

Greenhills School Operational Analysis

Ann Arbor, MI

June 2026

I certify that this Traffic Impact Analysis report has been prepared by me or under my immediate supervision and that I have experience and training in the field of traffic and transportation engineering.

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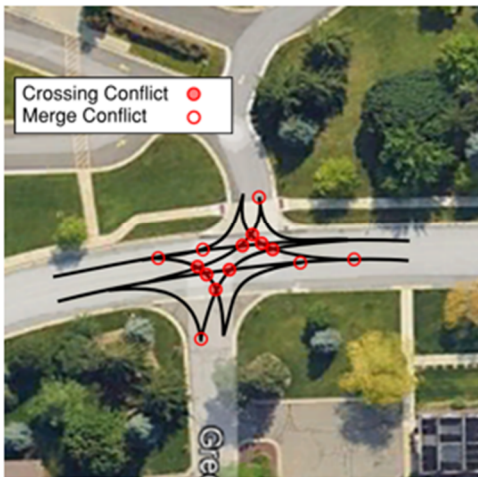
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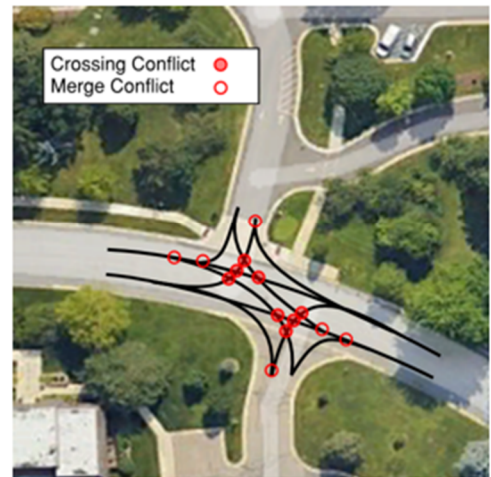
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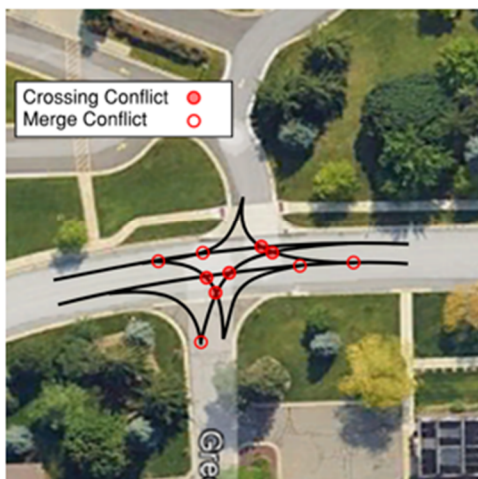
North Driveway Existing



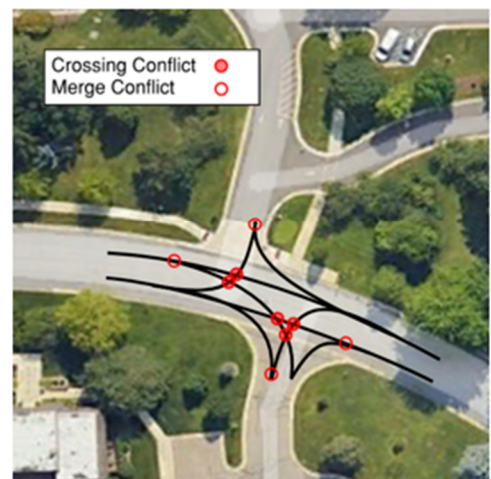
South Driveway Existing



North Driveway Proposed



South Driveway Proposed



GREENHILLS SCHOOL OPERATIONAL ANALYSIS

Kimley-Horn and Associates of Michigan, Inc. (Kimley-Horn) was retained by Greenhills School to perform a traffic analysis of the school's pick-up and drop operations in Ann Arbor, Michigan. A traffic impact study was previously completed for this development, *Multimodal Traffic Impact Study Greenhills School* dated March 18, 2026 by Midwestern Consulting. The purpose of this report is to provide supplemental operational analysis for the site utilizing 2026 traffic data, additional recorded video, and the forecasted increase of allowable students up to 750 from the existing 720. The analysis will evaluate proposed operational changes to the site based upon current operations.

