol, veh/h	273	19	480	48	15	953
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	-	-	200	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	297	21	522	52	16	1036

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1099	287	0	0	574	0
Stage 1	548	-	-	-	-	-
Stage 2	551	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	~ 207	710	-	-	995	-
Stage 1	543	-	-	-	-	-
Stage 2	541	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 204	710	-	-	995	-
Mov Cap-2 Maneuver	405	-	-	-	-	-
Stage 1	543	-	-	-	-	-
Stage 2	532	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	33.1	0	0.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	405	710	995	-
HCM Lane V/C Ratio	-	-	0.733	0.029	0.016	-
HCM Control Delay (s)	-	-	34.7	10.2	8.7	-
HCM Lane LOS	-	-	D	B	A	-
HCM 95th %tile Q(veh)	-	-	5.8	0.1	0.1	-

Notes
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	60	93	63	25	19
Future Vol, veh/h	8	60	93	63	25	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	65	101	68	27	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	309	38	48	0	-	0
Stage 1	38	-	-	-	-	-
Stage 2	271	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	683	1034	1559	-	-	-
Stage 1	984	-	-	-	-	-
Stage 2	775	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	637	1034	1559	-	-	-
Mov Cap-2 Maneuver	637	-	-	-	-	-
Stage 1	984	-	-	-	-	-
Stage 2	723	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	4.5	0
HCM LOS	A		

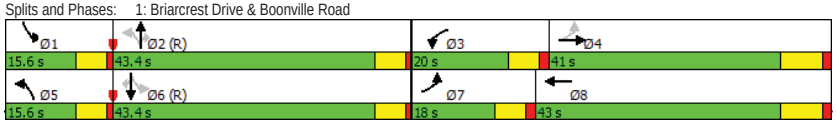
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1559	-	963	-	-
HCM Lane V/C Ratio	0.065	-	0.077	-	-
HCM Control Delay (s)	7.5	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.2	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	183	720	58	293	637	66	88	405	405	76	226	109
Future Volume (vph)	183	720	58	293	637	66	88	405	405	76	226	109
Satd. Flow (prot)	1770	3500	0	3433	3490	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.193			0.950			0.472			0.279		
Satd. Flow (perm)	360	3500	0	3433	3490	0	879	1863	1583	520	1863	1583
Satd. Flow (RTOR)		7			9				359			145
Lane Group Flow (vph)	199	846	0	318	764	0	96	440	440	83	246	118
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4						2		2	6		6
Total Split (s)	18.0	41.0		20.0	43.0		15.6	43.4	43.4	15.6	43.4	43.4
Total Lost Time (s)	6.0	7.5		6.0	7.5		5.5	5.5	5.5	5.5	5.5	5.5
Act Effct Green (s)	45.3	32.2		13.7	34.3		50.7	42.7	42.7	49.6	39.6	39.6
Actuated g/C Ratio	0.38	0.27		0.11	0.29		0.42	0.36	0.36	0.41	0.33	0.33
v/c Ratio	0.73	0.90		0.81	0.76		0.22	0.66	0.55	0.26	0.40	0.19
Control Delay	38.1	54.9		65.6	24.5		20.7	40.4	9.8	21.5	34.1	3.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.1	54.9		65.6	24.5		20.7	40.4	9.8	21.5	34.1	3.3
LOS	D	D		E	C		C	D	A	C	C	A
Approach Delay		51.7			36.5			24.6			23.6	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	92	325		94	287		43	304	45	37	150	0
Queue Length 95th (ft)	#157	#416		#183	352		77	430	147	68	226	27
Internal Link Dist (ft)		748			813			681			771	
Turn Bay Length (ft)	165			250			225			130		300
Base Capacity (vph)	278	982		400	1038		446	662	794	320	614	619
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.86		0.80	0.74		0.22	0.66	0.55	0.26	0.40	0.19

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green, Master Intersection
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 36.1 — Intersection LOS: D
Intersection Capacity Utilization 80.2% — ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Briarcrest Drive & Boonville Road



Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	1185	0	0	1018	3	0	0	0	8	0	4
Future Vol, veh/h	8	1185	0	0	1018	3	0	0	0	8	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	0	-	0	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	0	0	0
Mvmt Flow	9	1288	0	0	1107	3	0	0	0	9	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1110	0	0	1288	0	0	1858	-	644	1769	-	555
Stage 1	-	-	-	-	-	-	1305	-	-	1108	-	-
Stage 2	-	-	-	-	-	-	553	-	-	661	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	-	6.94	7.5	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.5	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.5	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32	3.5	-	3.3
Pot Cap-1 Maneuver	625	-	-	534	-	-	45	0	416	54	0	480
Stage 1	-	-	-	-	-	-	169	0	-	227	0	-
Stage 2	-	-	-	-	-	-	485	0	-	423	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	625	-	-	534	-	-	44	-	416	53	-	480
Mov Cap-2 Maneuver	-	-	-	-	-	-	44	-	-	53	-	-
Stage 1	-	-	-	-	-	-	167	-	-	224	-	-
Stage 2	-	-	-	-	-	-	481	-	-	417	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	0	61.4
HCM LOS			A	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	-	625	-	-	534	-	-	53	480
HCM Lane V/C Ratio	-	-	0.014	-	-	-	-	-	0.164	0.009
HCM Control Delay (s)	0	0	10.8	-	-	0	-	-	85.8	12.6
HCM Lane LOS	A	A	B	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	-	-	0	-	-	0	-	-	0.5	0

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	59	1090	0	0	926	21	0	0	0	17	0	57
Future Vol, veh/h	59	1090	0	0	926	21	0	0	0	17	0	57
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	140	-	-	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	64	1185	0	0	1007	23	0	0	0	18	0	62

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1029	0	0	1185	0	0	1816	-	592	1739	2331	515
Stage 1	-	-	-	-	-	-	1313	-	-	1018	1018	-
Stage 2	-	-	-	-	-	-	503	-	-	721	1313	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	-	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1049	-	-	585	-	-	*91	0	449	111	40	*719
Stage 1	-	-	-	-	-	-	*167	0	-	666	586	-
Stage 2	-	-	-	-	-	-	*678	0	-	385	226	-
Platoon blocked, %	1	-	-		-	-	1			1	1	1
Mov Cap-1 Maneuver	1049	-	-	585	-	-	*79	-	449	106	37	*719
Mov Cap-2 Maneuver	-	-	-	-	-	-	*79	-	-	106	37	-
Stage 1	-	-	-	-	-	-	*157	-	-	626	586	-
Stage 2	-	-	-	-	-	-	*619	-	-	362	212	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	0	20.7
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	1049	-	-	585	-	-	309
HCM Lane V/C Ratio	-	-	0.061	-	-	-	-	-	0.26
HCM Control Delay (s)	0	0	8.7	-	-	0	-	-	20.7
HCM Lane LOS	A	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	-	-	0.2	-	-	0	-	-	1

Notes

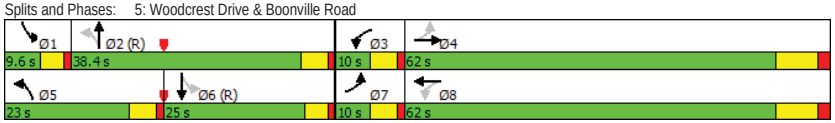
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	1074	68	25	927	18	47	0	30	6	0	9
Future Volume (vph)	27	1074	68	25	927	18	47	0	30	6	0	9
Satd. Flow (prot)	1770	3507	0	1770	3529	0	1770	1583	0	1770	1583	0
Flt Permitted	0.155			0.081			0.588			0.736		
Satd. Flow (perm)	289	3507	0	151	3529	0	1095	1583	0	1371	1583	0
Satd. Flow (RTOR)		7			2			195			277	
Lane Group Flow (vph)	29	1241	0	27	1028	0	51	33	0	7	10	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Total Split (s)	10.0	62.0		10.0	62.0		23.0	38.4		9.6	25.0	
Total Lost Time (s)	5.0	8.0		5.0	8.0		5.0	5.0		4.5	4.5	
Act Effct Green (s)	55.9	49.9		55.9	49.9		51.1	49.2		25.9	20.5	
Actuated g/C Ratio	0.47	0.42		0.47	0.42		0.43	0.41		0.22	0.17	
v/c Ratio	0.15	0.85		0.20	0.70		0.08	0.04		0.02	0.02	
Control Delay	10.1	22.9		16.3	31.4		24.5	0.1		25.8	0.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	10.1	22.9		16.3	31.4		24.5	0.1		25.8	0.1	
LOS	B	C		B	C		C	A		C	A	
Approach Delay		22.6			31.0			14.9			10.7	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)	6	181		10	333		25	0		3	0	
Queue Length 95th (ft)	m10	214		23	391		54	0		14	0	
Internal Link Dist (ft)		1459			1360			1378			922	
Turn Bay Length (ft)	180			175			100			100		
Base Capacity (vph)	196	1582		137	1589		612	763		313	500	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.15	0.78		0.20	0.65		0.08	0.04		0.02	0.02	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 69 (58%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 25.9 Intersection LOS: C
Intersection Capacity Utilization 52.0% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Woodcrest Drive & Boonville Road



Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	105	24	843	200	44	501
Future Vol, veh/h	105	24	843	200	44	501
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	114	26	916	217	48	545

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1393	567	0	0	1134	0
Stage 1	1025	-	-	-	-	-
Stage 2	368	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	133	467	-	-	612	-
Stage 1	307	-	-	-	-	-
Stage 2	670	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	123	467	-	-	612	-
Mov Cap-2 Maneuver	235	-	-	-	-	-
Stage 1	307	-	-	-	-	-
Stage 2	617	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	34.2	0	0.9
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	- 259	612	-
HCM Lane V/C Ratio	-	- 0.541	0.078	-
HCM Control Delay (s)	-	- 34.2	11.4	-
HCM Lane LOS	-	- D	B	-
HCM 95th %tile Q(veh)	-	- 3	0.3	-

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	22	76	67	64	55	12
Future Vol, veh/h	22	76	67	64	55	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	83	73	70	60	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	281	66	73	0	-	0
Stage 1	66	-	-	-	-	-
Stage 2	215	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	709	998	1527	-	-	-
Stage 1	957	-	-	-	-	-
Stage 2	821	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	674	998	1527	-	-	-
Mov Cap-2 Maneuver	674	-	-	-	-	-
Stage 1	957	-	-	-	-	-
Stage 2	780	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	3.8	0
HCM LOS	A		

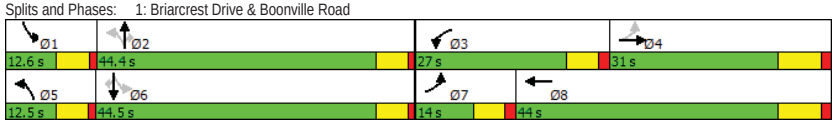
Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1527	- 901	-	-
HCM Lane V/C Ratio	0.048	- 0.118	-	-
HCM Control Delay (s)	7.5	0 9.5	-	-
HCM Lane LOS	A	A A	-	-
HCM 95th %tile Q(veh)	0.1	- 0.4	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	522	32	489	715	35	71	205	247	102	447	148
Future Volume (vph)	101	522	32	489	715	35	71	205	247	102	447	148
Satd. Flow (prot)	1770	3507	0	3433	3514	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.267			0.950			0.247			0.521		
Satd. Flow (perm)	497	3507	0	3433	3514	0	460	1863	1583	970	1863	1583
Satd. Flow (RTOR)		5			4				268			209
Lane Group Flow (vph)	110	602	0	532	815	0	77	223	268	111	486	161
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4						2		2	6		6
Total Split (s)	14.0	31.0		27.0	44.0		12.5	44.4	44.4	12.6	44.5	44.5
Total Lost Time (s)	6.0	7.5		6.0	7.5		5.5	5.5	5.5	5.5	5.5	5.5
Act Effct Green (s)	31.6	22.3		20.2	34.7		45.9	38.9	38.9	47.3	41.7	41.7
Actuated g/C Ratio	0.28	0.20		0.18	0.31		0.41	0.34	0.34	0.42	0.37	0.37
v/c Ratio	0.49	0.87		0.87	0.75		0.29	0.35	0.37	0.24	0.71	0.23
Control Delay	28.2	57.7		61.0	40.3		21.3	30.1	4.8	20.2	39.0	2.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.2	57.7		61.0	40.3		21.3	30.1	4.8	20.2	39.0	2.1
LOS	C	E		E	D		C	C	A	C	D	A
Approach Delay		53.2			48.5			17.0			28.4	
Approach LOS		D			D			B			C	
Queue Length 50th (ft)	46	225		198	279		32	123	0	47	320	0
Queue Length 95th (ft)	82	#311		#283	353		62	191	57	84	452	20
Internal Link Dist (ft)		748			813			681			771	
Turn Bay Length (ft)	165			250			225			130		300
Base Capacity (vph)	230	734		638	1139		268	642	721	456	687	715
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.82		0.83	0.72		0.29	0.35	0.37	0.24	0.71	0.23

