Kenig,Lindgren,O'Hara,Aboona,Inc.

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MEMORANDUM TO: Matt Brolley
Pulte Group

FROM: Brendan May, PE
Consultant

Luay R. Aboona, PE, PTOE
Principal

DATE: December 9, 2019

SUBJECT: Traffic Impact Study
Proposed Residential Development
Unincorporated DuPage County, Illinois

This memorandum summarizes the results and findings of a traffic impact study conducted by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) for Trillium Farm, a proposed residential development to be located in the southeast quadrant of the intersection of Purnell Road with Garys Mill Road in unincorporated DuPage County, Illinois. Land uses adjacent to the site include Blackwell Forest Preserve to the west, U-Haul Neighborhood Dealer and The Planter's Palette to the north, and vacant land to the east and south. **Figure 1** shows an aerial view of the site. The plans call for developing the site with approximately 84 age-targeted single-family homes with access off Purnell Road at two locations.

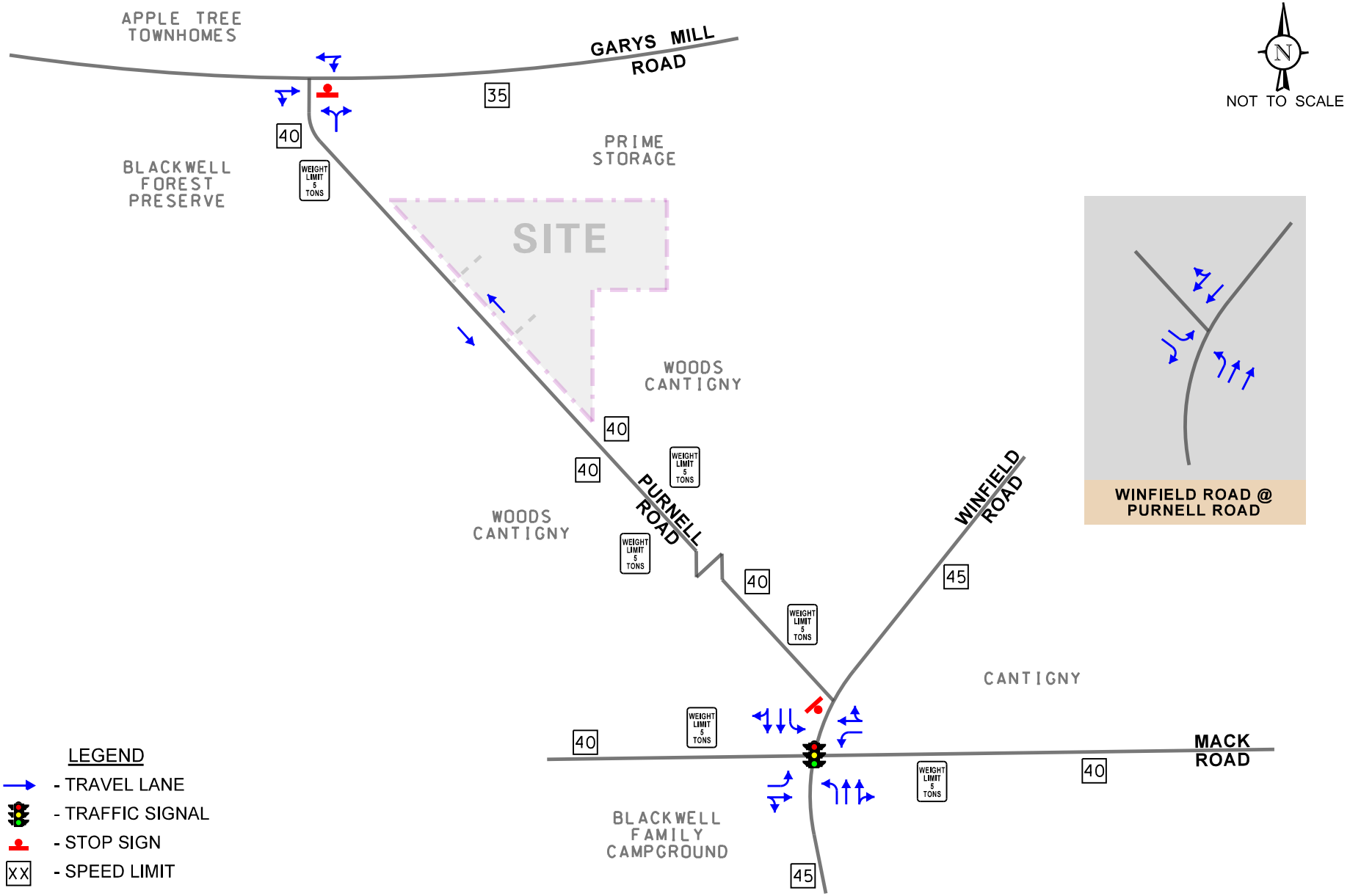
The purpose of this evaluation is to assess existing traffic conditions, evaluate the traffic impact the proposed development will have on area roadways, and to evaluate the adequacy of the proposed access system.

Existing Traffic Conditions

The following provides a detailed description of the physical characteristics of the roadways including geometry and traffic control, adjacent land uses, and average daily traffic volumes along the adjacent area roadways**.** **Figure 2** illustrates the existing roadway characteristics

Garys Mill Road is a minor collector that in the vicinity of the site provides one lane in each direction. At its unsignalized intersection with Purnell Road, Garys Mill Road provides a combined through/right-turn lane on the eastbound approach and a combined through/left-turn lane on the westbound approach. Garys Mill Road is under the jurisdiction of the Illinois Department of Transportation (IDOT), carries an Annual Average Daily Traffic (AADT) volume of 1,550 vehicles (IDOT 2016) east of Purnell Road, and has a posted speed limit of 35 miles per hour.

Aerial View of Site **Figure 1**



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Existing Roadway Characteristics

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Purnell Road is a minor collector that in the vicinity of the site provides one lane in each direction. At its unsignalized intersection with Garys Mill Road, Purnell Road provides a combined left-turn/right-turn lane on the northbound approach which is under stop sign control. At its unsignalized intersection with Winfield Road, Purnell Road provides an exclusive left-turn lane and an exclusive right-turn lane on the eastbound approach which is under stop sign control. Purnell Road is under the jurisdiction of the Township of Winfield, carries an AADT volume of 5,250 vehicles (IDOT 2016), and has a posted speed limit of 40 miles per hour.

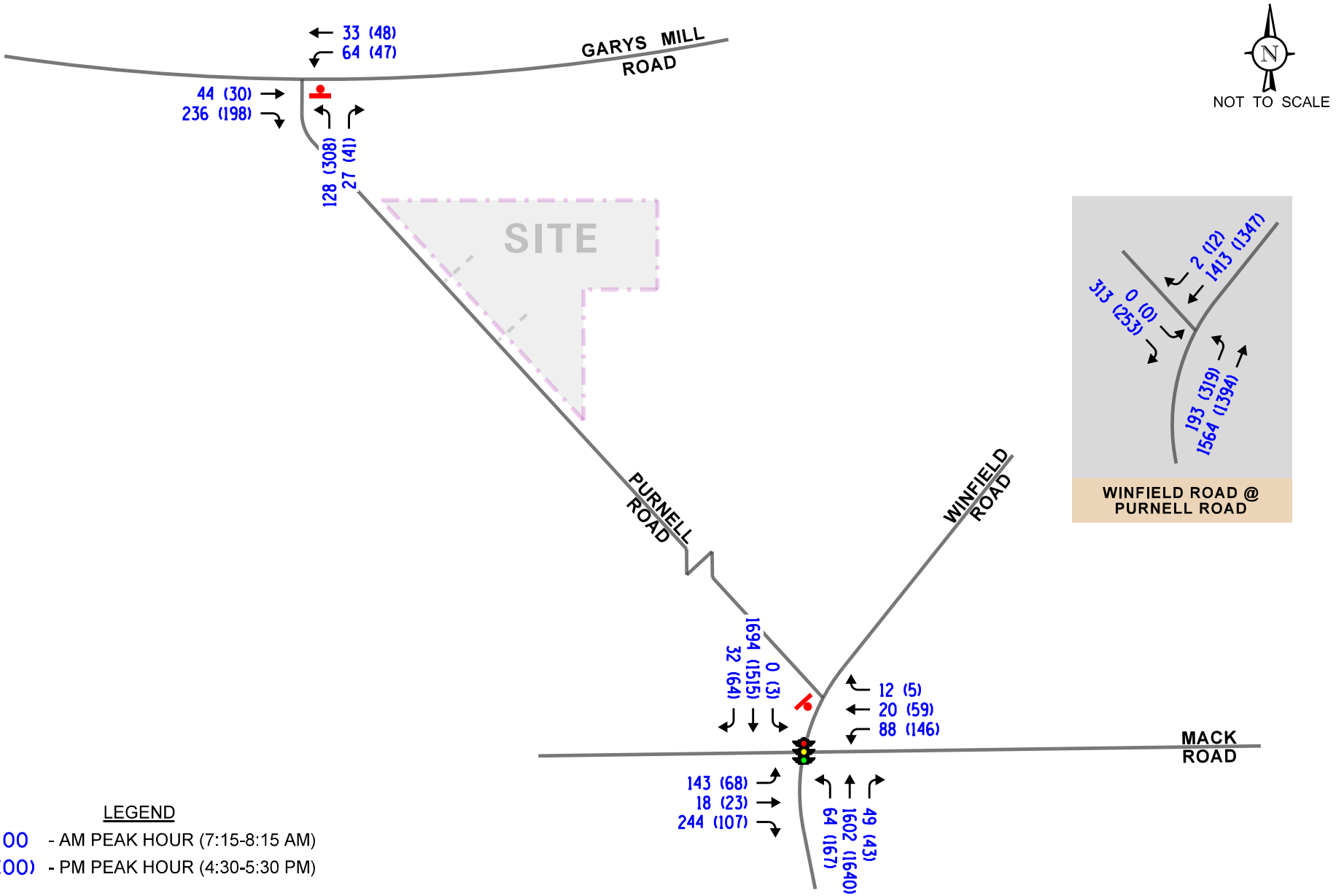
Winfield Road is a north-south arterial roadway that in the vicinity of the site provides two through lane in each direction. At its signalized intersection with Mack Road, Winfield Road provides an exclusive left-turn lane, a through lane and a shared through/right-turn lane on the northbound and southbound approaches. At its unsignalized intersection with Purnell Road, Winfield Road provides an exclusive left-turn lane and two through lanes on the northbound approach and a though lane and a shared through/right-turn lane on the southbound approach. Winfield Road is under the jurisdiction of the DuPage County Division of Transportation (DuDOT), carries an AADT volume of 21,200 (IDOT 2016), and has a posted speed limit of 45 miles per hour.

Mack Road is an east-west collector roadway that in the vicinity of the site provides one through lane in each direction. At its signalized intersection with Winfield Road, Mack Road provides an exclusive left-turn lane and a shared through/right-turn lane on the eastbound and westbound approaches. Mack Road is under the jurisdiction of the Township of Winfield, carries an AADT volume of 3,050 vehicles (IDOT 2016) east of Winfield Road and an AADT volume of 4,000 vehicles (IDOT 2016) west of Winfield Road and has a posted speed limit of 40 miles per hour.

Existing Traffic Volumes

Peak period traffic counts were conducted by KLOA, Inc. using Miovision Scout Collection Units on Thursday, September 25, 2019 during the weekday morning (6:30 A.M. to 9:00 A.M.) and weekday evening (4:00 P.M. to 6:00 P.M.) peak periods at the intersection of Purnell Road with Garys Mill Road. These counts were supplemented by counts conducted on Thursday, November 21, 2019 during the weekday morning (6:00 A.M. to 9:00 A.M.) and weekday evening (4:00 P.M. to 7:00 P.M.) peak periods at the intersections of Winfield Road with Mack Road and Winfield Road with Purnell Road. The results of the traffic counts showed that the weekday morning peak hour of traffic occurs from 7:15 A.M. to 8:15 A.M. and the weekday evening peak hour occurs from 4:30 P.M. to 5:30 P.M. The existing traffic volumes are illustrated in **Figure 3.**

As can be seen from Figure 3, there is a high volume of cut through traffic on Gary Mills Road and Purnell Road for vehicles traveling between IL Route 59 and Winfield Road. During the weekday morning peak hour, these cut through vehicles are primarily making right-turning movements from Garys Mill Road onto Purnell Road and from Purnell Road onto Winfield Road. During the weekday evening peak hour, these vehicles are primarily making left-turning movements from Winfield Road onto Purnell Road and from Purnell Road onto Garys Mill Road.



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Existing Traffic Volumes

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Field Observations

As previously indicated, Purnell Road and Garys Mill Road carry a high volume of cut-through traffic between IL Route 59 and Winfield Road during the peak hours. During the weekday morning peak hour, these cut through vehicles result in long eastbound queues on Purnell Road at Winfield Road and during the weekday evening peak hour, cut through vehicles result in queues in the northbound direction on Winfield Road at Purnell Road within the existing northbound left-turn lane on Winfield Road.

Observations conducted during the weekday morning peak period indicated that eastbound queues on Purnell Road at Winfield Road extended beyond Blakewood Court (with queues extending up to approximately 850 feet) for an approximately 30-minute period that generally occurred between 7:15 A.M. and 7:45 A.M. It should be noted that these queues extended to approximately 150 feet east of a crest vertical curve on Purnell Road, which resulted in limited sight lines for traffic approaching from the west. These queues are primarily the result of the amount of cut through vehicles on Purnell Road, as previously discussed, that are opposed by a high volume of southbound through traffic on Winfield Road during the weekday morning peak hour. Furthermore, the queues were result of the southbound queues on Winfield Road that extended beyond Purnell Road with each southbound red phase at the signalized intersection with Winfield Road with Mack Road. Outside of this time period, eastbound queues on Purnell Road at Winfield Road were approximately five vehicles.

Observations conducted during the weekday evening peak hour indicated that northbound left-turn queues from Winfield Road on Purnell Road extended beyond the 115 feet of left-turn lane storage provided for approximately half of the weekday evening peak hour which blocked vehicles traveling in the northbound direction on Winfield Road. These queues would clear the turn lane when courtesy gaps were provided in the southbound direction during the southbound red phase at the signalized intersection of Winfield Road and Mack Road and when southbound queues on Winfield Road cleared Purnell Road during each southbound green phase. Similar to the weekday morning peak hour, these queues are primarily the result of the cut through traffic on Purnell Road that are opposed by a high volume of southbound through traffic on Winfield Road during the weekday evening peak hour. Furthermore, the queues were result of the southbound queues on Winfield Road that extended beyond Purnell Road with each southbound red phase at the signalized intersection with Winfield Road with Mack Road. For the remainder of the peak hour, northbound left-turning queues on Winfield Road were approximately three to four vehicles and were contained within the left-turn lane storage provided.

Area Intersection Improvements

The intersection of IL Route 59 with Garys Mill Road is included in the IDOT Fiscal Year 2020-2025 Highway Improvement Program with improvements including the installation of a traffic signal and channelization of turning movements. It should be noted that the provision of a traffic signal will likely result in an increase in the amount of cut through traffic currently occurring on Garys Mill Road and Purnell Road given that the traffic signal will allow for a decrease in the delay experienced by vehicles turning to/from IL Route 59 and Garys Mill Road.

Traffic Characteristics of the Proposed Development

The plans call for developing the site with approximately 84 age-targeted single-family homes with access off Purnell Road at two locations, approximately 1,100 and 1,750 feet southeast of Garys Mill Road. Both access drives serving the proposed residential development will provide one inbound lane and one outbound lane with outbound movements under stop sign control. A copy of the site plan is included in the Appendix.

The estimate of vehicle traffic to be generated by the development is based on the proposed land use types and sizes. While the proposed development will contain age-targeted units, for the purpose of the analysis and in order to provide conservative analyses, a traditional residential subdivision was assumed. The volume of traffic generated for the proposed development was estimated using data published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 10th Edition.

Table 1 tabulates the vehicle trips anticipated for this development for the weekday morning and weekday evening peak hours as well as the total weekday trips.

Table 1
ESTIMATED PEAK HOUR DEVELOPMENT-GENERATED TRAFFIC VOLUMES

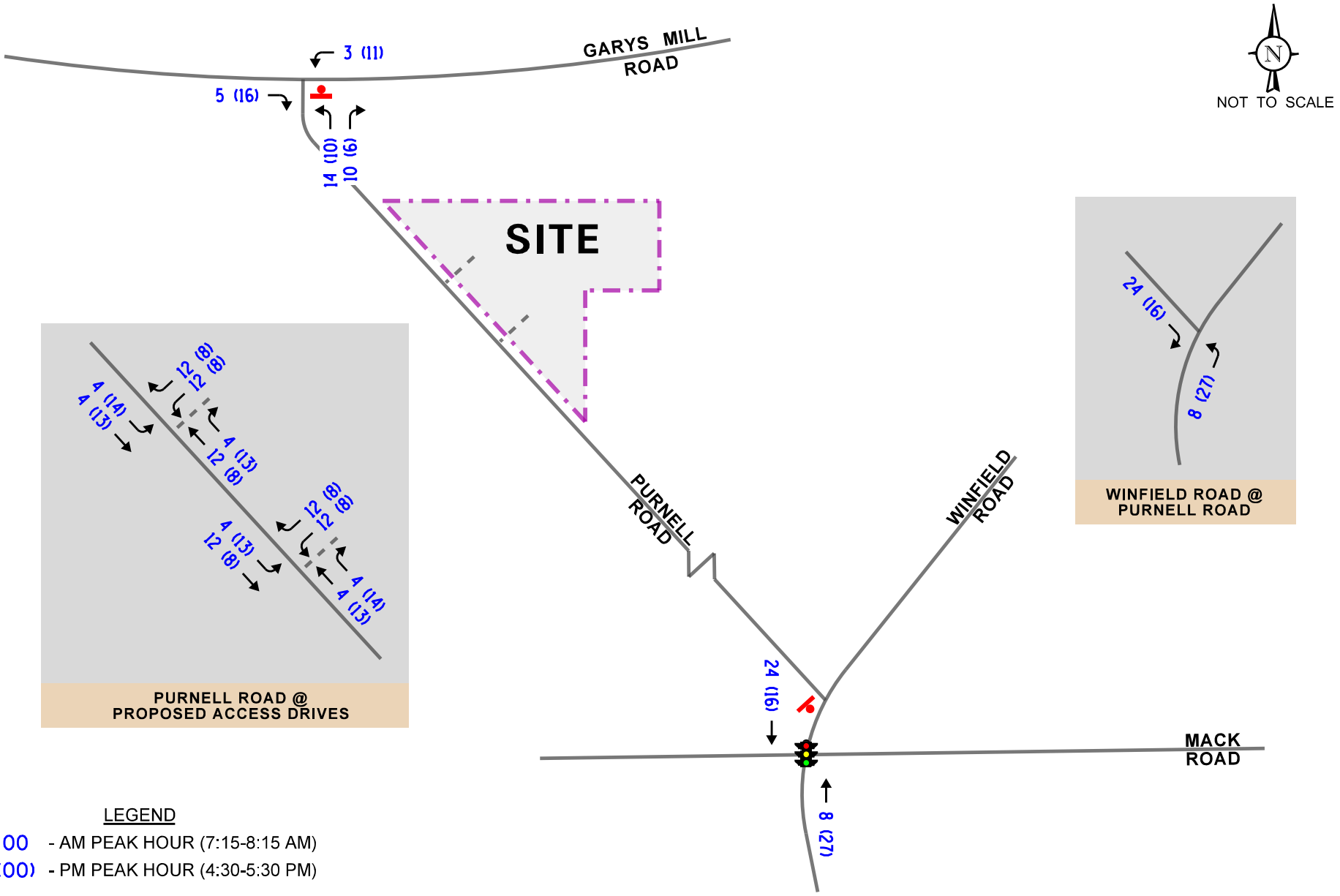
	Weekday Morning Peak Hour			Weekday Evening Peak Hour			Daily Weekday Two Way Traffic		
Land Use Type	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Single-Family Detached Housing (Land Use Code 210) 84 units	16	48	64	54	32	86	433	433	886

Site Traffic Assignment

The estimated weekday morning and weekday evening peak hour traffic volumes that will be generated by the proposed development were assigned to the roadway system based on the existing travel patterns. **Figure 4** illustrates the traffic assignment of the site generated traffic volumes.