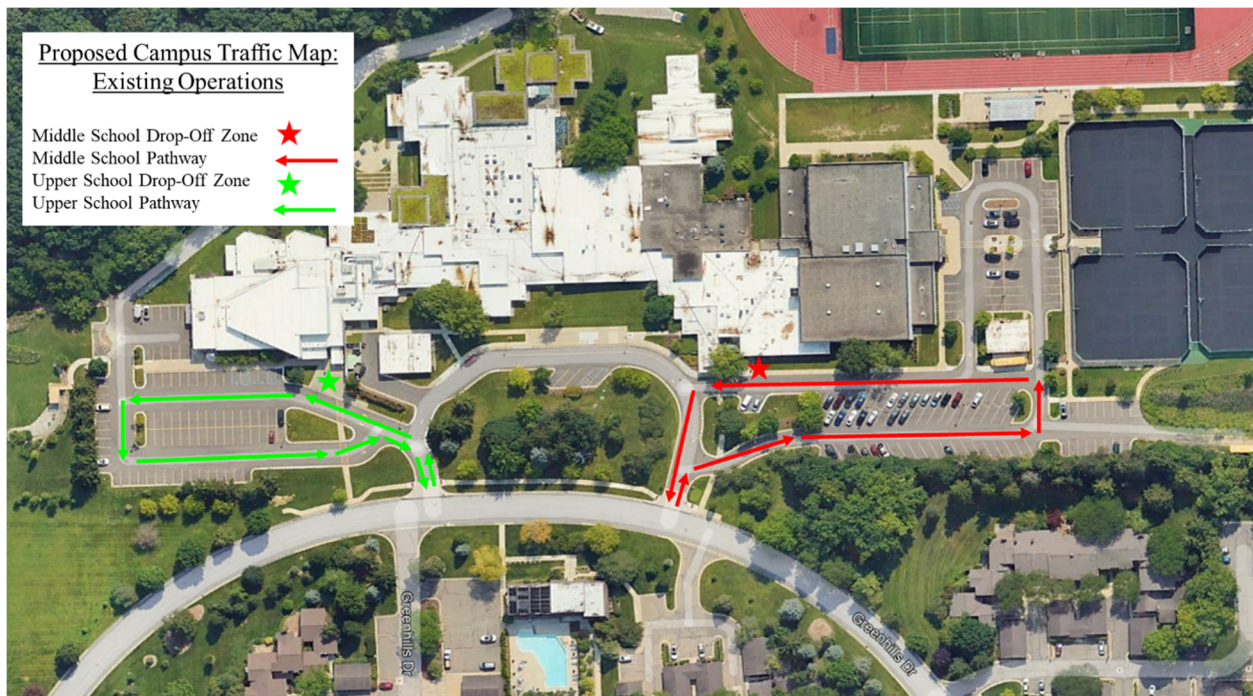
1. EXISTING OPERATIONAL REVIEW

As part of this study, the existing operations on campus and at the driveways with Greenhills Drive were reviewed. The review included pick-up/drop-off operations and parking utilization along Greenhills Drive.

Existing Observations

The existing traffic flow follows two main pickup/drop-off areas. The south driveway provides two-way access to a loop for middle school student processing. Cars that utilize this loop typically exit via the same south driveway to leave campus. The other access point for upper school students is by utilizing the north driveway which is also a two-way driveway. This traffic flow is illustrated in [Exhibit 1](#).

Exhibit 1. Existing Pick-up and Drop-off Operations

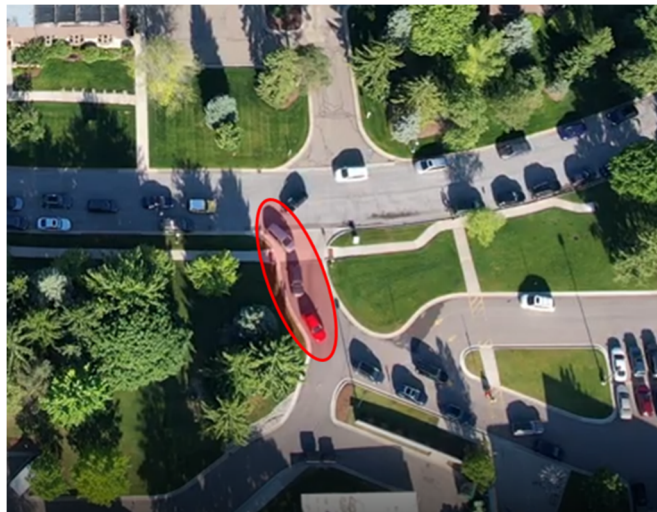


Existing AM Traffic Observations

Drone footage of the study area was collected on 05/27/26 thru 05/29/26 for peak AM peak hour. Note that on 5/29, the entire school was on campus for end of year activities. Video review of the intersections indicated that the max queue volumes during the AM peak were approximately 15 cars travelling northbound along Greenhills Drive between 8:20-8:30. Roughly one third of those vehicles continued northbound on Greenhills rather than making the northbound right into the south driveway.

Observations suggest that queuing along Greenhills Drive is influenced by two factors: conflicting turning movements at the southern driveway and queuing from the northbound driveway pick-up and drop-off as discussed in the prior impact study. The southern driveway has heavier movements in and out, which is exacerbated by queuing at the northern driveway. This was reinforced by the review of 12-hour camera footage of the driveways and Greenhills Drive taken on 02/10/2926. The figure below shows an example of how queuing from the northern driveway impacted operations along Greenhills Drive.

Figure: AM Video from 5/29/26 Showing Drop-Off Queue Reaching Greenhills Drive

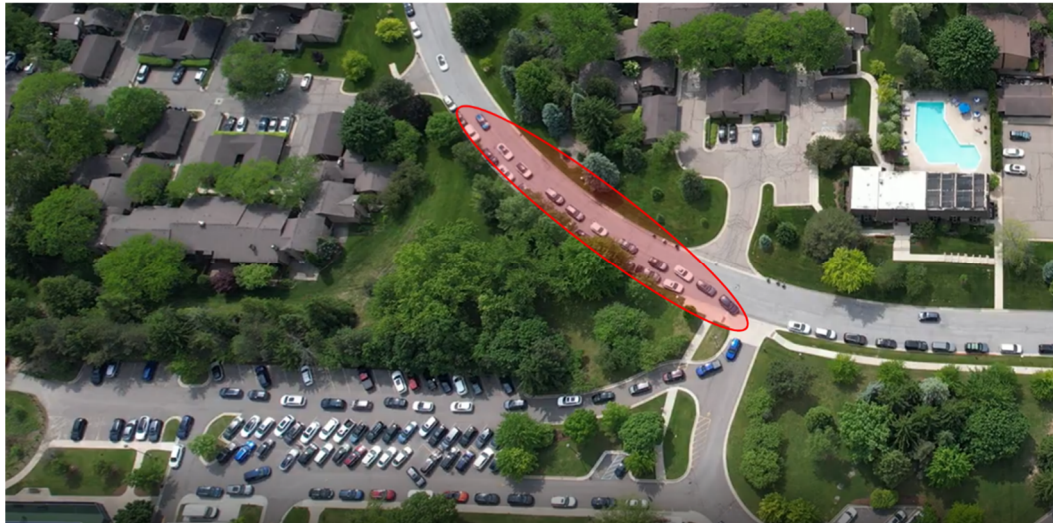


An average student processing time was calculated to be 20 seconds from a review of the drone footage. This value was the average time it took for a student to unload after the vehicle comes to a stop. It should be noted that while there was an observed variance during these observations. For example, anecdotally, if items such as large instruments or multiple students departed the vehicle, the duration increased.

Existing PM Traffic Observations

Drone footage was also collected on the same days for the afternoon peak times. Review of the footage indicated the max queue to be 46 cars, which extended near the Earhart Road and Greenhills Drive intersection. The figure below shows the PM pick-up queue starting to build.

