GTS Consulting
1396 White Bridge Road
Chittenango, NY 13037
Tel: (315) 391-5110 Fax: (315) 687-6267

January 25, 2022

APD Engineering & Architecture, PLLC
615 Fishers Run
Victor, NY 14564

Attn: Ms. Michelle Lipke

Re: Traffic Impact Assessment Proposal – Proposed Burger King Development
1997 / 2003 / 2007 Ridge Road – Town of West Seneca, NY

Dear Ms. Lipke:

I have completed my review of traffic operations associated with the proposed Burger King development located at 1997, 2003 and 2007 Ridge Road in the Town of West Seneca, NY. This letter summarizes the work completed in this review as well as my findings.

Project Understanding

The proposed development is located at 1997, 2003 and 2007 Ridge Road in West Seneca, NY. The site is currently occupied by two single family homes and a vacant parcel, which will be consolidated into one lot for the proposed development. The proposed development includes a 2,730 SF Burger King restaurant with drive through operations. Access to the development is proposed via one full access driveway on the west side of the building located approximately 360 feet west of the Orchard Park Road traffic signal, and one exit only driveway on the eastern side of the building located approximately 250 feet west of the signal. There is also a cross connection to Wendy's in the rear of the site, however all traffic is assumed to use the Ridge Road driveways for a worst case analysis.

A site plan developed by APD Engineering & Architecture, dated April 19th, 2021 has been attached.

Data Collection

Site visits were conducted on Wednesday – January 19th, 2022 to collect the following:

- Existing Traffic Volume Counts – Traffic turning movement counts were collected at the intersection of Ridge Road with Orchard Park Road during the weekday morning (7-9am) and evening (4-6pm) peak travel periods to ensure that actual peak hours of the adjacent streets were captured. Separate heavy vehicles counts were collected by approach. There were minimal pedestrian volumes observed during the traffic count periods and all area schools were in session.

- Ridge Road Gap Data – Gap data was collected to assess the ability for vehicles to turn in and out of the proposed site driveways on Ridge Road. In order for a vehicle to turn right out of the site, or left into the site, the vehicle only requires a gap in the eastbound direction on Ridge Road. A vehicle requires a gap in traffic in both directions at the same time to turn left out of

the site onto Ridge Road. These gaps in traffic were observed and timed on Ridge Road at the locations of the proposed full access driveway during the weekday morning and weekday evening traffic count periods. The gaps were then converted to a number of vehicles that could turn left or right out of the proposed site during each gap and then totaled for the peak hour. For example, one vehicle can turn from the driveway with a 6-9 second gap in traffic, two can turn with a 10-13 second gap, 3 with a 14-17 second gap, 4 with an 18-19 second gap, etc.

- Traffic Queue Data – Traffic queues in the eastbound left, through and through/right lanes on Ridge Road at the Orchard Park Road signal were observed and recorded at the beginning of each green phase throughout the traffic count periods in order to identify average and maximum traffic queues, and any impacts they may have on access to the site.

- Spot Speed Measurements – 50 speed measurements were collected in each direction on Ridge Road to identify average and 85th percentile operating speeds in the area passing the site driveways. The data was collected for free flow traffic during off-peak times. The weather was clear and the roadway was dry.

- Sight Distance Measurements – Sight lines looking east/west along Ridge Road from the proposed site driveways were collected for comparison to design standards in order to confirm that adequate sight lines are available for safe ingress and egress from the site.

- Operational Data - Other data needed to evaluate traffic operations, such as intersection geometry, control, and speeds limits were also collected. Existing signal timing data was obtained from the NYSDOT to ensure that the signal was properly modeled.

Existing Operations

Ridge Road has two through lanes in each direction with a hatched center lane passing the site driveways. The center lane hatching opens to form an eastbound left turn lane at the Orchard Park Road intersection immediately to the east of the proposed eastern exit only driveway. Orchard Park Road has two through lanes in each direction passing Ridge Road with auxiliary northbound and southbound left turn lanes.

Based on the traffic counts collected, the peak hours were identified as follows:

Morning Peak Hour – 8:00am to 9:00am
Evening Peak Hour – 4:30pm to 5:30pm

The 2022 existing traffic volumes collected in January are shown in the attached Figure 1 for the morning and evening peak hours.

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The existing traffic counts were reviewed and compared to historical traffic volumes on Ridge Road to identify any necessary adjustments to account for seasonal adjustments or current impacts from the Covid pandemic. Based on a directional count collected on October 15th, 2015, collected 1,560 feet to the east of Langer Road, Ridge Road carried 434 vehicles eastbound/481 vehicles westbound during the morning peak hour and 743 vehicles eastbound/636 vehicles westbound during the evening peak hour. Compared to the 2022 existing traffic counts, the historical counts are approximately 7% higher during the morning peak hour and 22%-34% higher during the evening peak hour. It is noted that historical AADT traffic volumes dropped by 7.5% between 2015 and 2019 so existing traffic volumes would be expected to be lower than 2015 volumes. In order to provide the most conservative analysis of traffic operations in the area, the 2022 existing traffic volumes were adjusted by increasing all traffic movements by +10% during the morning peak hour and +25% during evening peak hour. The adjusted 2022 existing traffic volumes used for this study are shown in Figure 1.

Ridge Road carries approximately 510 vehicles eastbound/496 vehicles westbound passing the site during the morning peak hour, and 691 vehicles eastbound/650 vehicles westbound passing the site during the evening peak hour.

Based on the gap data collected, there were sufficient gaps in traffic observed to accommodate approximately 400 or more vehicles turning right onto Ridge Road from the site driveways during both peak hours. These gaps would also be available for vehicles turning left into the site from Ridge Road. There were sufficient gaps observed to accommodate approximately 337 vehicles turning left out of the site onto Ridge Road during the morning peak hour and 241 vehicles turning left out during the evening peak hour. Given that the observed gaps could accommodate over 10 times the projected traffic volumes accessing the site, there are more than sufficient gaps anticipated even with the 10%-25% traffic volume adjustments. The gap data is attached.

The average traffic queues in the eastbound left turn lane on Ridge Road at Orchard Park Road were 1.3 vehicles during the morning peak hour and 1.4 vehicles during the evening peak hour, with maximum queues of 3 vehicles observed during both peak hours. These queues did not extend out of the eastbound left turn lane. The eastbound through and through/right lanes had average traffic queues of 5.1-6.3 vehicles in each lane during the morning peak hour and 7.5-7.7 vehicles in each lane during the evening peak hour. The maximum queues observed in the eastbound through and through/right lanes were 15-17 vehicles during the morning peak hour and 13-16 vehicles during the evening peak hour. With 360 feet of storage space between the signal and the full access site driveway, there is sufficient storage for up to 14 vehicles without impacting entering access to the site. The maximum queues observed temporarily blocked the proposed full access driveway for 1 out 23 signal cycles during the morning peak hour and 2 out of 24 signal cycles during the evening pea hour. With only minor temporary blockage of the full access driveway, there are no significant concerns with traffic queues impacting access to the site. Restriping of the existing center lane hatched area to provide a short westbound left turn lane entering the full access driveway could be considered to avoid any

impacts on westbound traffic flow if a vehicle has to temporarily wait to turn left into the site from Ridge Road.

The posted speed limit passing the site driveway is 35 mph on Ridge Road. The speed data collected indicates that the average speeds passing the site on Ridge Road are 39 mph eastbound and 41 mph westbound. The 85th percentile speeds based on the data collected are 42 mph eastbound and 43 mph westbound on Ridge Road. The speed data has been attached.