Background Traffic Conditions

The existing traffic volumes (Figure 3) were increased by a regional growth factor to account for the increase in existing traffic related to regional growth in the area (i.e., not attributable to any particular planned development). Based on Annual Average Daily Traffic (AADT) projections provided by the Chicago Metropolitan Agency for Planning (CMAP), the existing traffic volumes are projected to increase by an annual compounded growth rate of approximately 0.9 percent. As such, traffic volumes were increased by approximately five percent to represent Year 2025 total projected conditions (one-year buildout plus five years). A copy of the CMAP projections letter is included in the Appendix.



LEGEND

00 - AM PEAK HOUR (7:15-8:15 AM)

(00) - PM PEAK HOUR (4:30-5:30 PM)

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Estimated Site Traffic Assignment

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Total Projected Traffic Volumes

The new site-generated traffic was added to the existing traffic volumes to represent existing plus site generated traffic volumes as illustrated in **Figure 5.** Furthermore, the new site-generated traffic volumes was added to the existing traffic volumes taking into account background growth to determine the Year 2025 total projected traffic volumes as illustrated in **Figure 6**.

Traffic Analyses

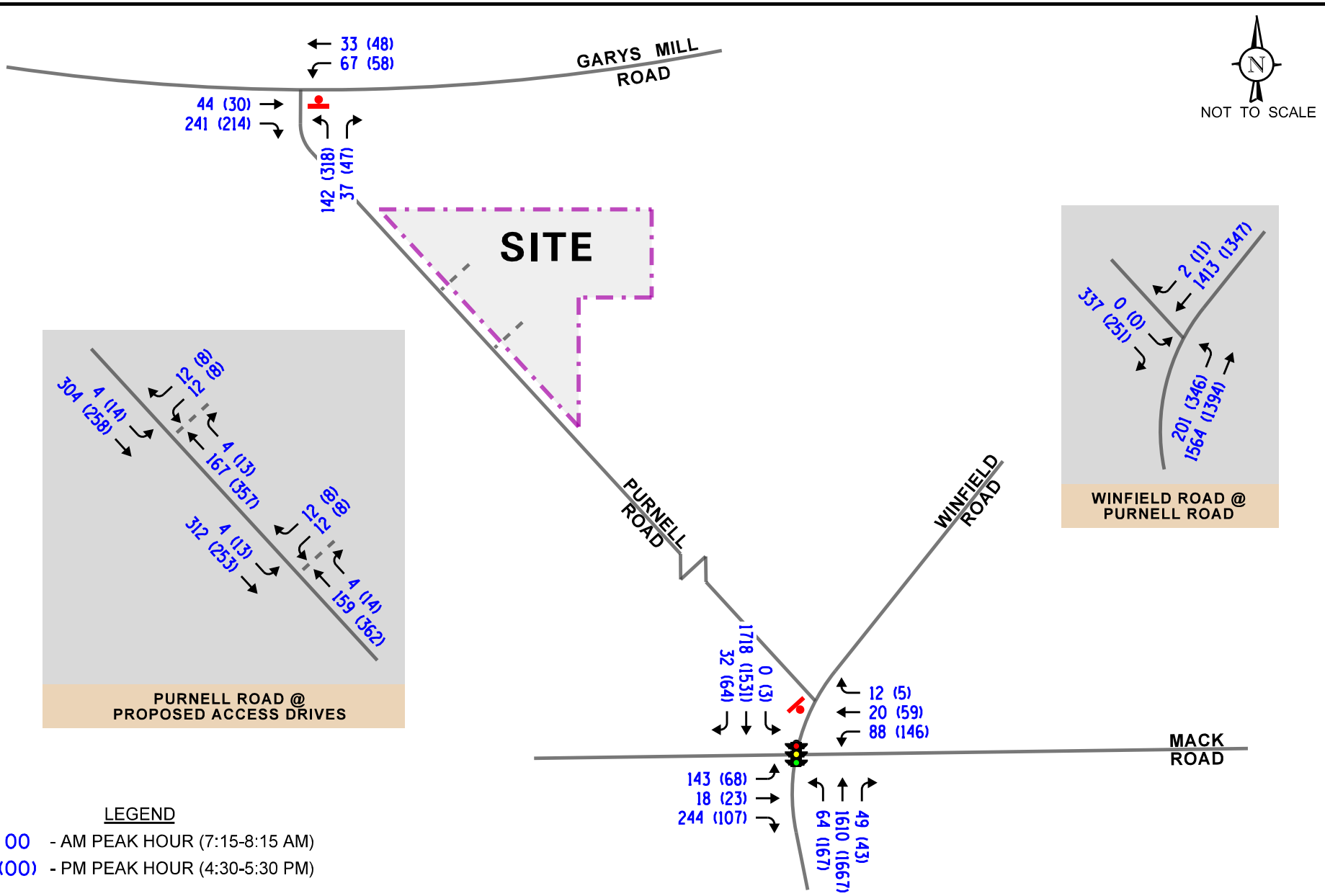
Roadway and adjacent or nearby intersection analyses were performed for the weekday morning and weekday evening peak hours for the existing (Year 2019), existing plus site generated traffic (Year 2019) and Year 2025 total projected traffic volumes.

The traffic analyses were performed using the methodologies outlined in the Transportation Research Board's *Highway Capacity Manual (HCM), 6th Edition* and analyzed using the Synchro/SimTraffic 10 software. The analysis for the signalized intersections were accomplished using actual cycle lengths and phasings to determine the average overall vehicle delay and levels of service.

The analyses for the unsignalized intersections determine the average control delay to vehicles at an intersection. Control delay is the elapsed time from a vehicle joining the queue at a stop sign (includes the time required to decelerate to a stop) until its departure from the stop sign and resumption of free flow speed. The methodology analyzes each intersection approach controlled by a stop sign and considers traffic volumes on all approaches and lane characteristics.

The ability of an intersection to accommodate traffic flow is expressed in terms of level of service, which is assigned a letter from A to F based on the average control delay experienced by vehicles passing through the intersection. The *Highway Capacity Manual* definitions for levels of service and the corresponding control delay for signalized intersections and unsignalized intersections are included in the Appendix of this report.

Summaries of the traffic analysis results showing the level of service and overall intersection delay (measured in seconds) for the existing and total projected conditions are presented in **Tables 1** through **4**. A discussion of each intersection follows. Summary sheets for the capacity analyses are included in the Appendix.



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Existing Plus Site-Generated Traffic Volumes

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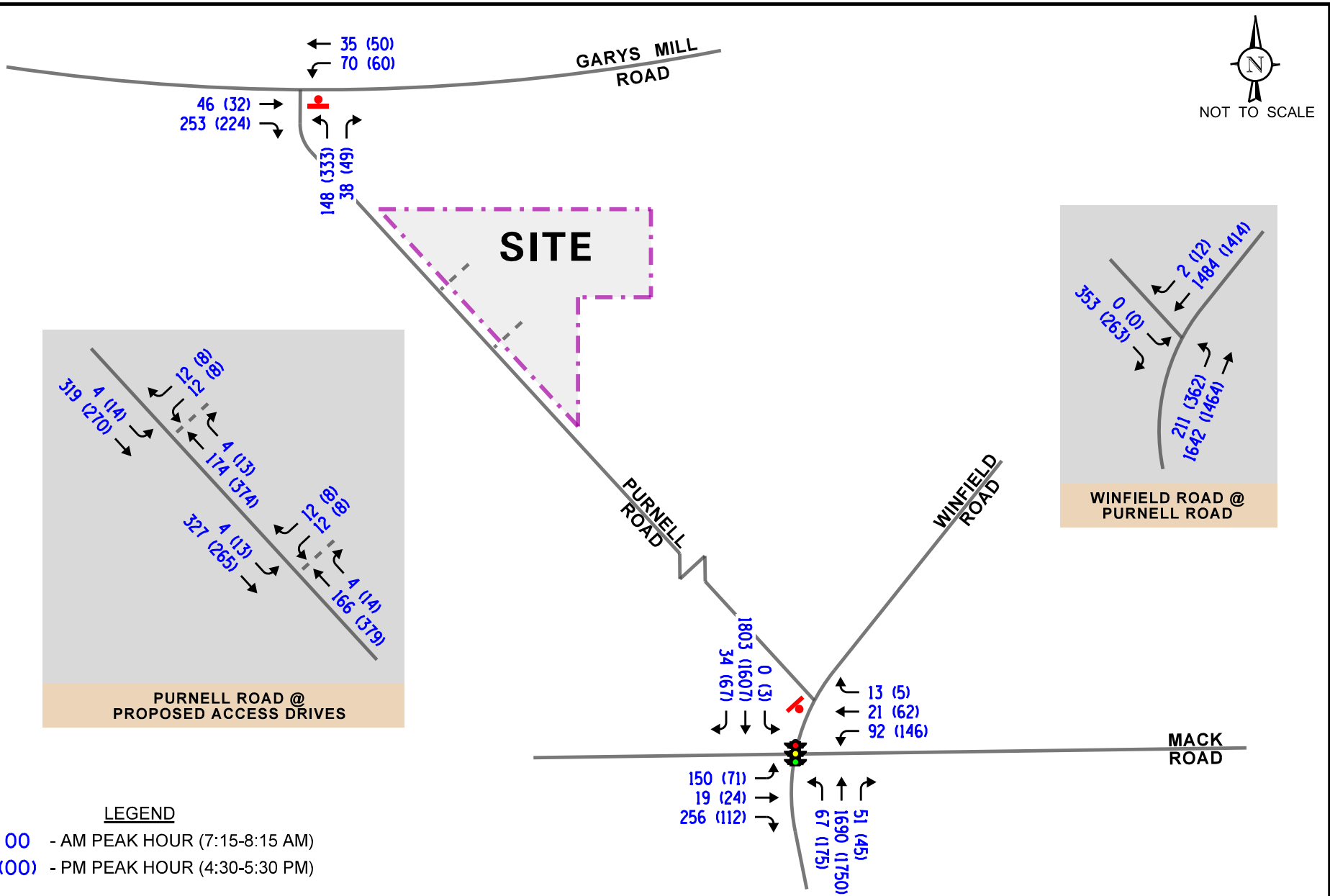

Proposed Residential Development
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Year 2025 Total Projected Traffic Volumes

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Table 1
CAPACITY ANALYSIS RESULTS – WINFIELD ROAD WITH MACK ROAD - SIGNALIZED

	Peak Hour	Eastbound			Westbound			Northbound			Southbound			Overall
		L	T	R	L	T	R	L	T	R	L	T	R	
Year 2019 Existing Traffic Volumes	**Weekday Morning Peak Hour**	D 40.8	C 28.3		D 43.4	C 32.8		B 18.3	C 22.0		--	D 48.2		D – 35.0
		C – 32.7			D – 40.6			C – 21.9			D – 48.2			
	Weekday Evening Peak Hour	D 37.6	B 18.3		D 43.3	D 47.1		E 61.1	C 20.2		A 7.7	C 31.0		C – 28.0
		C – 25.0			D – 44.5			C – 23.9			C – 30.9			
Year 2019 Existing Plus Site Generated Traffic Volumes	**Weekday Morning Peak Hour**	D 40.8	C 28.3		D 43.4	C 32.8		B 18.3	C 22.2		--	D 51.7		D – 36.7
		C – 32.7			D – 40.6			C – 22.1			D – 51.7			
	Weekday Evening Peak Hour	D 37.6	B 18.3		D 43.3	D 47.1		E 61.1	C 20.7		A 7.7	C 31.6		C – 28.4
		C – 25.0			D – 44.5			C – 24.3			C – 31.6			
Year 2025 Projected Traffic Volumes	**Weekday Morning Peak Hour**	D 50.9	C 31.8		D 44.1	C 31.9		B 19.8	C 25.6		--	E 70.8		D – 46.7
		D – 35.0			D – 40.9			C – 25.4			E – 70.8			
	Weekday Evening Peak Hour	D 37.8	B 18.3		D 43.7	D 47.5		E 67.9	C 22.4		A 7.7	D 35.5		C – 31.0
		C – 25.0			D – 44.9			C – 26.4			D – 35.4			

Letter denotes Level of Service L – Left Turns R – Right Turns
Delay is measured in seconds. T – Through

Table 2
CAPACITY ANALYSIS RESULTS
UNSIGNALIZED – EXISTING CONDITIONS

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Winfield Road with Purnell Road				
• Eastbound Right Turn	F	70.2	D	32.6
• Northbound Left Turn	C	19.8	D	30.1
Gary Mills Road with Purnell Road				
• Northbound Approach	B	12.9	C	17.7
• Westbound Left Turn	A	8.0	A	7.9

LOS = Level of Service Delay is measured in seconds

Table 3
CAPACITY ANALYSIS RESULTS
UNSIGNALIZED – EXISTING PLUS SITE GENERATED CONDITIONS

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Winfield Road with Purnell Road				
• Eastbound Right Turn	F	88.0	E	36.0
• Northbound Left Turn	C	20.3	E	35.1
Gary Mills Road with Purnell Road				
• Northbound Approach	B	13.4	C	20.4
• Westbound Left Turn	A	8.1	A	7.9
Purnell Road with North Access Drive				
• Southbound Approach	B	10.7	B	12.3
• Eastbound Left-Turn	A	7.6	A	8.1
Purnell Road with South Access Drive				
• Southbound Approach	B	10.7	B	12.3
• Eastbound Left-Turn	A	7.5	A	8.1

LOS = Level of Service
Delay is measured in seconds

Table 4
CAPACITY ANALYSIS RESULTS
UNSIGNALIZED – YEAR 2025 TOTAL PROJECTED CONDITIONS

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Winfield Road with Purnell Road				
• Eastbound Right Turn	F	125.3	E	45.5
• Northbound Left Turn	C	23.3	E	48.1
Gary Mills Road with Purnell Road				
• Northbound Approach	B	13.9	C	22.8
• Westbound Left Turn	A	8.1	A	8.0
Purnell Road with North Access Drive				
• Southbound Approach	B	10.8	B	12.6
• Eastbound Left-Turn	A	7.6	A	8.1
Purnell Road with South Access Drive				
• Southbound Approach	B	10.8	B	12.6
• Eastbound Left-Turn	A	7.6	A	8.2

LOS = Level of Service
Delay is measured in seconds

Discussion and Recommendations

The following summarizes how the intersections are projected to operate and identifies any roadway and traffic control improvements necessary to accommodate the facility-generated traffic.

Winfield Road with Mack Road

The results of the capacity analysis indicate that overall this intersection currently operates at LOS D during the weekday morning peak hour and at LOS C during the weekday evening peak hour. It should be noted that while all of the approaches currently operate at LOS D or better during the weekday morning and weekday evening peak hours, the 95th percentile queues for the southbound approach are approximately 1,125 feet and 680 feet, respectively, which impact the ability of vehicles to turn to/from Purnell Road, as observed.

With the addition of site-generated traffic only, this intersection is projected to continue operating at LOS D during the weekday morning peak hour and at LOS C during the weekday evening peak hour with increases in delay of approximately two seconds and less than one second, respectively. Furthermore, all of the approaches are projected to continue operating at LOS D or better during the peak hours with increases in delay of less than three second. The 95th percentile queues for the southbound approach are projected to be approximately 1,150 feet during the weekday morning peak hour and approximately 700 feet during the weekday evening peak hour which is an increase of approximately one vehicle over existing conditions.

Under Year 2025 total projected conditions, this intersection is projected to continue operating at LOS D during the weekday morning peak hour and at LOS C during the weekday evening peak hour with increases in delay of approximately twelve seconds and three seconds, respectively. Furthermore, all of the approaches are projected to continue operating at LOS D or better during the peak hours with the exception of the southbound approach which is projected to operate at LOS E during the weekday morning peak hour. Additionally, the 95th percentile queues for the southbound approach are projected to continue to extend beyond Purnell Road with increases of approximately four to five vehicles over existing conditions. However, this increase in delay is attributed to the background growth for the area, as can be seen form the results of the capacity analyses for the existing plus site condition and given that the site is only projected to increase the volume of traffic traversing this intersection by approximately one percent or less during the peak hours.

Overall, the traffic estimated to be generated by the proposed development will have a limited impact on the operations of this intersection.

Winfield Road with Purnell Road

The results of the capacity analysis indicate that the eastbound approach currently operates at LOS F during the weekday morning peak hour and at LOS D during the weekday evening peak hour. The northbound left turning movement from Winfield Road onto Purnell Road currently operates at C during the weekday morning peak hour and at LOS D during the weekday evening peak hour with 95th percentile queues of approximately two and six vehicles, respectively.

Under existing plus site conditions, the eastbound approach is projected to continue operating at LOS F during the weekday morning peak hour and at LOS E during the weekday evening peak hour with increases in delay of approximately 18 seconds and four seconds, respectively. The northbound left turning movement from Winfield Road onto Purnell Road is projected to continue operating at LOS C during the weekday morning peak hour and is projected to operate on the threshold of LOS D/E during the weekday evening peak hour with increases in delay of approximately five seconds or less. The 95th percentile queues of approximately three and seven vehicles during the weekday morning and weekday evening peak hours, respectively, which is an increase of one vehicle over existing conditions.

Under Year 2025 total projected conditions, the eastbound approach is projected to continue operating at LOS F during the weekday morning peak hour and at LOS E during the weekday evening peak hour with increases in delay of approximately 55 seconds and 13 seconds, respectively, over existing conditions. Furthermore, the northbound left turning movement from Winfield Road onto Purnell Road are projected to continue operating at LOS C during the weekday morning peak hour and is projected to operate at LOS E during the weekday evening peak hour with increases in delay of approximately three and 18 seconds, respectively. However, this increase in delay is attributed to the background growth for the area, as can be seen form the results of the capacity analyses for the existing plus site condition and given that the site is only projected to increase the volume of traffic traversing this intersection by approximately one percent or less during the peak hours.

Garys Mill Road with Purnell Road

The results of the capacity analysis indicate that the northbound approach currently operates at LOS B during the weekday morning peak hour and at LOS C during the weekday evening peak hour. Under existing plus site conditions, the northbound approach is projected to continue operating at LOS B during the weekday morning peak hour and at LOS C during the weekday evening peak hour with increases in delay of approximately one second and three seconds, respectively. Under Year 2025 total projected conditions, the northbound approach is projected to continue operating at LOS B during the weekday morning peak hour and at LOS C during the weekday evening peak hour with increases in delay of approximately one second and five seconds, respectively, over existing conditions. It should be noted that the existing vegetation in the southwest quadrant of the intersection obstructs the sight lines for northbound left-turning vehicles. Consideration should be given to trimming the existing vegetation to enhance the sight distances for this movement. Overall, this intersection has sufficient reserve capacity to accommodate the traffic estimated to be generated by the proposed development.

Purnell Road with Site Access Drives

The results of the capacity analysis indicate that outbound movements from the proposed access drives onto Purnell Road are projected to operate at LOS B during the weekday morning and weekday evening peak hours under both existing plus site and Year 2025 total projected conditions. Furthermore, left-turning movements from Purnell Road onto the access drives are projected to operate at LOS A during the weekday morning and weekday evening peak hours.