Figure: PM Video from 5/29/26 Showing Queue Building Along Greenhills Drive



It should be noted that the average student processing time was also calculated to be approximately 20 seconds. This illustrated that the PM operations are not influenced by loading times, but from the need to provide queuing space before pick-up time started.

Parking Observations

Parking utilization in the AM peaked at approximately 26 cars on 05/28/26, and 56 cars on 05/29/26. This difference is assumed to be due to the variations in traffic at the end of the school year, with the full campus being present on 5/29/26 for commencement activities. The parking utilization during the PM peak was 40 cars on 05/28/26, where approximately 15 of those cars were parked for student pickup.

Transit Observations

AAATA Route 65 operates along Greenhills Drive at 30 minute headways and Route 67 operates a route variation during school start and end times. The stop for these routes is at the northern school driveway. During observations, the AAATA buses did experience some delay during AM and PM peak operations.

Existing Operations Summary

From a review of the existing operations, two key issues have been identified that influence the operations at Greenhills School. First, the congestion between the driveways is influencing driver behavior along Greenhills Drive. Secondly, there is not adequate queuing capacity on campus with the current pick-up operations.

2. PROPOSED CHANGES ANALYSIS

To further improve the pick-up and drop-off operations, two main improvements are proposed. The first is to convert the school driveway into a one-way loop as shown in [Exhibit 2](#). Second, the school will enact a transportation demand management (TDM) strategy by staggering the school's start and end times. The proposed changes align with several key tools, strategies, and goals outlined in the *City of Ann Arbor Comprehensive Transportation Plan*.

Alignment with the City's Plan: Simplified Intersections

The plan lists simplified intersections as a tool to address dangerous driving behaviors. By converting the school driveway into a one-way loop, several turning movements are eliminated, simplifying the intersection.

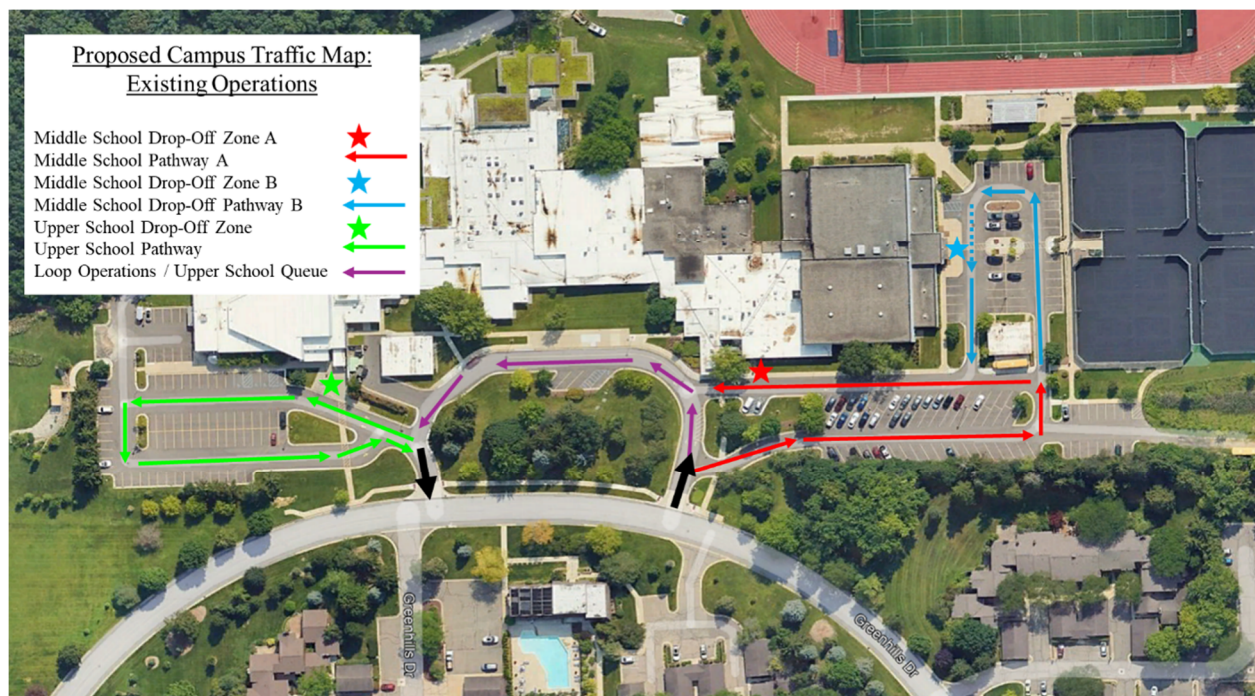
Alignment with the City's Plan: Transportation Demand Management

The plan references how TDM strategies aim to address the intensity of demand on a transportation facility. By staggering the start and end times of the school, Greenhills School is aligning with City objectives planning by spreading out the demand over a longer period of time.

Alignment with the City's Plan: Transit Reliability

The plan references how reliable service will help increase transit ridership. Improving operations along Greenhills Drive will improve transit service for Route 65 and Route 66.