The following table provides a summary of the recommended sight distances along Ridge Road from the AASHTO A Policy on Design of Highways and Streets as well as the available sight distances based on field measurements. The speed limit in the area is 35 mph on Ridge Road, however the speed data collected indicates that the operating speed is closer to 42-43 mph in both directions. Therefore 45 mph was used for the sight distance review. The recommended sight distance for left turning vehicles was adjusted to account for the two additional lanes to be crossed when exiting the site

Sight Distance Summary

Location	Operating Speed	Direction	AASHTO Recommended Sight Distance	Available Sight Distance
West Full Access Site Driveway @ Ridge Road – Turning Left	45 mph	Looking Left Looking Right	565 feet 565 feet	1,500+ feet 900+ feet
West Full Access Site Driveway @ Ridge Road – Turning Right	45 mph	Looking Left	430 feet	1,500+ feet
East Exit Only Site Driveway @ Ridge Road – Turning Left	45 mph	Looking Left Looking Right	565 feet 565 feet	1,500+ feet 800+ feet
East Exit Only Site Driveway @ Ridge Road – Turning Right	45 mph	Looking Left	430 feet	1,500+ feet

There are more than adequate sight distances available looking in both directions along Ridge Road from the proposed access locations based on the observed operating speeds of 42-43 mph. There are no concerns with sight distances and safety for ingress and egress from the proposed site driveways.

Capacity analysis of the existing traffic operations was completed using Synchro, an industry accepted standard for the analysis of both signalized and unsignalized intersections that is based on methodologies developed in the Highway Capacity Manual. Intersection and individual movement operations are graded in terms of Level of Service ranging from A to F, as described in the HCM. For example, an unsignalized intersection movement with an average delay of 5 seconds per vehicle is considered a Level of Service A while an average delay per vehicle of 20 seconds is considered a C. A Level of Service D or better is generally considered acceptable for a signalized intersection while a Level of Service E or better is generally considered acceptable for an unsignalized intersection.

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The results of the Synchro capacity analysis indicates that all traffic movements at the signalized intersection of Ridge Road with Orchard Park Road are operating at Levels of Service D or better during the two peak hours. The overall intersection is operating at Level of Service C during both peak hours. The maximum queues from the Synchro analysis indicate that existing eastbound queues on Ridge Road with the traffic volume adjustments are still less than 250 feet during both peak hours and do not reach the proposed site driveways during either peak hour.

The detailed Level of Service summary and capacity analysis printouts have been attached.

There are no noted concerns with existing traffic operations on Ridge Road in the vicinity of the project site as there are ample gaps in traffic and adequate sight lines in both directions. There are acceptable delays at the adjacent signalized intersection with acceptable Level of Service D or better for all traffic movements and minimal queuing concerns with relation to the proposed driveway locations. These findings are consistent with observations made during the data collection.

Accident Analysis

An accident analysis was completed for intersection of Ridge Road with Orchard Park Road using history reports obtained for a three year period from November 2018 through October 2021. Over the three year period, there were 33 total accidents in the study area with 18 accidents at the signalized intersection, 11 accidents along Ridge Road (not at the intersection), 1 accident along Orchard Park Road (not at the intersection) and 3 accidents in area parking lots.

Of the 18 accidents at the Ridge Road / Orchard Park Road intersection, 8 were rearend accidents, 4 were right angle accidents, 3 were left turn accidents, 1 was an overtaking accident, 1 was a fixed object accident and 1 was an unknown accident type. Assuming that the evening peak hour volumes are 9% of the total daily traffic traveling through the intersection, the accident rate is 0.52 accidents per million entering vehicles, which is equal to the statewide average of 0.52 accidents per million entering vehicles for similar facilities.

There are no distinct patterns noted. The detailed accident summary has been attached.

2023 Background Operations

The proposed Burger King development is assumed to be completed by 2023, therefore 2023 was used as the design year for this study. In order to fully understand the impacts of the development on the adjacent roadway system, analysis of the operations immediately before the project opening must first be completed. The existing traffic volumes were first adjusted by a growth rate to account for any unknown development that may occur prior to completion of the project.

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Historical traffic volumes along Ridge Road between Slade Road and Orchard Park Road were taken from the NYSDOT Traffic Data Viewer website and reviewed in order to identify an appropriate background growth rate. Long term growth rates in the area have been negative at -1.3% per year between 2013 and 2019. In order to maintain a conservative analysis, a positive +0.5% per year growth was chosen and used to grow the 2022 existing traffic volumes to the 2023 background condition. The 2023 background peak hour volumes for the study area with 0.5% growth are shown in Figure 2. The detailed growth calculations have been attached.

The Synchro capacity analysis of the 2023 background condition shows minimal increases in delay at the study area intersection during the peak hours. All movements continue to operate at Level of Service D or better during both peak hours with an overall intersection Levels of Service C.

The detailed Level of Service summary and capacity analysis printouts have been attached.

Trip Generation Estimate and Distribution

The proposed development includes a 2,730 SF Burger King restaurant with drive through operations. Trips generated by the proposed development were estimated using the ITE Trip Generation, 11th Edition, which is the industry accepted standard for estimating traffic generated by new developments. Land Use 934 – Fast Food Restaurant with Drive-Through Window was used.

Additionally, the ITE Trip Generation, was used to estimate the percentage of trips for the potential future development that would be pass-by trips. Pass-by trips are vehicles that stop at the development on their way to another location, such as stopping on their way to work in the morning or on their way home in the evening. These vehicles are already traveling on the roadway and are diverted to the site. Based on data reviewed, the average pass-by percentage for a fast food restaurant is 49% during the morning peak hour and 50% during the evening peak hour. A 50% pass-by trip generation rate was assumed for both peak hours.

The following table summarizes the trip generation estimate for the proposed Burger King development at 1997, 2003 & 2007 Ridge Road in the Town of New West Seneca, NY.

Trip Generation Summary

	Morning Peak		**Evening Peak**	
	Entering	**Exiting**	**Entering**	**Exiting**
Burger King– 2,730 SF	62	60	47	43
Pass-by Trips - 50%	*-30*	*-30*	*-22*	*-22*
New Trips Generated	**32**	**30**	**25**	**21**

The detailed trip generation calculations have been attached.

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Overall the proposed development is minor traffic generator with 60 total trips entering and exiting during the morning peak hour and less than 50 total trips entering and exiting during the evening peak hour. With half of the trips generated being drawn from traffic already in the area, the site is only expected to generate 25-30 new trips entering and exiting the area during peak hours.

Based on existing traffic patterns and population centers in the area, 35% of the new trips generated are expected to travel to/from the west on Ridge Road, 30% will travel to from the east on Ridge Road, 25% will travel to/from the south on Orchard Park Road and 10% will travel to/from the north on Orchard Park Road. Separate pass-by trip distributions were developed for each peak hour based on specific traffic patterns passing the site and traveling through the adjacent intersection. The anticipated arrival/departure distribution for the morning and evening peak hours are shown in Figure 3. The trips generated during each peak hour are shown in Figure 4, and the resultant full build traffic volumes expected when the development is complete are shown in Figure 5.

Build Operations

Based on the projected turning movements on Ridge Road at the site driveways, there are more than sufficient gaps available to accommodate the proposed development.

Capacity analysis of the build condition with the proposed Burger King development indicates that the development will have negligible impacts on traffic operations at the signalized intersection of Ridge Road with Orchard Park Road. All traffic movements at the signalized intersection are projected to continue to operate at Level of Service D or better during both peak hours with overall intersection Levels of Service C maintained. There are no delay increases of more than 1 second for any specific movement during either peak hour.

Maximum eastbound traffic queues on Ridge Road at the signal are projected to be less than 265 feet during both peak hours. Queues are not anticipated to have any significant impacts on traffic turning in or out of the site driveways. Restriping of the existing center lane hatched area to provide a short westbound left turn lane entering the full access driveway could be considered to avoid any impacts on westbound traffic flow if a vehicle has to temporarily wait to turn left into the site from Ridge Road.

The site driveways are projected to operate at a Level of Service C or better with 16 seconds or less of average delay per vehicle exiting the site during both peak hours. There are minimal delays projected on Ridge Road during both peak periods.

The detailed Level of Service summary and capacity analysis printouts have been attached.

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Conclusions

The additional traffic generated by the proposed Burger King development will have no notable or significant impact on traffic operations on Ridge Road or at the adjacent Orchard Park Road intersection. The development will only average 1 vehicle entering and exiting per minute during the morning peak hour and 1 vehicle entering and exiting every 1-1½ minutes during the evening peak hour. There are adequate gaps in traffic to accommodate turning movements into and out of the development, adequate sight lines in each direction, no significant queuing concerns from the signal, and no capacity concerns.

There are no mitigation measures recommended. Restriping of the existing center lane hatched area to provide a short westbound left turn lane entering the full access driveway could be considered to avoid any impacts on westbound traffic flow if a vehicle has to temporarily wait to turn left into the site from Ridge Road.