Intersection Summary

Cycle Length: 115
Actuated Cycle Length: 113
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 39.7 — Intersection LOS: D
Intersection Capacity Utilization 79.2% — ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Briarcrest Drive & Boonville Road



Intersection

Int Delay, s/veh 13.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	111	947	0	0	1075	58	0	0	0	50	0	100
Future Vol, veh/h	111	947	0	0	1075	58	0	0	0	50	0	100
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	0	-	0	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	0	0	0
Mvmt Flow	121	1029	0	0	1168	63	0	0	0	54	0	109

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1232	0	0	1029	0	0	1855	-	515	1956	-	616
Stage 1	-	-	-	-	-	-	1271	-	-	1200	-	-
Stage 2	-	-	-	-	-	-	584	-	-	756	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	-	6.94	7.5	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.5	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.5	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32	3.5	-	3.3
Pot Cap-1 Maneuver	561	-	-	671	-	-	46	0	505	~ 39	0	438
Stage 1	-	-	-	-	-	-	178	0	-	200	0	-
Stage 2	-	-	-	-	-	-	465	0	-	371	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	561	-	-	671	-	-	29	-	505	~ 33	-	438
Mov Cap-2 Maneuver	-	-	-	-	-	-	29	-	-	~ 33	-	-
Stage 1	-	-	-	-	-	-	140	-	-	157	-	-
Stage 2	-	-	-	-	-	-	350	-	-	291	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0	0	203.6
HCM LOS			A	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	-	561	-	-	671	-	-	33	438
HCM Lane V/C Ratio	-	-	0.215	-	-	-	-	-	1.647	0.248
HCM Control Delay (s)	0	0	13.2	-	-	0	-	-	$ 579.1	15.9
HCM Lane LOS	A	A	B	-	-	A	-	-	F	C
HCM 95th %tile Q(veh)	-	-	0.8	-	-	0	-	-	6	1

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	931	4	8	1065	24	16	0	0	15	0	52
Future Vol, veh/h	62	931	4	8	1065	24	16	0	0	15	0	52
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	140	-	-	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	67	1012	4	9	1158	26	17	0	0	16	0	57

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1184	0	0	1016	0	0	1745	-	508	1829	2339	592
Stage 1	-	-	-	-	-	-	1149	-	-	1188	1188	-
Stage 2	-	-	-	-	-	-	596	-	-	641	1151	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	-	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	979	-	-	678	-	-	*135	0	510	107	41	*657
Stage 1	-	-	-	-	-	-	*211	0	-	611	537	-
Stage 2	-	-	-	-	-	-	*619	0	-	430	271	-
Platoon blocked, %	1	-	-		-	-	1			1	1	1
Mov Cap-1 Maneuver	979	-	-	678	-	-	*115	-	510	100	37	*657
Mov Cap-2 Maneuver	-	-	-	-	-	-	*115	-	-	100	37	-
Stage 1	-	-	-	-	-	-	*197	-	-	569	530	-
Stage 2	-	-	-	-	-	-	*558	-	-	401	252	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.1	41.8	21.4
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	115	-	979	-	-	678	-	-	292
HCM Lane V/C Ratio	0.151	-	0.069	-	-	0.013	-	-	0.249
HCM Control Delay (s)	41.8	0	8.9	-	-	10.4	-	-	21.4
HCM Lane LOS	E	A	A	-	-	B	-	-	C
HCM 95th %tile Q(veh)	0.5	-	0.2	-	-	0	-	-	1

Notes
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	939	6	0	1097	0	32
Future Vol, veh/h	939	6	0	1097	0	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1021	7	0	1192	0	35

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	514
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	505
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	505
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.7
HCM LOS			B

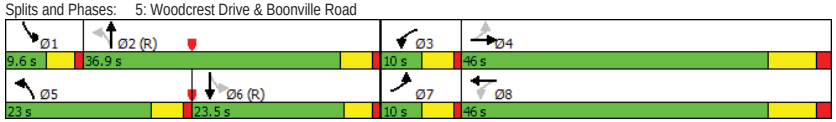
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	505	-	-	-
HCM Lane V/C Ratio	0.069	-	-	-
HCM Control Delay (s)	12.7	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	865	15	7	1019	6	77	0	30	18	0	27
Future Volume (vph)	9	865	15	7	1019	6	77	0	30	18	0	27
Satd. Flow (prot)	1770	3529	0	1770	3536	0	1770	1583	0	1770	1583	0
Flt Permitted	0.106			0.163			0.549			0.736		
Satd. Flow (perm)	197	3529	0	304	3536	0	1023	1583	0	1371	1583	0
Satd. Flow (RTOR)		2			1			243			293	
Lane Group Flow (vph)	10	956	0	8	1115	0	84	33	0	20	29	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Total Split (s)	10.0	46.0		10.0	46.0		23.0	36.9		9.6	23.5	
Total Lost Time (s)	5.0	8.0		5.0	8.0		5.0	5.0		4.5	4.5	
Act Effct Green (s)	41.6	37.6		41.6	37.6		49.9	45.8		24.7	19.0	
Actuated g/C Ratio	0.41	0.37		0.41	0.37		0.49	0.45		0.24	0.19	
v/c Ratio	0.06	0.74		0.04	0.86		0.12	0.04		0.06	0.05	
Control Delay	15.8	31.9		15.3	37.7		16.6	0.1		18.7	0.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.8	31.9		15.3	37.7		16.6	0.1		18.7	0.2	
LOS	B	C		B	D		B	A		B	A	
Approach Delay		31.7			37.5			12.0			7.7	
Approach LOS		C			D			B			A	
Queue Length 50th (ft)	4	272		3	338		29	0		6	0	
Queue Length 95th (ft)	12	355		10	437		65	0		23	0	
Internal Link Dist (ft)		1459			1360			1378			922	
Turn Bay Length (ft)	180			175			100			100		
Base Capacity (vph)	156	1344		194	1346		690	841		353	532	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.06	0.71		0.04	0.83		0.12	0.04		0.06	0.05	

Intersection Summary

Cycle Length: 102.5
Actuated Cycle Length: 102.5
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 33.1 — Intersection LOS: C
Intersection Capacity Utilization 50.1% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 5: Woodcrest Drive & Boonville Road



Intersection

Int Delay, s/veh 12.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	353	43	480	69	15	953
Future Vol, veh/h	353	43	480	69	15	953
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	-	-	200	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	384	47	522	75	16	1036

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1110	298	0	0	597	0
Stage 1	559	-	-	-	-	-
Stage 2	551	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	~ 203	698	-	-	976	-
Stage 1	536	-	-	-	-	-
Stage 2	541	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 200	698	-	-	976	-
Mov Cap-2 Maneuver	401	-	-	-	-	-
Stage 1	536	-	-	-	-	-
Stage 2	532	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	61	0	0.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	401	698	976	-
HCM Lane V/C Ratio	-	-	0.957	0.067	0.017	-
HCM Control Delay (s)	-	-	67.2	10.5	8.8	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	11	0.2	0.1	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	63	293	2	8	104
Future Vol, veh/h	21	63	293	2	8	104
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	68	318	2	9	113

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	321	0	-	0	434	320
Stage 1	-	-	-	-	320	-
Stage 2	-	-	-	-	114	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1239	-	-	-	579	721
Stage 1	-	-	-	-	736	-
Stage 2	-	-	-	-	911	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1239	-	-	-	568	721
Mov Cap-2 Maneuver	-	-	-	-	568	-
Stage 1	-	-	-	-	736	-
Stage 2	-	-	-	-	894	-

Approach	EB	WB	SB
HCM Control Delay, s	2	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1239	-	-	-	707
HCM Lane V/C Ratio	0.018	-	-	-	0.172
HCM Control Delay (s)	8	0	-	-	11.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	68	95	63	25	19
Future Vol, veh/h	8	68	95	63	25	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	74	103	68	27	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	313	38	48	0	-	0
Stage 1	38	-	-	-	-	-
Stage 2	275	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	680	1034	1559	-	-	-
Stage 1	984	-	-	-	-	-
Stage 2	771	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	633	1034	1559	-	-	-
Mov Cap-2 Maneuver	633	-	-	-	-	-
Stage 1	984	-	-	-	-	-
Stage 2	718	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	4.5	0
HCM LOS	A		

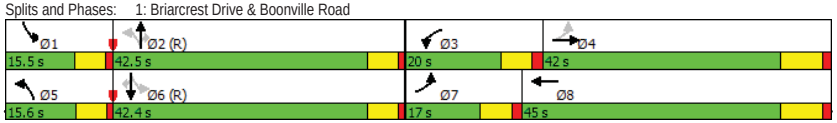
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1559	-	969	-	-
HCM Lane V/C Ratio	0.066	-	0.085	-	-
HCM Control Delay (s)	7.5	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.3	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	182	761	58	293	645	65	100	404	404	75	226	109
Future Volume (vph)	182	761	58	293	645	65	100	404	404	75	226	109
Satd. Flow (prot)	1770	3500	0	3433	3490	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.210			0.950			0.464			0.265		
Satd. Flow (perm)	391	3500	0	3433	3490	0	864	1863	1583	494	1863	1583
Satd. Flow (RTOR)		7			9				335			145
Lane Group Flow (vph)	198	890	0	318	772	0	109	439	439	82	246	118
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4						2		2	6		6
Total Split (s)	17.0	42.0		20.0	45.0		15.6	42.5	42.5	15.5	42.4	42.4
Total Lost Time (s)	6.0	7.5		6.0	7.5		5.5	5.5	5.5	5.5	5.5	5.5
Act Effct Green (s)	45.9	33.6		13.7	36.5		49.4	41.3	41.3	48.2	38.2	38.2
Actuated g/C Ratio	0.38	0.28		0.11	0.30		0.41	0.34	0.34	0.40	0.32	0.32
v/c Ratio	0.73	0.90		0.81	0.72		0.25	0.68	0.57	0.27	0.42	0.20
Control Delay	37.3	54.7		68.5	21.5		21.8	42.1	11.8	22.4	35.3	3.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.3	54.7		68.5	21.5		21.8	42.1	11.8	22.4	35.3	3.4
LOS	D	D		E	C		C	D	B	C	D	A
Approach Delay		51.5			35.2			26.4			24.5	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	90	344		96	283		50	307	60	37	152	0
Queue Length 95th (ft)	#149	#454		#182	342		87	434	170	69	229	27
Internal Link Dist (ft)		748			813			681			771	
Turn Bay Length (ft)	165			250			225			130		300
Base Capacity (vph)	276	1011		400	1096		432	641	764	304	592	602
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.88		0.80	0.70		0.25	0.68	0.57	0.27	0.42	0.20

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green, Master Intersection
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 36.4 — Intersection LOS: D
Intersection Capacity Utilization 81.3% — ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Briarcrest Drive & Boonville Road



Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	1226	0	0	1026	3	0	0	0	7	0	4
Future Vol, veh/h	7	1226	0	0	1026	3	0	0	0	7	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	0	-	0	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	0	0	0
Mvmt Flow	8	1333	0	0	1115	3	0	0	0	8	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1118	0	0	1333	0	0	1906	-	666	1799	-	559
Stage 1	-	-	-	-	-	-	1348	-	-	1117	-	-
Stage 2	-	-	-	-	-	-	558	-	-	682	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	-	6.94	7.5	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.5	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.5	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32	3.5	-	3.3
Pot Cap-1 Maneuver	620	-	-	513	-	-	42	0	402	51	0	478
Stage 1	-	-	-	-	-	-	159	0	-	224	0	-
Stage 2	-	-	-	-	-	-	482	0	-	411	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	620	-	-	513	-	-	41	-	402	50	-	478
Mov Cap-2 Maneuver	-	-	-	-	-	-	41	-	-	50	-	-
Stage 1	-	-	-	-	-	-	157	-	-	221	-	-
Stage 2	-	-	-	-	-	-	478	-	-	406	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	0	61.5
HCM LOS			A	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	-	620	-	-	513	-	-	50	478
HCM Lane V/C Ratio	-	-	0.012	-	-	-	-	-	0.152	0.009
HCM Control Delay (s)	0	0	10.9	-	-	0	-	-	89.5	12.6
HCM Lane LOS	A	A	B	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	-	-	0	-	-	0	-	-	0.5	0

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	59	1115	16	33	925	20	8	0	0	17	0	57
Future Vol, veh/h	59	1115	16	33	925	20	8	0	0	17	0	57
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	140	-	-	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	64	1212	17	36	1005	22	9	0	0	18	0	62