When the left and right-turn lane warrant guidelines published in Chapter 36 of the IDOT Bureau of Design and Environment (BDE) Manual, exclusive left and right-turn lanes on Purnell Road, serving the proposed access drives, will not be warranted. As such, these access drives will be adequate in accommodating the traffic estimated to be generated by the proposed development and will ensure efficient and flexible access is provided.

Sight Distance

Intersection Sight Distance studies have been completed for both proposed full movement access drives located on Purnell Road, located approximately 1,100 feet and 1,750 feet southeast of Garys Mill Road. These studies indicate that the location of the access roads meets the sight distance requirements for passenger vehicles to turn left and right out onto Purnell Road. Exhibits showing the results are included in the Appendix.

Roadway Improvement Recommendations

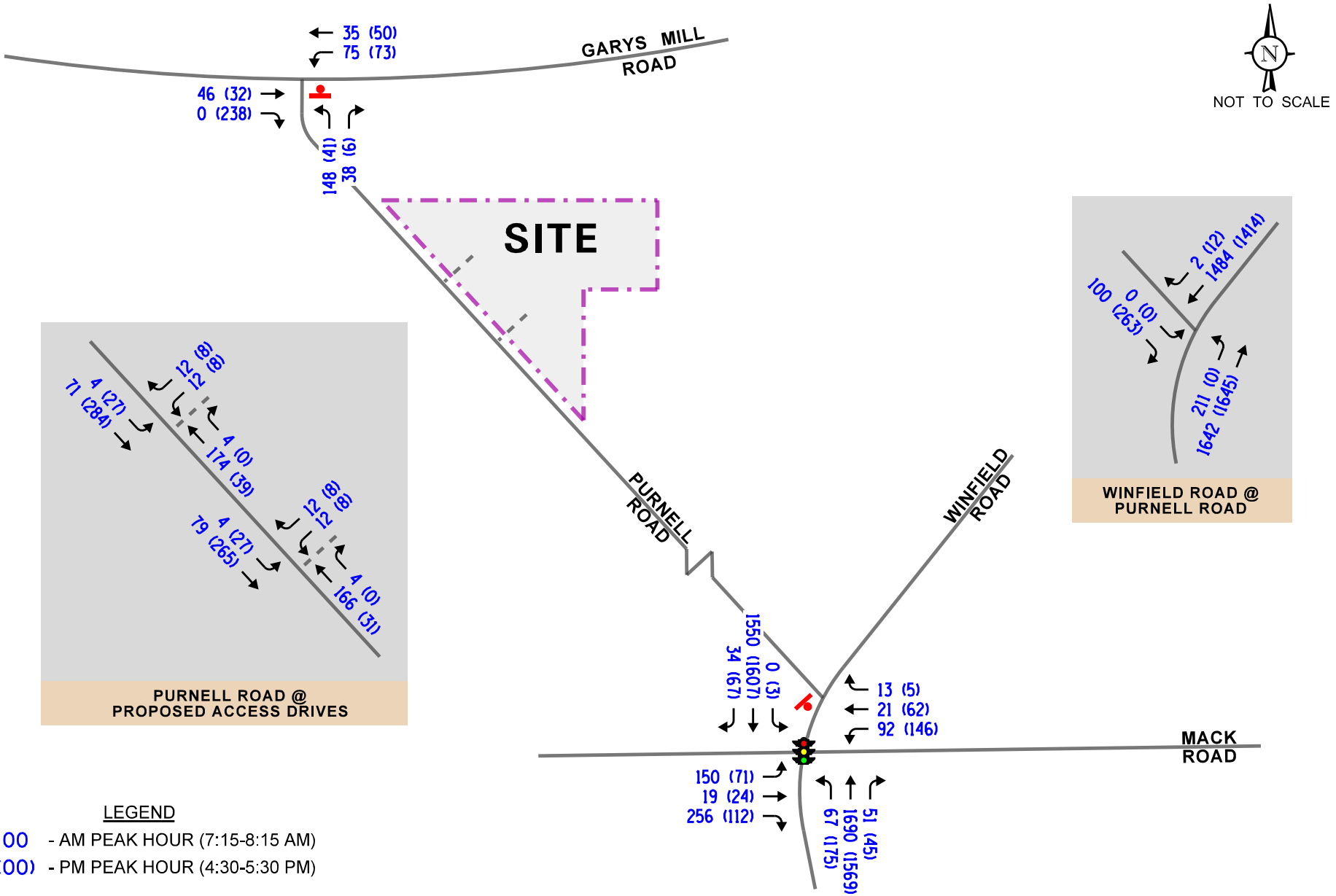
As previously indicated, Purnell Road carries a high volume of cut through traffic during the peak hours which results in increased delays and queueing in the eastbound direction on Purnell Road at Winfield Road during the weekday morning peak hour and in northbound direction on Winfield Road at Purnell Road during the weekday evening peak hour. Furthermore, eastbound queues on Purnell Road at Winfield Road were observed to extended to approximately 150 feet east of a crest vertical curve on Purnell Road, which resulted in limited sight lines for approaching traffic from the west. While the traffic increases resulting from the proposed development will not have a significant impact on the area intersections as discussed earlier, in order to reduce the volume of cut-through traffic, thus reducing delays and queues experienced during the peak hours and to increase driver awareness of queueing in the eastbound direction on Purnell Road, consideration should be given to the following:

- Prohibit right-turning movements from Garys Mill Road onto Purnell Road via signage during the weekday morning peak period (7:00 A.M. to 9:00 A.M.).

- Prohibit left-turning movements from Winfield Road onto Purnell Road via signage during the weekday evening peak period (4:00 P.M. to 6:00 P.M.).

The provision of the above turning movement restrictions will significantly reduce the volume of traffic on Purnell Road during the peak hours, due to the elimination of cut-through traffic. Furthermore, by restricting northbound left-turning movements from Winfield Road onto Purnell Road, left-turning queues during the peak hour will not conflict with southbound through traffic nor will obstruct through movements on Winfield Road.

Figure 7 illustrates the resulting traffic volumes with the turning restrictions during the peak hours and **Tables 5** and **6** summarizes the results of the capacity analyses for the projected conditions with turning restrictions.



Proposed Residential Development
Unincorporated DuPage County, Illinois

Year 2025 Total Projected Traffic Volumes
With Peak Hour Turning Restrictions

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Table 5
CAPACITY ANALYSIS RESULTS
WINFIELD ROAD WITH MACK ROAD – SIGNALIZED – WITH TURN RESTRICTIONS

	Peak Hour	Eastbound			Westbound			Northbound			Southbound			Overall
		L	T	R	L	T	R	L	T	R	L	T	R	
Year 2025 Projected Traffic Volumes[1]	Weekday Morning Peak Hour	D 41.0	C 31.0		D 44.2	C 32.0		B 19.7	C 25.4		--	D 35.9		C – 31.0
		C – 34.5			D – 41.0			C – 25.2			D – 35.9			
	Weekday Evening Peak Hour	D 37.8	B 18.3		D 43.7	D 47.5		E 67.9	B 19.1		A 7.7	D 35.5		C – 30.0
		C – 25.0			D – 44.9			C – 23.8			D – 35.4			

Letter denotes Level of Service
Delay is measured in seconds.
L – Left Turns
T – Through
R – Right Turns
1 – With recommended peak hour turning restrictions

Table 6
CAPACITY ANALYSIS RESULTS – UNSIGNALIZED
YEAR 2025 TOTAL PROJECTED CONDITIONS – WITH TURN RESTRICTIONS

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Winfield Road with Purnell Road				
• Eastbound Right Turn	C	20.9	E	45.5
• Northbound Left Turn	C	23.3	--	--
Gary Mills Road with Purnell Road				
• Northbound Approach	B	11.8	B	11.7
• Westbound Left Turn	A	7.4	A	8.1
Purnell Road with North Access Drive				
• Southbound Approach	A	9.7	A	9.8
• Eastbound Left-Turn	A	7.6	A	7.3
Purnell Road with South Access Drive				
• Southbound Approach	A	9.7	A	9.7
• Eastbound Left-Turn	A	7.6	A	7.3

LOS = Level of Service
Delay is measured in seconds

As can be seen from Table 5, with the reassignment of traffic due to the turning restrictions, the signalized intersection of Winfield Road with Mack Road is projected to operate at LOS C during the weekday morning with decreases in delay of four seconds over existing conditions and is projected to continue operating at LOS C during the weekday evening peak hours with increases in delay of approximately two seconds over existing conditions.

As can be seen from Table 6, with the reassignment of traffic due to the turning restrictions, the eastbound approach at the intersection of Purnell Road with Winfield Road is projected to operate at LOS C during the weekday morning peak hour with decreases in delay of approximately 50 seconds over existing conditions.

Furthermore, the northbound of Purnell Road at its intersection with Gary's Mill Road is projected to operate at LOS B during the weekday evening peak hour with decreases in delay of approximately six seconds over existing conditions.

Outbound turning movements from the proposed access drives onto Purnell Road are projected to operate at LOS A during the weekday morning and weekday evening peak hours. It should be noted that, during the weekday evening peak hour when all of the site generated traffic will enter the site by performing a southbound left-turn movement onto the access drive, exclusive left-turn lanes on Purnell Road serving the proposed access drives will still not be warranted during the peak hours.

Traffic Calming Recommendations

In additional to the above peak hour turning movement restrictions, in order to help calm traffic along Purnell Road, the following recommendations should be considered:

- Provide radar feedback speed limit signage.

- Provide "Be Prepared to Stop When Flashing" signage in advance of the crest vertical curve, similar to the signage provided in the southbound direction on Winfield Road north of Purnell Road due to the restricted sight lines along the horizontal curve.

Conclusion

Based on the proposed development plan and the preceding evaluation, the following conclusions and recommendations are made.

- The proposed residential development will be a low traffic generator and will not have a significant impact on area roadways and intersections.

- The results of the traffic counts and field observations have indicated that a high volume of cut through traffic occurs on Purnell Road between Garys Mill Road and Winfield Road.

- In order to mitigate the existing conditions, consideration should be given to prohibiting eastbound right-turning movements from Garys Mill Road onto Purnell Road, via signage, during the weekday morning peak period (7:00 A.M. to 9:00 A.M.). Signage should also be provided at the intersection of IL Route 59 with Garys Mill Road indicating the restriction.

- Similarly, northbound left-turning movements from Winfield Road onto Purnell Road should be prohibited via signage during the weekday evening (4:00 P.M. to 6:00 P.M. peak periods.

- To further calm traffic on Purnell Road, consideration should be given to the installation of the following:

    - Provide radar feedback speed limit signage.

    - Provide “Be Prepared to Stop When Flashing” signage in advance of the crest vertical curve, similar to the signage provided in the southbound direction on Winfield Road north of Purnell Road due to the restricted sight lines along the horizontal curve.

- The proposed access system with two access drives off Purnell Road will be adequate in accommodating site traffic.

- Based on the projected traffic volumes and results of the capacity analyses, the widening of Purnell Road to provide left and right-turn lanes will not be warranted or required.

- The location of the two access drives will meet the minimum requirement for Intersection Sight Distance.

Appendix

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Winfield Road with Mack Road
Site Code:
Start Date: 11/21/2019

Turning Movement Data

Start Time	Mack Road Eastbound						Mack Road Westbound						Winfield Road Northbound						Winfield Road Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
6:00 AM	0	13	2	12	0	27	0	6	3	0	0	9	0	9	128	3	0	140	0	5	128	6	0	139	315
6:15 AM	0	11	1	24	0	36	0	4	3	1	0	8	0	16	221	7	0	244	0	0	204	11	0	215	503
6:30 AM	0	31	4	22	0	57	0	8	3	2	0	13	0	10	242	12	0	264	0	3	301	16	0	320	654
6:45 AM	0	24	5	37	0	66	0	10	5	2	0	17	0	14	329	11	0	354	0	0	299	12	0	311	748
Hourly Total	0	79	12	95	0	186	0	28	14	5	0	47	0	49	920	33	0	1002	0	8	932	45	0	985	2220
7:00 AM	0	30	1	47	0	78	0	13	7	2	0	22	0	18	348	5	0	371	0	1	333	8	0	342	813
7:15 AM	0	35	3	54	0	92	0	20	4	3	0	27	0	15	431	9	0	455	0	0	397	9	0	406	980
7:30 AM	0	43	4	77	0	124	0	27	6	4	0	37	0	20	368	10	0	398	0	0	468	5	0	473	1032
7:45 AM	0	37	6	75	0	118	0	23	6	3	0	32	0	12	445	12	0	469	0	0	479	8	0	487	1106
Hourly Total	0	145	14	253	0	412	0	83	23	12	0	118	0	65	1592	36	0	1693	0	1	1677	30	0	1708	3931
8:00 AM	0	28	5	38	0	71	0	18	4	2	0	24	0	17	358	18	0	393	0	0	350	10	0	360	848
8:15 AM	0	32	6	43	0	81	0	13	7	2	0	22	0	11	380	7	0	398	0	0	348	9	0	357	858
8:30 AM	0	34	5	44	0	83	0	10	6	0	0	16	0	15	301	11	0	327	0	1	369	10	0	380	806
8:45 AM	0	26	9	44	0	79	0	14	4	1	0	19	0	13	296	16	0	325	0	1	359	12	0	372	795
Hourly Total	0	120	25	169	0	314	0	55	21	5	0	81	0	56	1335	52	0	1443	0	2	1426	41	0	1469	3307
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	9	8	18	0	35	0	21	12	0	0	33	0	38	365	15	0	418	0	1	365	22	0	388	874
4:15 PM	0	12	6	24	0	42	0	27	12	1	0	40	0	33	400	11	0	444	0	0	395	18	0	413	939
4:30 PM	0	24	4	32	0	60	0	35	14	2	0	51	0	34	407	11	0	452	0	2	355	18	0	375	938
4:45 PM	0	11	7	31	0	49	0	49	17	1	0	67	0	55	398	12	0	465	0	1	354	14	0	369	950
Hourly Total	0	56	25	105	0	186	0	132	55	4	0	191	0	160	1570	49	0	1779	0	4	1469	72	0	1545	3701
5:00 PM	0	16	7	23	0	46	0	22	14	1	0	37	0	29	423	12	0	464	0	0	385	19	0	404	951
5:15 PM	0	17	5	21	0	43	0	40	14	1	0	55	0	49	412	8	0	469	0	0	421	13	0	434	1001
5:30 PM	0	18	5	26	0	49	0	18	12	1	0	31	1	33	403	9	0	446	0	1	354	21	0	376	902
5:45 PM	0	17	4	25	0	46	0	12	8	1	0	21	0	33	279	7	0	319	0	0	285	28	0	313	699
Hourly Total	0	68	21	95	0	184	0	92	48	4	0	144	1	144	1517	36	0	1698	0	1	1445	81	0	1527	3553
6:00 PM	0	5	6	9	0	20	0	17	2	0	0	19	0	23	321	7	0	351	0	2	274	17	0	293	683
6:15 PM	0	16	2	14	0	32	0	14	1	2	0	17	0	19	277	5	0	301	0	1	228	21	0	250	600
6:30 PM	0	14	4	17	0	35	0	9	3	3	0	15	0	22	248	9	0	279	0	0	221	19	0	240	569
6:45 PM	0	17	5	10	0	32	0	5	3	2	0	10	0	10	204	5	0	219	0	0	174	13	0	187	448
Hourly Total	0	52	17	50	0	119	0	45	9	7	0	61	0	74	1050	26	0	1150	0	3	897	70	0	970	2300
Grand Total	0	520	114	767	0	1401	0	435	170	37	0	642	1	548	7984	232	0	8765	0	19	7846	339	0	8204	19012
Approach %	0.0	37.1	8.1	54.7	-	-	0.0	67.8	26.5	5.8	-	-	0.0	6.3	91.1	2.6	-	-	0.0	0.2	95.6	4.1	-	-	-
Total %	0.0	2.7	0.6	4.0	-	7.4	0.0	2.3	0.9	0.2	-	3.4	0.0	2.9	42.0	1.2	-	46.1	0.0	0.1	41.3	1.8	-	43.2	-
Lights	0	507	107	758	-	1372	0	431	165	37	-	633	1	545	7855	227	-	8628	0	18	7733	328	-	8079	18712

% Lights	-	97.5	93.9	98.8	-	97.9	-	99.1	97.1	100.0	-	98.6	100.0	99.5	98.4	97.8	-	98.4	-	94.7	98.6	96.8	-	98.5	98.4
Buses	0	7	5	6	-	18	0	1	5	0	-	6	0	1	20	3	-	24	0	0	33	7	-	40	88
% Buses	-	1.3	4.4	0.8	-	1.3	-	0.2	2.9	0.0	-	0.9	0.0	0.2	0.3	1.3	-	0.3	-	0.0	0.4	2.1	-	0.5	0.5
Single-Unit Trucks	0	5	2	2	-	9	0	3	0	0	-	3	0	2	63	2	-	67	0	0	48	4	-	52	131
% Single-Unit Trucks	-	1.0	1.8	0.3	-	0.6	-	0.7	0.0	0.0	-	0.5	0.0	0.4	0.8	0.9	-	0.8	-	0.0	0.6	1.2	-	0.6	0.7
Articulated Trucks	0	1	0	1	-	2	0	0	0	0	-	0	0	0	46	0	-	46	0	1	32	0	-	33	81
% Articulated Trucks	-	0.2	0.0	0.1	-	0.1	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.6	0.0	-	0.5	-	5.3	0.4	0.0	-	0.4	0.4
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Winfield Road with Mack Road
Site Code:
Start Date: 11/21/2019

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Mack Road Eastbound						Mack Road Westbound						Winfield Road Northbound						Winfield Road Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:15 AM	0	35	3	54	0	92	0	20	4	3	0	27	0	15	431	9	0	455	0	0	397	9	0	406	980
7:30 AM	0	43	4	77	0	124	0	27	6	4	0	37	0	20	368	10	0	398	0	0	468	5	0	473	1032
7:45 AM	0	37	6	75	0	118	0	23	6	3	0	32	0	12	445	12	0	469	0	0	479	8	0	487	1106
8:00 AM	0	28	5	38	0	71	0	18	4	2	0	24	0	17	358	18	0	393	0	0	350	10	0	360	848
Total	0	143	18	244	0	405	0	88	20	12	0	120	0	64	1602	49	0	1715	0	0	1694	32	0	1726	3966
Approach %	0.0	35.3	4.4	60.2	-	-	0.0	73.3	16.7	10.0	-	-	0.0	3.7	93.4	2.9	-	-	0.0	0.0	98.1	1.9	-	-	-
Total %	0.0	3.6	0.5	6.2	-	10.2	0.0	2.2	0.5	0.3	-	3.0	0.0	1.6	40.4	1.2	-	43.2	0.0	0.0	42.7	0.8	-	43.5	-
PHF	0.000	0.831	0.750	0.792	-	0.817	0.000	0.815	0.833	0.750	-	0.811	0.000	0.800	0.900	0.681	-	0.914	0.000	0.000	0.884	0.800	-	0.886	0.896
Lights	0	138	17	239	-	394	0	87	17	12	-	116	0	63	1579	49	-	1691	0	0	1665	30	-	1695	3896
% Lights	-	96.5	94.4	98.0	-	97.3	-	98.9	85.0	100.0	-	96.7	-	98.4	98.6	100.0	-	98.6	-	-	98.3	93.8	-	98.2	98.2
Buses	0	2	1	3	-	6	0	1	3	0	-	4	0	1	3	0	-	4	0	0	8	2	-	10	24
% Buses	-	1.4	5.6	1.2	-	1.5	-	1.1	15.0	0.0	-	3.3	-	1.6	0.2	0.0	-	0.2	-	-	0.5	6.3	-	0.6	0.6
Single-Unit Trucks	0	3	0	1	-	4	0	0	0	0	-	0	0	0	10	0	-	10	0	0	15	0	-	15	29
% Single-Unit Trucks	-	2.1	0.0	0.4	-	1.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.6	0.0	-	0.6	-	-	0.9	0.0	-	0.9	0.7
Articulated Trucks	0	0	0	1	-	1	0	0	0	0	-	0	0	0	10	0	-	10	0	0	6	0	-	6	17
% Articulated Trucks	-	0.0	0.0	0.4	-	0.2	-	0.0	0.0	0.0	-	0.0	-	0.0	0.6	0.0	-	0.6	-	-	0.4	0.0	-	0.3	0.4
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	-	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Winfield Road with Mack Road
Site Code:
Start Date: 11/21/2019