Exhibit 2. Proposed Pick-up and Drop-off Operations



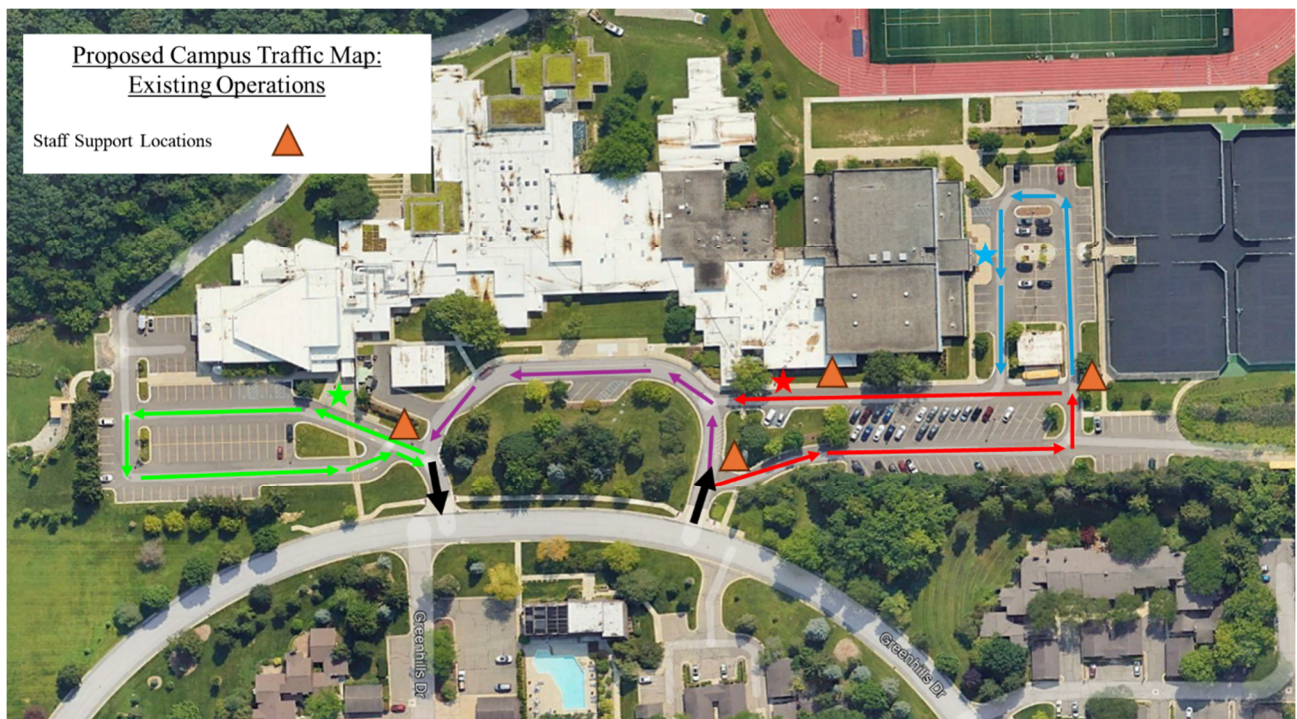
One-Way Driveway Analysis

Queuing Analysis

Observations showed queuing starting to encroach upon the roundabout at Earhart Drive from the southern school driveway. The total distance from the southern driveway to Earhart Drive along Greenhills Drive is approximately 750'. As seen above in Exhibit 2, by converting the school driveway into a one-way loop (purple line) and utilizing the athletic door (blue star), **approximately 675' of new queuing space is created on campus** which effectively shifts the stacking from Greenhills Drive onto the school campus. The school is developing an assignment plan to balance pick-ups between the locations based upon the student population to balance the utilization of each drop-off zone. Furthermore, additional signage is recommended to encourage drivers to utilize the full length of the sidewalk for pick-up and drop-off operations. This will increase the rate of turnover on campus, reducing the impacts to Greenhills Drive.

It is recognized that enforcement of this plan will be a contributor to the success of the new plan. As such, it is recommended that school staff key points on campus to help manage drop-off and pick-up operations by staffing the following location as shown in Exhibit 3.

Exhibit 3. Staffing Recommendations

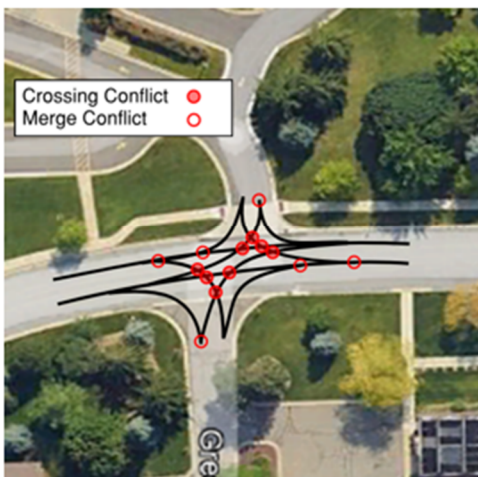


Safety Analysis

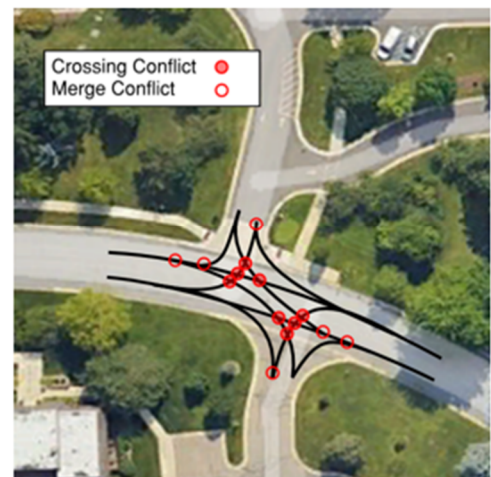
By converting the school driveway into one way operation, the driveway intersections with Greenhills Drive are simplified, improving the intersection for all users, including residents of Earhart Village. This is due to the fact that conflict points within the intersection are reduced as shown in [Exhibit 4](#). At the southern driveway, there are currently 8 crossing conflict points and 6 merging conflict points meaning there are 14 possible locations for crashes between vehicles. By removing the outbound traffic, this intersection is reduced to 5 crossing conflict points and 4 merging conflict points, for a total of 9 conflict points. For the northern driveway, similarly there are 8 crossing and 6 merging conflict points in the existing condition, being reduced to 5 crossing and 5 merging, respectively in the one-way condition. The proposed one-way operations improve safety for users along Greenhills Drive.