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1027	0	0	1229	0	0	1923	-	615	1822	2446	514
Stage 1	-	-	-	-	-	-	1349	-	-	1088	1088	-
Stage 2	-	-	-	-	-	-	574	-	-	734	1358	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	-	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1052	-	-	563	-	-	*69	0	434	90	31	*719
Stage 1	-	-	-	-	-	-	*159	0	-	579	528	-
Stage 2	-	-	-	-	-	-	*678	0	-	378	215	-
Platoon blocked, %	1	-	-		-	-	1			1	1	1
Mov Cap-1 Maneuver	1052	-	-	563	-	-	*57	-	434	81	27	*719
Mov Cap-2 Maneuver	-	-	-	-	-	-	*57	-	-	81	27	-
Stage 1	-	-	-	-	-	-	*149	-	-	544	495	-
Stage 2	-	-	-	-	-	-	*580	-	-	355	202	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.4	79.2	25.4
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	57	-	1052	-	-	563	-	-	256
HCM Lane V/C Ratio	0.153	-	0.061	-	-	0.064	-	-	0.314
HCM Control Delay (s)	79.2	0	8.6	-	-	11.8	-	-	25.4
HCM Lane LOS	F	A	A	-	-	B	-	-	D
HCM 95th %tile Q(veh)	0.5	-	0.2	-	-	0.2	-	-	1.3

Notes
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1107	24	0	1006	0	17
Future Vol, veh/h	1107	24	0	1006	0	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1203	26	0	1093	0	18

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	615
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	434
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	434
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.7
HCM LOS			B

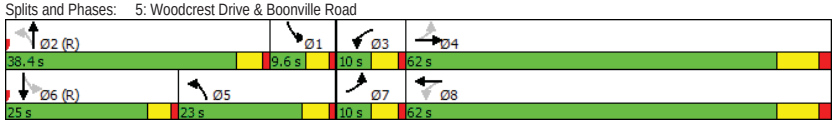
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	434	-	-	-
HCM Lane V/C Ratio	0.043	-	-	-
HCM Control Delay (s)	13.7	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	1091	68	24	960	18	46	0	30	6	0	9
Future Volume (vph)	27	1091	68	24	960	18	46	0	30	6	0	9
Satd. Flow (prot)	1770	3507	0	1770	3529	0	1770	1583	0	1770	1583	0
Flt Permitted	0.144			0.080			0.751			0.736		
Satd. Flow (perm)	268	3507	0	149	3529	0	1399	1583	0	1371	1583	0
Satd. Flow (RTOR)		7			2			187			273	
Lane Group Flow (vph)	29	1260	0	26	1063	0	50	33	0	7	10	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Total Split (s)	10.0	62.0		10.0	62.0		23.0	38.4		9.6	25.0	
Total Lost Time (s)	5.0	8.0		5.0	8.0		5.0	5.0		4.5	4.5	
Act Effct Green (s)	56.3	50.3		56.3	50.3		50.7	48.8		33.3	28.2	
Actuated g/C Ratio	0.47	0.42		0.47	0.42		0.42	0.41		0.28	0.24	
v/c Ratio	0.15	0.86		0.19	0.72		0.08	0.04		0.02	0.02	
Control Delay	10.1	22.6		16.0	31.8		24.9	0.1		26.0	0.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	10.1	22.6		16.0	31.8		24.9	0.1		26.0	0.0	
LOS	B	C		B	C		C	A		C	A	
Approach Delay		22.3			31.4			15.0			10.7	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)	6	181		9	345		25	0		3	0	
Queue Length 95th (ft)	m10	216		22	408		54	0		14	0	
Internal Link Dist (ft)		1459			1360			1378			922	
Turn Bay Length (ft)	180			175			100			100		
Base Capacity (vph)	188	1582		137	1589		646	754		397	581	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.15	0.80		0.19	0.67		0.08	0.04		0.02	0.02	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 46 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 26.0 — Intersection LOS: C
Intersection Capacity Utilization 52.4% — ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Woodcrest Drive & Boonville Road



Intersection

Int Delay, s/veh 6.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	149	37	842	283	44	500
Future Vol, veh/h	149	37	842	283	44	500
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	162	40	915	308	48	543

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1436	611	0	0	1223	0
Stage 1	1069	-	-	-	-	-
Stage 2	367	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	~ 124	437	-	-	566	-
Stage 1	291	-	-	-	-	-
Stage 2	671	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 113	437	-	-	566	-
Mov Cap-2 Maneuver	223	-	-	-	-	-
Stage 1	291	-	-	-	-	-
Stage 2	614	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	62.6	0	1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	247	566	-
HCM Lane V/C Ratio	-	-	0.819	0.084	-
HCM Control Delay (s)	-	-	62.6	11.9	-
HCM Lane LOS	-	-	F	B	-
HCM 95th %tile Q(veh)	-	-	6.3	0.3	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	83	244	128	8	4	57
Future Vol, veh/h	83	244	128	8	4	57
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	90	265	139	9	4	62

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	148	0	-	0	589	143
Stage 1	-	-	-	-	143	-
Stage 2	-	-	-	-	446	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1434	-	-	-	471	905
Stage 1	-	-	-	-	884	-
Stage 2	-	-	-	-	645	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1434	-	-	-	436	905
Mov Cap-2 Maneuver	-	-	-	-	436	-
Stage 1	-	-	-	-	884	-
Stage 2	-	-	-	-	597	-

Approach	EB	WB	SB
HCM Control Delay, s	1.9	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1434	-	-	-	845
HCM Lane V/C Ratio	0.063	-	-	-	0.078
HCM Control Delay (s)	7.7	0	-	-	9.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.3

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	80	75	63	55	11
Future Vol, veh/h	21	80	75	63	55	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	87	82	68	60	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	298	66	72	0	-	0
Stage 1	66	-	-	-	-	-
Stage 2	232	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	693	998	1528	-	-	-
Stage 1	957	-	-	-	-	-
Stage 2	807	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	654	998	1528	-	-	-
Mov Cap-2 Maneuver	654	-	-	-	-	-
Stage 1	957	-	-	-	-	-
Stage 2	762	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	4.1	0
HCM LOS	A		

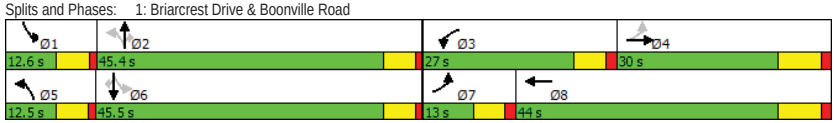
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1528	-	900	-	-
HCM Lane V/C Ratio	0.053	-	0.122	-	-
HCM Control Delay (s)	7.5	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.4	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	575	36	551	787	40	53	231	278	115	503	166
Future Volume (vph)	114	575	36	551	787	40	53	231	278	115	503	166
Satd. Flow (prot)	1770	3507	0	3433	3514	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.221			0.950			0.178			0.487		
Satd. Flow (perm)	412	3507	0	3433	3514	0	332	1863	1583	907	1863	1583
Satd. Flow (RTOR)		5			5				302			209
Lane Group Flow (vph)	124	664	0	599	898	0	58	251	302	125	547	180
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4						2		2	6		6
Total Split (s)	13.0	30.0		27.0	44.0		12.5	45.4	45.4	12.6	45.5	45.5
Total Lost Time (s)	6.0	7.5		6.0	7.5		5.5	5.5	5.5	5.5	5.5	5.5
Act Effct Green (s)	31.0	22.5		21.0	36.5		46.9	39.9	39.9	48.2	42.5	42.5
Actuated g/C Ratio	0.27	0.20		0.18	0.32		0.41	0.35	0.35	0.42	0.37	0.37
v/c Ratio	0.64	0.96		0.96	0.80		0.26	0.39	0.40	0.29	0.80	0.25
Control Delay	38.8	72.1		73.8	42.3		20.8	30.6	4.7	20.6	43.4	3.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.8	72.1		73.8	42.3		20.8	30.6	4.7	20.6	43.4	3.0
LOS	D	E		E	D		C	C	A	C	D	A
Approach Delay		66.9			54.9			16.9			31.5	
Approach LOS		E			D			B			C	
Queue Length 50th (ft)	54	256		228	317		24	139	0	53	371	0
Queue Length 95th (ft)	#95	#378		#340	398		48	212	59	91	#558	32
Internal Link Dist (ft)		748			813			681			771	
Turn Bay Length (ft)	165			250			225			130		300
Base Capacity (vph)	193	690		626	1118		222	646	746	433	688	716
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.96		0.96	0.80		0.26	0.39	0.40	0.29	0.80	0.25

Intersection Summary

Cycle Length: 115
Actuated Cycle Length: 115
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 45.9 Intersection LOS: D
Intersection Capacity Utilization 85.5% ICU Level of Service E
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Briarcrest Drive & Boonville Road



Intersection

Int Delay, s/veh 22.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	111	1060	0	0	1225	58	0	0	0	50	0	100
Future Vol, veh/h	111	1060	0	0	1225	58	0	0	0	50	0	100
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	0	-	0	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	0	0	0
Mvmt Flow	121	1152	0	0	1332	63	0	0	0	54	0	109

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1395	0	0	1152	0	0	2059	-	576	2180	-	697
Stage 1	-	-	-	-	-	-	1393	-	-	1363	-	-
Stage 2	-	-	-	-	-	-	666	-	-	817	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	-	6.94	7.5	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.5	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.5	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32	3.5	-	3.3
Pot Cap-1 Maneuver	486	-	-	602	-	-	32	0	460	~ 26	0	388
Stage 1	-	-	-	-	-	-	149	0	-	158	0	-
Stage 2	-	-	-	-	-	-	415	0	-	341	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	486	-	-	602	-	-	19	-	460	~ 21	-	388
Mov Cap-2 Maneuver	-	-	-	-	-	-	19	-	-	~ 21	-	-
Stage 1	-	-	-	-	-	-	112	-	-	119	-	-
Stage 2	-	-	-	-	-	-	299	-	-	256	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0	0	$ 380.5
HCM LOS			A	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	-	486	-	-	602	-	-	21	388
HCM Lane V/C Ratio	-	-	0.248	-	-	-	-	-	2.588	0.28
HCM Control Delay (s)	0	0	14.8	-	-	0	-	-	$ 1105.8	17.9
HCM Lane LOS	A	A	B	-	-	A	-	-	F	C
HCM 95th %tile Q(veh)	-	-	1	-	-	0	-	-	7.1	1.1

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	70	1040	0	0	1224	27	0	0	0	17	0	59
Future Vol, veh/h	70	1040	0	0	1224	27	0	0	0	17	0	59
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	140	-	-	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	76	1130	0	0	1330	29	0	0	0	18	0	64

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1360	0	0	1130	0	0	1948	-	565	2062	2628	680
Stage 1	-	-	-	-	-	-	1283	-	-	1345	1345	-
Stage 2	-	-	-	-	-	-	665	-	-	717	1283	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	-	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	876	-	-	614	-	-	*94	0	468	*66	*20	*596
Stage 1	-	-	-	-	-	-	*175	0	-	*562	*493	-
Stage 2	-	-	-	-	-	-	*562	0	-	*387	*234	-
Platoon blocked, %	1	-	-		-	-	1			1	1	1
Mov Cap-1 Maneuver	876	-	-	614	-	-	*78	-	468	*61	*19	*596
Mov Cap-2 Maneuver	-	-	-	-	-	-	*78	-	-	*61	*19	-
Stage 1	-	-	-	-	-	-	*160	-	-	*514	*493	-
Stage 2	-	-	-	-	-	-	*502	-	-	*353	*214	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	0	34.9
HCM LOS			A	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	876	-	-	614	-	-	201
HCM Lane V/C Ratio	-	-	0.087	-	-	-	-	-	0.411
HCM Control Delay (s)	0	0	9.5	-	-	0	-	-	34.9
HCM Lane LOS	A	A	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	-	-	0.3	-	-	0	-	-	1.9

Notes

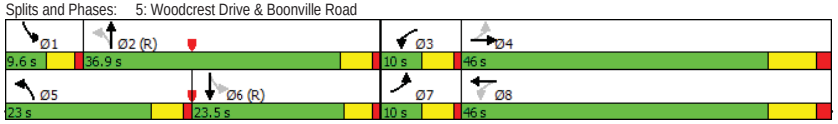
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	938	17	8	1137	6	87	0	34	18	0	27
Future Volume (vph)	9	938	17	8	1137	6	87	0	34	18	0	27
Satd. Flow (prot)	1770	3529	0	1770	3536	0	1770	1583	0	1770	1583	0
Flt Permitted	0.095			0.155			0.549			0.733		
Satd. Flow (perm)	177	3529	0	289	3536	0	1023	1583	0	1365	1583	0
Satd. Flow (RTOR)		2			1			235			280	
Lane Group Flow (vph)	10	1038	0	9	1243	0	95	37	0	20	29	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Total Split (s)	10.0	46.0		10.0	46.0		23.0	36.9		9.6	23.5	
Total Lost Time (s)	5.0	8.0		5.0	8.0		5.0	5.0		4.5	4.5	
Act Effct Green (s)	46.0	42.0		46.0	42.0		45.5	41.6		24.5	19.0	
Actuated g/C Ratio	0.45	0.41		0.45	0.41		0.44	0.41		0.24	0.19	
v/c Ratio	0.06	0.72		0.04	0.86		0.15	0.05		0.06	0.06	
Control Delay	14.2	28.7		13.9	34.8		18.9	0.1		19.8	0.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.2	28.7		13.9	34.8		18.9	0.1		19.8	0.2	
LOS	B	C		B	C		B	A		B	A	
Approach Delay		28.5			34.7			13.6			8.2	
Approach LOS		C			C			B			A	
Queue Length 50th (ft)	3	276		3	361		36	0		7	0	
Queue Length 95th (ft)	12	396		11	#557		72	0		23	0	
Internal Link Dist (ft)		1459			1360			1378			922	
Turn Bay Length (ft)	180			175			100			100		
Base Capacity (vph)	157	1450		201	1452		613	782		347	521	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.06	0.72		0.04	0.86		0.15	0.05		0.06	0.06	