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Mack Road Eastbound						Mack Road Westbound						Winfield Road Northbound						Winfield Road Southbound						
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Int. Total
4:30 PM	0	24	4	32	0	60	0	35	14	2	0	51	0	34	407	11	0	452	0	2	355	18	0	375	938
4:45 PM	0	11	7	31	0	49	0	49	17	1	0	67	0	55	398	12	0	465	0	1	354	14	0	369	950
5:00 PM	0	16	7	23	0	46	0	22	14	1	0	37	0	29	423	12	0	464	0	0	385	19	0	404	951
5:15 PM	0	17	5	21	0	43	0	40	14	1	0	55	0	49	412	8	0	469	0	0	421	13	0	434	1001
Total	0	68	23	107	0	198	0	146	59	5	0	210	0	167	1640	43	0	1850	0	3	1515	64	0	1582	3840
Approach %	0.0	34.3	11.6	54.0	-	-	0.0	69.5	28.1	2.4	-	-	0.0	9.0	88.6	2.3	-	-	0.0	0.2	95.8	4.0	-	-	-
Total %	0.0	1.8	0.6	2.8	-	5.2	0.0	3.8	1.5	0.1	-	5.5	0.0	4.3	42.7	1.1	-	48.2	0.0	0.1	39.5	1.7	-	41.2	-
PHF	0.000	0.708	0.821	0.836	-	0.825	0.000	0.745	0.868	0.625	-	0.784	0.000	0.759	0.969	0.896	-	0.986	0.000	0.375	0.900	0.842	-	0.911	0.959
Lights	0	67	22	107	-	196	0	145	59	5	-	209	0	166	1628	43	-	1837	0	3	1502	64	-	1569	3811
% Lights	-	98.5	95.7	100.0	-	99.0	-	99.3	100.0	100.0	-	99.5	-	99.4	99.3	100.0	-	99.3	-	100.0	99.1	100.0	-	99.2	99.2
Buses	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Buses	-	0.0	4.3	0.0	-	0.5	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Single-Unit Trucks	0	1	0	0	-	1	0	1	0	0	-	1	0	1	6	0	-	7	0	0	5	0	-	5	14
% Single-Unit Trucks	-	1.5	0.0	0.0	-	0.5	-	0.7	0.0	0.0	-	0.5	-	0.6	0.4	0.0	-	0.4	-	0.0	0.3	0.0	-	0.3	0.4
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	6	0	-	6	0	0	8	0	-	8	14
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.4	0.0	-	0.3	-	0.0	0.5	0.0	-	0.5	0.4
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Purnell Road with Winfield Road
Site Code:
Start Date: 11/21/2019

Turning Movement Data

Start Time	Purnell Road Eastbound					Winfield Road Northbound					Winfield Road Southbound					
	U-Turn	Left	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	Int. Total
6:00 AM	0	0	54	0	54	0	11	125	0	136	0	102	0	0	102	292
6:15 AM	0	0	51	0	51	0	26	185	0	211	0	181	0	0	181	443
6:30 AM	0	0	93	0	93	0	25	270	0	295	0	184	0	0	184	572
6:45 AM	0	0	82	0	82	0	46	268	0	314	0	178	1	0	179	575
Hourly Total	0	0	280	0	280	0	108	848	0	956	0	645	1	0	646	1882
7:00 AM	0	0	72	0	72	0	35	306	0	341	0	294	1	0	295	708
7:15 AM	0	0	73	0	73	0	50	356	0	406	0	302	1	0	303	782
7:30 AM	0	0	87	0	87	0	44	299	0	343	0	352	0	0	352	782
7:45 AM	0	0	86	0	86	0	42	342	0	384	0	365	0	0	365	835
Hourly Total	0	0	318	0	318	0	171	1303	0	1474	0	1313	2	0	1315	3107
8:00 AM	0	0	67	0	67	0	57	331	0	388	0	295	1	0	296	751
8:15 AM	0	0	77	0	77	0	53	316	0	369	0	258	0	0	258	704
8:30 AM	0	0	84	0	84	0	24	307	0	331	0	296	0	0	296	711
8:45 AM	0	0	71	0	71	0	48	261	0	309	0	279	1	0	280	660
Hourly Total	0	0	299	0	299	0	182	1215	0	1397	0	1128	2	0	1130	2826
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	0	65	0	65	0	63	290	0	353	0	318	2	0	320	738
4:15 PM	0	0	76	0	76	0	78	296	0	374	0	326	3	0	329	779
4:30 PM	0	0	61	0	61	0	83	300	0	383	0	309	3	0	312	756
4:45 PM	0	0	53	0	53	0	83	239	0	322	0	309	3	0	312	687
Hourly Total	0	0	255	0	255	0	307	1125	0	1432	0	1262	11	0	1273	2960
5:00 PM	0	0	62	0	62	0	66	328	0	394	0	304	2	0	306	762
5:15 PM	0	0	59	0	59	0	87	339	0	426	0	314	3	0	317	802
5:30 PM	0	0	79	0	79	0	69	319	0	388	0	249	1	0	250	717
5:45 PM	0	0	49	0	49	0	58	230	0	288	0	246	1	0	247	584
Hourly Total	0	0	249	0	249	0	280	1216	0	1496	0	1113	7	0	1120	2865
6:00 PM	0	0	61	0	61	0	56	241	0	297	0	218	3	0	221	579
6:15 PM	0	0	47	0	47	0	60	217	0	277	0	189	0	0	189	513
6:30 PM	0	1	38	0	39	0	49	189	0	238	0	192	5	0	197	474
6:45 PM	0	1	30	0	31	0	46	163	0	209	0	146	0	0	146	386
Hourly Total	0	2	176	0	178	0	211	810	0	1021	0	745	8	0	753	1952
Grand Total	0	2	1577	0	1579	0	1259	6517	0	7776	0	6206	31	0	6237	15592
Approach %	0.0	0.1	99.9	-	-	0.0	16.2	83.8	-	-	0.0	99.5	0.5	-	-	-
Total %	0.0	0.0	10.1	-	10.1	0.0	8.1	41.8	-	49.9	0.0	39.8	0.2	-	40.0	-
Lights	0	2	1559	-	1561	0	1244	6389	-	7633	0	6101	31	-	6132	15326
% Lights	-	100.0	98.9	-	98.9	-	98.8	98.0	-	98.2	-	98.3	100.0	-	98.3	98.3

Buses	0	0	10	-	10	0	6	25	-	31	0	28	0	-	28	69
% Buses	-	0.0	0.6	-	0.6	-	0.5	0.4	-	0.4	-	0.5	0.0	-	0.4	0.4
Single-Unit Trucks	0	0	6	-	6	0	7	60	-	67	0	45	0	-	45	118
% Single-Unit Trucks	-	0.0	0.4	-	0.4	-	0.6	0.9	-	0.9	-	0.7	0.0	-	0.7	0.8
Articulated Trucks	0	0	2	-	2	0	2	43	-	45	0	32	0	-	32	79
% Articulated Trucks	-	0.0	0.1	-	0.1	-	0.2	0.7	-	0.6	-	0.5	0.0	-	0.5	0.5
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Purnell Road with Winfield Road
Site Code:
Start Date: 11/21/2019

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Purnell Road Eastbound					Winfield Road Northbound					Winfield Road Southbound					
	U-Turn	Left	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	Int. Total
7:15 AM	0	0	73	0	73	0	50	356	0	406	0	302	1	0	303	782
7:30 AM	0	0	87	0	87	0	44	299	0	343	0	352	0	0	352	782
7:45 AM	0	0	86	0	86	0	42	342	0	384	0	365	0	0	365	835
8:00 AM	0	0	67	0	67	0	57	331	0	388	0	295	1	0	296	751
Total	0	0	313	0	313	0	193	1328	0	1521	0	1314	2	0	1316	3150
Approach %	0.0	0.0	100.0	-	-	0.0	12.7	87.3	-	-	0.0	99.8	0.2	-	-	-
Total %	0.0	0.0	9.9	-	9.9	0.0	6.1	42.2	-	48.3	0.0	41.7	0.1	-	41.8	-
PHF	0.000	0.000	0.899	-	0.899	0.000	0.846	0.933	-	0.937	0.000	0.900	0.500	-	0.901	0.943
Lights	0	0	308	-	308	0	191	1301	-	1492	0	1290	2	-	1292	3092
% Lights	-	-	98.4	-	98.4	-	99.0	98.0	-	98.1	-	98.2	100.0	-	98.2	98.2
Buses	0	0	5	-	5	0	0	5	-	5	0	5	0	-	5	15
% Buses	-	-	1.6	-	1.6	-	0.0	0.4	-	0.3	-	0.4	0.0	-	0.4	0.5
Single-Unit Trucks	0	0	0	-	0	0	2	12	-	14	0	13	0	-	13	27
% Single-Unit Trucks	-	-	0.0	-	0.0	-	1.0	0.9	-	0.9	-	1.0	0.0	-	1.0	0.9
Articulated Trucks	0	0	0	-	0	0	0	10	-	10	0	6	0	-	6	16
% Articulated Trucks	-	-	0.0	-	0.0	-	0.0	0.8	-	0.7	-	0.5	0.0	-	0.5	0.5
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	-	-	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Purnell Road with Winfield Road
Site Code:
Start Date: 11/21/2019

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Purnell Road Eastbound					Winfield Road Northbound					Winfield Road Southbound					
	U-Turn	Left	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	Int. Total
4:30 PM	0	0	61	0	61	0	83	300	0	383	0	309	3	0	312	756
4:45 PM	0	0	53	0	53	0	83	239	0	322	0	309	3	0	312	687
5:00 PM	0	0	62	0	62	0	66	328	0	394	0	304	2	0	306	762
5:15 PM	0	0	59	0	59	0	87	339	0	426	0	314	3	0	317	802
Total	0	0	235	0	235	0	319	1206	0	1525	0	1236	11	0	1247	3007
Approach %	0.0	0.0	100.0	-	-	0.0	20.9	79.1	-	-	0.0	99.1	0.9	-	-	-
Total %	0.0	0.0	7.8	-	7.8	0.0	10.6	40.1	-	50.7	0.0	41.1	0.4	-	41.5	-
PHF	0.000	0.000	0.948	-	0.948	0.000	0.917	0.889	-	0.895	0.000	0.984	0.917	-	0.983	0.937
Lights	0	0	234	-	234	0	317	1197	-	1514	0	1224	11	-	1235	2983
% Lights	-	-	99.6	-	99.6	-	99.4	99.3	-	99.3	-	99.0	100.0	-	99.0	99.2
Buses	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Buses	-	-	0.0	-	0.0	-	0.3	0.0	-	0.1	-	0.0	0.0	-	0.0	0.0
Single-Unit Trucks	0	0	0	-	0	0	1	5	-	6	0	6	0	-	6	12
% Single-Unit Trucks	-	-	0.0	-	0.0	-	0.3	0.4	-	0.4	-	0.5	0.0	-	0.5	0.4
Articulated Trucks	0	0	1	-	1	0	0	4	-	4	0	6	0	-	6	11
% Articulated Trucks	-	-	0.4	-	0.4	-	0.0	0.3	-	0.3	-	0.5	0.0	-	0.5	0.4
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	-	-	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Purnell Road with Gary Mills Road
Site Code:
Start Date: 09/19/2019

Turning Movement Data

Start Time	Gary Mill Road Eastbound					Gary Mill Road Westbound					Purnell Road Northbound					
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	Int. Total
6:30 AM	0	9	72	0	81	0	8	7	0	15	0	36	5	0	41	137
6:45 AM	0	9	93	0	102	0	6	3	0	9	0	36	7	0	43	154
Hourly Total	0	18	165	0	183	0	14	10	0	24	0	72	12	0	84	291
7:00 AM	0	13	86	0	99	0	17	8	0	25	0	39	4	0	43	167
7:15 AM	0	14	72	0	86	0	13	4	0	17	0	31	7	0	38	141
7:30 AM	0	6	49	0	55	0	14	8	0	22	0	24	9	0	33	110
7:45 AM	0	13	53	0	66	0	11	6	0	17	0	44	4	0	48	131
Hourly Total	0	46	260	0	306	0	55	26	0	81	0	138	24	0	162	549
8:00 AM	0	11	62	0	73	0	26	15	0	41	0	29	7	0	36	150
8:15 AM	0	10	69	0	79	0	21	11	0	32	0	30	9	0	39	150
8:30 AM	0	12	74	0	86	0	25	7	0	32	0	28	12	0	40	158
8:45 AM	0	13	78	0	91	0	9	10	0	19	0	24	6	0	30	140
Hourly Total	0	46	283	0	329	0	81	43	0	124	0	111	34	0	145	598
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	11	62	0	73	0	23	19	0	42	0	51	3	0	54	169
4:15 PM	0	11	76	0	87	0	18	13	0	31	0	83	6	0	89	207
4:30 PM	0	9	45	0	54	0	7	7	0	14	0	80	7	0	87	155
4:45 PM	0	5	36	0	41	0	7	16	0	23	0	68	6	0	74	138
Hourly Total	0	36	219	0	255	0	55	55	0	110	0	282	22	0	304	669
5:00 PM	0	9	56	0	65	0	12	16	0	28	0	82	10	0	92	185
5:15 PM	0	7	61	0	68	0	21	9	0	30	0	78	18	0	96	194
5:30 PM	0	12	66	0	78	0	11	5	0	16	0	72	7	0	79	173
5:45 PM	0	12	55	0	67	0	9	12	0	21	0	84	7	0	91	179
Hourly Total	0	40	238	0	278	0	53	42	0	95	0	316	42	0	358	731
Grand Total	0	186	1165	0	1351	0	258	176	0	434	0	919	134	0	1053	2838
Approach %	0.0	13.8	86.2	-	-	0.0	59.4	40.6	-	-	0.0	87.3	12.7	-	-	-
Total %	0.0	6.6	41.1	-	47.6	0.0	9.1	6.2	-	15.3	0.0	32.4	4.7	-	37.1	-
Lights	0	179	1147	-	1326	0	257	158	-	415	0	902	134	-	1036	2777
% Lights	-	96.2	98.5	-	98.1	-	99.6	89.8	-	95.6	-	98.2	100.0	-	98.4	97.9
Buses	0	2	9	-	11	0	1	11	-	12	0	7	0	-	7	30
% Buses	-	1.1	0.8	-	0.8	-	0.4	6.3	-	2.8	-	0.8	0.0	-	0.7	1.1
Single-Unit Trucks	0	4	9	-	13	0	0	2	-	2	0	7	0	-	7	22
% Single-Unit Trucks	-	2.2	0.8	-	1.0	-	0.0	1.1	-	0.5	-	0.8	0.0	-	0.7	0.8
Articulated Trucks	0	0	0	-	0	0	0	2	-	2	0	3	0	-	3	5
% Articulated Trucks	-	0.0	0.0	-	0.0	-	0.0	1.1	-	0.5	-	0.3	0.0	-	0.3	0.2
Bicycles on Road	0	1	0	-	1	0	0	3	-	3	0	0	0	-	0	4

% Bicycles on Road	-	0.5	0.0	-	0.1	-	0.0	1.7	-	0.7	-	0.0	0.0	-	0.0	0.1
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Purnell Road with Gary Mills Road
Site Code:
Start Date: 09/19/2019

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Gary Mill Road Eastbound					Gary Mill Road Westbound					Purnell Road Northbound					
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	Int. Total
7:15 AM	0	14	72	0	86	0	13	4	0	17	0	31	7	0	38	141
7:30 AM	0	6	49	0	55	0	14	8	0	22	0	24	9	0	33	110
7:45 AM	0	13	53	0	66	0	11	6	0	17	0	44	4	0	48	131
8:00 AM	0	11	62	0	73	0	26	15	0	41	0	29	7	0	36	150
Total	0	44	236	0	280	0	64	33	0	97	0	128	27	0	155	532
Approach %	0.0	15.7	84.3	-	-	0.0	66.0	34.0	-	-	0.0	82.6	17.4	-	-	-
Total %	0.0	8.3	44.4	-	52.6	0.0	12.0	6.2	-	18.2	0.0	24.1	5.1	-	29.1	-
PHF	0.000	0.786	0.819	-	0.814	0.000	0.615	0.550	-	0.591	0.000	0.727	0.750	-	0.807	0.887
Lights	0	42	231	-	273	0	64	27	-	91	0	124	27	-	151	515
% Lights	-	95.5	97.9	-	97.5	-	100.0	81.8	-	93.8	-	96.9	100.0	-	97.4	96.8
Buses	0	0	2	-	2	0	0	5	-	5	0	2	0	-	2	9
% Buses	-	0.0	0.8	-	0.7	-	0.0	15.2	-	5.2	-	1.6	0.0	-	1.3	1.7
Single-Unit Trucks	0	2	3	-	5	0	0	1	-	1	0	2	0	-	2	8
% Single-Unit Trucks	-	4.5	1.3	-	1.8	-	0.0	3.0	-	1.0	-	1.6	0.0	-	1.3	1.5
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
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Count Name: Purnell Road with Gary Mills Road
Site Code:
Start Date: 09/19/2019

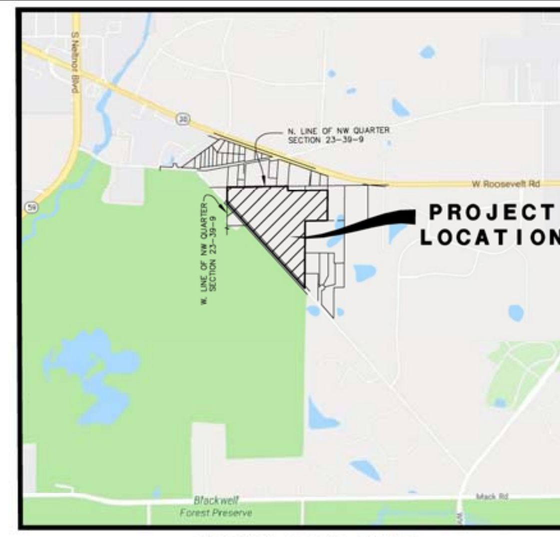
Turning Movement Peak Hour Data (4:30 PM)