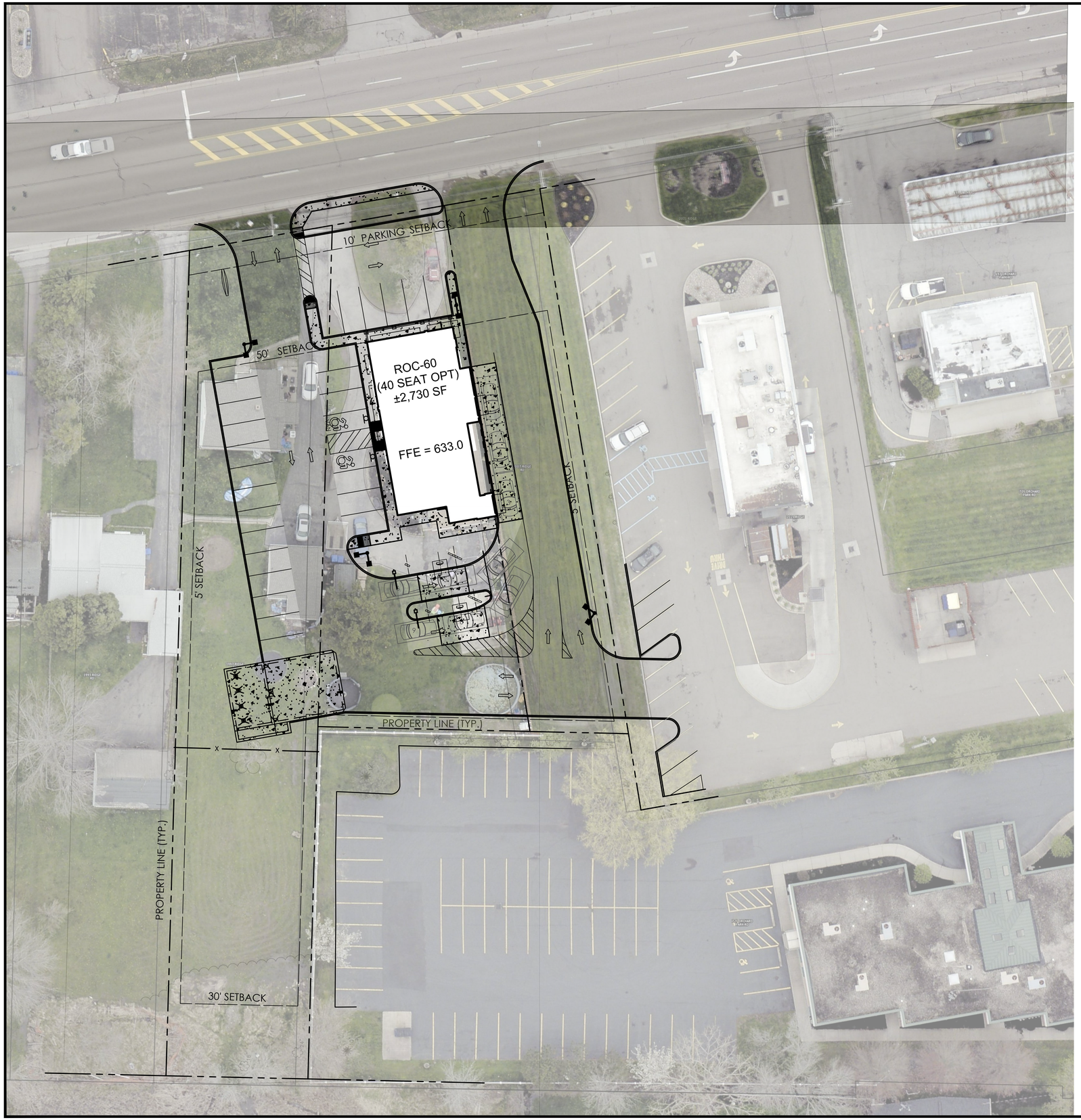
If you have any questions or need additional information, please call.

Sincerely,

Gordon T. Stansbury, P.E., P.T.O.E.
GTS Consulting

Attachments –

- Site Plan
- Traffic Volume Figures 1-5
- Spot Speed Data
- Trip Generation Estimate
- Count Data
- Level of Service Summary
- Gap Calculations
- Growth Rate Calculations
- Accident Data
- Synchro Capacity Printouts



Graphic Scale: 1"=20'

AS REQUIRED BY NEW YORK STATE LAW, CONTRACTOR SHALL CONTACT "DIG SAFELY NEW YORK" (UFPO) @ 1-800-962-7962 FOR LOCATION STAKE-OUT OF ALL UTILITIES, AT LEAST 2 FULL WORKING DAYS PRIOR TO ANY EXCAVATION.

REFERENCE:

1. 4775 1997-2003 RIDGE RD BURGER KING.DWG, SHEET NUMBER 1, LAST REVISED ON 11/19/2021, PREPARED BY FRANDINA ENGINEERING AND LAND SURVEYING, PC

SITE DATA:	
LOCAL JURISDICTION:	**TOWN OF WEST SENECA**
ZONING CLASSIFICATION:	**R 60A RESIDENCE DISTRICT (PROPOSED C-2 (S) REZONING)**
PERMITTED USES:	**SPECIAL USE PERMIT TO ALLOW OPERATION AS A EATING OR DRINKING ESTABLISHMENTS, PROVIDED THAT ANY ENTERTAINMENT SHALL BE LIMITED TO TELEVISION, RADIO OR RECORDED MUSIC, AND FURTHER PROVIDED THAT NO SALES OF ALCOHOLIC BEVERAGES FOR CONSUMPTION ON THE PREMISES SHALL BE PERMITTED ON ANY LOT WHERE A SIDE LOT ABUTS ANY R DISTRICT BOUNDARY.**
OWNER:	**MARK A. LORENZ, SR. (CURRENT), GLR HOLDINGS, LLC (CURRENT) JSC MANAGEMENT GROUP, LLC (UNDER CONTRACT)**
PROPERTY ACREAGE:	**1.000+/- ACRES PER 8/12/2021 SURVEY**

BULK REQUIREMENTS	REQUIRED	PROPOSED	VARIANCE
FRONT YARD	40 FT MINIMUM + 10 FEET	50 FT	NO
REAR YARD	10 FT; IF REAR YARD ABUTS R DISTRICT BOUNDARIES, THE REAR YARD SHALL BE 30 FT OR A DISTANCE EQUAL TO THE HEIGHT OF THE PRINCIPAL BUILDING, WHICHEVER IS GREATER.	± 235 FT	NO
SIDE YARD	5 FT, IF SIDE YARD ABUTS AN R DISTRICT ZONE, MINIMUM REQUIRED FOR SIDE YARDS FOR MULTIFAMILY DWELLING/MIXED OCCUPANCY IN THE ABUTTING R DISTRICT (5 FT FOR SINGLE FAMILY).	± 36 FT	NO
MINIMUM LOT AREA	900 SF	± 43,550 SQ FT	NO
MINIMUM LOT FRONTAGE	50 FT	± 147 FT	NO
MAXIMUM BUILDING COVERAGE	50% (43,550 SQ FT)	±6.3%	NO
MAXIMUM BUILDING HEIGHT	40 FT	24 FT	NO
INGRESS/EGRESS MINIMUM DRIVE WIDTH	A 30 FT DRIVE FOR INGRESS / EGRESS SHALL BE PROVIDED FOR ALL MULTIFAMILY AND SPECIAL DEVELOPMENTS OR 20 FT MIN. FOR SEPARATE INGRESS / EGRESS DRIVES.	24 FT & 24 FT	NO
PARKING REQUIREMENT	3 SPACES FOR EACH 5 SEATS (40 SEATS = 24 SPACES)	28 SPACES	NO
PARKING STALL WIDTH	9 FT MIN	9 FT	NO
PARKING STALL LENGTH	18 FT MIN	18 FT	NO
MINIMUM STACKING REQUIREMENTS	5 SPACES PER BOOTH / SERVICE WINDOW	9 SPACES	NO
OFF-STREET PARKING SETBACK (PAVEMENT)	NO OPEN OFF-STREET PARKING SPACE WITHIN 10 FT OF ANY STREET LINE OR ANY R DISTRICT BOUNDARY.	3' (N)	YES