Intersection Summary

Cycle Length: 102.5
Actuated Cycle Length: 102.5
Offset: 77.5 (76%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 30.4 Intersection LOS: C
Intersection Capacity Utilization 53.9% ICU Level of Service A
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Woodcrest Drive & Boonville Road



Intersection	
Int Delay, s/veh	9.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	307	21	541	54	17	1073
Future Vol, veh/h	307	21	541	54	17	1073
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	-	-	200	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	334	23	588	59	18	1166

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1237	323	0	0	647	0
Stage 1	617	-	-	-	-	-
Stage 2	620	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	~ 168	673	-	-	934	-
Stage 1	501	-	-	-	-	-
Stage 2	499	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 165	673	-	-	934	-
Mov Cap-2 Maneuver	365	-	-	-	-	-
Stage 1	501	-	-	-	-	-
Stage 2	489	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	58.8	0	0.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	365	673	934	-
HCM Lane V/C Ratio	-	-	0.914	0.034	0.02	-
HCM Control Delay (s)	-	-	62.1	10.5	8.9	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	9.4	0.1	0.1	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	68	104	71	29	21
Future Vol, veh/h	9	68	104	71	29	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	74	113	77	32	23

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	346	43	54	0	-	0
Stage 1	43	-	-	-	-	-
Stage 2	303	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	651	1027	1551	-	-	-
Stage 1	979	-	-	-	-	-
Stage 2	749	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	602	1027	1551	-	-	-
Mov Cap-2 Maneuver	602	-	-	-	-	-
Stage 1	979	-	-	-	-	-
Stage 2	692	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	4.5	0
HCM LOS	A		

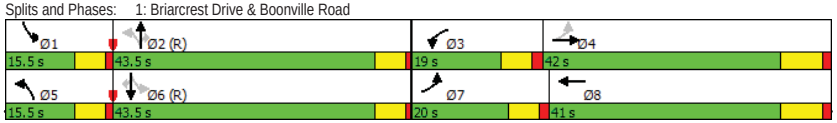
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1551	-	949	-	-
HCM Lane V/C Ratio	0.073	-	0.088	-	-
HCM Control Delay (s)	7.5	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.3	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	810	65	329	716	74	98	455	455	85	254	122
Future Volume (vph)	205	810	65	329	716	74	98	455	455	85	254	122
Satd. Flow (prot)	1770	3500	0	3433	3490	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.119			0.950			0.447			0.161		
Satd. Flow (perm)	222	3500	0	3433	3490	0	833	1863	1583	300	1863	1583
Satd. Flow (RTOR)		7			9				342			145
Lane Group Flow (vph)	223	951	0	358	858	0	107	495	495	92	276	133
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4						2		2	6		6
Total Split (s)	20.0	42.0		19.0	41.0		15.5	43.5	43.5	15.5	43.5	43.5
Total Lost Time (s)	6.0	7.5		6.0	7.5		5.5	5.5	5.5	5.5	5.5	5.5
Act Effct Green (s)	49.2	34.2		13.0	33.7		48.3	38.3	38.3	48.3	38.3	38.3
Actuated g/C Ratio	0.41	0.28		0.11	0.28		0.40	0.32	0.32	0.40	0.32	0.32
v/c Ratio	0.84	0.95		0.96	0.87		0.26	0.83	0.67	0.38	0.46	0.22
Control Delay	54.5	60.6		85.6	32.8		21.5	51.7	15.5	24.3	35.9	4.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.5	60.6		85.6	32.8		21.5	51.7	15.5	24.3	35.9	4.8
LOS	D	E		F	C		C	D	B	C	D	A
Approach Delay		59.4			48.3			32.4			25.5	
Approach LOS		E			D			C			C	
Queue Length 50th (ft)	114	376		122	339		48	356	97	41	171	0
Queue Length 95th (ft)	#245	#508		#232	#444		84	#534	225	74	255	38
Internal Link Dist (ft)		748			813			681			771	
Turn Bay Length (ft)	165			250			225			130		300
Base Capacity (vph)	272	1011		371	985		413	594	737	243	594	604
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.94		0.96	0.87		0.26	0.83	0.67	0.38	0.46	0.22

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green, Master Intersection
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 44.4 Intersection LOS: D
Intersection Capacity Utilization 86.5% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Briarcrest Drive & Boonville Road



Intersection

Int Delay, s/veh 0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	1333	0	0	1144	3	0	0	0	8	0	4
Future Vol, veh/h	8	1333	0	0	1144	3	0	0	0	8	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	0	-	0	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	0	0	0
Mvmt Flow	9	1449	0	0	1243	3	0	0	0	9	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1247	0	0	1449	0	0	2088	-	724	1987	-	623
Stage 1	-	-	-	-	-	-	1466	-	-	1245	-	-
Stage 2	-	-	-	-	-	-	622	-	-	742	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	-	6.94	7.5	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.5	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.5	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32	3.5	-	3.3
Pot Cap-1 Maneuver	554	-	-	463	-	-	30	0	368	37	0	434
Stage 1	-	-	-	-	-	-	134	0	-	187	0	-
Stage 2	-	-	-	-	-	-	441	0	-	378	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	554	-	-	463	-	-	29	-	368	37	-	434
Mov Cap-2 Maneuver	-	-	-	-	-	-	29	-	-	37	-	-
Stage 1	-	-	-	-	-	-	132	-	-	184	-	-
Stage 2	-	-	-	-	-	-	437	-	-	372	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	0	91.1
HCM LOS			A	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	-	554	-	-	463	-	-	37	434
HCM Lane V/C Ratio	-	-	0.016	-	-	-	-	-	0.235	0.01
HCM Control Delay (s)	0	0	11.6	-	-	0	-	-	130	13.4
HCM Lane LOS	A	A	B	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	-	-	0	-	-	0	-	-	0.8	0

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	66	1226	0	0	1041	23	0	0	0	19	0	64
Future Vol, veh/h	66	1226	0	0	1041	23	0	0	0	19	0	64
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	140	-	-	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	72	1333	0	0	1132	25	0	0	0	21	0	70

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1157	0	0	1333	0	0	2042	-	666	1954	2620	578
Stage 1	-	-	-	-	-	-	1476	-	-	1144	1144	-
Stage 2	-	-	-	-	-	-	566	-	-	810	1476	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	-	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	992	-	-	513	-	-	*57	0	402	*73	*21	*667
Stage 1	-	-	-	-	-	-	*132	0	-	*629	*552	-
Stage 2	-	-	-	-	-	-	*629	0	-	*340	*189	-
Platoon blocked, %	1	-	-		-	-	1			1	1	1
Mov Cap-1 Maneuver	992	-	-	513	-	-	*48	-	402	*69	*19	*667
Mov Cap-2 Maneuver	-	-	-	-	-	-	*48	-	-	*69	*19	-
Stage 1	-	-	-	-	-	-	*122	-	-	*584	*552	-
Stage 2	-	-	-	-	-	-	*564	-	-	*315	*175	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	0	31.5
HCM LOS			A	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	992	-	-	513	-	-	224
HCM Lane V/C Ratio	-	-	0.072	-	-	-	-	-	0.403
HCM Control Delay (s)	0	0	8.9	-	-	0	-	-	31.5
HCM Lane LOS	A	A	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	-	-	0.2	-	-	0	-	-	1.8

Notes

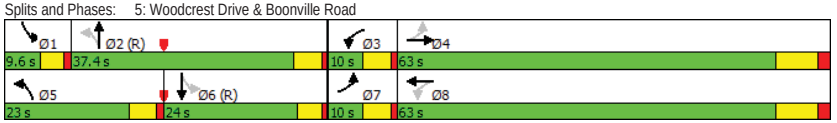
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	1208	76	27	1042	18	52	0	34	6	0	9
Future Volume (vph)	27	1208	76	27	1042	18	52	0	34	6	0	9
Satd. Flow (prot)	1770	3507	0	1770	3529	0	1770	1583	0	1770	1583	0
Flt Permitted	0.126			0.075			0.580			0.733		
Satd. Flow (perm)	235	3507	0	140	3529	0	1080	1583	0	1365	1583	0
Satd. Flow (RTOR)		7			2			184			257	
Lane Group Flow (vph)	29	1396	0	29	1153	0	57	37	0	7	10	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Total Split (s)	10.0	63.0		10.0	63.0		23.0	37.4		9.6	24.0	
Total Lost Time (s)	5.0	8.0		5.0	8.0		5.0	5.0		4.5	4.5	
Act Effct Green (s)	59.2	53.2		59.2	53.2		47.8	45.9		24.8	19.5	
Actuated g/C Ratio	0.49	0.44		0.49	0.44		0.40	0.38		0.21	0.16	
v/c Ratio	0.16	0.90		0.21	0.74		0.10	0.05		0.02	0.02	
Control Delay	9.3	23.4		15.8	30.7		25.8	0.1		26.8	0.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.3	23.4		15.8	30.7		25.8	0.1		26.8	0.1	
LOS	A	C		B	C		C	A		C	A	
Approach Delay		23.1			30.3			15.7			11.1	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)	6	205		9	368		29	0		4	0	
Queue Length 95th (ft)	m9	m241		23	450		60	0		14	0	
Internal Link Dist (ft)		1459			1360			1378			922	
Turn Bay Length (ft)	180			175			100			100		
Base Capacity (vph)	180	1611		137	1618		566	718		299	472	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.16	0.87		0.21	0.71		0.10	0.05		0.02	0.02	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 67 (56%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 25.9 Intersection LOS: C
Intersection Capacity Utilization 56.2% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Woodcrest Drive & Boonville Road



Intersection	
Int Delay, s/veh	4.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	118	26	947	225	49	563
Future Vol, veh/h	118	26	947	225	49	563
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	128	28	1029	245	53	612

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1565	637	0	0	1274	0
Stage 1	1152	-	-	-	-	-
Stage 2	413	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	~ 102	420	-	-	541	-
Stage 1	263	-	-	-	-	-
Stage 2	636	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 92	420	-	-	541	-
Mov Cap-2 Maneuver	199	-	-	-	-	-
Stage 1	263	-	-	-	-	-
Stage 2	574	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	53.7	0	1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	- 220	541	-
HCM Lane V/C Ratio	-	- 0.711	0.098	-
HCM Control Delay (s)	-	- 53.7	12.4	-
HCM Lane LOS	-	- F	B	-
HCM 95th %tile Q(veh)	-	- 4.7	0.3	-

Notes
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	85	75	71	62	13
Future Vol, veh/h	24	85	75	71	62	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	92	82	77	67	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	314	74	82	0	-	0
Stage 1	74	-	-	-	-	-
Stage 2	240	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	679	988	1515	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	800	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	640	988	1515	-	-	-
Mov Cap-2 Maneuver	640	-	-	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	754	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	3.9	0
HCM LOS	A		

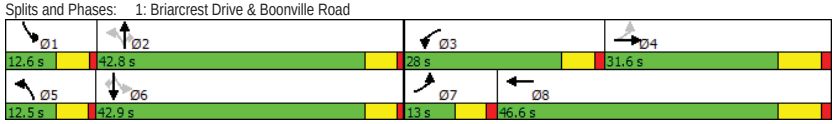
Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1515	- 882	-	-
HCM Lane V/C Ratio	0.054	- 0.134	-	-
HCM Control Delay (s)	7.5	0 9.7	-	-
HCM Lane LOS	A	A A	-	-
HCM 95th %tile Q(veh)	0.2	- 0.5	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	625	36	580	822	45	82	231	326	123	504	167
Future Volume (vph)	114	625	36	580	822	45	82	231	326	123	504	167
Satd. Flow (prot)	1770	3511	0	3433	3511	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.218			0.950			0.144			0.474		
Satd. Flow (perm)	406	3511	0	3433	3511	0	268	1863	1583	883	1863	1583
Satd. Flow (RTOR)		5			5				354			209
Lane Group Flow (vph)	124	718	0	630	942	0	89	251	354	134	548	182
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4						2		2	6		6
Total Split (s)	13.0	31.6		28.0	46.6		12.5	42.8	42.8	12.6	42.9	42.9
Total Lost Time (s)	6.0	7.5		6.0	7.5		5.5	5.5	5.5	5.5	5.5	5.5
Act Effct Green (s)	32.6	24.1		22.0	39.1		44.3	37.3	37.3	45.6	39.9	39.9
Actuated g/C Ratio	0.28	0.21		0.19	0.34		0.39	0.32	0.32	0.40	0.35	0.35
v/c Ratio	0.63	0.97		0.96	0.79		0.46	0.42	0.47	0.33	0.85	0.27
Control Delay	36.1	72.1		73.2	39.7		27.6	32.9	5.2	22.9	49.7	3.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.1	72.1		73.2	39.7		27.6	32.9	5.2	22.9	49.7	3.4
LOS	D	E		E	D		C	C	A	C	D	A
Approach Delay		66.8			53.1			18.1			35.8	
Approach LOS		E			D			B			D	
Queue Length 50th (ft)	51	278		240	326		39	144	0	60	386	0
Queue Length 95th (ft)	#92	#405		#355	408		71	220	65	102	#592	34
Internal Link Dist (ft)		748			813			681			771	
Turn Bay Length (ft)	165			250			225			130		300
Base Capacity (vph)	198	739		656	1197		194	604	752	404	646	685
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.97		0.96	0.79		0.46	0.42	0.47	0.33	0.85	0.27