Exhibit 4. Conflict Point Summary Exhibit

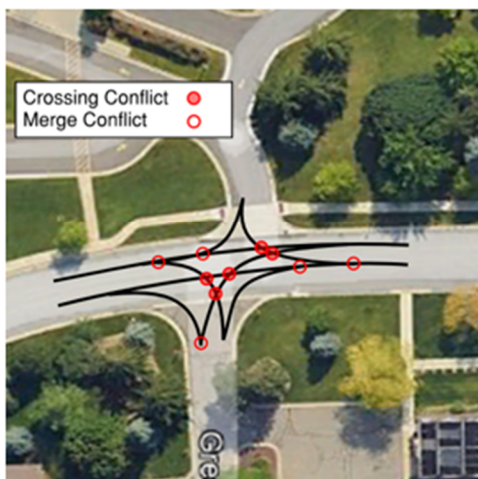
North Driveway Existing



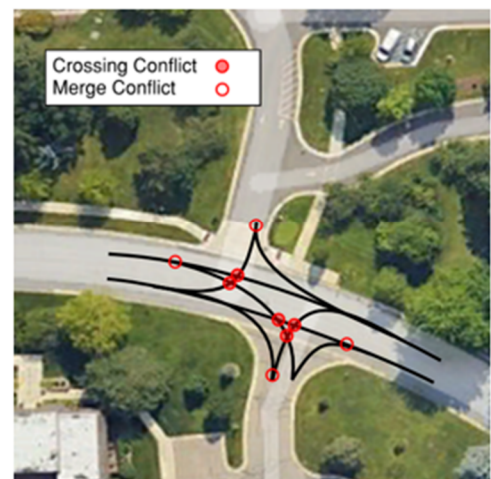
South Driveway Existing



North Driveway Proposed



South Driveway Proposed



Operational Analysis

An analysis of one-way operations was completed utilizing the Synchro models and forecasted volumes from the *Multimodal Traffic Impact Study Greenhills School*. The same analysis periods were utilized for an AM peak and two hours of PM peak traffic. The forecasted volumes were reassigned to utilize the southbound driveway to enter the site and the northbound driveway to exit the site with one lane for both the entrance and exit. For the purposes of this analysis, vehicles heading southbound or northbound along Greenhills Drive was kept constant, meaning if drivers turned left out of either driveway existing, they turned left from the consolidated driveway.

Table 2.1 shows the projection level of service for the one-way operation of the school driveway. It should be noted that the operations northbound and southbound along Greenhills Drive in this analysis show nominal delay, including the southbound left into campus at the south school driveway. The westbound driveway exist at the north driveway does show some delay during the AM peak, but this delay can be managed on campus.

If the exiting delay becomes challenging for operations on campus, two mitigation measures exist. First, if the exit was designed with two lanes, the ~25 second average delay per vehicle is reduced to ~18 seconds. Second, if the exit driveway was converted to right out only, the delay would be reduced to ~19 seconds with a queue of 188'. Ultimately the exiting traffic will self-balance the delay operations between right and left turns and the driveway is recommended to provide both movements.

Table 2.1. Proposed Operational Levels of Service – One lane exit

Intersection	Weekday AM Peak Hour			Weekday PM Peak Hour (3pm)			Weekday PM Peak Hour (4pm)		
	Delay (s/veh)	LOS	Queue (ft)	Delay (s/veh)	LOS	Queue (ft)	Delay (s/veh)	LOS	Queue (ft)
Greenhills Drive / South Driveway									
Eastbound	15.5	C	1	11.1	B	1	8.8	A	0
Westbound	-	-	-	-	-	-	-	-	-
Northbound	0.0	A	0	0.0	A	0	0.1	A	0
Southbound	8.2	A	24	3.3	A	5	2.8	A	3
Intersection	2.6	A	-	1.9	A	-	1.7	A	-
Greenhills Drive / North Driveway									
Eastbound	29.5	D	2	9.5	A	1	8.7	A	0
Westbound	25.3	D	249	12.1	B	57	9.8	A	21
Northbound	0.3	A	0	0.2	A	0	0.8	A	0
Southbound	0.0	A	0	0.0	A	0	0.0	A	0
Intersection	17.7	C	-	8.4	A	-	6.8	A	-

Staggered Drop-Off Analysis

The TDM strategy to be implemented by Greenhills School is to stagger the drop-off times for students. Currently, the majority of the school population arrives within a 15 minute window. This is evidenced by both observations of the recorded drone footage and that the peak hour factor from the collected turning movement counts generally ranged between 0.5 and 0.6.

For next school year, the staggered school schedule will have faculty expected to be in school by 7:30 AM, the Middle School starting at 8:00 AM, and the Upper School starting at 8:30 AM. When looking at enrollment trends, the schedule distributes the arrival over the morning hour instead of being concentrated. To analyze the impacts of this operation, and peak hour factor of 0.85 was assumed. This value generally spreads traffic over the hour and is assumed reasonable. Note carpools and siblings make it unreasonable to attempt to report on a discrete value.

Table 2.2 shows the projection level of service for the one-way operation of the school driveway during the AM peak with the staggered start times. It should be noted that when comparing existing operations to the proposed staggered start times with a one-way driveway, operations along Greenhills Drive improves.

Table 2.2. Proposed Operational Levels of Service – Staggered School Start Times

Intersection	Existing Weekday AM Peak Hour			Proposed Weekday AM Peak Hour – Current Start			Proposed Weekday AM Peak Hour - Staggered		
	Delay (s/veh)	LOS	Queue (ft)	Delay (s/veh)	LOS	Queue (ft)	Delay (s/veh)	LOS	Queue (ft)
Greenhills Drive / South Driveway									
Eastbound	11.6	B	*	15.5	C	1	12.3	C	0
Westbound	17.0	C	*	-	-	-	-	-	-
Northbound	0.0	A	*	0.0	A	0	0.0	A	0
Southbound	8.7	A	*	8.2	A	24	6.9	A	14
<i>Intersection</i>	2.5	A	-	2.6	A	-	2.5	A	-
Greenhills Drive / North Driveway									
Eastbound	18.3	C	*	29.5	D	2	13.0	B	0
Westbound	22.1	C	*	25.3	D	249	11.1	B	21
Northbound	0.0	A	*	0.3	A	0	0.2	A	0
Southbound	6.3	A	*	0.0	A	0	0.0	A	0
<i>Intersection</i>	9.1	A	-	17.7	C	-	7.1	A	-

* See prior study

Table 2.3 shows the projection level of service for the one-way operation of the school driveway during the PM peak with the staggered end times. It should be noted that when comparing existing operations to the proposed staggered end times with a one-way driveway, operations along Greenhills Drive improves slightly at the northern driveway.