Start Time	Gary Mill Road Eastbound					Gary Mill Road Westbound					Purnell Road Northbound					
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	Int. Total
4:30 PM	0	9	45	0	54	0	7	7	0	14	0	80	7	0	87	155
4:45 PM	0	5	36	0	41	0	7	16	0	23	0	68	6	0	74	138
5:00 PM	0	9	56	0	65	0	12	16	0	28	0	82	10	0	92	185
5:15 PM	0	7	61	0	68	0	21	9	0	30	0	78	18	0	96	194
Total	0	30	198	0	228	0	47	48	0	95	0	308	41	0	349	672
Approach %	0.0	13.2	86.8	-	-	0.0	49.5	50.5	-	-	0.0	88.3	11.7	-	-	-
Total %	0.0	4.5	29.5	-	33.9	0.0	7.0	7.1	-	14.1	0.0	45.8	6.1	-	51.9	-
PHF	0.000	0.833	0.811	-	0.838	0.000	0.560	0.750	-	0.792	0.000	0.939	0.569	-	0.909	0.866
Lights	0	28	198	-	226	0	47	46	-	93	0	305	41	-	346	665
% Lights	-	93.3	100.0	-	99.1	-	100.0	95.8	-	97.9	-	99.0	100.0	-	99.1	99.0
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Single-Unit Trucks	0	1	0	-	1	0	0	0	-	0	0	2	0	-	2	3
% Single-Unit Trucks	-	3.3	0.0	-	0.4	-	0.0	0.0	-	0.0	-	0.6	0.0	-	0.6	0.4
Articulated Trucks	0	0	0	-	0	0	0	1	-	1	0	1	0	-	1	2
% Articulated Trucks	-	0.0	0.0	-	0.0	-	0.0	2.1	-	1.1	-	0.3	0.0	-	0.3	0.3
Bicycles on Road	0	1	0	-	1	0	0	1	-	1	0	0	0	-	0	2
% Bicycles on Road	-	3.3	0.0	-	0.4	-	0.0	2.1	-	1.1	-	0.0	0.0	-	0.0	0.3
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

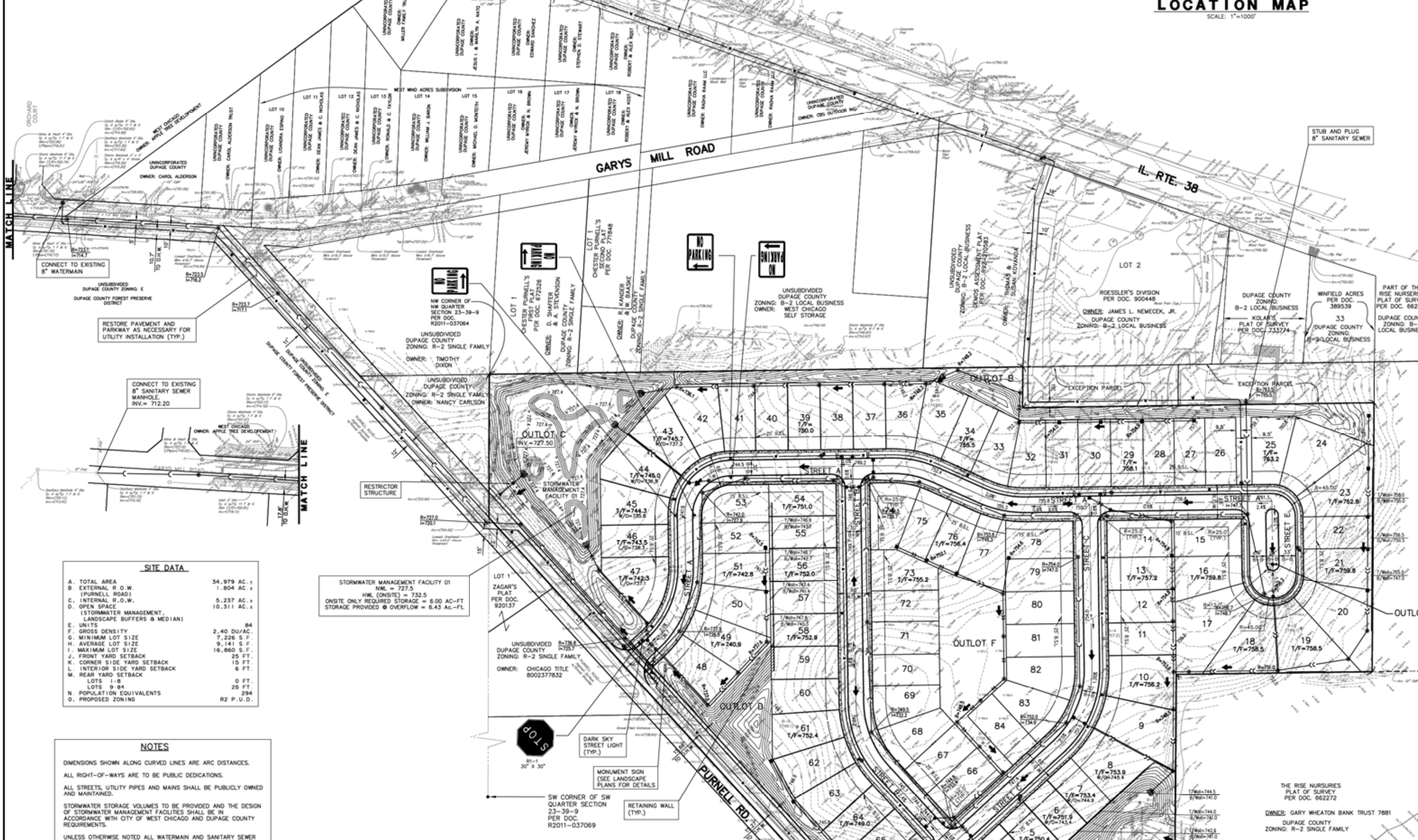
PRELIMINARY ENGINEERING PLAN
FOR
TRILLIUM FARM
DUPAGE COUNTY, IL

BEING A PART OF THE NORTHWEST 1/4 OF SECTION 23, TOWNSHIP 39 NORTH, RANGE 9, EAST OF THE THIRD PRINCIPAL MERIDIAN, IN DUPAGE COUNTY, ILLINOIS

SCALE: 1" = 80'



LOCATION MAP
SCALE: 1"=1000'



SITE DATA

A. TOTAL AREA	34.979 AC.±
B. EXTERNAL R.O.W. (PURNELL ROAD)	1.804 AC.±
C. INTERNAL R.O.W.	5.237 AC.±
D. OPEN SPACE (STORMWATER MANAGEMENT, LANDSCAPE BUFFERS & MEDIAN)	10.311 AC.±
E. UNITS	84
F. GROSS DENSITY	2.40 DU/AC.
G. MINIMUM LOT SIZE	7,226 S.F.
H. AVERAGE LOT SIZE	9,141 S.F.
I. MAXIMUM LOT SIZE	16,860 S.F.
J. FRONT YARD SETBACK	25 FT.
K. CORNER SIDE YARD SETBACK	15 FT.
L. INTERIOR SIDE YARD SETBACK	6 FT.
M. REAR YARD SETBACK	
LOTS 1-8	0 FT.
LOTS 9-84	25 FT.
N. POPULATION EQUIVALENTS	294
O. PROPOSED ZONING	R2 P.U.D.

NOTES

DIMENSIONS SHOWN ALONG CURVED LINES ARE ARC DISTANCES.

ALL RIGHT-OF-WAYS ARE TO BE PUBLIC DEDICATIONS.

ALL STREETS, UTILITY PIPES AND MAINS SHALL BE PUBLICLY OWNED AND MAINTAINED.

STORMWATER STORAGE VOLUMES TO BE PROVIDED AND THE DESIGN OF STORMWATER MANAGEMENT FACILITIES SHALL BE IN ACCORDANCE WITH CITY OF WEST CHICAGO AND DUPAGE COUNTY REQUIREMENTS.

UNLESS OTHERWISE NOTED ALL WATERMAIN AND SANITARY SEWER TO BE 8" DIAMETER.

ALL SANITARY SERVICE CONNECTIONS TO SANITARY SEWER MAINS MUST HAVE AN OVERHEAD SEWER SYSTEM WITHIN THE BUILDING.

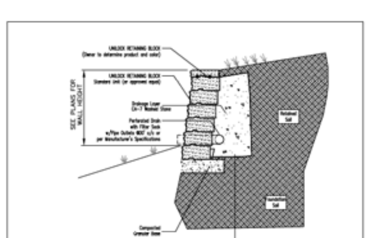
ALL EXISTING ONSITE BUILDINGS TO BE REMOVED AND DISPOSED.

ANY EXISTING WELL AND SEPTIC FIELDS SHALL BE ABANDONED ACCORDING TO COUNTY HEALTH DEPARTMENT.

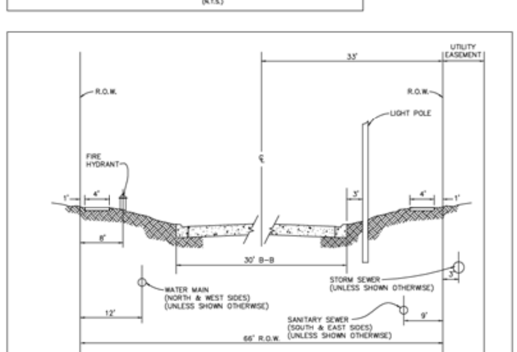
ALL STORM SEWER TO BE OWNED AND MAINTAINED BY HOA

LEGEND

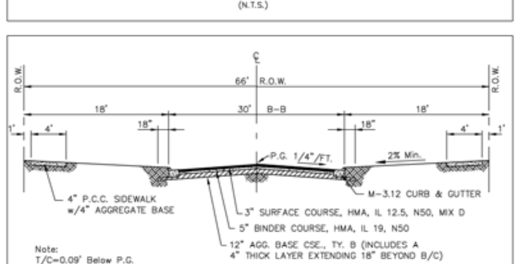
EXISTING	PROPOSED	DESCRIPTION
		MANHOLE
		CATCH BASIN
		INLET
		CLEANOUT
		SLOPE INLET BOX
		HEADWALL
		END SECTION
		STORM SEWER
		SANITARY SEWER
		WATERMAIN
		VALVE & BOX
		WATER VALVE IN VAULT
		FIRE HYDRANT
		CONTOURS
(ELEV)	ELEV	ELEVATIONS
		STREET LIGHT
		WATERMAIN PROTECTION
		SILT FENCE INLET PROTECTOR
		TEMPORARY STRAW BALE DITCH CHECK
		SILT FENCE DITCH CHECK
		RIP-RAP
		OVERFLOW ROUTE



TYPICAL WALL SECTION
(N.T.S.)



STANDARD UTILITIES LOCATION
30' PAVEMENT WITHIN 66' R.O.W.
(N.T.S.)



TYPICAL PAVEMENT SECTION
(N.T.S.)

PROFESSIONAL ENGINEER'S CERTIFICATION

STATE OF ILLINOIS)
SS.
COUNTY OF DU PAGE)

I, CHRISTOPHER R. MORGART , A LICENSED PROFESSIONAL ENGINEER OF ILLINOIS, HEREBY CERTIFY THAT THIS TECHNICAL SUBMISSION WAS PREPARED ON BEHALF OF PULTE HOME COMPANY, LLC, BY CEMCON, LTD. UNDER MY PERSONAL DIRECTION. THIS TECHNICAL SUBMISSION IS INTENDED TO BE USED AS AN INTEGRAL PART OF AND IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT DOCUMENTS.

DATED THIS _____ DAY OF _______________, A.D., 2019.

ILLINOIS LICENSED PROFESSIONAL ENGINEER NO. 062-055788
MY LICENSE EXPIRES ON NOVEMBER 30, 2019

PROFESSIONAL DESIGN FIRM LICENSE NUMBER 184-002937
EXPIRES APRIL 30, 2021

NOTE : UNLESS THIS DOCUMENT BEARS THE ORIGINAL SIGNATURE AND IMPRESSED SEAL OF THE DESIGN PROFESSIONAL ENGINEER, IT IS NOT A VALID TECHNICAL SUBMISSION.

PREPARED FOR:
PULTE HOME COMPANY, LLC
1900 E. GOLF ROAD, SUITE 300
SCHAUMBURG, IL 60173
(847) 230-5400

PREPARED BY:
CEMCON, Ltd.
Consulting Engineers, Land Surveyors & Planners
2280 White Oak Circle, Suite 100
Aurora, Illinois 60502-9675
PH: 630.862.2100 FAX: 630.862.2199
E-Mail: cadd@cemcon.com Website: www.cemcon.com

DISC NO.: 402135 FILE NAME: PREOVR
DRAWN BY: LAL FLD. BK. / PG. NO.: D83\26-29 & D83\43-46
COMPLETION DATE: 08-23-19 JOB NO.: 402.135

09-16-19/LAL: REVISED PER IN-HOUSE REVIEW
09-25-19/LAL: REVISED PER MEETING w/CITY OF WEST CHICAGO
10-09-19/LAL: REVISED PER 10/4/19 MEETING w/CITY OF WEST CHICAGO

PREENG

Chicago Metropolitan Agency for Planning

233 South Wacker Drive
Suite 800
Chicago, Illinois 60606

312 454 0400
www.cmap.illinois.gov

December 3, 2019

Brendan S. May
Consultant
Kenig, Lindgren, O'Hara and Aboona, Inc.
9575 West Higgins Road
Suite 400
Rosemont, IL 60018

Subject: ***Garys Mill Road - Purnell Road - Winfield Road - Mack Road***
IDOT

Dear Mr. May:

In response to a request made on your behalf and dated December 2, 2019, we have developed year 2050 average daily traffic (ADT) projections for the subject location.

ROAD SEGMENT	Current Volumes	Year 2050 ADT
Garys Mill Rd west of Purnell Rd	1,600	1,890
Garys Mill Rd east of Purnell Rd	1,550	1,830
Purnell Rd	5,250	6,200
Winfield Rd	21,200	23,000
Mack Rd west of Winfield Rd	3,050	5,400
Mack Rd east of Winfield Rd	4,000	7,400

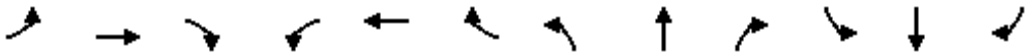
Traffic projections are developed using existing ADT data provided in the request letter and the results from the October 2019 CMAP Travel Demand Analysis. The regional travel model uses CMAP 2050 socioeconomic projections and assumes the implementation of the ON TO 2050 Comprehensive Regional Plan for the Northeastern Illinois area. The provision of this data in support of your request does not constitute a CMAP endorsement of the proposed development or any subsequent developments.

If you have any questions, please call me at (312) 386-8806.

Sincerely,

Jose Rodriguez, PTP, AICP
Senior Planner, Research & Analysis

cc: Quigley (IDOT)
\\cmap.local\shared\AdminGroups\ResearchAnalysis\2019_ForecastsTraffic\WinfieldTwp\du-39-19\du-39-19.docx

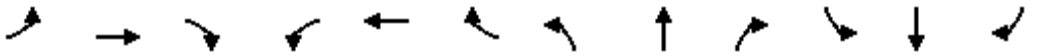


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	18	244	88	20	12	64	1602	49	0	1694	32
Future Volume (vph)	143	18	244	88	20	12	64	1602	49	0	1694	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	140		0	110		0	165		0	120		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	150			100			90			80		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.860			0.944			0.996			0.997	
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1736	1598	0	1787	1639	0	1770	3561	0	1900	3526	0
Flt Permitted	0.483			0.383			0.058					
Satd. Flow (perm)	882	1598	0	720	1639	0	108	3561	0	1900	3526	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		194			13			3			2	
Link Speed (mph)		40			40			45			45	
Link Distance (ft)		2827			1940			1468			399	
Travel Time (s)		48.2			33.1			22.2			6.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	6%	2%	1%	15%	0%	2%	1%	0%	0%	2%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	159	291	0	98	35	0	71	1834	0	0	1918	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		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	15.0		3.0	15.0		3.0	8.0		3.0	8.0	
Minimum Split (s)	8.5	37.5		7.5	37.5		8.0	34.5		7.5	37.5	
Total Split (s)	15.0	35.0		15.0	35.0		15.0	70.0		15.0	70.0	
Total Split (%)	11.1%	25.9%		11.1%	25.9%		11.1%	51.9%		11.1%	51.9%	
Yellow Time (s)	3.5	4.5		3.5	4.5		3.5	4.5		3.5	4.5	
All-Red Time (s)	2.0	2.0		1.0	1.0		1.5	2.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	6.5		4.5	5.5		5.0	6.5		4.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Min		None	Ped	
Act Effct Green (s)	29.6	17.5		21.9	18.1		75.7	74.2			64.9	
Actuated g/C Ratio	0.25	0.15		0.18	0.15		0.64	0.62			0.55	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.46	0.73		0.45	0.13		0.40	0.83			1.00	
Control Delay	40.8	28.3		43.4	32.8		18.3	22.0			48.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	40.8	28.3		43.4	32.8		18.3	22.0			48.2	
LOS	D	C		D	C		B	C			D	
Approach Delay		32.7			40.6			21.9			48.2	
Approach LOS		C			D			C			D	
Queue Length 50th (ft)	100	71		59	15		18	510			~757	
Queue Length 95th (ft)	164	175		105	46		55	768			#1125	
Internal Link Dist (ft)		2747			1860			1388			319	
Turn Bay Length (ft)	140			110			165					
Base Capacity (vph)	348	532		232	418		209	2220			1923	
Starvation Cap Reductn	0	0		0	0		0	0			0	
Spillback Cap Reductn	0	0		0	0		0	0			0	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.46	0.55		0.42	0.08		0.34	0.83			1.00	

Intersection Summary			
Area Type:	Other		
Cycle Length: 135			
Actuated Cycle Length: 119			
Natural Cycle: 125			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 35.0		Intersection LOS: D	
Intersection Capacity Utilization 88.7%		ICU Level of Service E	
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: Winfield Road & Mack Road

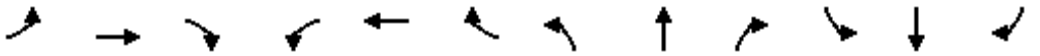


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	23	107	146	59	5	167	1640	43	3	1515	64
Future Volume (vph)	68	23	107	146	59	5	167	1640	43	3	1515	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	140		0	110		0	165		0	120		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	150			100			90			80		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.877			0.989			0.996			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1655	0	1787	1879	0	1787	3561	0	1805	3554	0
Flt Permitted	0.714			0.516			0.055			0.063		
Satd. Flow (perm)	1330	1655	0	971	1879	0	103	3561	0	120	3554	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		111			3			3			4	
Link Speed (mph)		40			40			45			45	
Link Distance (ft)		2827			1940			1468			399	
Travel Time (s)		48.2			33.1			22.2			6.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	4%	0%	1%	0%	0%	1%	1%	0%	0%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	71	135	0	152	66	0	174	1753	0	3	1645	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		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	15.0		3.0	15.0		3.0	8.0		3.0	8.0	
Minimum Split (s)	8.5	37.5		7.5	37.5		8.0	34.5		7.5	37.5	
Total Split (s)	15.0	35.0		15.0	35.0		15.0	70.0		15.0	70.0	
Total Split (%)	11.1%	25.9%		11.1%	25.9%		11.1%	51.9%		11.1%	51.9%	
Yellow Time (s)	3.5	4.5		3.5	4.5		3.5	4.5		3.5	4.5	
All-Red Time (s)	2.0	2.0		1.0	1.0		1.5	2.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	6.5		4.5	5.5		5.0	6.5		4.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Min		None	Ped	
Act Effct Green (s)	24.5	15.0		28.5	19.1		79.9	76.4		71.1	64.5	
Actuated g/C Ratio	0.20	0.12		0.24	0.16		0.66	0.63		0.59	0.53	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.24	0.45		0.51	0.22		0.84	0.78		0.02	0.87	
Control Delay	37.6	18.3		43.3	47.1		61.1	20.2		7.7	31.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	37.6	18.3		43.3	47.1		61.1	20.2		7.7	31.0	
LOS	D	B		D	D		E	C		A	C	
Approach Delay		25.0			44.5			23.9			30.9	
Approach LOS		C			D			C			C	
Queue Length 50th (ft)	43	17		96	45		86	466		1	569	
Queue Length 95th (ft)	83	78		158	90		#213	715		4	684	
Internal Link Dist (ft)		2747			1860			1388			319	
Turn Bay Length (ft)	140			110			165			120		
Base Capacity (vph)	314	474		298	459		206	2246		221	1892	
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	0.23	0.28		0.51	0.14		0.84	0.78		0.01	0.87	