Intersection Summary

Cycle Length: 115
Actuated Cycle Length: 115
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 46.1 — Intersection LOS: D
Intersection Capacity Utilization 87.7% — ICU Level of Service E
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Briarcrest Drive & Boonville Road



Intersection

Int Delay, s/veh 31.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	111	1130	35	20	1252	58	16	0	12	50	0	100
Future Vol, veh/h	111	1130	35	20	1252	58	16	0	12	50	0	100
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	0	-	0	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	0	0	0
Mvmt Flow	121	1228	38	22	1361	63	17	0	13	54	0	109

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1424	0	0	1266	0	0	2213	-	633	2291	-	712
Stage 1	-	-	-	-	-	-	1489	-	-	1436	-	-
Stage 2	-	-	-	-	-	-	724	-	-	855	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	-	6.94	7.5	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.5	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.5	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32	3.5	-	3.3
Pot Cap-1 Maneuver	474	-	-	545	-	-	24	0	422	~ 22	0	379
Stage 1	-	-	-	-	-	-	130	0	-	143	0	-
Stage 2	-	-	-	-	-	-	383	0	-	323	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	474	-	-	545	-	-	~ 13	-	422	~ 17	-	379
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 13	-	-	~ 17	-	-
Stage 1	-	-	-	-	-	-	97	-	-	106	-	-
Stage 2	-	-	-	-	-	-	262	-	-	233	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0.2	$ 447.7	$ 496.2
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	13	422	474	-	-	545	-	-	17	379
HCM Lane V/C Ratio	1.338	0.031	0.255	-	-	0.04	-	-	3.197	0.287
HCM Control Delay (s)	$ 773.2	13.8	15.2	-	-	11.9	-	-	$ 1452	18.3
HCM Lane LOS	F	B	C	-	-	B	-	-	F	C
HCM 95th %tile Q(veh)	2.8	0.1	1	-	-	0.1	-	-	7.4	1.2

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	71	1058	63	28	1217	28	53	0	12	17	0	60
Future Vol, veh/h	71	1058	63	28	1217	28	53	0	12	17	0	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	140	-	-	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	77	1150	68	30	1323	30	58	0	13	18	0	65

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1353	0	0	1218	0	0	2061	-	609	2128	2772	677
Stage 1	-	-	-	-	-	-	1339	-	-	1399	1399	-
Stage 2	-	-	-	-	-	-	722	-	-	729	1373	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	-	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	886	-	-	568	-	-	*66	0	438	53	14	*596
Stage 1	-	-	-	-	-	-	*161	0	-	497	450	-
Stage 2	-	-	-	-	-	-	*562	0	-	380	212	-
Platoon blocked, %	1	-	-		-	-	1			1	1	1
Mov Cap-1 Maneuver	886	-	-	568	-	-	*~ 53	-	438	46	12	*596
Mov Cap-2 Maneuver	-	-	-	-	-	-	*~ 53	-	-	46	12	-
Stage 1	-	-	-	-	-	-	*147	-	-	454	426	-
Stage 2	-	-	-	-	-	-	*474	-	-	337	194	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.3	227.4	47.8
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	53	438	886	-	-	568	-	-	164
HCM Lane V/C Ratio	1.087	0.03	0.087	-	-	0.054	-	-	0.51
HCM Control Delay (s)	275.8	13.5	9.5	-	-	11.7	-	-	47.8
HCM Lane LOS	F	B	A	-	-	B	-	-	E
HCM 95th %tile Q(veh)	4.9	0.1	0.3	-	-	0.2	-	-	2.5

Notes
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1081	6	0	1273	0	32
Future Vol, veh/h	1081	6	0	1273	0	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1175	7	0	1384	0	35

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	591
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	450
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	450
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.7
HCM LOS			B

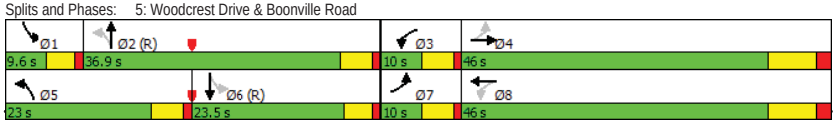
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	450	-	-	-
HCM Lane V/C Ratio	0.077	-	-	-
HCM Control Delay (s)	13.7	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	994	17	9	1185	6	88	0	34	18	0	27
Future Volume (vph)	9	994	17	9	1185	6	88	0	34	18	0	27
Satd. Flow (prot)	1770	3532	0	1770	3536	0	1770	1583	0	1770	1583	0
Flt Permitted	0.090			0.145			0.549			0.733		
Satd. Flow (perm)	168	3532	0	270	3536	0	1023	1583	0	1365	1583	0
Satd. Flow (RTOR)		2			1			231			278	
Lane Group Flow (vph)	10	1098	0	10	1295	0	96	37	0	20	29	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Total Split (s)	10.0	46.0		10.0	46.0		23.0	36.9		9.6	23.5	
Total Lost Time (s)	5.0	8.0		5.0	8.0		5.0	5.0		4.5	4.5	
Act Effct Green (s)	48.2	44.2		48.2	44.2		43.3	39.4		24.3	19.0	
Actuated g/C Ratio	0.47	0.43		0.47	0.43		0.42	0.38		0.24	0.19	
v/c Ratio	0.06	0.72		0.05	0.85		0.17	0.05		0.06	0.06	
Control Delay	14.0	27.7		13.7	33.1		19.7	0.1		20.1	0.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.0	27.7		13.7	33.1		19.7	0.1		20.1	0.2	
LOS	B	C		B	C		B	A		C	A	
Approach Delay		27.6			33.0			14.3			8.3	
Approach LOS		C			C			B			A	
Queue Length 50th (ft)	3	282		3	362		39	0		8	0	
Queue Length 95th (ft)	12	427		12	#596		73	0		23	0	
Internal Link Dist (ft)		1459			1360			1378			922	
Turn Bay Length (ft)	180			175			100			100		
Base Capacity (vph)	157	1525		200	1526		576	751		344	519	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.06	0.72		0.05	0.85		0.17	0.05		0.06	0.06	

Intersection Summary

Cycle Length: 102.5
Actuated Cycle Length: 102.5
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 29.2 Intersection LOS: C
Intersection Capacity Utilization 55.3% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Woodcrest Drive & Boonville Road



Intersection

Int Delay, s/veh 32.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	402	51	588	99	17	1103
Future Vol, veh/h	402	51	588	99	17	1103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	-	-	200	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	437	55	639	108	18	1199

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1329	373	0	0	747	0
Stage 1	693	-	-	-	-	-
Stage 2	636	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	~ 146	624	-	-	857	-
Stage 1	457	-	-	-	-	-
Stage 2	489	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 143	624	-	-	857	-
Mov Cap-2 Maneuver	~ 341	-	-	-	-	-
Stage 1	457	-	-	-	-	-
Stage 2	479	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	160.5	0	0.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	341	624	857	-
HCM Lane V/C Ratio	-	-	1.281	0.089	0.022	-
HCM Control Delay (s)	-	-	179.4	11.3	9.3	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	20.1	0.3	0.1	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	23	93	434	0	0	19
Future Vol, veh/h	23	93	434	0	0	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	101	472	0	0	21

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	472	0	-	0	623	472
Stage 1	-	-	-	-	472	-
Stage 2	-	-	-	-	151	-
Critical Hdwy	4.12	-	-	-	7.12	6.22
Critical Hdwy Stg 1	-	-	-	-	6.12	-
Critical Hdwy Stg 2	-	-	-	-	6.12	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1090	-	-	-	398	592
Stage 1	-	-	-	-	573	-
Stage 2	-	-	-	-	851	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1090	-	-	-	391	592
Mov Cap-2 Maneuver	-	-	-	-	391	-
Stage 1	-	-	-	-	559	-
Stage 2	-	-	-	-	831	-

Approach	EB	WB	SB
HCM Control Delay, s	1.7	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1090	-	-	-	592
HCM Lane V/C Ratio	0.023	-	-	-	0.035
HCM Control Delay (s)	8.4	0	-	-	11.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	72	330	2	8	104
Future Vol, veh/h	21	72	330	2	8	104
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	78	359	2	9	113

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	361	0	-	0	484	360
Stage 1	-	-	-	-	360	-
Stage 2	-	-	-	-	124	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1198	-	-	-	542	684
Stage 1	-	-	-	-	706	-
Stage 2	-	-	-	-	902	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1198	-	-	-	531	684
Mov Cap-2 Maneuver	-	-	-	-	531	-
Stage 1	-	-	-	-	706	-
Stage 2	-	-	-	-	884	-

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1198	-	-	-	670
HCM Lane V/C Ratio	0.019	-	-	-	0.182
HCM Control Delay (s)	8.1	0	-	-	11.6
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	76	107	72	29	22
Future Vol, veh/h	10	76	107	72	29	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	83	116	78	32	24

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	354	43	55	0	-	0
Stage 1	43	-	-	-	-	-
Stage 2	311	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	644	1027	1550	-	-	-
Stage 1	979	-	-	-	-	-
Stage 2	743	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	594	1027	1550	-	-	-
Mov Cap-2 Maneuver	594	-	-	-	-	-
Stage 1	979	-	-	-	-	-
Stage 2	685	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	4.5	0
HCM LOS	A		

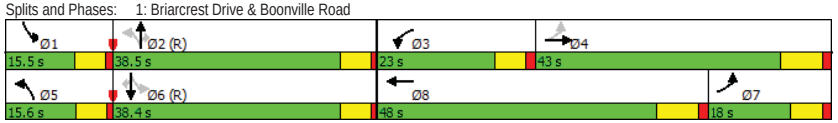
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1550	-	947	-	-
HCM Lane V/C Ratio	0.075	-	0.099	-	-
HCM Control Delay (s)	7.5	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.3	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	206	969	66	483	827	100	137	455	596	109	254	123
Future Volume (vph)	206	969	66	483	827	100	137	455	596	109	254	123
Satd. Flow (prot)	1770	3504	0	3433	3483	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.242			0.950			0.404			0.122		
Satd. Flow (perm)	451	3504	0	3433	3483	0	753	1863	1583	227	1863	1583
Satd. Flow (RTOR)		6			12				395			214
Lane Group Flow (vph)	224	1125	0	525	1008	0	149	495	648	118	276	134
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4						2		2	6		6
Total Split (s)	18.0	43.0		23.0	48.0		15.6	38.5	38.5	15.5	38.4	38.4
Total Lost Time (s)	6.0	7.5		6.0	7.5		5.5	5.5	5.5	5.5	5.5	5.5
Act Effct Green (s)	37.0	35.5		17.0	38.8		43.1	33.0	33.0	42.9	32.9	32.9
Actuated g/C Ratio	0.31	0.30		0.14	0.32		0.36	0.28	0.28	0.36	0.27	0.27
v/c Ratio	0.78	1.08		1.08	0.89		0.42	0.97	0.90	0.56	0.54	0.23
Control Delay	63.9	92.9		105.8	29.4		27.5	75.8	33.0	34.2	41.8	0.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.9	92.9		105.8	29.4		27.5	75.8	33.0	34.2	41.8	0.9
LOS	E	F		F	C		C	E	C	C	D	A
Approach Delay		88.1			55.6			48.8			29.7	
Approach LOS		F			E			D			C	
Queue Length 50th (ft)	137	~512		~226	293		74	379	213	58	183	0
Queue Length 95th (ft)	#261	#649		m#337	373		122	#596	#453	99	272	0
Internal Link Dist (ft)		748			813			681			771	
Turn Bay Length (ft)	165			250			225			130		300
Base Capacity (vph)	289	1040		486	1183		356	512	721	209	510	589
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.78	1.08		1.08	0.85		0.42	0.97	0.90	0.56	0.54	0.23

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 120		
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green, Master Intersection		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 1.08		
Intersection Signal Delay: 60.1	Intersection LOS: E	
Intersection Capacity Utilization 95.4%	ICU Level of Service F	
Analysis Period (min) 15		

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Briarcrest Drive & Boonville Road