Table 2.3. Proposed Operational Levels of Service – Staggered School End Times

Intersection	Existing Weekday 3PM Peak Hour			Proposed Weekday 3PM Peak Hour – Current Start			Proposed Weekday 3PM Peak Hour - Staggered		
	Delay (s/veh)	LOS	Queue (ft)	Delay (s/veh)	LOS	Queue (ft)	Delay (s/veh)	LOS	Queue (ft)
Greenhills Drive / South Driveway									
Eastbound	10.7	B	*	11.1	B	1	11.5	B	1
Westbound	11.1	B	*	-	-	-	-	-	-
Northbound	0.0	A	*	0.0	A	0	0.0	A	0
Southbound	2.9	A	*	3.3	A	5	3.6	A	5
<i>Intersection</i>	5.6	A	-	1.9	A	-	2.0	A	-
Greenhills Drive / North Driveway									
Eastbound	9.5	A	*	9.5	A	1	9.5	A	0
Westbound	11.6	B	*	12.1	B	57	11.0	B	40
Northbound	0.1	A	*	0.2	A	0	0.1	A	0
Southbound	4.5	A	*	0.0	A	0	0.0	A	0
<i>Intersection</i>	5.7	A	-	8.4	A	-	7.8	A	-

* See prior study

Recommended Analysis Evaluation

The analysis shows improvements to existing operations with the proposed recommendations. However, it is acknowledged that the analyzed improvements need to be realized in real-world practice. It is recommended that school staff partner with City staff upon project completion to observe the changes and determine any longer-term improvements to be considered beyond the current proposed recommendations.

Some of the potential longer-term improvements may include the following:

- Convert the northern driveway into a right-out only to improve peak operations. It may limit overall mobility during off-peak operations.
- Raising crosswalks internal to the campus from the school to the Greenhills Drive to improve the non-motorized operation of those crosswalks.
- Develop a formalized carpool portal to help student families identify potential carpool options to further limit site demand.
- Investigate partnership with adjacent parcel land owners to increase the sidewalk network along Greenhills Drive and/or utilizing space to create additional parking or another access point. Note this is not within complete control of the school due adjacent parcel ownership.

3. RECOMMENDATIONS & CONCLUSIONS

Based on Kimley-Horn's review of the proposed site plan and evaluation of existing and future traffic conditions, the study intersections of Greenhills Drive and the two school driveways are expected to adequately accommodate the proposed student increase with the following recommendations:

- Convert the existing loop driveway from two-way operations into a one-way driveway.
 - Convert the south school driveway intersection from full access to one-way into campus.
 - Convert the north school driveway intersection from full access to one-way from campus.
- Stagger the school start and end times for the Middle School and Upper School by 30 minutes.
- Develop a pick-up/drop-off plan that utilizes the athletic wing parking lot to maximize on-campus queuing space.
 - Staff key points to manage internal operations during pick-up/drop-off
- Coordinate with City Staff to confirm proposed recommendations in action align with analyzed benefits.
 - Consider if longer term considerations need to be enacted.

Design Considerations

The following design considerations should be included when implementing the recommendations.

South School Driveway

- Utilize pavement markings or channelizing devices to align motorists into one lane at the driveway
 - This will eliminate the possibility of motorists weaving right when entering campus
 - Larger vehicles such as buses and service vehicles will need to be reviewed to ensure adequate turning radius is provided

North School Driveway

- Utilize pavement markings to create one left turn and one right turn lane exiting campus
 - This will align vehicles for entering the public right of way at Greenhills Drive
 - During high peaks there may be some low-speed weaving on campus as vehicles approach the intersection but the benefits of a two-lane exit outweigh the concerns with low-speed weaving

Revised Pick-Up/Drop-Off Plan

- Add signage along the full length of the Middle School sidewalk indicating it is a pick-up/drop-off zone
 - This will maximize the ability to process vehicles during this time, reducing the chance for delays to impact Greenhills Drive
- Consider developing a drop-off assignment plan to assist in enforcing the new drop-off area to be utilized

APPENDIX

Synchro Capacity Reports

SYNCHRO CAPACITY REPORTS

HCM Unsignalized Intersection Capacity Analysis

1003: Greenhills Drive & Residential Driveway/School Drive (S)

06/01/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	1	0	0	0	0	36	342	151	57	0
Future Volume (Veh/h)	1	0	1	0	0	0	0	36	342	151	57	0
Sign Control	Stop		Stop		Free		Free					
Grade	0%		0%		0%		0%					
Peak Hour Factor	0.50	0.50	0.50	0.54	0.54	0.54	0.56	0.56	0.56	0.68	0.68	0.68
Hourly flow rate (vph)	2	0	2	0	0	0	0	64	611	222	84	0
Pedestrians	9											
Lane Width (ft)	12.0											
Walking Speed (ft/s)	3.5											
Percent Blockage	1											
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	898	1212	84	909	907	379	84				684	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	898	1212	84	909	907	379	84				684	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	99	100	100	100	100	100	100				75	
cM capacity (veh/h)	211	137	981	206	208	667	1513				901	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	4	0	675	306								
Volume Left	2	0	0	222								
Volume Right	2	0	611	0								
cSH	348	1700	1513	901								
Volume to Capacity	0.01	0.00	0.00	0.25								
Queue Length 95th (ft)	1	0	0	24								
Control Delay (s/veh)	15.5	0.0	0.0	8.2								
Lane LOS	C	A		A								
Approach Delay (s/veh)	15.5	0.0	0.0	8.2								
Approach LOS	C	A										
Intersection Summary												
Average Delay				2.6								
Intersection Capacity Utilization				48.6%	ICU Level of Service				A			
Analysis Period (min)				15								

* Value less than 0.01.