Intersection Summary			
Area Type:	Other		
Cycle Length: 135			
Actuated Cycle Length: 121.2			
Natural Cycle: 115			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 28.0		Intersection LOS: C	
Intersection Capacity Utilization 91.7%		ICU Level of Service F	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: Winfield Road & Mack Road



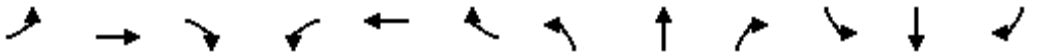
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	18	244	88	20	12	64	1610	49	0	1718	32
Future Volume (vph)	143	18	244	88	20	12	64	1610	49	0	1718	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	140		0	110		0	165		0	120		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	150			100			90			80		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.860			0.944			0.996			0.997	
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1736	1598	0	1787	1639	0	1770	3561	0	1900	3526	0
Flt Permitted	0.483			0.383			0.058					
Satd. Flow (perm)	882	1598	0	720	1639	0	108	3561	0	1900	3526	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		194			13			3			2	
Link Speed (mph)		40			40			45			45	
Link Distance (ft)		2827			1940			1468			399	
Travel Time (s)		48.2			33.1			22.2			6.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	6%	2%	1%	15%	0%	2%	1%	0%	0%	2%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	159	291	0	98	35	0	71	1843	0	0	1945	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		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	15.0		3.0	15.0		3.0	8.0		3.0	8.0	
Minimum Split (s)	8.5	37.5		7.5	37.5		8.0	34.5		7.5	37.5	
Total Split (s)	15.0	35.0		15.0	35.0		15.0	70.0		15.0	70.0	
Total Split (%)	11.1%	25.9%		11.1%	25.9%		11.1%	51.9%		11.1%	51.9%	
Yellow Time (s)	3.5	4.5		3.5	4.5		3.5	4.5		3.5	4.5	
All-Red Time (s)	2.0	2.0		1.0	1.0		1.5	2.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	6.5		4.5	5.5		5.0	6.5		4.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Min		None	Ped	
Act Effct Green (s)	29.6	17.5		21.9	18.1		75.7	74.2			64.9	
Actuated g/C Ratio	0.25	0.15		0.18	0.15		0.64	0.62			0.55	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.46	0.73		0.45	0.13		0.40	0.83			1.01	
Control Delay	40.8	28.3		43.4	32.8		18.3	22.2			51.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	40.8	28.3		43.4	32.8		18.3	22.2			51.7	
LOS	D	C		D	C		B	C			D	
Approach Delay		32.7			40.6			22.1			51.7	
Approach LOS		C			D			C			D	
Queue Length 50th (ft)	100	71		59	15		18	516			~834	
Queue Length 95th (ft)	164	175		105	46		55	776			#1150	
Internal Link Dist (ft)		2747			1860			1388			319	
Turn Bay Length (ft)	140			110			165					
Base Capacity (vph)	348	532		232	418		209	2220			1923	
Starvation Cap Reductn	0	0		0	0		0	0			0	
Spillback Cap Reductn	0	0		0	0		0	0			0	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.46	0.55		0.42	0.08		0.34	0.83			1.01	

Intersection Summary

Area Type: Other
Cycle Length: 135
Actuated Cycle Length: 119
Natural Cycle: 125
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 36.7 Intersection LOS: D
Intersection Capacity Utilization 88.7% ICU Level of Service E
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: Winfield Road & Mack Road

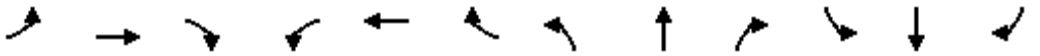


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	23	107	146	59	5	167	1667	43	3	1531	64
Future Volume (vph)	68	23	107	146	59	5	167	1667	43	3	1531	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	140		0	110		0	165		0	120		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	150			100			90			80		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.877			0.989			0.996			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1655	0	1787	1879	0	1787	3561	0	1805	3554	0
Flt Permitted	0.714			0.516			0.055			0.059		
Satd. Flow (perm)	1330	1655	0	971	1879	0	103	3561	0	112	3554	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		111			3			3			4	
Link Speed (mph)		40			40			45			45	
Link Distance (ft)		2827			1940			1468			399	
Travel Time (s)		48.2			33.1			22.2			6.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	4%	0%	1%	0%	0%	1%	1%	0%	0%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	71	135	0	152	66	0	174	1781	0	3	1662	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		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	15.0		3.0	15.0		3.0	8.0		3.0	8.0	
Minimum Split (s)	8.5	37.5		7.5	37.5		8.0	34.5		7.5	37.5	
Total Split (s)	15.0	35.0		15.0	35.0		15.0	70.0		15.0	70.0	
Total Split (%)	11.1%	25.9%		11.1%	25.9%		11.1%	51.9%		11.1%	51.9%	
Yellow Time (s)	3.5	4.5		3.5	4.5		3.5	4.5		3.5	4.5	
All-Red Time (s)	2.0	2.0		1.0	1.0		1.5	2.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	6.5		4.5	5.5		5.0	6.5		4.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Min		None	Ped	
Act Effct Green (s)	24.5	15.0		28.5	19.1		79.9	76.4		71.1	64.5	
Actuated g/C Ratio	0.20	0.12		0.24	0.16		0.66	0.63		0.59	0.53	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.24	0.45		0.51	0.22		0.84	0.79		0.02	0.88	
Control Delay	37.6	18.3		43.3	47.1		61.1	20.7		7.7	31.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	37.6	18.3		43.3	47.1		61.1	20.7		7.7	31.6	
LOS	D	B		D	D		E	C		A	C	
Approach Delay		25.0			44.5			24.3			31.6	
Approach LOS		C			D			C			C	
Queue Length 50th (ft)	43	17		96	45		86	481		1	581	
Queue Length 95th (ft)	83	78		158	90		#213	738		4	697	
Internal Link Dist (ft)		2747			1860			1388			319	
Turn Bay Length (ft)	140			110			165			120		
Base Capacity (vph)	314	474		298	459		206	2246		216	1892	
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	0.23	0.28		0.51	0.14		0.84	0.79		0.01	0.88	

Intersection Summary			
Area Type:	Other		
Cycle Length: 135			
Actuated Cycle Length: 121.2			
Natural Cycle: 115			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 28.4		Intersection LOS: C	
Intersection Capacity Utilization 92.1%		ICU Level of Service F	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: Winfield Road & Mack Road

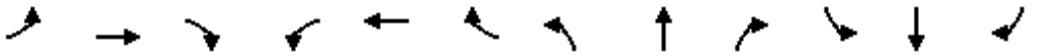


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	19	256	92	21	13	67	1690	51	0	1803	34
Future Volume (vph)	150	19	256	92	21	13	67	1690	51	0	1803	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	140		0	110		0	165		0	120		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	150			100			90			80		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.860			0.943			0.996			0.997	
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1736	1598	0	1787	1639	0	1770	3561	0	1900	3526	0
Flt Permitted	0.494			0.339			0.058					
Satd. Flow (perm)	902	1598	0	638	1639	0	108	3561	0	1900	3526	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		188			14			3			2	
Link Speed (mph)		40			40			45			45	
Link Distance (ft)		2827			1940			1468			399	
Travel Time (s)		48.2			33.1			22.2			6.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	6%	2%	1%	15%	0%	2%	1%	0%	0%	2%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	167	305	0	102	37	0	74	1935	0	0	2041	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		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	15.0		3.0	15.0		3.0	8.0		3.0	8.0	
Minimum Split (s)	8.5	37.5		7.5	37.5		8.0	34.5		7.5	37.5	
Total Split (s)	15.0	35.0		15.0	35.0		15.0	70.0		15.0	70.0	
Total Split (%)	11.1%	25.9%		11.1%	25.9%		11.1%	51.9%		11.1%	51.9%	
Yellow Time (s)	3.5	4.5		3.5	4.5		3.5	4.5		3.5	4.5	
All-Red Time (s)	2.0	2.0		1.0	1.0		1.5	2.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	6.5		4.5	5.5		5.0	6.5		4.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Min		None	Ped	
Act Effct Green (s)	30.6	18.4		22.8	18.9		75.8	74.3			64.9	
Actuated g/C Ratio	0.25	0.15		0.19	0.16		0.63	0.62			0.54	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.47	0.76		0.48	0.14		0.42	0.88			1.07	
Control Delay	40.9	31.8		44.1	31.9		19.8	25.6			70.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	40.9	31.8		44.1	31.9		19.8	25.6			70.8	
LOS	D	C		D	C		B	C			E	
Approach Delay		35.0			40.9			25.4			70.8	
Approach LOS		D			D			C			E	
Queue Length 50th (ft)	106	89		61	16		19	578			~924	
Queue Length 95th (ft)	171	197		108	48		60	901			#1273	
Internal Link Dist (ft)		2747			1860			1388			319	
Turn Bay Length (ft)	140			110			165					
Base Capacity (vph)	355	524		226	416		207	2204			1907	
Starvation Cap Reductn	0	0		0	0		0	0			0	
Spillback Cap Reductn	0	0		0	0		0	0			0	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.47	0.58		0.45	0.09		0.36	0.88			1.07	

Intersection Summary			
Area Type:	Other		
Cycle Length: 135			
Actuated Cycle Length: 120.1			
Natural Cycle: 145			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.07			
Intersection Signal Delay: 46.7		Intersection LOS: D	
Intersection Capacity Utilization 92.2%		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: Winfield Road & Mack Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	24	112	146	62	5	175	1750	45	3	1607	67
Future Volume (vph)	71	24	112	146	62	5	175	1750	45	3	1607	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	140		0	110		0	165		0	120		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	150			100			90			80		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.876			0.989			0.996			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1653	0	1787	1879	0	1787	3561	0	1805	3554	0
Flt Permitted	0.711			0.498			0.055			0.059		
Satd. Flow (perm)	1324	1653	0	937	1879	0	103	3561	0	112	3554	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		117			3			3			4	
Link Speed (mph)		40			40			45			45	
Link Distance (ft)		2827			1940			1468			399	
Travel Time (s)		48.2			33.1			22.2			6.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	4%	0%	1%	0%	0%	1%	1%	0%	0%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	74	142	0	152	70	0	182	1870	0	3	1744	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		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	15.0		3.0	15.0		3.0	8.0		3.0	8.0	
Minimum Split (s)	8.5	37.5		7.5	37.5		8.0	34.5		7.5	37.5	
Total Split (s)	15.0	35.0		15.0	35.0		15.0	70.0		15.0	70.0	
Total Split (%)	11.1%	25.9%		11.1%	25.9%		11.1%	51.9%		11.1%	51.9%	
Yellow Time (s)	3.5	4.5		3.5	4.5		3.5	4.5		3.5	4.5	
All-Red Time (s)	2.0	2.0		1.0	1.0		1.5	2.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	6.5		4.5	5.5		5.0	6.5		4.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Min		None	Ped	
Act Effct Green (s)	24.6	15.0		28.4	19.0		79.9	76.4		71.1	64.5	
Actuated g/C Ratio	0.20	0.12		0.23	0.16		0.66	0.63		0.59	0.53	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.25	0.46		0.52	0.24		0.88	0.83		0.02	0.92	
Control Delay	37.8	18.3		43.7	47.5		67.9	22.4		7.7	35.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	37.8	18.3		43.7	47.5		67.9	22.4		7.7	35.5	
LOS	D	B		D	D		E	C		A	D	
Approach Delay		25.0			44.9			26.4			35.4	
Approach LOS		C			D			C			D	
Queue Length 50th (ft)	45	18		96	48		93	531		1	636	
Queue Length 95th (ft)	87	81		158	95		#229	#848		4	#782	
Internal Link Dist (ft)		2747			1860			1388			319	
Turn Bay Length (ft)	140			110			165			120		
Base Capacity (vph)	313	478		293	459		206	2246		216	1892	
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	0.24	0.30		0.52	0.15		0.88	0.83		0.01	0.92	

Intersection Summary			
Area Type:	Other		
Cycle Length: 135			
Actuated Cycle Length: 121.2			
Natural Cycle: 125			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 31.0		Intersection LOS: C	
Intersection Capacity Utilization 94.8%		ICU Level of Service F	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: Winfield Road & Mack Road

Intersection	
Int Delay, s/veh	7.4

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	0	313	193	1564	1413	2
Future Vol, veh/h	0	313	193	1564	1413	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	50	0	115	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	2	1	2	2	0
Mvmt Flow	0	333	205	1664	1503	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2746	753	1505	0	-	0
Stage 1	1504	-	-	-	-	-
Stage 2	1242	-	-	-	-	-
Critical Hdwy	6.8	6.94	4.12	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.32	2.21	-	-	-
Pot Cap-1 Maneuver	16	352	446	-	-	-
Stage 1	174	-	-	-	-	-
Stage 2	240	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	9	352	446	-	-	-
Mov Cap-2 Maneuver	9	-	-	-	-	-
Stage 1	94	-	-	-	-	-
Stage 2	240	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	70.2	2.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SELn2	SWT	SWR
Capacity (veh/h)	446	-	-	352	-	-
HCM Lane V/C Ratio	0.46	-	-	0.946	-	-
HCM Control Delay (s)	19.8	-	0	70.2	-	-
HCM Lane LOS	C	-	A	F	-	-
HCM 95th %tile Q(veh)	2.4	-	-	10	-	-

Intersection	
Int Delay, s/veh	4.7

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	44	236	64	33	128	27
Future Vol, veh/h	44	236	64	33	128	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	89	89	89	89	89	89
Heavy Vehicles, %	5	2	0	18	3	0
Mvmt Flow	49	265	72	37	144	30

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	314	0	363	182
Stage 1	-	-	-	-	182	-
Stage 2	-	-	-	-	181	-
Critical Hdwy	-	-	4.1	-	6.43	6.2
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.2	-	3.527	3.3
Pot Cap-1 Maneuver	-	-	1258	-	634	866
Stage 1	-	-	-	-	847	-
Stage 2	-	-	-	-	848	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1258	-	597	866
Mov Cap-2 Maneuver	-	-	-	-	597	-
Stage 1	-	-	-	-	798	-
Stage 2	-	-	-	-	848	-

Approach	EB	WB	NW
HCM Control Delay, s	0	5.3	12.9
HCM LOS			B

Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	631	-	-	1258	-
HCM Lane V/C Ratio	0.276	-	-	0.057	-
HCM Control Delay (s)	12.9	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	1.1	-	-	0.2	-

Intersection	
Int Delay, s/veh	5.2

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	0	235	319	1394	1347	11
Future Vol, veh/h	0	235	319	1394	1347	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	50	0	115	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	1	1	1	1	0
Mvmt Flow	0	250	339	1483	1433	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2859	723	1445	0	-	0
Stage 1	1439	-	-	-	-	-
Stage 2	1420	-	-	-	-	-
Critical Hdwy	6.8	6.92	4.12	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.31	2.21	-	-	-
Pot Cap-1 Maneuver	14	371	470	-	-	-
Stage 1	188	-	-	-	-	-
Stage 2	193	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	4	371	470	-	-	-
Mov Cap-2 Maneuver	4	-	-	-	-	-
Stage 1	52	-	-	-	-	-
Stage 2	193	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	32.6	5.6	0
HCM LOS	D		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SELn2	SWT	SWR
Capacity (veh/h)	470	-	-	371	-	-
HCM Lane V/C Ratio	0.722	-	-	0.674	-	-
HCM Control Delay (s)	30.1	-	0	32.6	-	-
HCM Lane LOS	D	-	A	D	-	-
HCM 95th %tile Q(veh)	5.8	-	-	4.7	-	-

Intersection	
Int Delay, s/veh	9.7

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	30	198	47	48	308	41
Future Vol, veh/h	30	198	47	48	308	41
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	87	87	87	87	87	87
Heavy Vehicles, %	7	0	0	4	1	0
Mvmt Flow	34	228	54	55	354	47

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	262	0	311	148
Stage 1	-	-	-	-	148	-
Stage 2	-	-	-	-	163	-
Critical Hdwy	-	-	4.1	-	6.41	6.2
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.2	-	3.509	3.3
Pot Cap-1 Maneuver	-	-	1314	-	684	904
Stage 1	-	-	-	-	882	-
Stage 2	-	-	-	-	869	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1314	-	655	904
Mov Cap-2 Maneuver	-	-	-	-	655	-
Stage 1	-	-	-	-	845	-
Stage 2	-	-	-	-	869	-

Approach	EB	WB	NW
HCM Control Delay, s	0	3.9	17.7
HCM LOS			C

Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	677	-	-	1314	-
HCM Lane V/C Ratio	0.593	-	-	0.041	-
HCM Control Delay (s)	17.7	-	-	7.9	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	3.9	-	-	0.1	-

Intersection	
Int Delay, s/veh	9.6

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	0	337	201	1564	1413	2
Future Vol, veh/h	0	337	201	1564	1413	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	50	0	115	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	2	1	2	2	0
Mvmt Flow	0	359	214	1664	1503	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2764	753	1505	0	-	0
Stage 1	1504	-	-	-	-	-
Stage 2	1260	-	-	-	-	-
Critical Hdwy	6.8	6.94	4.12	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.32	2.21	-	-	-
Pot Cap-1 Maneuver	16	~ 352	446	-	-	-
Stage 1	174	-	-	-	-	-
Stage 2	234	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	8	~ 352	446	-	-	-
Mov Cap-2 Maneuver	8	-	-	-	-	-
Stage 1	90	-	-	-	-	-
Stage 2	234	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	88	2.3	0
HCM LOS	F		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SELn2	SWT	SWR
Capacity (veh/h)	446	-	-	352	-	-
HCM Lane V/C Ratio	0.479	-	-	1.018	-	-
HCM Control Delay (s)	20.3	-	0	88	-	-
HCM Lane LOS	C	-	A	F	-	-
HCM 95th %tile Q(veh)	2.5	-	-	12	-	-

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

Intersection	
Int Delay, s/veh	5.2

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	44	241	67	33	142	37
Future Vol, veh/h	44	241	67	33	142	37
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	89	89	89	89	89	89
Heavy Vehicles, %	5	2	0	18	3	0
Mvmt Flow	49	271	75	37	160	42

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	320	0	372	185
Stage 1	-	-	-	-	185	-
Stage 2	-	-	-	-	187	-
Critical Hdwy	-	-	4.1	-	6.43	6.2
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.2	-	3.527	3.3
Pot Cap-1 Maneuver	-	-	1251	-	627	862
Stage 1	-	-	-	-	844	-
Stage 2	-	-	-	-	843	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1251	-	589	862
Mov Cap-2 Maneuver	-	-	-	-	589	-
Stage 1	-	-	-	-	793	-
Stage 2	-	-	-	-	843	-

Approach	EB	WB	NW
HCM Control Delay, s	0	5.4	13.4
HCM LOS			B

Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	630	-	-	1251	-
HCM Lane V/C Ratio	0.319	-	-	0.06	-
HCM Control Delay (s)	13.4	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	1.4	-	-	0.2	-

Intersection	
Int Delay, s/veh	0.6

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	4	304	167	4	12	12
Future Vol, veh/h	4	304	167	4	12	12
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	95	95	95	95	95	95
Heavy Vehicles, %	0	2	2	0	0	0
Mvmt Flow	4	320	176	4	13	13