Issued:		Date:
A		
B		
C		
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E		
F		
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Revisions:		Date:
1	Minor Site Plan Revisions	01/06/22
2		
3		
4		
5		
6		
7		
8		

STATE OF NEW YORK
TODD GEORGE MARKEVICZ
080577
LICENSED PROFESSIONAL ENGINEER

Seal 01/06/22 Seal

FOR APPROVAL ONLY/NOT FOR CONSTRUCTION

CIVIL ENGINEER OF RECORD
Name: Todd G. Markevicz
New York License No.: 080577
Exp. Date. November 30, 2023
Firm Reg. No.: 0014815
Exp. Date: December 31, 2023

APD ENGINEERING ARCHITECTURE
615 Fishers Run Victor, NY 14564
585.742.2222 - www.apd.com

Burger King
JSC MANAGEMENT GROUP
ATTN: JAMES CAMMILLERI
BURGER KING FRANCHISEE
585.755.3950

Burger King Store #:

S.B.L. No. 143.06-1-11, 12, & 13

1997, 2003, & 2007 Ridge Road

West Seneca, NY 14224

Erie County (Town of West Seneca)

Project Name & Location:

Overall Site Plan

Drawing Name:

Date: 04/19/21

Type: Sketch

Drawn By: SAS

Scale: 1"=20'

Project No. 21-0239

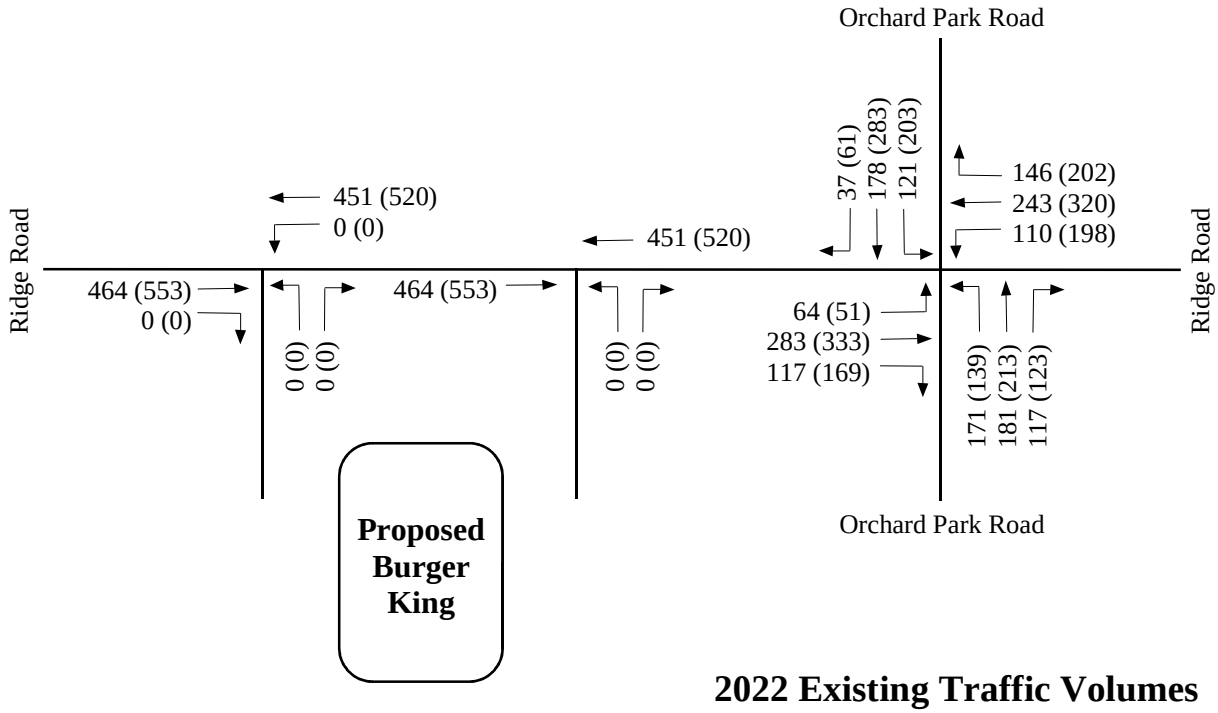
C2 Drawing No.

Proposed Burger King Development
1997 / 2003 / 2007 Ridge Road, Town of West Seneca, NY

Intersection Level of Service Summary

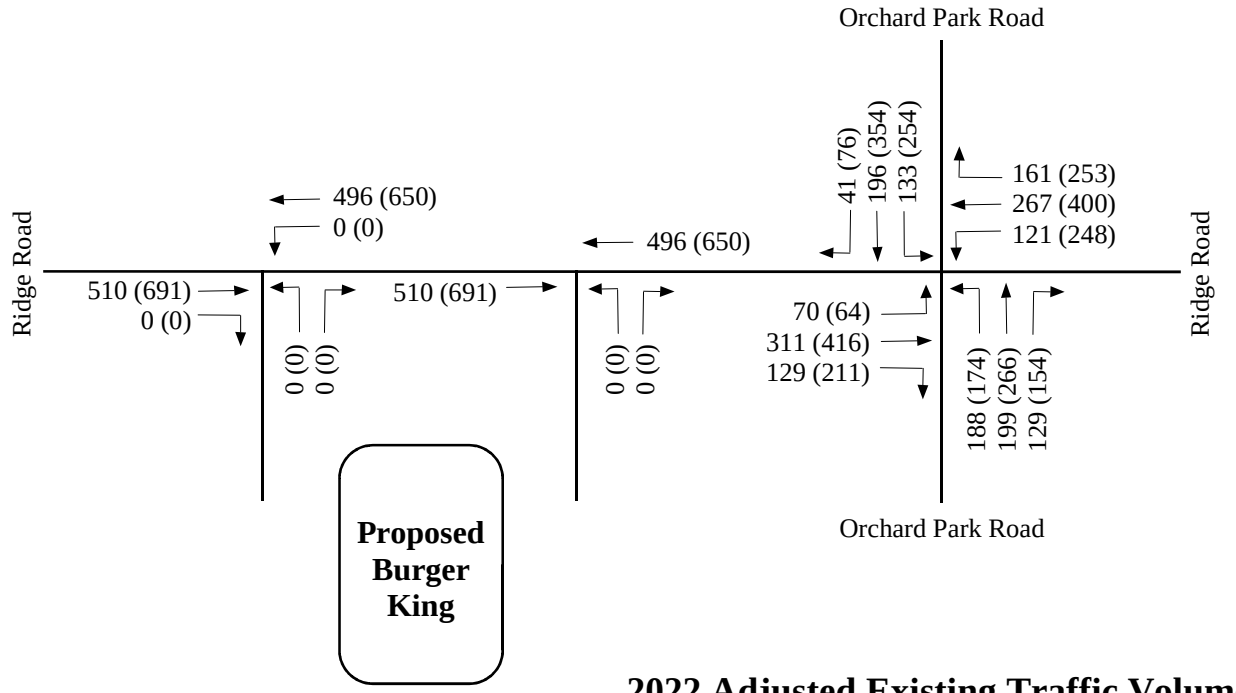
	Morning Peak Hour			Evening Peak Hour		
Intersection	**2022 Existing**	**2023 Background**	**2023 Build**	**2022 Existing**	**2023 Background**	**2023 Build**
Ridge Road @ Orchard Park Road	**C(21)**	**C(21)**	**C(22)**	**C(29)**	**C(29)**	**C(30)**
EB Left	B(14)	B(14)	B(15)	B(17)	B(17)	B(17)
EB Through/Right	C(25)	C(25)	C(25)	C(31)	C(31)	C(31)
WB Left	B(16)	B(16)	B(16)	C(26)	C(26)	C(26)
WB Through/Right	B(20)	B(20)	C(21)	C(23)	C(23)	C(24)
NB Left	B(18)	B(18)	B(19)	C(25)	C(25)	C(26)
NB Through/Right	C(21)	C(21)	C(21)	C(32)	C(32)	C(33)
SB Left	B(17)	B(17)	B(18)	C(32)	C(33)	C(33)
SB Through/Right	C(28)	C(28)	C(29)	D(36)	D(36)	D(37)
Ridge Road @ West Full Access Driveway						
EB Through/Right	-	-	a(0)	-	-	a(0)
WB Left/Through	-	-	a(1)	-	-	a(1)
NB Left/Right	-	-	b(13)	-	-	b(12)
Ridge Road @ East Exit Only Driveway						
EB Through	-	-	a(0)	-	-	a(0)
WB Through	-	-	a(0)	-	-	a(0)
NB Left	-	-	b(14)	-	-	c(16)
NB Right			b(11)			b(11)