HCM Unsignalized Intersection Capacity Analysis

1004: Greenhills Drive & Residential Driveway/School Driveway (N)

06/01/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	1	52	0	276	1	31	0	0	159	0
Future Volume (Veh/h)	1	0	1	52	0	276	1	31	0	0	159	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.50	0.50	0.43	0.43	0.43	0.53	0.53	0.53	0.58	0.58	0.58
Hourly flow rate (vph)	2	0	2	121	0	642	2	58	0	0	274	0
Pedestrians					3							
Lane Width (ft)					12.0							
Walking Speed (ft/s)					3.5							
Percent Blockage					0							
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	978	339	274	341	339	61	274			61		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	978	339	274	341	339	61	274			61		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	100	80	100	36	100			100		
cM capacity (veh/h)	84	583	770	611	583	1007	1283			1544		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	4	763	60	274								
Volume Left	2	121	2	0								
Volume Right	2	642	0	0								
cSH	151	913	1283	1544								
Volume to Capacity	0.03	0.84	0.00*	0.00								
Queue Length 95th (ft)	2	249	0	0								
Control Delay (s/veh)	29.5	25.3	0.3	0.0								
Lane LOS	D	D	A									
Approach Delay (s/veh)	29.5	25.3	0.3	0.0								
Approach LOS	D	D										
Intersection Summary												
Average Delay			17.7									
Intersection Capacity Utilization			35.4%		ICU Level of Service				A			
Analysis Period (min)			15									

* Value less than 0.01.

HCM Unsignalized Intersection Capacity Analysis

1003: Greenhills Drive & Residential Driveway/School Drive (S)

06/01/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	0	0	0	0	0	0	41	107	66	88	2
Future Volume (Veh/h)	3	0	0	0	0	0	0	41	107	66	88	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.38	0.38	0.38	0.57	0.57	0.57	0.82	0.82	0.82	0.83	0.83	0.83
Hourly flow rate (vph)	8	0	0	0	0	0	0	50	130	80	106	2
Pedestrians		1			16			1				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		3.5			3.5			3.5				
Percent Blockage		0			2			0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	383	464	109	399	400	131	109			196		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	383	464	109	399	400	131	109			196		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	100	100	100	100			94		
cM capacity (veh/h)	545	461	948	524	501	910	1474			1350		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	8	0	180	188								
Volume Left	8	0	0	80								
Volume Right	0	0	130	2								
cSH	545	1700	1474	1350								
Volume to Capacity	0.01	0.00	0.00	0.06								
Queue Length 95th (ft)	1	0	0	5								
Control Delay (s/veh)	11.7	0.0	0.0	3.6								
Lane LOS	B	A		A								
Approach Delay (s/veh)	11.7	0.0	0.0	3.6								
Approach LOS	B	A										
Intersection Summary												
Average Delay			2.1									
Intersection Capacity Utilization			33.5%	ICU Level of Service					A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

1004: Greenhills Drive & Residential Driveway/School Driveway (N)

06/01/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	3	87	1	191	1	49	0	0	66	0
Future Volume (Veh/h)	1	0	3	87	1	191	1	49	0	0	66	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.33	0.33	0.33	0.70	0.70	0.70	0.74	0.74	0.74	0.61	0.61	0.61
Hourly flow rate (vph)	3	0	9	124	1	273	1	66	0	0	108	0
Pedestrians		1			5							
Lane Width (ft)		12.0			12.0							
Walking Speed (ft/s)		3.5			3.5							
Percent Blockage		0			0							
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	451	182	109	190	182	71	109			71		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	451	182	109	190	182	71	109			71		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	99	84	100	72	100			100		
cM capacity (veh/h)	375	711	949	755	707	987	1474			1516		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	12	398	67	108								
Volume Left	3	124	1	0								
Volume Right	9	273	0	0								
cSH	687	900	1474	1516								
Volume to Capacity	0.02	0.44	0.00*	0.00								
Queue Length 95th (ft)	1	57	0	0								
Control Delay (s/veh)	10.3	12.1	0.1	0.0								
Lane LOS	B	B	A									
Approach Delay (s/veh)	10.3	12.1	0.1	0.0								
Approach LOS	B	B										
Intersection Summary												
Average Delay			8.5									
Intersection Capacity Utilization			34.9%		ICU Level of Service				A			
Analysis Period (min)			15									

* Value less than 0.01.

HCM Unsignalized Intersection Capacity Analysis

1003: Greenhills Drive & Residential Driveway/School Drive (S)

06/01/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	1	0	0	0	1	9	91	49	83	1
Future Volume (Veh/h)	0	0	1	0	0	0	1	9	91	49	83	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.25	0.25	0.60	0.60	0.60	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	0	0	4	0	0	0	1	11	114	61	104	1
Pedestrians		2										
Lane Width (ft)		12.0										
Walking Speed (ft/s)		3.5										
Percent Blockage		0										
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	299	356	107	301	299	68	107			125		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	299	356	107	301	299	68	107			125		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			96		
cM capacity (veh/h)	634	548	951	631	589	1001	1475			1455		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	4	0	126	166								
Volume Left	0	0	1	61								
Volume Right	4	0	114	1								
cSH	951	1700	1475	1455								
Volume to Capacity	0.00*	0.00	0.00*	0.04								
Queue Length 95th (ft)	0	0	0	3								
Control Delay (s/veh)	8.8	0.0	0.1	3.0								
Lane LOS	A	A	A	A								
Approach Delay (s/veh)	8.8	0.0	0.1	3.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay			1.8									
Intersection Capacity Utilization			23.8%		ICU Level of Service				A			
Analysis Period (min)			15									

* Value less than 0.01.

HCM Unsignalized Intersection Capacity Analysis

1004: Greenhills Drive & Residential Driveway/School Driveway (N)

06/01/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	2	83	0	76	1	8	0	0	49	1
Future Volume (Veh/h)	0	0	2	83	0	76	1	8	0	0	49	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.50	0.50	0.74	0.74	0.74	0.76	0.76	0.76	0.59	0.59	0.59
Hourly flow rate (vph)	0	0	4	112	0	103	1	11	0	0	83	2
Pedestrians		5									1	
Lane Width (ft)		12.0									12.0	
Walking Speed (ft/s)		3.5									3.5	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	206	102	89	101	103	12	90			11		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	206	102	89	101	103	12	90			11		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	87	100	90	100			100		
cM capacity (veh/h)	677	788	970	878	787	1073	1492			1621		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	4	215	12	85								
Volume Left	0	112	1	0								
Volume Right	4	103	0	2								
cSH	970	962	1492	1621								
Volume to Capacity	0.00*	0.22	0.00*	0.00								
Queue Length 95th (ft)	0	21	0	0								
Control Delay (s/veh)	8.7	9.8	0.6	0.0								
Lane LOS	A	A	A									
Approach Delay (s/veh)	8.7	9.8	0.6	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay			6.8									
Intersection Capacity Utilization			27.5%	ICU Level of Service					A			
Analysis Period (min)			15									

* Value less than 0.01.