Intersection	
Int Delay, s/veh	127.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	1553	104	58	1346	4	88	0	63	9	0	5
Future Vol, veh/h	9	1553	104	58	1346	4	88	0	63	9	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	0	-	0	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	0	0	0
Mvmt Flow	10	1688	113	63	1463	4	96	0	68	10	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1467	0	0	1801	0	0	2622	-	901	2455	-	734
Stage 1	-	-	-	-	-	-	1764	-	-	1591	-	-
Stage 2	-	-	-	-	-	-	858	-	-	864	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	-	6.94	7.5	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.5	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.5	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32	3.5	-	3.3
Pot Cap-1 Maneuver	456	-	-	338	-	-	~ 12	0	281	16	0	367
Stage 1	-	-	-	-	-	-	~ 87	0	-	114	0	-
Stage 2	-	-	-	-	-	-	318	0	-	319	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	456	-	-	338	-	-	~ 10	-	281	10	-	367
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 10	-	-	10	-	-
Stage 1	-	-	-	-	-	-	~ 85	-	-	112	-	-
Stage 2	-	-	-	-	-	-	255	-	-	236	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.7	$ 2682	$ 492.8
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	10	281	456	-	-	338	-	-	10	367
HCM Lane V/C Ratio	9.565	0.244	0.021	-	-	0.187	-	-	0.978	0.015
HCM Control Delay (s)	$ 4586.4	21.9	13.1	-	-	18.1	-	-	$ 758.2	15
HCM Lane LOS	F	C	B	-	-	C	-	-	F	C
HCM 95th %tile Q(veh)	13.4	0.9	0.1	-	-	0.7	-	-	1.9	0

Notes
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	595.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	67	1314	194	92	1099	23	201	0	64	19	0	64
Future Vol, veh/h	67	1314	194	92	1099	23	201	0	64	19	0	64
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	140	-	-	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	73	1428	211	100	1195	25	218	0	70	21	0	70

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1220	0	0	1639	0	0	2476	-	820	2267	3192	610
Stage 1	-	-	-	-	-	-	1679	-	-	1407	1407	-
Stage 2	-	-	-	-	-	-	797	-	-	860	1785	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	-	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	*960	-	-	391	-	-	*~ 17	0	318	31	5	*642
Stage 1	-	-	-	-	-	-	*~ 99	0	-	399	389	-
Stage 2	-	-	-	-	-	-	*605	0	-	317	133	-
Platoon blocked, %	1	-	-		-	-	1			1	1	1
Mov Cap-1 Maneuver	*960	-	-	391	-	-	*~ 11	-	318	~ 18	3	*642
Mov Cap-2 Maneuver	-	-	-	-	-	-	*~ 11	-	-	~ 18	3	-
Stage 1	-	-	-	-	-	-	*~ 91	-	-	369	289	-
Stage 2	-	-	-	-	-	-	*401	-	-	229	123	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	1.3	$ 6946.2	289.2
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	11	318	* 960	-	-	391	-	-	72
HCM Lane V/C Ratio	19.862	0.219	0.076	-	-	0.256	-	-	1.253
HCM Control Delay (s)	$ 9151.7	19.5	9.1	-	-	17.3	-	-	289.2
HCM Lane LOS	F	C	A	-	-	C	-	-	F
HCM 95th %tile Q(veh)	28.8	0.8	0.2	-	-	1	-	-	7.1

Notes
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1373	25	0	1245	0	18
Future Vol, veh/h	1373	25	0	1245	0	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1492	27	0	1353	0	20

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	760
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	349
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	349
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.9
HCM LOS			C

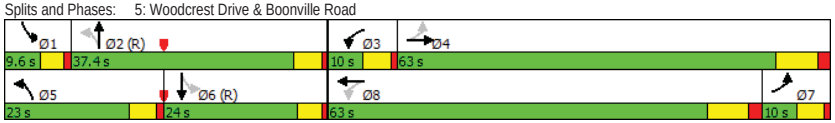
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	349	-	-	-
HCM Lane V/C Ratio	0.056	-	-	-
HCM Control Delay (s)	15.9	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	1353	77	28	1193	18	52	0	34	6	0	9
Future Volume (vph)	27	1353	77	28	1193	18	52	0	34	6	0	9
Satd. Flow (prot)	1770	3511	0	1770	3532	0	1770	1583	0	1770	1583	0
Flt Permitted	0.117			0.076			0.580			0.733		
Satd. Flow (perm)	218	3511	0	142	3532	0	1080	1583	0	1365	1583	0
Satd. Flow (RTOR)		6			2			205			250	
Lane Group Flow (vph)	29	1555	0	30	1317	0	57	37	0	7	10	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Total Split (s)	10.0	63.0		10.0	63.0		23.0	37.4		9.6	24.0	
Total Lost Time (s)	5.0	8.0		5.0	8.0		5.0	5.0		4.5	4.5	
Act Effct Green (s)	58.7	55.7		58.4	55.4		45.3	43.4		24.8	19.5	
Actuated g/C Ratio	0.49	0.46		0.49	0.46		0.38	0.36		0.21	0.16	
v/c Ratio	0.16	0.95		0.22	0.81		0.11	0.05		0.02	0.02	
Control Delay	14.1	27.6		20.2	32.7		26.4	0.1		26.8	0.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.1	27.6		20.2	32.7		26.4	0.1		26.8	0.1	
LOS	B	C		C	C		C	A		C	A	
Approach Delay		27.3			32.4			16.0			11.1	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)	8	273		12	466		29	0		4	0	
Queue Length 95th (ft)	m10	m283		29	548		60	0		14	0	
Internal Link Dist (ft)		1459			1360			1378			922	
Turn Bay Length (ft)	180			175			100			100		
Base Capacity (vph)	178	1634		136	1641		529	703		299	466	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.16	0.95		0.22	0.80		0.11	0.05		0.02	0.02	

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 120		
Offset: 67 (56%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.95		
Intersection Signal Delay: 29.1	Intersection LOS: C	
Intersection Capacity Utilization 60.2%	ICU Level of Service B	
Analysis Period (min) 15		

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Woodcrest Drive & Boonville Road



Intersection	
Int Delay, s/veh	25.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	238	65	1089	377	50	716
Future Vol, veh/h	238	65	1089	377	50	716
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	-	-	200	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	259	71	1184	410	54	778

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1887	797	0	0	1593	0
Stage 1	1389	-	-	-	-	-
Stage 2	498	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	*~ 85	329	-	-	408	-
Stage 1	*~ 196	-	-	-	-	-
Stage 2	*752	-	-	-	-	-
Platoon blocked, %	1		-	-		-
Mov Cap-1 Maneuver	*~ 73	329	-	-	408	-
Mov Cap-2 Maneuver	*~ 182	-	-	-	-	-
Stage 1	*~ 196	-	-	-	-	-
Stage 2	*653	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	213.5	0	1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	182	329	408	-
HCM Lane V/C Ratio	-	-	1.421	0.215	0.133	-
HCM Control Delay (s)	-	-	266.7	18.9	15.2	-
HCM Lane LOS	-	-	F	C	C	-
HCM 95th %tile Q(veh)	-	-	15.7	0.8	0.5	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	69	358	203	0	0	100
Future Vol, veh/h	69	358	203	0	0	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	75	389	221	0	0	109

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	221	0	-	0	760	221
Stage 1	-	-	-	-	221	-
Stage 2	-	-	-	-	539	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1348	-	-	-	374	819
Stage 1	-	-	-	-	816	-
Stage 2	-	-	-	-	585	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1348	-	-	-	347	819
Mov Cap-2 Maneuver	-	-	-	-	347	-
Stage 1	-	-	-	-	816	-
Stage 2	-	-	-	-	543	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1348	-	-	-	819
HCM Lane V/C Ratio	0.056	-	-	-	0.133
HCM Control Delay (s)	7.8	0	-	-	10.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.5

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	83	275	145	8	4	58
Future Vol, veh/h	83	275	145	8	4	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	90	299	158	9	4	63

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	166	0	-	0	641	162
Stage 1	-	-	-	-	162	-
Stage 2	-	-	-	-	479	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1412	-	-	-	439	883
Stage 1	-	-	-	-	867	-
Stage 2	-	-	-	-	623	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1412	-	-	-	406	883
Mov Cap-2 Maneuver	-	-	-	-	406	-
Stage 1	-	-	-	-	867	-
Stage 2	-	-	-	-	576	-

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1412	-	-	-	821
HCM Lane V/C Ratio	0.064	-	-	-	0.082
HCM Control Delay (s)	7.7	0	-	-	9.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.3

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	90	84	72	62	13
Future Vol, veh/h	24	90	84	72	62	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	98	91	78	67	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	335	74	82	0	-	0
Stage 1	74	-	-	-	-	-
Stage 2	261	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	660	988	1515	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	783	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	618	988	1515	-	-	-
Mov Cap-2 Maneuver	618	-	-	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	734	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.8	4.1	0
HCM LOS	A		

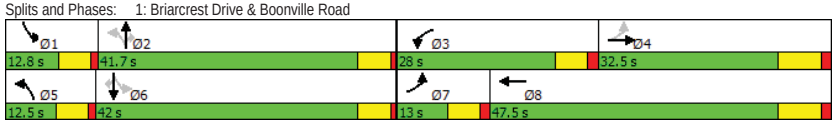
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1515	-	877	-	-
HCM Lane V/C Ratio	0.06	-	0.141	-	-
HCM Control Delay (s)	7.5	0	9.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.5	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	655	36	573	818	44	81	231	363	129	504	167
Future Volume (vph)	114	655	36	573	818	44	81	231	363	129	504	167
Satd. Flow (prot)	1770	3511	0	3433	3511	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.229			0.950			0.132			0.465		
Satd. Flow (perm)	427	3511	0	3433	3511	0	246	1863	1583	866	1863	1583
Satd. Flow (RTOR)		4			5				395			209
Lane Group Flow (vph)	124	751	0	623	937	0	88	251	395	140	548	182
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4						2		2	6		6
Total Split (s)	13.0	32.5		28.0	47.5		12.5	41.7	41.7	12.8	42.0	42.0
Total Lost Time (s)	6.0	7.5		6.0	7.5		5.5	5.5	5.5	5.5	5.5	5.5
Act Effct Green (s)	33.5	25.0		22.0	40.0		43.2	36.2	36.2	44.8	39.0	39.0
Actuated g/C Ratio	0.29	0.22		0.19	0.35		0.38	0.31	0.31	0.39	0.34	0.34
v/c Ratio	0.60	0.98		0.95	0.77		0.48	0.43	0.51	0.35	0.87	0.27
Control Delay	33.6	73.0		71.1	38.2		29.0	34.0	5.5	23.9	52.4	3.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.6	73.0		71.1	38.2		29.0	34.0	5.5	23.9	52.4	3.5
LOS	C	E		E	D		C	C	A	C	D	A
Approach Delay		67.4			51.3			18.1			37.6	
Approach LOS		E			D			B			D	
Queue Length 50th (ft)	51	291		237	320		39	147	0	63	391	0
Queue Length 95th (ft)	87	#422		#349	400		72	223	70	107	#604	35
Internal Link Dist (ft)		748			813			681			771	
Turn Bay Length (ft)	165			250			225			130		300
Base Capacity (vph)	206	766		656	1224		185	586	768	395	631	675
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.98		0.95	0.77		0.48	0.43	0.51	0.35	0.87	0.27

Intersection Summary

Cycle Length: 115
Actuated Cycle Length: 115
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 45.8 — Intersection LOS: D
Intersection Capacity Utilization 88.4% — ICU Level of Service E
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Briarcrest Drive & Boonville Road



Intersection

Int Delay, s/veh 34.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	111	1178	62	34	1231	58	13	0	9	50	0	100
Future Vol, veh/h	111	1178	62	34	1231	58	13	0	9	50	0	100
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	0	-	0	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	0	0	0
Mvmt Flow	121	1280	67	37	1338	63	14	0	10	54	0	109

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1401	0	0	1348	0	0	2298	-	674	2325	-	701
Stage 1	-	-	-	-	-	-	1555	-	-	1443	-	-
Stage 2	-	-	-	-	-	-	743	-	-	882	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	-	6.94	7.5	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.5	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.5	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32	3.5	-	3.3
Pot Cap-1 Maneuver	484	-	-	507	-	-	21	0	397	~ 20	0	386
Stage 1	-	-	-	-	-	-	118	0	-	141	0	-
Stage 2	-	-	-	-	-	-	373	0	-	312	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	484	-	-	507	-	-	~ 12	-	397	~ 15	-	386
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 12	-	-	~ 15	-	-
Stage 1	-	-	-	-	-	-	89	-	-	106	-	-
Stage 2	-	-	-	-	-	-	248	-	-	228	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.3	$ 446.4	$ 577
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	12	397	484	-	-	507	-	-	15	386
HCM Lane V/C Ratio	1.178	0.025	0.249	-	-	0.073	-	-	3.623	0.282
HCM Control Delay (s)	$ 745.6	14.3	14.9	-	-	12.7	-	-	$ 1695.3	17.9
HCM Lane LOS	F	B	B	-	-	B	-	-	F	C
HCM 95th %tile Q(veh)	2.4	0.1	1	-	-	0.2	-	-	7.6	1.1