A(9) – Signalized Level of Service (Average Delay per Vehicle in Seconds) – Synchro
a(9) – Unsignalized Level of Service (Average Delay per Vehicle in Seconds) – Synchro



2022 Existing Traffic Volumes Collected January 19th, 2022

Morning Peak Hour - 8:00 - 9:00am
Evening Peak Hour - 4:30 - 5:30pm



2022 Adjusted Existing Traffic Volumes

Morning Peak Hour - Increased by 10%
Evening Peak Hour - Increased by 25%

Proposed Burger King Development - Ridge Road, West Seneca, NY

2022 Existing Traffic Volumes & 2022 Adjusted Existing Traffic Volumes
Morning (Evening) Peak Hour

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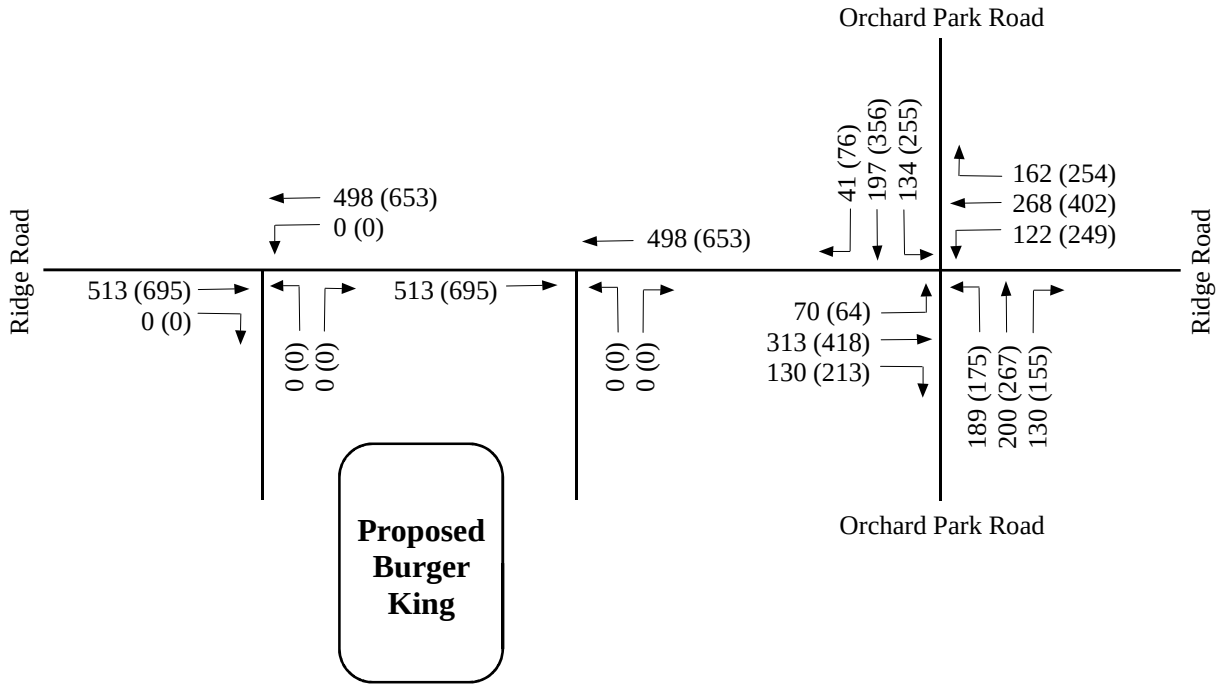
Figure 1

Not to Scale



Proposed Burger King Development - Ridge Road, West Seneca, NY

2023 Background Traffic Volumes - With 0.5% Growth
Morning (Evening) Peak Hour

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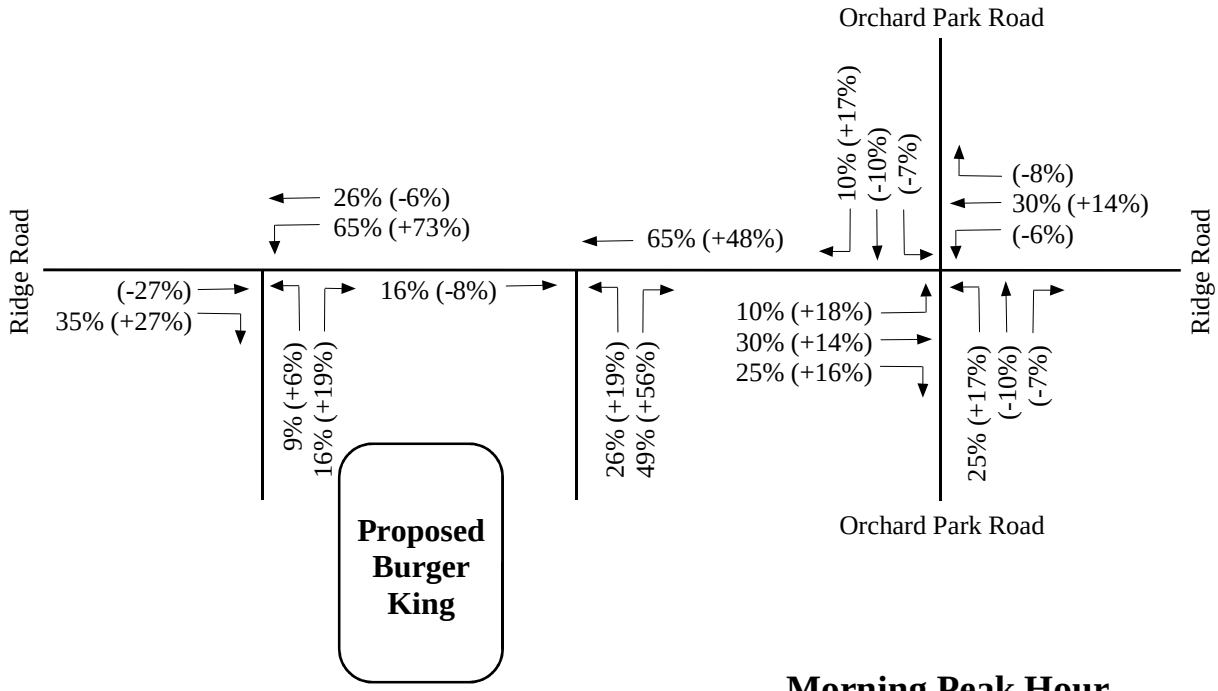
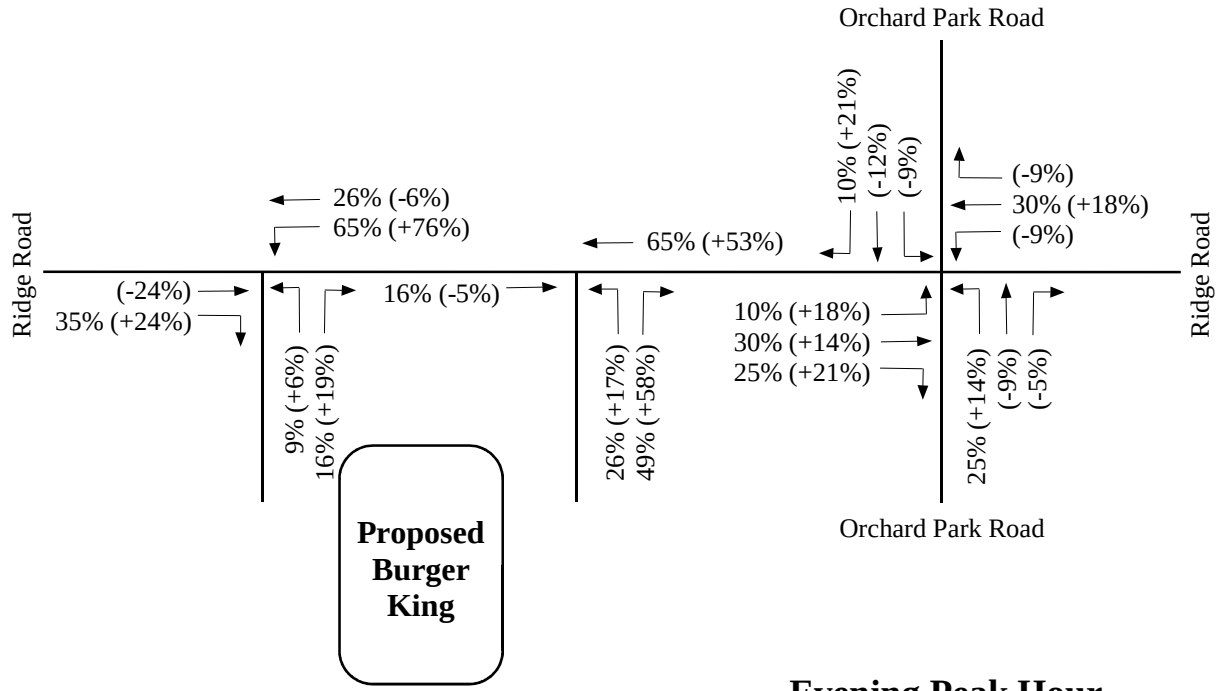
Figure 2