HCM Unsignalized Intersection Capacity Analysis

1003: Greenhills Drive & Residential Driveway/School Drive (S)

06/01/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	1	0	0	0	0	36	342	151	57	0
Future Volume (Veh/h)	1	0	1	0	0	0	0	36	342	151	57	0
Sign Control	Stop		Stop		Free		Free					
Grade	0%		0%		0%		0%					
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	1	0	1	0	0	0	0	42	402	178	67	0
Pedestrians	9											
Lane Width (ft)	12.0											
Walking Speed (ft/s)	3.5											
Percent Blockage	1											
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	666	876	67	676	675	252	67				453	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	666	876	67	676	675	252	67				453	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	100	100	100	100	100	100	100				84	
cM capacity (veh/h)	327	241	1002	319	314	785	1535				1098	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	2	0	444	245								
Volume Left	1	0	0	178								
Volume Right	1	0	402	0								
cSH	493	1700	1535	1098								
Volume to Capacity	0.00*	0.00	0.00	0.16								
Queue Length 95th (ft)	0	0	0	14								
Control Delay (s/veh)	12.3	0.0	0.0	6.9								
Lane LOS	B	A		A								
Approach Delay (s/veh)	12.3	0.0	0.0	6.9								
Approach LOS	B	A										
Intersection Summary												
Average Delay				2.5								
Intersection Capacity Utilization				48.6%	ICU Level of Service				A			
Analysis Period (min)				15								

* Value less than 0.01.

HCM Unsignalized Intersection Capacity Analysis

1004: Greenhills Drive & Residential Driveway/School Driveway (N)

06/01/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	1	52	0	276	1	31	0	0	159	0
Future Volume (Veh/h)	1	0	1	52	0	276	1	31	0	0	159	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	1	0	1	61	0	325	1	36	0	0	187	0
Pedestrians					3							
Lane Width (ft)					12.0							
Walking Speed (ft/s)					3.5							
Percent Blockage					0							
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	550	228	187	229	228	39	187			39		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	550	228	187	229	228	39	187			39		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	92	100	69	100			100		
cM capacity (veh/h)	307	673	860	725	673	1035	1381			1573		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	2	386	37	187								
Volume Left	1	61	1	0								
Volume Right	1	325	0	0								
cSH	453	970	1381	1573								
Volume to Capacity	0.00*	0.40	0.00*	0.00								
Queue Length 95th (ft)	0	48	0	0								
Control Delay (s/veh)	13.0	11.1	0.2	0.0								
Lane LOS	B	B	A									
Approach Delay (s/veh)	13.0	11.1	0.2	0.0								
Approach LOS	B	B										
Intersection Summary												
Average Delay			7.1									
Intersection Capacity Utilization			35.4%		ICU Level of Service				A			
Analysis Period (min)			15									
* Value less than 0.01.												

HCM Unsignalized Intersection Capacity Analysis

1003: Greenhills Drive & Residential Driveway/School Drive (S)

06/08/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	0	0	0	0	0	0	41	107	66	88	2
Future Volume (Veh/h)	3	0	0	0	0	0	0	41	107	66	88	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	4	0	0	0	0	0	0	48	126	78	104	2
Pedestrians		1			16			1				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		3.5			3.5			3.5				
Percent Blockage		0			2			0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	373	452	107	389	390	127	107			190		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	373	452	107	389	390	127	107			190		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	100	100	100	100			94		
cM capacity (veh/h)	554	469	951	533	509	914	1476			1357		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	4	0	174	184								
Volume Left	4	0	0	78								
Volume Right	0	0	126	2								
cSH	554	1700	1476	1357								
Volume to Capacity	0.00*	0.00	0.00	0.06								
Queue Length 95th (ft)	1	0	0	5								
Control Delay (s/veh)	11.5	0.0	0.0	3.6								
Lane LOS	B	A		A								
Approach Delay (s/veh)	11.5	0.0	0.0	3.6								
Approach LOS	B	A										
Intersection Summary												
Average Delay			2.0									
Intersection Capacity Utilization			33.5%	ICU Level of Service					A			
Analysis Period (min)			15									
* Value less than 0.01.												

HCM Unsignalized Intersection Capacity Analysis

1004: Greenhills Drive & Residential Driveway/School Driveway (N)

06/08/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	3	87	1	191	1	49	0	0	66	0
Future Volume (Veh/h)	1	0	3	87	1	191	1	49	0	0	66	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	1	0	4	102	1	225	1	58	0	0	78	0
Pedestrians		1			5							
Lane Width (ft)		12.0			12.0							
Walking Speed (ft/s)		3.5			3.5							
Percent Blockage		0			0							
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	365	144	79	147	144	63	79			63		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	365	144	79	147	144	63	79			63		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	87	100	77	100			100		
cM capacity (veh/h)	458	746	986	810	742	997	1511			1526		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	5	328	59	78								
Volume Left	1	102	1	0								
Volume Right	4	225	0	0								
cSH	801	929	1511	1526								
Volume to Capacity	0.00*	0.35	0.00*	0.00								
Queue Length 95th (ft)	0	40	0	0								
Control Delay (s/veh)	9.5	11.0	0.1	0.0								
Lane LOS	A	B	A									
Approach Delay (s/veh)	9.5	11.0	0.1	0.0								
Approach LOS	A	B										
Intersection Summary												
Average Delay			7.8									
Intersection Capacity Utilization			34.9%		ICU Level of Service				A			
Analysis Period (min)			15									

* Value less than 0.01.