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	180	0	-	0	506	178
Stage 1	-	-	-	-	178	-
Stage 2	-	-	-	-	328	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1408	-	-	-	530	870
Stage 1	-	-	-	-	858	-
Stage 2	-	-	-	-	734	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1408	-	-	-	528	870
Mov Cap-2 Maneuver	-	-	-	-	528	-
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	734	-

Approach	SE	NW	SW
HCM Control Delay, s	0.1	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SWLn1
Capacity (veh/h)	-	-	1408	-	657
HCM Lane V/C Ratio	-	-	0.003	-	0.038
HCM Control Delay (s)	-	-	7.6	0	10.7
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0	-	0.1

Intersection	
Int Delay, s/veh	0.6

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	4	312	159	4	12	12
Future Vol, veh/h	4	312	159	4	12	12
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	95	95	95	95	95	95
Heavy Vehicles, %	0	2	2	0	0	0
Mvmt Flow	4	328	167	4	13	13

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	171	0	-	0	505	169
Stage 1	-	-	-	-	169	-
Stage 2	-	-	-	-	336	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1418	-	-	-	530	880
Stage 1	-	-	-	-	866	-
Stage 2	-	-	-	-	728	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1418	-	-	-	528	880
Mov Cap-2 Maneuver	-	-	-	-	528	-
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	728	-

Approach	SE	NW	SW
HCM Control Delay, s	0.1	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SWLn1
Capacity (veh/h)	-	-	1418	-	660
HCM Lane V/C Ratio	-	-	0.003	-	0.038
HCM Control Delay (s)	-	-	7.5	0	10.7
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0	-	0.1

Intersection	
Int Delay, s/veh	6.3

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	0	251	346	1394	1347	11
Future Vol, veh/h	0	251	346	1394	1347	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	50	0	115	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	1	1	1	1	0
Mvmt Flow	0	267	368	1483	1433	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2917	723	1445	0	-	0
Stage 1	1439	-	-	-	-	-
Stage 2	1478	-	-	-	-	-
Critical Hdwy	6.8	6.92	4.12	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.31	2.21	-	-	-
Pot Cap-1 Maneuver	13	371	470	-	-	-
Stage 1	188	-	-	-	-	-
Stage 2	179	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	3	371	470	-	-	-
Mov Cap-2 Maneuver	3	-	-	-	-	-
Stage 1	41	-	-	-	-	-
Stage 2	179	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	36	7	0
HCM LOS	E		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SELn2	SWT	SWR
Capacity (veh/h)	470	-	-	371	-	-
HCM Lane V/C Ratio	0.783	-	-	0.72	-	-
HCM Control Delay (s)	35.1	-	0	36	-	-
HCM Lane LOS	E	-	A	E	-	-
HCM 95th %tile Q(veh)	7	-	-	5.4	-	-

Intersection	
Int Delay, s/veh	11.1

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	30	214	58	48	318	47
Future Vol, veh/h	30	214	58	48	318	47
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	87	87	87	87	87	87
Heavy Vehicles, %	7	0	0	4	1	0
Mvmt Flow	34	246	67	55	366	54

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	280	0	346	157
Stage 1	-	-	-	-	157	-
Stage 2	-	-	-	-	189	-
Critical Hdwy	-	-	4.1	-	6.41	6.2
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.2	-	3.509	3.3
Pot Cap-1 Maneuver	-	-	1294	-	653	894
Stage 1	-	-	-	-	874	-
Stage 2	-	-	-	-	846	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1294	-	618	894
Mov Cap-2 Maneuver	-	-	-	-	618	-
Stage 1	-	-	-	-	828	-
Stage 2	-	-	-	-	846	-

Approach	EB	WB	NW
HCM Control Delay, s	0	4.3	20.4
HCM LOS			C

Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	644	-	-	1294	-
HCM Lane V/C Ratio	0.651	-	-	0.052	-
HCM Control Delay (s)	20.4	-	-	7.9	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	4.8	-	-	0.2	-

Intersection	
Int Delay, s/veh	0.5

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	14	258	357	13	8	8
Future Vol, veh/h	14	258	357	13	8	8
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	95	95	95	95	95	95
Heavy Vehicles, %	0	0	1	0	0	0
Mvmt Flow	15	272	376	14	8	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	390	0	-	0	685	383
Stage 1	-	-	-	-	383	-
Stage 2	-	-	-	-	302	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1180	-	-	-	417	669
Stage 1	-	-	-	-	694	-
Stage 2	-	-	-	-	755	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1180	-	-	-	411	669
Mov Cap-2 Maneuver	-	-	-	-	411	-
Stage 1	-	-	-	-	684	-
Stage 2	-	-	-	-	755	-

Approach	SE	NW	SW
HCM Control Delay, s	0.4	0	12.3
HCM LOS			B

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SWLn1
Capacity (veh/h)	-	-	1180	-	509
HCM Lane V/C Ratio	-	-	0.012	-	0.033
HCM Control Delay (s)	-	-	8.1	0	12.3
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0	-	0.1

Intersection	
Int Delay, s/veh	0.5

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	13	253	362	14	8	8
Future Vol, veh/h	13	253	362	14	8	8
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	95	95	95	95	95	95
Heavy Vehicles, %	0	0	1	0	0	0
Mvmt Flow	14	266	381	15	8	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	396	0	-	0	683	389
Stage 1	-	-	-	-	389	-
Stage 2	-	-	-	-	294	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1174	-	-	-	418	664
Stage 1	-	-	-	-	689	-
Stage 2	-	-	-	-	761	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1174	-	-	-	412	664
Mov Cap-2 Maneuver	-	-	-	-	412	-
Stage 1	-	-	-	-	679	-
Stage 2	-	-	-	-	761	-

Approach	SE	NW	SW
HCM Control Delay, s	0.4	0	12.3
HCM LOS			B

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SWLn1
Capacity (veh/h)	-	-	1174	-	508
HCM Lane V/C Ratio	-	-	0.012	-	0.033
HCM Control Delay (s)	-	-	8.1	0	12.3
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0	-	0.1

Intersection	
Int Delay, s/veh	13.3

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	0	353	211	1642	1484	2
Future Vol, veh/h	0	353	211	1642	1484	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	50	0	115	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	2	1	2	2	0
Mvmt Flow	0	376	224	1747	1579	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2902	791	1581	0	-	0
Stage 1	1580	-	-	-	-	-
Stage 2	1322	-	-	-	-	-
Critical Hdwy	6.8	6.94	4.12	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.32	2.21	-	-	-
Pot Cap-1 Maneuver	13	~ 332	417	-	-	-
Stage 1	158	-	-	-	-	-
Stage 2	217	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	6	~ 332	417	-	-	-
Mov Cap-2 Maneuver	6	-	-	-	-	-
Stage 1	73	-	-	-	-	-
Stage 2	217	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	125.3	2.6	0
HCM LOS	F		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SELn2	SWT	SWR
Capacity (veh/h)	417	-	-	332	-	-
HCM Lane V/C Ratio	0.538	-	-	1.131	-	-
HCM Control Delay (s)	23.3	-	0	125.3	-	-
HCM Lane LOS	C	-	A	F	-	-
HCM 95th %tile Q(veh)	3.1	-	-	14.9	-	-

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

Intersection	
Int Delay, s/veh	5.3

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	46	253	70	35	148	38
Future Vol, veh/h	46	253	70	35	148	38
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	89	89	89	89	89	89
Heavy Vehicles, %	5	2	0	18	3	0
Mvmt Flow	52	284	79	39	166	43

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	336	0	391	194
Stage 1	-	-	-	-	194	-
Stage 2	-	-	-	-	197	-
Critical Hdwy	-	-	4.1	-	6.43	6.2
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.2	-	3.527	3.3
Pot Cap-1 Maneuver	-	-	1235	-	611	853
Stage 1	-	-	-	-	836	-
Stage 2	-	-	-	-	834	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1235	-	571	853
Mov Cap-2 Maneuver	-	-	-	-	571	-
Stage 1	-	-	-	-	782	-
Stage 2	-	-	-	-	834	-

Approach	EB	WB	NW
HCM Control Delay, s	0	5.4	13.9
HCM LOS			B

Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	612	-	-	1235	-
HCM Lane V/C Ratio	0.341	-	-	0.064	-
HCM Control Delay (s)	13.9	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	1.5	-	-	0.2	-

Intersection	
Int Delay, s/veh	0.6

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	4	319	174	4	12	12
Future Vol, veh/h	4	319	174	4	12	12
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	95	95	95	95	95	95
Heavy Vehicles, %	0	2	2	0	0	0
Mvmt Flow	4	336	183	4	13	13

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	187	0	-	0	529	185
Stage 1	-	-	-	-	185	-
Stage 2	-	-	-	-	344	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1399	-	-	-	514	862
Stage 1	-	-	-	-	852	-
Stage 2	-	-	-	-	722	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1399	-	-	-	512	862
Mov Cap-2 Maneuver	-	-	-	-	512	-
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	722	-

Approach	SE	NW	SW
HCM Control Delay, s	0.1	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SWLn1
Capacity (veh/h)	-	-	1399	-	642
HCM Lane V/C Ratio	-	-	0.003	-	0.039
HCM Control Delay (s)	-	-	7.6	0	10.8
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0	-	0.1

Intersection	
Int Delay, s/veh	0.6

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	4	327	166	4	12	12
Future Vol, veh/h	4	327	166	4	12	12
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	95	95	95	95	95	95
Heavy Vehicles, %	0	2	2	0	0	0
Mvmt Flow	4	344	175	4	13	13

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	179	0	-	0	529	177
Stage 1	-	-	-	-	177	-
Stage 2	-	-	-	-	352	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1409	-	-	-	514	871
Stage 1	-	-	-	-	859	-
Stage 2	-	-	-	-	716	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1409	-	-	-	512	871
Mov Cap-2 Maneuver	-	-	-	-	512	-
Stage 1	-	-	-	-	856	-
Stage 2	-	-	-	-	716	-

Approach	SE	NW	SW
HCM Control Delay, s	0.1	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SWLn1
Capacity (veh/h)	-	-	1409	-	645
HCM Lane V/C Ratio	-	-	0.003	-	0.039
HCM Control Delay (s)	-	-	7.6	0	10.8
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0	-	0.1

Intersection	
Int Delay, s/veh	8.3

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	0	263	362	1464	1414	12
Future Vol, veh/h	0	263	362	1464	1414	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	50	0	115	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	1	1	1	1	0
Mvmt Flow	0	280	385	1557	1504	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3060	759	1517	0	-	0
Stage 1	1511	-	-	-	-	-
Stage 2	1549	-	-	-	-	-
Critical Hdwy	6.8	6.92	4.12	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.31	2.21	-	-	-
Pot Cap-1 Maneuver	10	351	441	-	-	-
Stage 1	172	-	-	-	-	-
Stage 2	164	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1	351	441	-	-	-
Mov Cap-2 Maneuver	1	-	-	-	-	-
Stage 1	22	-	-	-	-	-
Stage 2	164	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	45.5	9.5	0
HCM LOS	E		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SELn2	SWT	SWR
Capacity (veh/h)	441	-	-	351	-	-
HCM Lane V/C Ratio	0.873	-	-	0.797	-	-
HCM Control Delay (s)	48.1	-	0	45.5	-	-
HCM Lane LOS	E	-	A	E	-	-
HCM 95th %tile Q(veh)	9	-	-	6.7	-	-

Intersection	
Int Delay, s/veh	12.3

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	32	224	60	50	333	49
Future Vol, veh/h	32	224	60	50	333	49
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	87	87	87	87	87	87
Heavy Vehicles, %	7	0	0	4	1	0
Mvmt Flow	37	257	69	57	383	56

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	294	0	361	166
Stage 1	-	-	-	-	166	-
Stage 2	-	-	-	-	195	-
Critical Hdwy	-	-	4.1	-	6.41	6.2
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.2	-	3.509	3.3
Pot Cap-1 Maneuver	-	-	1279	-	640	884
Stage 1	-	-	-	-	866	-
Stage 2	-	-	-	-	840	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1279	-	604	884
Mov Cap-2 Maneuver	-	-	-	-	604	-
Stage 1	-	-	-	-	818	-
Stage 2	-	-	-	-	840	-

Approach	EB	WB	NW
HCM Control Delay, s	0	4.4	22.8
HCM LOS			C

Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	630	-	-	1279	-
HCM Lane V/C Ratio	0.697	-	-	0.054	-
HCM Control Delay (s)	22.8	-	-	8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	5.6	-	-	0.2	-

Intersection	
Int Delay, s/veh	0.5

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	14	270	374	13	8	8
Future Vol, veh/h	14	270	374	13	8	8
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	95	95	95	95	95	95
Heavy Vehicles, %	0	0	1	0	0	0
Mvmt Flow	15	284	394	14	8	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	408	0	-	0	715	401
Stage 1	-	-	-	-	401	-
Stage 2	-	-	-	-	314	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1162	-	-	-	400	653
Stage 1	-	-	-	-	681	-
Stage 2	-	-	-	-	745	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1162	-	-	-	394	653
Mov Cap-2 Maneuver	-	-	-	-	394	-
Stage 1	-	-	-	-	671	-
Stage 2	-	-	-	-	745	-

Approach	SE	NW	SW
HCM Control Delay, s	0.4	0	12.6
HCM LOS			B

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SWLn1
Capacity (veh/h)	-	-	1162	-	491
HCM Lane V/C Ratio	-	-	0.013	-	0.034
HCM Control Delay (s)	-	-	8.1	0	12.6
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0	-	0.1

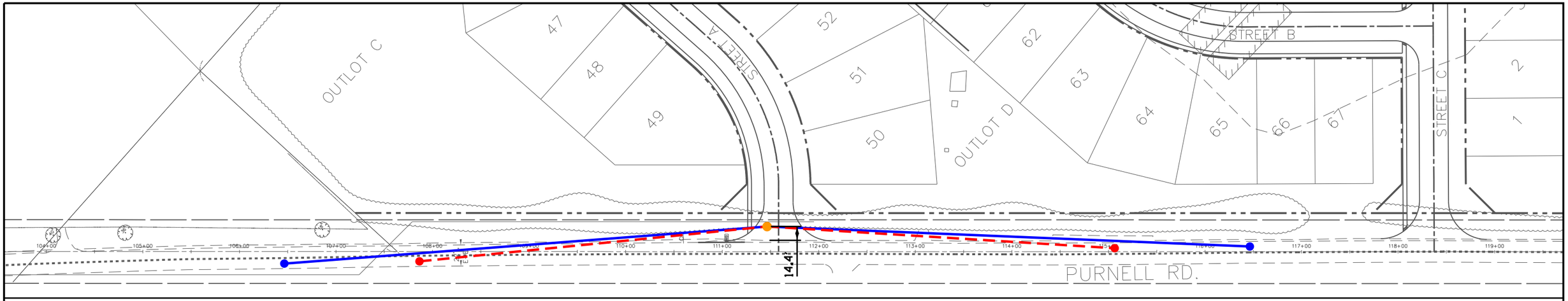
Intersection	
Int Delay, s/veh	0.5

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	13	265	379	14	8	8
Future Vol, veh/h	13	265	379	14	8	8
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	95	95	95	95	95	95
Heavy Vehicles, %	0	0	1	0	0	0
Mvmt Flow	14	279	399	15	8	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	414	0	-	0	714	407
Stage 1	-	-	-	-	407	-
Stage 2	-	-	-	-	307	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1156	-	-	-	401	648
Stage 1	-	-	-	-	676	-
Stage 2	-	-	-	-	751	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1156	-	-	-	395	648
Mov Cap-2 Maneuver	-	-	-	-	395	-
Stage 1	-	-	-	-	667	-
Stage 2	-	-	-	-	751	-

Approach	SE	NW	SW
HCM Control Delay, s	0.4	0	12.6
HCM LOS			B

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SWLn1
Capacity (veh/h)	-	-	1156	-	491
HCM Lane V/C Ratio	-	-	0.012	-	0.034
HCM Control Delay (s)	-	-	8.2	0	12.6
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0	-	0.1



IDOT BDE MANUAL – CHAPTER 36

b = ISD = 1.467 V_{major} t_c

where: b = length of sight triangle along the major road or ISD, ft (m)
ISD = Intersection Sight Distance, ft (m)
V_{major} = design speed of major road, mph (km/h)
t_c = critical gap for entering or crossing the major road, sec

Passenger Vehicle ISD = (1.467)(45)(7.5) = 500 ft

= INTERSECTION SIGHT DISTANCE
= STOPPING SIGHT DISTANCE

IDOT BDE MANUAL – CHAPTER 31

$SSD = 1.47\ Vt + 1.075\ \frac{V^2}{a}$

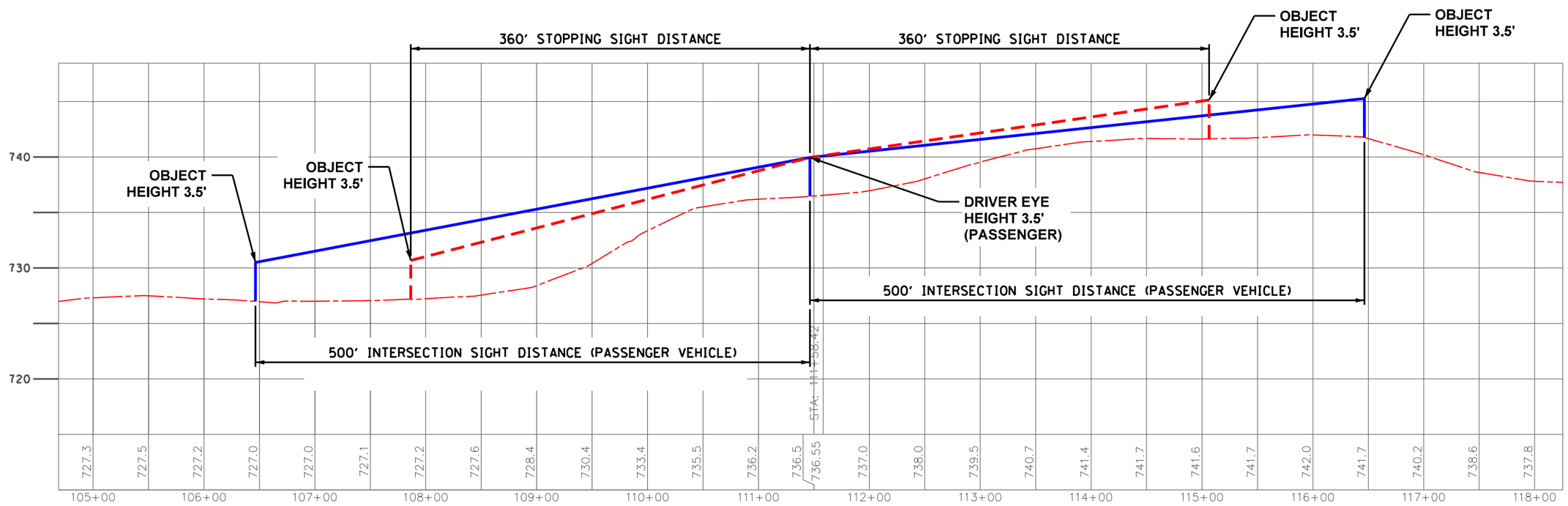
where: SSD = Stopping Sight Distance, ft (m)
V = design speed, mph (km/h)
t = brake time, 2.5 seconds
a = driver deceleration, ft/s² (m/s²)

$360 = 1.47\ 45(2.5) + 1.075\ (\frac{2025}{11.2})$

POSTED SPEED LIMIT = 40 MPH
DESIGN SPEED = 45 MPH

N

SCALE: 1" = 100'