Not to Scale



Morning Peak Hour



Evening Peak Hour

Proposed Burger King Development - Ridge Road, West Seneca, NY

Arrival / Departure Trip Distribution
New (Pass-by) Trip Percentage

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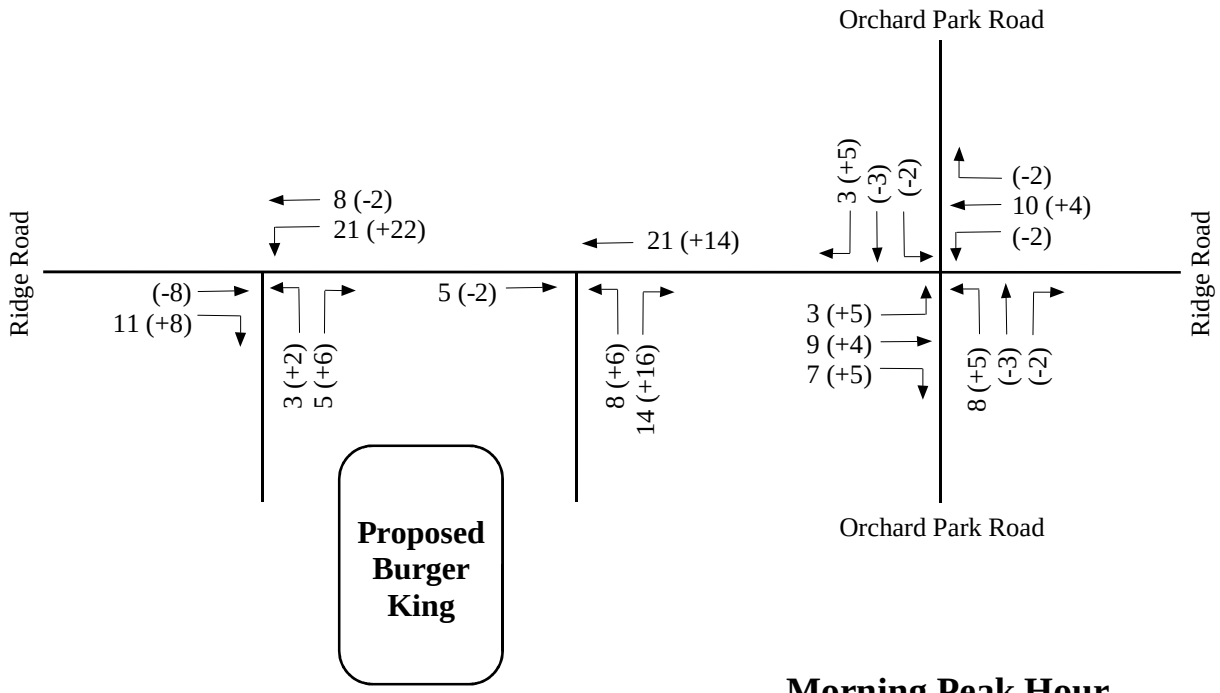
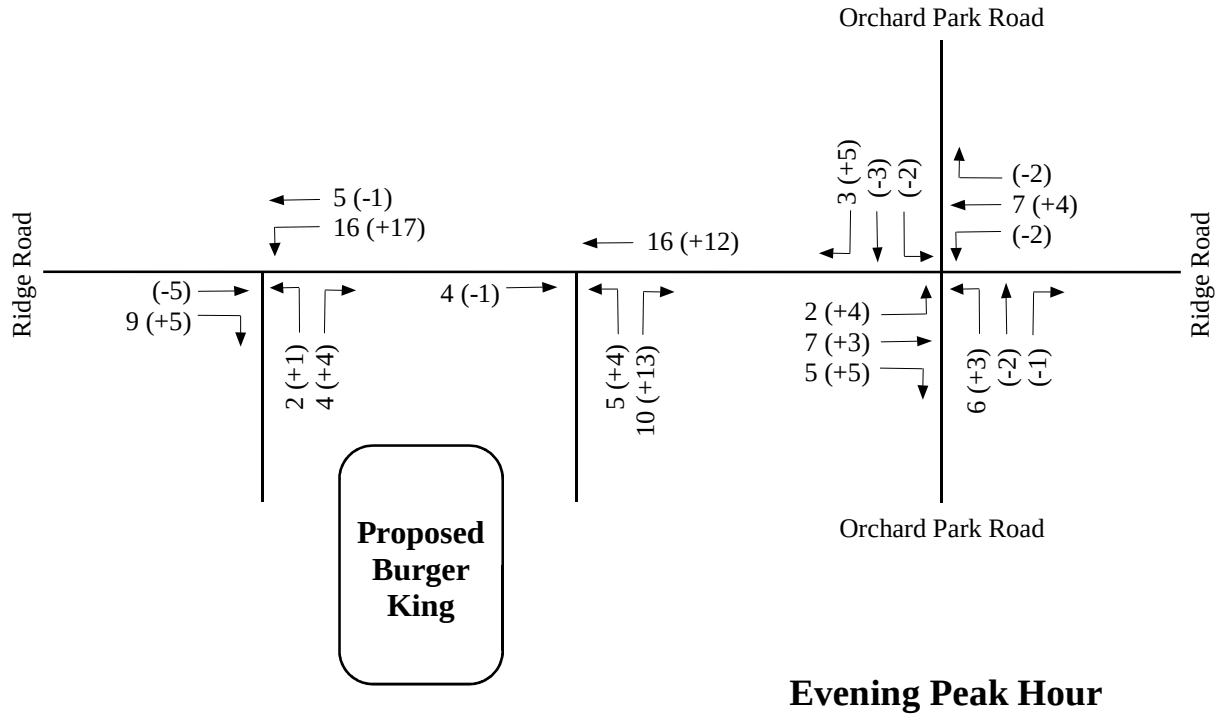
Figure 3