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	71	1056	110	44	1220	28	43	0	9	17	0	60
Future Vol, veh/h	71	1056	110	44	1220	28	43	0	9	17	0	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	140	-	-	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	77	1148	120	48	1326	30	47	0	10	18	0	65

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1357	0	0	1267	0	0	2121	-	634	2165	2859	678
Stage 1	-	-	-	-	-	-	1362	-	-	1437	1437	-
Stage 2	-	-	-	-	-	-	759	-	-	728	1422	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	-	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	881	-	-	544	-	-	*55	0	422	48	11	*596
Stage 1	-	-	-	-	-	-	*156	0	-	454	420	-
Stage 2	-	-	-	-	-	-	*562	0	-	381	200	-
Platoon blocked, %	1	-	-		-	-	1			1	1	1
Mov Cap-1 Maneuver	881	-	-	544	-	-	*~ 42	-	422	41	9	*596
Mov Cap-2 Maneuver	-	-	-	-	-	-	*~ 42	-	-	41	9	-
Stage 1	-	-	-	-	-	-	*142	-	-	414	383	-
Stage 2	-	-	-	-	-	-	*457	-	-	340	183	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.4	271	56.4
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	42	422	881	-	-	544	-	-	149
HCM Lane V/C Ratio	1.113	0.023	0.088	-	-	0.088	-	-	0.562
HCM Control Delay (s)	$ 324.8	13.7	9.5	-	-	12.3	-	-	56.4
HCM Lane LOS	F	B	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	4.5	0.1	0.3	-	-	0.3	-	-	2.9

Notes
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1076	6	0	1292	0	32
Future Vol, veh/h	1076	6	0	1292	0	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1170	7	0	1404	0	35

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	588
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	452
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	452
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.6
HCM LOS			B

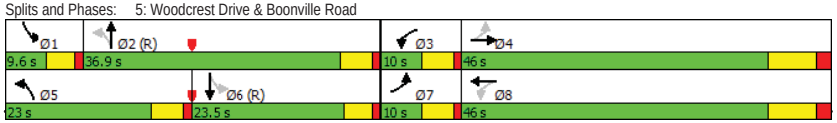
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	452	-	-	-
HCM Lane V/C Ratio	0.077	-	-	-
HCM Control Delay (s)	13.6	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	988	17	9	1215	6	88	0	34	18	0	27
Future Volume (vph)	9	988	17	9	1215	6	88	0	34	18	0	27
Satd. Flow (prot)	1770	3532	0	1770	3536	0	1770	1583	0	1770	1583	0
Flt Permitted	0.087			0.155			0.549			0.733		
Satd. Flow (perm)	162	3532	0	289	3536	0	1023	1583	0	1365	1583	0
Satd. Flow (RTOR)		2			1			232			277	
Lane Group Flow (vph)	10	1092	0	10	1328	0	96	37	0	20	29	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Total Split (s)	10.0	46.0		10.0	46.0		23.0	36.9		9.6	23.5	
Total Lost Time (s)	5.0	8.0		5.0	8.0		5.0	5.0		4.5	4.5	
Act Effct Green (s)	49.8	45.8		49.8	45.8		41.7	37.9		24.2	19.0	
Actuated g/C Ratio	0.49	0.45		0.49	0.45		0.41	0.37		0.24	0.19	
v/c Ratio	0.06	0.69		0.05	0.84		0.17	0.05		0.06	0.06	
Control Delay	14.0	26.2		13.6	32.0		20.1	0.1		20.2	0.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.0	26.2		13.6	32.0		20.1	0.1		20.2	0.2	
LOS	B	C		B	C		C	A		C	A	
Approach Delay		26.1			31.8			14.6			8.4	
Approach LOS		C			C			B			A	
Queue Length 50th (ft)	3	279		3	376		39	0		8	0	
Queue Length 95th (ft)	12	425		12	#621		73	0		23	0	
Internal Link Dist (ft)		1459			1360			1378			922	
Turn Bay Length (ft)	180			175			100			100		
Base Capacity (vph)	157	1578		212	1579		549	731		342	519	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.06	0.69		0.05	0.84		0.17	0.05		0.06	0.06	

Intersection Summary

Cycle Length: 102.5
Actuated Cycle Length: 102.5
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 28.1 Intersection LOS: C
Intersection Capacity Utilization 56.2% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Woodcrest Drive & Boonville Road



Intersection

Int Delay, s/veh 50.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	399	49	626	117	17	1096
Future Vol, veh/h	399	49	626	117	17	1096
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	-	-	200	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	434	53	680	127	18	1191

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1377	404	0	0	808	0
Stage 1	744	-	-	-	-	-
Stage 2	633	-	-	-	-	-
Critical Hdwy	7.54	6.94	-	-	4.14	-
Critical Hdwy Stg 1	6.54	-	-	-	-	-
Critical Hdwy Stg 2	6.54	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	~ 104	596	-	-	813	-
Stage 1	~ 373	-	-	-	-	-
Stage 2	434	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 102	596	-	-	813	-
Mov Cap-2 Maneuver	~ 283	-	-	-	-	-
Stage 1	~ 373	-	-	-	-	-
Stage 2	~ 424	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	259.2	0	0.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	283	596	813	-
HCM Lane V/C Ratio	-	-	1.532	0.089	0.023	-
HCM Control Delay (s)	-	-	289.6	11.6	9.5	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	25.3	0.3	0.1	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	41	93	434	0	0	14
Future Vol, veh/h	41	93	434	0	0	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	101	472	0	0	15

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	472	0	-	0	662	472
Stage 1	-	-	-	-	472	-
Stage 2	-	-	-	-	190	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1090	-	-	-	427	592
Stage 1	-	-	-	-	628	-
Stage 2	-	-	-	-	842	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1090	-	-	-	408	592
Mov Cap-2 Maneuver	-	-	-	-	408	-
Stage 1	-	-	-	-	628	-
Stage 2	-	-	-	-	805	-

Approach	EB	WB	SB
HCM Control Delay, s	2.6	0	11.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1090	-	-	-	592
HCM Lane V/C Ratio	0.041	-	-	-	0.026
HCM Control Delay (s)	8.4	0	-	-	11.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	72	330	2	8	104
Future Vol, veh/h	21	72	330	2	8	104
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	78	359	2	9	113

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	361	0	-	0	484	360
Stage 1	-	-	-	-	360	-
Stage 2	-	-	-	-	124	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1198	-	-	-	542	684
Stage 1	-	-	-	-	706	-
Stage 2	-	-	-	-	902	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1198	-	-	-	531	684
Mov Cap-2 Maneuver	-	-	-	-	531	-
Stage 1	-	-	-	-	706	-
Stage 2	-	-	-	-	884	-

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1198	-	-	-	670
HCM Lane V/C Ratio	0.019	-	-	-	0.182
HCM Control Delay (s)	8.1	0	-	-	11.6
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	76	107	72	29	22
Future Vol, veh/h	10	76	107	72	29	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	83	116	78	32	24

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	354	43	55	0	-	0
Stage 1	43	-	-	-	-	-
Stage 2	311	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	644	1027	1550	-	-	-
Stage 1	979	-	-	-	-	-
Stage 2	743	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	594	1027	1550	-	-	-
Mov Cap-2 Maneuver	594	-	-	-	-	-
Stage 1	979	-	-	-	-	-
Stage 2	685	-	-	-	-	-

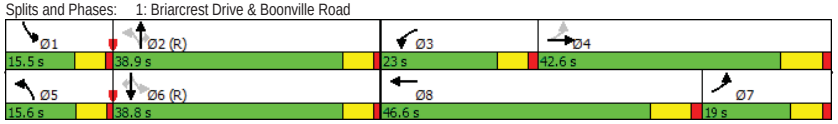
Approach	EB	NB	SB
HCM Control Delay, s	9.2	4.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1550	-	947	-	-
HCM Lane V/C Ratio	0.075	-	0.099	-	-
HCM Control Delay (s)	7.5	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.3	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	206	918	66	457	810	95	133	455	535	98	254	123
Future Volume (vph)	206	918	66	457	810	95	133	455	535	98	254	123
Satd. Flow (prot)	1770	3504	0	3433	3483	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.255			0.950			0.408			0.120		
Satd. Flow (perm)	475	3504	0	3433	3483	0	760	1863	1583	224	1863	1583
Satd. Flow (RTOR)		6			11				406			214
Lane Group Flow (vph)	224	1070	0	497	983	0	145	495	582	107	276	134
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4						2		2	6		6
Total Split (s)	19.0	42.6		23.0	46.6		15.6	38.9	38.9	15.5	38.8	38.8
Total Lost Time (s)	6.0	7.5		6.0	7.5		5.5	5.5	5.5	5.5	5.5	5.5
Act Effct Green (s)	36.6	35.1		17.0	37.5		43.5	33.4	33.4	43.3	33.3	33.3
Actuated g/C Ratio	0.30	0.29		0.14	0.31		0.36	0.28	0.28	0.36	0.28	0.28
v/c Ratio	0.74	1.04		1.02	0.90		0.40	0.96	0.79	0.51	0.53	0.23
Control Delay	60.3	80.3		88.6	30.2		26.9	73.1	20.8	31.8	41.3	0.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.3	80.3		88.6	30.2		26.9	73.1	20.8	31.8	41.3	0.9
LOS	E	F		F	C		C	E	C	C	D	A
Approach Delay		76.9			49.8			42.7			28.9	
Approach LOS		E			D			D			C	
Queue Length 50th (ft)	138	~470		~187	299		71	378	129	52	182	0
Queue Length 95th (ft)	#248	#606		#314	366		118	#591	290	91	270	0
Internal Link Dist (ft)		748			813			681			771	
Turn Bay Length (ft)	165			250			225			130		300
Base Capacity (vph)	303	1029		486	1142		360	518	733	209	516	593
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.74	1.04		1.02	0.86		0.40	0.96	0.79	0.51	0.53	0.23

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 120		
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green, Master Intersection		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 1.04		
Intersection Signal Delay: 53.2	Intersection LOS: D	
Intersection Capacity Utilization 93.2%	ICU Level of Service F	
Analysis Period (min) 15		
~ Volume exceeds capacity, queue is theoretically infinite.		
Queue shown is maximum after two cycles.		
# 95th percentile volume exceeds capacity, queue may be longer.		
Queue shown is maximum after two cycles.		

Splits and Phases: 1: Briarcrest Drive & Boonville Road



Intersection	
Int Delay, s/veh	65.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	1475	58	32	1314	4	73	0	52	9	0	5
Future Vol, veh/h	9	1475	58	32	1314	4	73	0	52	9	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	0	-	0	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	0	0	0
Mvmt Flow	10	1603	63	35	1428	4	79	0	57	10	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1433	0	0	1666	0	0	2438	-	833	2321	-	716
Stage 1	-	-	-	-	-	-	1654	-	-	1500	-	-
Stage 2	-	-	-	-	-	-	784	-	-	821	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	-	6.94	7.5	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.5	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.5	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32	3.5	-	3.3
Pot Cap-1 Maneuver	470	-	-	382	-	-	~ 16	0	312	21	0	377
Stage 1	-	-	-	-	-	-	102	0	-	130	0	-
Stage 2	-	-	-	-	-	-	352	0	-	339	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	470	-	-	382	-	-	~ 14	-	312	16	-	377
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 14	-	-	16	-	-
Stage 1	-	-	-	-	-	-	100	-	-	127	-	-
Stage 2	-	-	-	-	-	-	315	-	-	272	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.4	$ 1548.9	266.4
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	14	312	470	-	-	382	-	-	16	377
HCM Lane V/C Ratio	5.668	0.181	0.021	-	-	0.091	-	-	0.611	0.014
HCM Control Delay (s)	$ 2638.6	19.1	12.8	-	-	15.4	-	-	$ 406.3	14.7
HCM Lane LOS	F	C	B	-	-	C	-	-	F	B
HCM 95th %tile Q(veh)	10.9	0.7	0.1	-	-	0.3	-	-	1.6	0

Notes
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	265.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	67	1303	117	67	1074	23	169	0	53	19	0	64
Future Vol, veh/h	67	1303	117	67	1074	23	169	0	53	19	0	64
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	140	-	-	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	73	1416	127	73	1167	25	184	0	58	21	0	70