TRILLUM FARM
WEST CHICAGO, ILLINOIS

SIGHT DISTANCE STUDY
PURNELL ROAD AT STREET A

DRAWN: MD CHECKED: LA
DATE: 09-23-19 REV:
PROJECT # 19-227
FIGURE: A

KLOA
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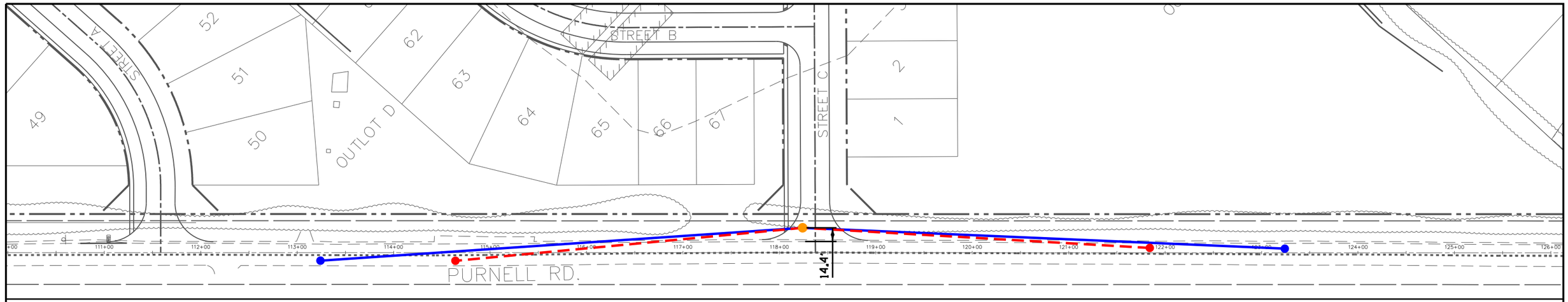

IDOT BDE MANUAL – CHAPTER 36

b = ISD = 1.467 V_{major} t_c

where: b = length of sight triangle along the major road or ISD, ft (m)
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V_{major} = design speed of major road, mph (km/h)
t_c = critical gap for entering or crossing the major road, sec

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= INTERSECTION SIGHT DISTANCE
= STOPPING SIGHT DISTANCE

IDOT BDE MANUAL – CHAPTER 31

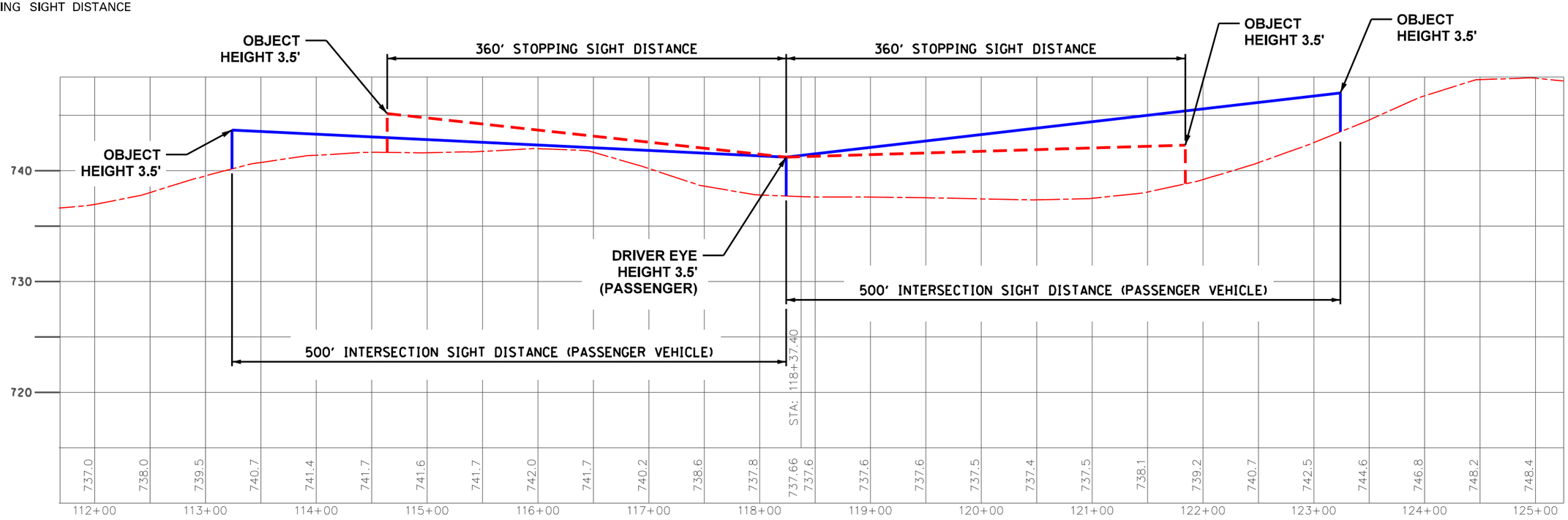
$SSD = 1.47\ Vt + 1.075\ \frac{V^2}{a}$

where: SSD = Stopping Sight Distance, ft (m)
V = design speed, mph (km/h)
t = brake time, 2.5 seconds
a = driver deceleration, ft/s² (m/s²)

$360 = 1.47\ 45(2.5) + 1.075\ (\frac{2025}{11.2})$

POSTED SPEED LIMIT = 40 MPH
DESIGN SPEED = 45 MPH

SCALE: 1" = 100'

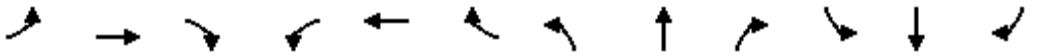


TRILLUM FARM
WEST CHICAGO, ILLINOIS

SIGHT DISTANCE STUDY
PURNELL ROAD AT STREET C

DRAWN: MD CHECKED: LA
DATE: 09-23-19 REV:
PROJECT # 19-227
FIGURE: B

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.

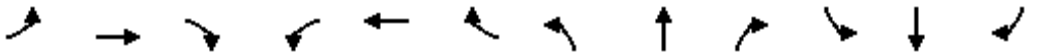


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	19	256	92	21	13	67	1690	51	0	1550	34
Future Volume (vph)	150	19	256	92	21	13	67	1690	51	0	1550	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	140		0	110		0	165		0	120		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	150			100			90			80		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.860			0.943			0.996			0.997	
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1736	1598	0	1787	1639	0	1770	3561	0	1900	3526	0
Flt Permitted	0.493			0.338			0.058					
Satd. Flow (perm)	901	1598	0	636	1639	0	108	3561	0	1900	3526	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		192			14			3			2	
Link Speed (mph)		40			40			45			45	
Link Distance (ft)		2827			1940			1468			399	
Travel Time (s)		48.2			33.1			22.2			6.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	6%	2%	1%	15%	0%	2%	1%	0%	0%	2%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	167	305	0	102	37	0	74	1935	0	0	1760	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		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	15.0		3.0	15.0		3.0	8.0		3.0	8.0	
Minimum Split (s)	8.5	37.5		7.5	37.5		8.0	34.5		7.5	37.5	
Total Split (s)	15.0	35.0		15.0	35.0		15.0	70.0		15.0	70.0	
Total Split (%)	11.1%	25.9%		11.1%	25.9%		11.1%	51.9%		11.1%	51.9%	
Yellow Time (s)	3.5	4.5		3.5	4.5		3.5	4.5		3.5	4.5	
All-Red Time (s)	2.0	2.0		1.0	1.0		1.5	2.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	6.5		4.5	5.5		5.0	6.5		4.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Min		None	Ped	
Act Effct Green (s)	30.4	18.2		22.7	18.8		75.8	74.3			65.0	
Actuated g/C Ratio	0.25	0.15		0.19	0.16		0.63	0.62			0.54	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.47	0.75		0.48	0.14		0.42	0.88			0.92	
Control Delay	41.0	31.0		44.2	32.0		19.7	25.4			35.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	41.0	31.0		44.2	32.0		19.7	25.4			35.9	
LOS	D	C		D	C		B	C			D	
Approach Delay		34.5			41.0			25.2			35.9	
Approach LOS		C			D			C			D	
Queue Length 50th (ft)	106	86		61	16		19	575			628	
Queue Length 95th (ft)	171	193		108	48		60	896			#1001	
Internal Link Dist (ft)		2747			1860			1388			319	
Turn Bay Length (ft)	140			110			165					
Base Capacity (vph)	354	528		225	416		207	2206			1910	
Starvation Cap Reductn	0	0		0	0		0	0			0	
Spillback Cap Reductn	0	0		0	0		0	0			0	
Storage Cap Reductn	0	0		0	0		0	0			0	
Reduced v/c Ratio	0.47	0.58		0.45	0.09		0.36	0.88			0.92	

Intersection Summary			
Area Type:	Other		
Cycle Length: 135			
Actuated Cycle Length: 120			
Natural Cycle: 125			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 31.0		Intersection LOS: C	
Intersection Capacity Utilization 91.9%		ICU Level of Service F	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: Winfield Road & Mack Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	24	112	146	62	5	175	1569	45	3	1607	67
Future Volume (vph)	71	24	112	146	62	5	175	1569	45	3	1607	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	140		0	110		0	165		0	120		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	150			100			90			80		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.876			0.989			0.996			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1653	0	1787	1879	0	1787	3561	0	1805	3554	0
Flt Permitted	0.711			0.498			0.055			0.076		
Satd. Flow (perm)	1324	1653	0	937	1879	0	103	3561	0	144	3554	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		117			3			3			4	
Link Speed (mph)		40			40			45			45	
Link Distance (ft)		2827			1940			1468			399	
Travel Time (s)		48.2			33.1			22.2			6.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	4%	0%	1%	0%	0%	1%	1%	0%	0%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	74	142	0	152	70	0	182	1681	0	3	1744	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		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	15.0		3.0	15.0		3.0	8.0		3.0	8.0	
Minimum Split (s)	8.5	37.5		7.5	37.5		8.0	34.5		7.5	37.5	
Total Split (s)	15.0	35.0		15.0	35.0		15.0	70.0		15.0	70.0	
Total Split (%)	11.1%	25.9%		11.1%	25.9%		11.1%	51.9%		11.1%	51.9%	
Yellow Time (s)	3.5	4.5		3.5	4.5		3.5	4.5		3.5	4.5	
All-Red Time (s)	2.0	2.0		1.0	1.0		1.5	2.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	6.5		4.5	5.5		5.0	6.5		4.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Min		None	Ped	
Act Effct Green (s)	24.6	15.0		28.4	19.0		79.9	76.4		71.1	64.5	
Actuated g/C Ratio	0.20	0.12		0.23	0.16		0.66	0.63		0.59	0.53	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.25	0.46		0.52	0.24		0.88	0.75		0.02	0.92	
Control Delay	37.8	18.3		43.7	47.5		67.9	19.1		7.7	35.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	37.8	18.3		43.7	47.5		67.9	19.1		7.7	35.5	
LOS	D	B		D	D		E	B		A	D	
Approach Delay		25.0			44.9			23.8			35.4	
Approach LOS		C			D			C			D	
Queue Length 50th (ft)	45	18		96	48		93	430		1	636	
Queue Length 95th (ft)	87	81		158	95		#229	660		4	#782	
Internal Link Dist (ft)		2747			1860			1388			319	
Turn Bay Length (ft)	140			110			165			120		
Base Capacity (vph)	313	478		293	459		206	2246		234	1892	
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	0.24	0.30		0.52	0.15		0.88	0.75		0.01	0.92	

Intersection Summary			
Area Type:	Other		
Cycle Length: 135			
Actuated Cycle Length: 121.2			
Natural Cycle: 125			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 30.0		Intersection LOS: C	
Intersection Capacity Utilization 94.8%		ICU Level of Service F	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: Winfield Road & Mack Road

Intersection	
Int Delay, s/veh	2

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	0	100	211	1642	1484	2
Future Vol, veh/h	0	100	211	1642	1484	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	50	0	115	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	2	1	2	2	0
Mvmt Flow	0	106	224	1747	1579	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2902	791	1581	0	-	0
Stage 1	1580	-	-	-	-	-
Stage 2	1322	-	-	-	-	-
Critical Hdwy	6.8	6.94	4.12	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.32	2.21	-	-	-
Pot Cap-1 Maneuver	13	332	417	-	-	-
Stage 1	158	-	-	-	-	-
Stage 2	217	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	6	332	417	-	-	-
Mov Cap-2 Maneuver	6	-	-	-	-	-
Stage 1	73	-	-	-	-	-
Stage 2	217	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	20.9	2.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SELn2	SWT	SWR
Capacity (veh/h)	417	-	-	332	-	-
HCM Lane V/C Ratio	0.538	-	-	0.32	-	-
HCM Control Delay (s)	23.3	-	0	20.9	-	-
HCM Lane LOS	C	-	A	C	-	-
HCM 95th %tile Q(veh)	3.1	-	-	1.4	-	-

Intersection	
Int Delay, s/veh	8.1

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	46	0	75	35	148	38
Future Vol, veh/h	46	0	75	35	148	38
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	89	89	89	89	89	89
Heavy Vehicles, %	5	2	0	18	3	0
Mvmt Flow	52	0	84	39	166	43

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	52	0	259	52
Stage 1	-	-	-	-	52	-
Stage 2	-	-	-	-	207	-
Critical Hdwy	-	-	4.1	-	6.43	6.2
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.2	-	3.527	3.3
Pot Cap-1 Maneuver	-	-	1567	-	728	1021
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	825	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1567	-	688	1021
Mov Cap-2 Maneuver	-	-	-	-	688	-
Stage 1	-	-	-	-	915	-
Stage 2	-	-	-	-	825	-

Approach	EB	WB	NW
HCM Control Delay, s	0	5.1	11.8
HCM LOS			B

Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	737	-	-	1567	-
HCM Lane V/C Ratio	0.284	-	-	0.054	-
HCM Control Delay (s)	11.8	-	-	7.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	1.2	-	-	0.2	-

Intersection	
Int Delay, s/veh	0.9

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	4	71	174	4	12	12
Future Vol, veh/h	4	71	174	4	12	12
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	95	95	95	95	95	95
Heavy Vehicles, %	0	2	2	0	0	0
Mvmt Flow	4	75	183	4	13	13

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	187	0	-	0	268	185
Stage 1	-	-	-	-	185	-
Stage 2	-	-	-	-	83	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1399	-	-	-	726	862
Stage 1	-	-	-	-	852	-
Stage 2	-	-	-	-	945	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1399	-	-	-	724	862
Mov Cap-2 Maneuver	-	-	-	-	724	-
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	945	-

Approach	SE	NW	SW
HCM Control Delay, s	0.4	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SWLn1
Capacity (veh/h)	-	-	1399	-	787
HCM Lane V/C Ratio	-	-	0.003	-	0.032
HCM Control Delay (s)	-	-	7.6	0	9.7
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	-	0.1

Intersection	
Int Delay, s/veh	1

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	4	79	166	4	12	12
Future Vol, veh/h	4	79	166	4	12	12
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	95	95	95	95	95	95
Heavy Vehicles, %	0	2	2	0	0	0
Mvmt Flow	4	83	175	4	13	13

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	179	0	-	0	268	177
Stage 1	-	-	-	-	177	-
Stage 2	-	-	-	-	91	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1409	-	-	-	726	871
Stage 1	-	-	-	-	859	-
Stage 2	-	-	-	-	938	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1409	-	-	-	724	871
Mov Cap-2 Maneuver	-	-	-	-	724	-
Stage 1	-	-	-	-	856	-
Stage 2	-	-	-	-	938	-

Approach	SE	NW	SW
HCM Control Delay, s	0.4	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SWLn1
Capacity (veh/h)	-	-	1409	-	791
HCM Lane V/C Ratio	-	-	0.003	-	0.032
HCM Control Delay (s)	-	-	7.6	0	9.7
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	-	0.1

Intersection	
Int Delay, s/veh	3.6

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	0	263	0	1645	1414	12
Future Vol, veh/h	0	263	0	1645	1414	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	50	0	115	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	1	1	1	1	0
Mvmt Flow	0	280	0	1750	1504	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2386	759	1517	0	-	0
Stage 1	1511	-	-	-	-	-
Stage 2	875	-	-	-	-	-
Critical Hdwy	6.8	6.92	4.12	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.31	2.21	-	-	-
Pot Cap-1 Maneuver	29	351	441	-	-	-
Stage 1	172	-	-	-	-	-
Stage 2	373	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	29	351	441	-	-	-
Mov Cap-2 Maneuver	29	-	-	-	-	-
Stage 1	172	-	-	-	-	-
Stage 2	373	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	45.5	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SELn2	SWT	SWR
Capacity (veh/h)	441	-	-	351	-	-
HCM Lane V/C Ratio	-	-	-	0.797	-	-
HCM Control Delay (s)	0	-	0	45.5	-	-
HCM Lane LOS	A	-	A	E	-	-
HCM 95th %tile Q(veh)	0	-	-	6.7	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	32	238	73	50	41	6
Future Vol, veh/h	32	238	73	50	41	6
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	87	87	87	87	87	87
Heavy Vehicles, %	7	0	0	4	1	0
Mvmt Flow	37	274	84	57	47	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	311	0	399	174
Stage 1	-	-	-	-	174	-
Stage 2	-	-	-	-	225	-
Critical Hdwy	-	-	4.1	-	6.41	6.2
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.2	-	3.509	3.3
Pot Cap-1 Maneuver	-	-	1261	-	609	875
Stage 1	-	-	-	-	859	-
Stage 2	-	-	-	-	815	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1261	-	567	875
Mov Cap-2 Maneuver	-	-	-	-	567	-
Stage 1	-	-	-	-	800	-
Stage 2	-	-	-	-	815	-

Approach	EB	WB	NW
HCM Control Delay, s	0	4.8	11.7
HCM LOS			B

Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	594	-	-	1261	-
HCM Lane V/C Ratio	0.091	-	-	0.067	-
HCM Control Delay (s)	11.7	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.2	-

Intersection	
Int Delay, s/veh	0.9

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	27	284	39	0	8	8
Future Vol, veh/h	27	284	39	0	8	8
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	95	95	95	95	95	95
Heavy Vehicles, %	0	0	1	0	0	0
Mvmt Flow	28	299	41	0	8	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	41	0	-	0	396	41
Stage 1	-	-	-	-	41	-
Stage 2	-	-	-	-	355	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1581	-	-	-	613	1036
Stage 1	-	-	-	-	987	-
Stage 2	-	-	-	-	714	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1581	-	-	-	600	1036
Mov Cap-2 Maneuver	-	-	-	-	600	-
Stage 1	-	-	-	-	966	-
Stage 2	-	-	-	-	714	-

Approach	SE	NW	SW
HCM Control Delay, s	0.6	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SWLn1
Capacity (veh/h)	-	-	1581	-	760
HCM Lane V/C Ratio	-	-	0.018	-	0.022
HCM Control Delay (s)	-	-	7.3	0	9.8
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	-	0.1

Intersection	
Int Delay, s/veh	1.1

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	27	265	31	0	8	8
Future Vol, veh/h	27	265	31	0	8	8
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	95	95	95	95	95	95
Heavy Vehicles, %	0	0	1	0	0	0
Mvmt Flow	28	279	33	0	8	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	33	0	-	0	368	33
Stage 1	-	-	-	-	33	-
Stage 2	-	-	-	-	335	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1592	-	-	-	636	1046
Stage 1	-	-	-	-	995	-
Stage 2	-	-	-	-	729	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1592	-	-	-	623	1046
Mov Cap-2 Maneuver	-	-	-	-	623	-
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	729	-

Approach	SE	NW	SW
HCM Control Delay, s	0.7	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SWLn1
Capacity (veh/h)	-	-	1592	-	781
HCM Lane V/C Ratio	-	-	0.018	-	0.022
HCM Control Delay (s)	-	-	7.3	0	9.7
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	-	0.1