Not to Scale



Morning Peak Hour



Evening Peak Hour

Proposed Burger King Development - Ridge Road, West Seneca, NY

Trips Generated
New (Pass-by) Trips

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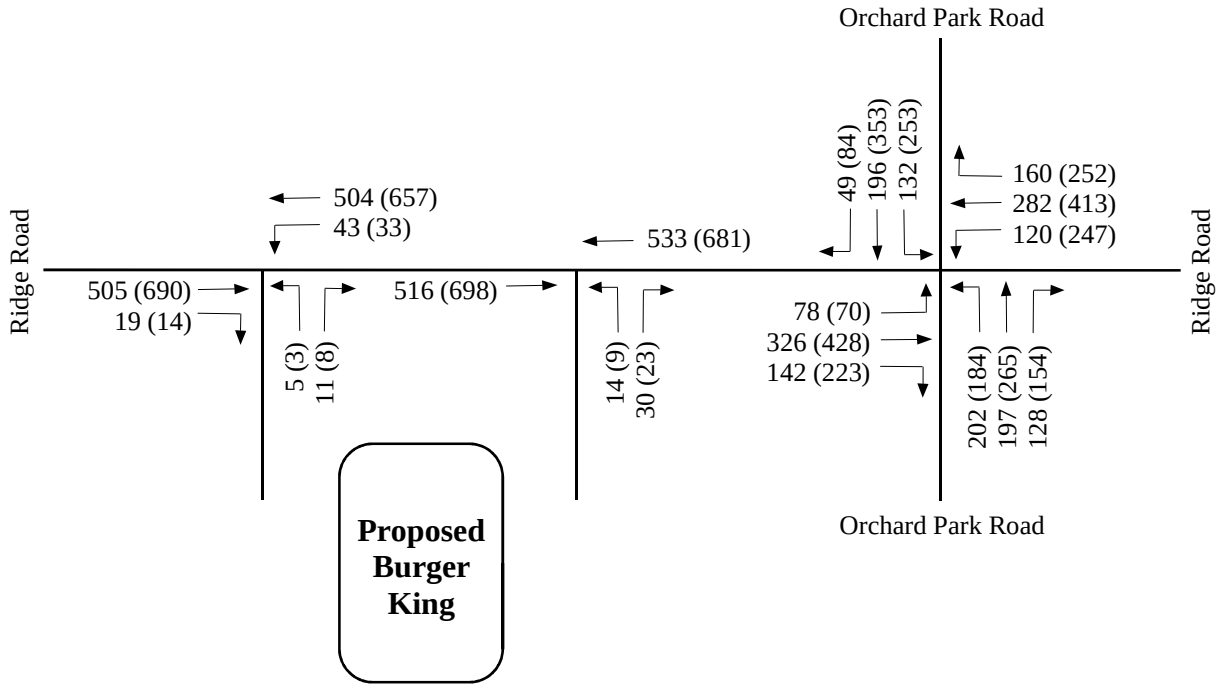
Figure 4

Not to Scale



Proposed Burger King Development - Ridge Road, West Seneca, NY

2023 Build Traffic Volumes
Morning (Evening) Peak Hour

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Figure 5

Not to Scale

Intersection Gap Study

Project: Proposed Burger King Development - 1997 / 2003 / 2007 Ridge Road, Town of West Seneca, NY
Date: 1/19/2022

Intersection: Site Access @ Ridge Road
Movement: Right Turns Exiting / Left Turns Entering

Time Interval		6-9 sec x 1	10-13 sec x 2	14-17 sec x 3	18-19 sec x 4	20-23 sec x 5	24-25 sec x 6	26-29 sec x 7	>29 sec x 8	Interval Total	Hour Total
Morning Peak Hour											
8:00-8:15am	# of Gaps	5	8	6	2	1	0	1	8		
	# of Vehicles	**5**	**16**	**18**	**8**	**5**	**0**	**7**	**64**	**123**	
8:15-8:30am	# of Gaps	18	15	8	1	2	0	1	2		
	# of Vehicles	**18**	**30**	**24**	**4**	**10**	**0**	**7**	**16**	**109**	
8:30-8:45am	# of Gaps	16	6	2	0	7	0	1	6		
	# of Vehicles	**16**	**12**	**6**	**0**	**35**	**0**	**7**	**48**	**124**	
8:45-9:00am	# of Gaps	16	9	3	3	5	2	4	1		
	# of Vehicles	**16**	**18**	**9**	**12**	**25**	**12**	**28**	**8**	**128**	**484**
Evening Peak Hour											
4:30-4:45pm	# of Gaps	4	12	8	5	3	1	2	0		
	# of Vehicles	**4**	**24**	**24**	**20**	**15**	**6**	**14**	**0**	**107**	
4:45-5:00pm	# of Gaps	14	12	4	3	2	0	1	3		
	# of Vehicles	**14**	**24**	**12**	**12**	**10**	**0**	**7**	**24**	**103**	
5:00-5:15pm	# of Gaps	9	9	2	4	4	1	0	3		
	# of Vehicles	**9**	**18**	**6**	**16**	**20**	**6**	**0**	**24**	**99**	
5:15-5:30pm	# of Gaps	13	7	5	2	3	1	0	2		
	# of Vehicles	**13**	**14**	**15**	**8**	**15**	**6**	**0**	**16**	**87**	**396**

Intersection Gap Study

Project: Proposed Burger King Development - 1997 / 2003 / 2007 Ridge Road, Town of West Seneca, NY
Date: 1/19/2022

Intersection: Site Access @ Ridge Road
Movement: Left Turns Exiting

Time Interval		6-9 sec x 1	10-13 sec x 2	14-17 sec x 3	18-19 sec x 4	20-23 sec x 5	24-25 sec x 6	26-29 sec x 7	>29 sec x 8	Interval Total	Hour Total
Morning Peak Hour											
8:00-8:15am	# of Gaps	12	11	0	3	1	1	1	4		
	# of Vehicles	**12**	**22**	**0**	**12**	**5**	**6**	**7**	**32**	**96**	
8:15-8:30am	# of Gaps	15	11	6	0	3	1	2	0		
	# of Vehicles	**15**	**22**	**18**	**0**	**15**	**6**	**14**	**0**	**90**	
8:30-8:45am	# of Gaps	22	8	2	1	1	0	1	2		
	# of Vehicles	**22**	**16**	**6**	**4**	**5**	**0**	**7**	**16**	**76**	
8:45-9:00am	# of Gaps	23	6	2	3	3	0	1	0		
	# of Vehicles	**23**	**12**	**6**	**12**	**15**	**0**	**7**	**0**	**75**	**337**
Evening Peak Hour											
4:30-4:45pm	# of Gaps	8	6	6	3	0	2	0	0		
	# of Vehicles	**8**	**12**	**18**	**12**	**0**	**12**	**0**	**0**	**62**	
4:45-5:00pm	# of Gaps	21	8	2	2	1	0	1	0		
	# of Vehicles	**21**	**16**	**6**	**8**	**5**	**0**	**7**	**0**	**63**	
5:00-5:15pm	# of Gaps	11	11	3	2	3	0	0	0		
	# of Vehicles	**11**	**22**	**9**	**8**	**15**	**0**	**0**	**0**	**65**	
5:15-5:30pm	# of Gaps	15	5	2	1	0	0	0	2		
	# of Vehicles	**15**	**10**	**6**	**4**	**0**	**0**	**0**	**16**	**51**	**241**

Proposed Buger King Development, 1997 / 2003 / 2007 Ridge Road, Town of West Seneca, NY

Speed Study Measurements - Ridge Road Passing Site

1/19/2022

Distance Travelled (ft) = 140 50 Speed Measurements per Direction Speed Limit 35 mph

EB Time Seconds	Calculated Speed	EB Time Seconds	Calculated Speed	WB Time Seconds	Calculated Speed	WB Time Seconds	Calculated Speed
3	32	2.4	40	2.69	35	2.32	41
3	32	2.4	40	2.63	36	2.31	41
2.88	33	2.39	40	2.6	37	2.31	41
2.88	33	2.37	40	2.56	37	2.31	41
2.84	34	2.37	40	2.56	37	2.3	42
2.84	34	2.37	40	2.56	37	2.29	42
2.75	35	2.35	41	2.55	37	2.28	42
2.68	36	2.35	41	2.54	38	2.28	42
2.66	36	2.34	41	2.53	38	2.27	42
2.65	36	2.34	41	2.5	38	2.27	42
2.64	36	2.31	41	2.5	38	2.27	42
2.62	36	2.31	41	2.47	39	2.25	42
2.61	37	2.31	41	2.46	39	2.25	42
2.6	37	2.3	42	2.43	39	2.25	42
2.59	37	2.29	42	2.41	40	2.24	43
2.56	37	2.28	42	2.41	40	2.22	43
2.56	37	2.25	42	2.39	40	2.22	43
2.55	37	2.25	42	2.38	40	2.22	43
2.53	38	2.25	42	2.38	40	2.2	43
2.5	38	2.25	42	2.38	40	2.19	44
2.5	38	2.22	43	2.37	40	2.16	44
2.49	38	2.18	44	2.35	41	2.14	45
2.44	39	2.16	44	2.35	41	2.11	45
2.43	39	2.14	45	2.34	41	2.1	45
2.41	40	2.09	46	2.32	41	2.07	46