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1192	0	0	1543	0	0	2355	-	772	2180	3015	596
Stage 1	-	-	-	-	-	-	1626	-	-	1326	1326	-
Stage 2	-	-	-	-	-	-	729	-	-	854	1689	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	-	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	-	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	*960	-	-	426	-	-	*~ 24	0	342	40	8	*642
Stage 1	-	-	-	-	-	-	*~ 106	0	-	480	446	-
Stage 2	-	-	-	-	-	-	*605	0	-	320	148	-
Platoon blocked, %	1	-	-		-	-	1			1	1	1
Mov Cap-1 Maneuver	*960	-	-	426	-	-	*~ 18	-	342	27	6	*642
Mov Cap-2 Maneuver	-	-	-	-	-	-	*~ 18	-	-	27	6	-
Stage 1	-	-	-	-	-	-	*~ 98	-	-	443	370	-
Stage 2	-	-	-	-	-	-	*447	-	-	246	137	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.9	$ 3474.3	132.7
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	18	342	* 960	-	-	426	-	-	103
HCM Lane V/C Ratio	10.205	0.168	0.076	-	-	0.171	-	-	0.876
HCM Control Delay (s)	$ 4558.4	17.6	9.1	-	-	15.2	-	-	132.7
HCM Lane LOS	F	C	A	-	-	C	-	-	F
HCM 95th %tile Q(veh)	23.6	0.6	0.2	-	-	0.6	-	-	5.1

Notes
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1351	25	0	1194	0	18
Future Vol, veh/h	1351	25	0	1194	0	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1468	27	0	1298	0	20

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	748
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	355
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	355
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.7
HCM LOS			C

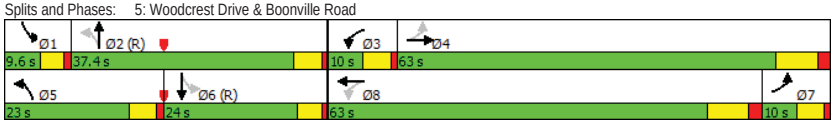
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	355	-	-	-
HCM Lane V/C Ratio	0.055	-	-	-
HCM Control Delay (s)	15.7	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	1331	77	28	1142	18	52	0	34	6	0	9
Future Volume (vph)	27	1331	77	28	1142	18	52	0	34	6	0	9
Satd. Flow (prot)	1770	3511	0	1770	3532	0	1770	1583	0	1770	1583	0
Flt Permitted	0.130			0.078			0.580			0.733		
Satd. Flow (perm)	242	3511	0	145	3532	0	1080	1583	0	1365	1583	0
Satd. Flow (RTOR)		6			2			205			250	
Lane Group Flow (vph)	29	1531	0	30	1261	0	57	37	0	7	10	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Total Split (s)	10.0	63.0		10.0	63.0		23.0	37.4		9.6	24.0	
Total Lost Time (s)	5.0	8.0		5.0	8.0		5.0	5.0		4.5	4.5	
Act Effct Green (s)	58.1	55.1		57.4	54.4		45.9	43.9		24.8	19.5	
Actuated g/C Ratio	0.48	0.46		0.48	0.45		0.38	0.37		0.21	0.16	
v/c Ratio	0.15	0.95		0.22	0.79		0.11	0.05		0.02	0.02	
Control Delay	13.7	27.0		20.4	32.2		26.2	0.1		26.8	0.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	13.7	27.0		20.4	32.2		26.2	0.1		26.8	0.1	
LOS	B	C		C	C		C	A		C	A	
Approach Delay		26.7			31.9			16.0			11.1	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)	8	251		13	445		29	0		4	0	
Queue Length 95th (ft)	m10	m272		29	513		60	0		14	0	
Internal Link Dist (ft)		1459			1360			1378			922	
Turn Bay Length (ft)	180			175			100			100		
Base Capacity (vph)	192	1624		137	1631		538	709		299	466	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.15	0.94		0.22	0.77		0.11	0.05		0.02	0.02	

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 120		
Offset: 67 (56%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.95		
Intersection Signal Delay: 28.6	Intersection LOS: C	
Intersection Capacity Utilization 59.6%	ICU Level of Service B	
Analysis Period (min) 15		

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Woodcrest Drive & Boonville Road



Intersection	
Int Delay, s/veh	17.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	225	61	1027	347	50	690
Future Vol, veh/h	225	61	1027	347	50	690
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	-	-	200	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	245	66	1116	377	54	750

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1789	747	0	0	1493	0
Stage 1	1305	-	-	-	-	-
Stage 2	484	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	*~ 104	355	-	-	446	-
Stage 1	*~ 218	-	-	-	-	-
Stage 2	*752	-	-	-	-	-
Platoon blocked, %	1			-		-
Mov Cap-1 Maneuver	*~ 91	355	-	-	446	-
Mov Cap-2 Maneuver	*~ 202	-	-	-	-	-
Stage 1	*~ 218	-	-	-	-	-
Stage 2	*661	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	145	0	1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	202	355	446	-
HCM Lane V/C Ratio	-	-	1.211	0.187	0.122	-
HCM Control Delay (s)	-	-	179.6	17.5	14.2	-
HCM Lane LOS	-	-	F	C	B	-
HCM 95th %tile Q(veh)	-	-	12.6	0.7	0.4	-

Notes
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	39	358	203	0	0	83
Future Vol, veh/h	39	358	203	0	0	83
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	42	389	221	0	0	90

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	221	0	-	0	695	221
Stage 1	-	-	-	-	221	-
Stage 2	-	-	-	-	474	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1348	-	-	-	408	819
Stage 1	-	-	-	-	816	-
Stage 2	-	-	-	-	626	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1348	-	-	-	392	819
Mov Cap-2 Maneuver	-	-	-	-	392	-
Stage 1	-	-	-	-	816	-
Stage 2	-	-	-	-	601	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1348	-	-	-	819
HCM Lane V/C Ratio	0.031	-	-	-	0.11
HCM Control Delay (s)	7.8	0	-	-	9.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	83	275	145	8	4	58
Future Vol, veh/h	83	275	145	8	4	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	90	299	158	9	4	63

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	166	0	-	0	641	162
Stage 1	-	-	-	-	162	-
Stage 2	-	-	-	-	479	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1412	-	-	-	439	883
Stage 1	-	-	-	-	867	-
Stage 2	-	-	-	-	623	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1412	-	-	-	406	883
Mov Cap-2 Maneuver	-	-	-	-	406	-
Stage 1	-	-	-	-	867	-
Stage 2	-	-	-	-	576	-

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1412	-	-	-	821
HCM Lane V/C Ratio	0.064	-	-	-	0.082
HCM Control Delay (s)	7.7	0	-	-	9.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.3

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	90	84	72	62	13
Future Vol, veh/h	24	90	84	72	62	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	98	91	78	67	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	335	74	82	0	-	0
Stage 1	74	-	-	-	-	-
Stage 2	261	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	660	988	1515	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	783	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	618	988	1515	-	-	-
Mov Cap-2 Maneuver	618	-	-	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	734	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.8	4.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1515	-	877	-	-
HCM Lane V/C Ratio	0.06	-	0.141	-	-
HCM Control Delay (s)	7.5	0	9.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.5	-	-

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	70	1062	59	8	19	1234	27	36	0	12	17	0	59
Future Vol, veh/h	70	1062	59	8	19	1234	27	36	0	12	17	0	59
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	-	140	-	-	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	76	1154	64	9	21	1341	29	39	0	13	18	0	64

Major/Minor	Major1			Major2				Minor1			Minor2		
Conflicting Flow All	1371	0	0	889	1218	0	0	2068	-	609	2144	2786	685
Stage 1	-	-	-	-	-	-	-	1339	-	-	1415	1415	-
Stage 2	-	-	-	-	-	-	-	729	-	-	729	1371	-
Critical Hdwy	4.14	-	-	6.44	4.14	-	-	7.54	-	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.52	2.22	-	-	3.52	-	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	*847	-	-	391	568	-	-	*72	0	438	*56	*13	*566
Stage 1	-	-	-	-	-	-	-	*161	0	-	*534	*468	-
Stage 2	-	-	-	-	-	-	-	*534	0	-	*380	*212	-
Platoon blocked, %	1	-	-			-	-	1			1	1	1
Mov Cap-1 Maneuver	*847	-	-	495	495	-	-	*59	-	438	*51	*12	*566
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	*59	-	-	*51	*12	-
Stage 1	-	-	-	-	-	-	-	*147	-	-	*486	*468	-
Stage 2	-	-	-	-	-	-	-	*473	-	-	*336	*193	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.3	112.1	43.1
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	59	438	* 847	-	-	495	-	-	174
HCM Lane V/C Ratio	0.663	0.03	0.09	-	-	0.059	-	-	0.475
HCM Control Delay (s)	145	13.5	9.7	-	-	12.7	-	-	43.1
HCM Lane LOS	F	B	A	-	-	B	-	-	E
HCM 95th %tile Q(veh)	2.8	0.1	0.3	-	-	0.2	-	-	2.3

Notes
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1081	18	0	1288	0	48
Future Vol, veh/h	1081	18	0	1288	0	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1175	20	0	1400	0	52

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	597
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	446
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	446
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	446	-	-	-
HCM Lane V/C Ratio	0.117	-	-	-
HCM Control Delay (s)	14.1	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.4	-	-	-

Intersection	
Int Delay, s/veh	421.7

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	67	1331	178	33	59	1108	23	192	0	64	19	0	64
Future Vol, veh/h	67	1331	178	33	59	1108	23	192	0	64	19	0	64
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	-	140	-	-	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	73	1447	193	36	64	1204	25	209	0	70	21	0	70

Major/Minor	Major1			Major2				Minor1			Minor2		
Conflicting Flow All	1229	0	0	1196	1640	0	0	2491	-	820	2286	3203	615
Stage 1	-	-	-	-	-	-	-	1689	-	-	1417	1417	-
Stage 2	-	-	-	-	-	-	-	802	-	-	869	1786	-
Critical Hdwy	4.14	-	-	6.44	4.14	-	-	7.54	-	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.52	2.22	-	-	3.52	-	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	952	-	-	248	391	-	-	*~ 16	0	318	29	5	*642
Stage 1	-	-	-	-	-	-	-	*~ 97	0	-	390	382	-
Stage 2	-	-	-	-	-	-	-	*605	0	-	313	132	-
Platoon blocked, %	1	-	-			-	-	1			1	1	1
Mov Cap-1 Maneuver	952	-	-	290	290	-	-	*~ 14	-	318	22	4	*642
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	*~ 14	-	-	22	4	-
Stage 1	-	-	-	-	-	-	-	*~ 90	-	-	360	382	-
Stage 2	-	-	-	-	-	-	-	*539	-	-	226	122	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	1.8	$ 5093.4	198.9
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	14	318	952	-	-	290	-	-	86
HCM Lane V/C Ratio	14.907	0.219	0.076	-	-	0.345	-	-	1.049
HCM Control Delay (s)	$ 6784.7	19.5	9.1	-	-	23.8	-	-	198.9
HCM Lane LOS	F	C	A	-	-	C	-	-	F
HCM 95th %tile Q(veh)	27.2	0.8	0.2	-	-	1.5	-	-	6.1

Notes
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1373	75	0	1254	0	27
Future Vol, veh/h	1373	75	0	1254	0	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1492	82	0	1363	0	29

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	787
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	334
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	334
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	16.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	334	-	-	-
HCM Lane V/C Ratio	0.088	-	-	-
HCM Control Delay (s)	16.8	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-

HIGHWAY CAPACITY MANUAL LEVEL OF SERVICE DESCRIPTIONS

Level of Service Criteria for Signalized Intersections

Level-of-Service (LOS)	Average Control Delay (seconds per vehicle)	Description
A	≤ 10.0	Very low vehicle delays, free flow, signal progression extremely favorable, most vehicles arrive during given signal phase.
B	10.1 - 20.0	Good signal progression, more vehicles stop and experience higher delays than for LOS A.
C	20.1 - 35.0	Stable flow, fair signal progression, significant number of vehicles stop at signals.
D	35.1 - 55.0	Congestion noticeable, longer delays and unfavorable signal progression, many vehicles stop at signals.
E	55.1 - 80.0	Limit of acceptable delay, unstable flow, poor signal progression, traffic near roadway capacity, frequent cycle failures.
F	> 80.0	Unacceptable delays, extremely unstable flow and congestion, traffic exceeds roadway capacity, stop-and-go conditions.

SOURCE: Highway Capacity Manual, HCM 2010, Transportation Research Board, 2010.

Level of Service Criteria for Unsignalized Intersections

Level-of-Service (LOS)	Average Control Delay (seconds per vehicle)	Description
A	≤ 10.0	No delays at intersections with continuous flow of traffic. Uncongested operations: high frequency of long gaps available for all left and right turning traffic. No observable queues.
B	10.1 - 15.0	No delays at intersections with continuous flow of traffic. Uncongested operations: high frequency of long gaps available for all left and right turning traffic. No observable queues.
C	15.1 - 25.0	Moderate delays at intersections with satisfactory to good traffic flow. Light congestion; infrequent backups on critical approaches.
D	25.1 - 35.0	Increased probability of delays along every approach. Significant congestion on critical approaches, but intersection functional. No standing long lines formed.
E	35.1 - 50.0	Heavy traffic flow condition. Heavy delays probable. No available gaps for cross-street traffic or main street turning traffic. Limit of stable flow.
F	> 50.0	Unstable traffic flow. Heavy congestion. Traffic moves in forced flow condition. Average delays greater than one minute highly probable. Total breakdown.

SOURCE: Highway Capacity Manual, HCM 2010, Transportation Research Board, 2010.