Eastbound

Average Speed = 39 mph

85th Percentile Speed = 42 mph

Westbound

Average Speed = 41 mph

85th Percentile Speed = 43 mph

Background Traffic Growth Calculations

Proposed Burger KIng Development, 1997 / 2003 / 2007 Ridge Road

Historical Traffic Counts Taken from the NYSDOT Traffic Data Viewer Website

Ridge Road - Between Slade Road and Orchard Park Road

2019	2016	2013
19,889 veh	21,506 veh	21,611 veh

-2.5% per year

-0.2% per year

-1.3% per year

Use +0.5% annual growth for conservative traffic projections

Proposed Burger King Development
1997 / 2003 / 2007 Ridge Road, Town of West Seneca, NY

Trip Generation Estimate

Proposed Development 2,730 SF - Burger King with Drive Through

ITE Trip Generation - 11th Edition

Land Use 934 - Fast-Food Restaurant with Drive-Through Window

AM Peak Hour	44.61 Trips/1,000 SF	51% Enter	49% Exit
PM Peak Hour	33.03 Trips/1,000 SF	52% Enter	48% Exit

Pass-by Trip Percentages
Fast Food Restaurant - AM - 49%, PM - 50% - Use 50% both peak hours

Trip Generation Summary

		Morning Peak Hour			Evening Peak Hour		
Development	**Size**	**Total Trips**	**Entering**	**Exiting**	**Total Trips**	**Entering**	**Exiting**
Burger King	2,730 SF	122	62	60	90	47	43
Pass-by Trips - 50%		*-60*	*-30*	*-30*	*-44*	*-22*	*-22*
New Trips Generated		**62**	**32**	**30**	**46**	**25**	**21**

Proposed Burger King Development - 1997 / 2003 / 2007 Ridge Road, Town of West Seneca, NY
Accident History Summaries - November 1, 2018 Through October 31, 2021

Accident #	Date	Location	Type	# Cars	Severity	Direction	Conditions	Contributing Factors
1	11/12/2018	Midblock Ridge Road	Overtaking	2	PDO	WB Changing Lanes / WB	Dry	Alcohol Involvement
2	2/18/2019	Ridge Rd @ Orchard Park Rd	Left Turn	2	INJ	WB Left / EB	Dry	Failure to Yield ROW
3	4/10/2019	Midblock Ridge Road	Left Turn	2	PDO	SB Left / EB	Dry	Failure to Yield ROW
4	6/10/2019	Midblock Ridge Road	Left Turn	2	PDO	NB Left / EB	Dry	Failure to Yield ROW
5	6/27/2019	Ridge Rd @ Orchard Park Rd	Right Angle	2	PDO	NB Right / EB	Dry	Failure to Yield ROW
6	8/1/2019	Ridge Rd @ Orchard Park Rd	Overtaking	2	PDO	NB Right / NB Left	Dry	Failure to Yield ROW
7	8/3/2019	Ridge Rd @ Orchard Park Rd	Fixed Object	1	PDO	NB / Guide Rail	Dry	Not Entered
8	8/21/2019	Ridge Rd @ Orchard Park Rd	Rearend	2	INJ	Unknown / Unknown	Unknown	Not Entered
9	11/10/2019	Ridge Rd @ Orchard Park Rd	Left Turn	2	PDO	SB Left / EB	Dry	Failure to Yield ROW
10	12/7/2019	Ridge Rd @ Orchard Park Rd	Right Angle	2	INJ	EB / WB Left	Dry	Failure to Yield ROW
11	12/24/2019	Ridge Rd @ Orchard Park Rd	Rearend	2	PDO	EB / EB Stopped	Dry	Following Too Closely
12	12/31/2019	Midblock Ridge Road	Left Turn	2	PDO	WB Left / EB	Wet	Turning Improper
13	1/15/2020	Orchard Park Road	Rearend	2	PDO	NB / NB Stopped	Dry	Following Too Closely
14	1/17/2020	Ridge Rd @ Orchard Park Rd	Rearend	2	PDO	WB / WB Stopped	Dry	Following Too Closely
15	12/18/2019	Ridge Rd @ Orchard Park Rd	Right Angle	2	INJ	WB / NB Right	Wet	Failure to Yield ROW
16	3/9/2020	Ridge Rd @ Orchard Park Rd	Rearend	2	INJ	NB / NB Stopped	Dry	Other Vehicle
17	5/16/2020	Ridge Rd @ Orchard Park Rd	Rearend	2	PDO	NB / NB Stopped	Dry	Driver Inattention
18	9/11/2020	Ridge Rd @ Orchard Park Rd	Rearend	3	INJ	EB / EB Stopped (2)	Dry	Prescription Medication
19	10/7/2020	Ridge Rd @ Orchard Park Rd	Unknown	2	PDO	Unknown / EB Stopped	Wet	Unknown
20	10/16/2020	Parking Lot	Left Turn	2	PDO	NB Left / WB Parked	Dry	Turning Improper
21	1/5/2021	Midblock Ridge Road	Right Angle	2	PDO	SB Left / WB	Dry	Failure to Yield ROW
22	1/11/2021	Ridge Rd @ Orchard Park Rd	Rearend	3	INJ	NB / NB / NB Stopped	Wet	Following Too Closely
23	3/6/2021	Midblock Ridge Road	Rearend	2	PDO	EB / EB	Dry	Following Too Closely
24	3/5/2021	Parking Lot	Sideswipe	2	PDO	NB / SB Parked	Dry	Unsafe Lane Change
25	5/24/2021	Midblock Ridge Road	Left Turn	2	PDO	NB Left / EB	Dry	Reaction ot Another Vehicle
26	6/4/2021	Ridge Rd @ Orchard Park Rd	Right Angle	2	INJ	SB / EB	Dry	Failure to Yield ROW
27	7/8/2021	Midblock Ridge Road	Left Turn	2	PDO	NB Left / EB	Wet	Failure to Yield ROW
28	8/5/2021	Ridge Rd @ Orchard Park Rd	Left Turn	2	PDO	NB Left / WB	Dry	Turning Improper
29	7/21/2021	Midblock Ridge Road	Rearend	2	PDO	EB / EB	Dry	Following Too Closely
30	8/14/2021	Midblock Ridge Road	Left Turn	2	PDO	WB Left / EB	Dry	Failure to Yield ROW
31	8/18/2021	Midblock Ridge Road	Left Turn	2	PDO	NB Left / WB	Wet	Turning Improper
32	8/28/2021	Parking Lot	Overtaking	2	PDO	NB / NB Parked	Dry	Other Vehicle
33	9/15/2021	Ridge Rd @ Orchard Park Rd	Rearend	2	PDO	NB Uturn / NB Stopped	Dry	Reaction ot Another Vehicle

Ridge Road @ Orchard Park Road - 18 Accidents
8 - Rearend Accidents
4 - Right Angle Accidents
3 - Left Turn Accidents
1 - Overtaking Accident
1 - Fixed Object Accident
1 - Unknown Accident

Ridge Road - Not at Intersection - 11 Accidents
7 - Left Turn Accidents
2 - Rearend Accidents
1 - Right Angle Accidents
1 - Overtaking Accidents

Orchard Park Road - 1 Rearend Accident

Parking Lots - 3 Accidents

Ridge Road @ Orchard Park Road Intersection - Evening Peak Hour - 2,870 Vehicles. Assumed PM Peak is 9% of AADT, AADT = 31,889 Vehicles

Intersection Accident Rates

$$\frac{\text{\# Accidents X 1,000,000}}{\text{AADT X \# Years X 365 Days}}$$

Time Period = 3 years

Ridge Road @ Orchard Park Road - 18 Accidents
Accident Rate = 0.52 accidents per million entering vehicles
Statewide average for similar facilities = 0.52 accidents per million entering vehicles (Urban - 4 Legged Signal Intersection - 1-4 Lanes)
Intersection Accident History is the Same as the Statewide Average

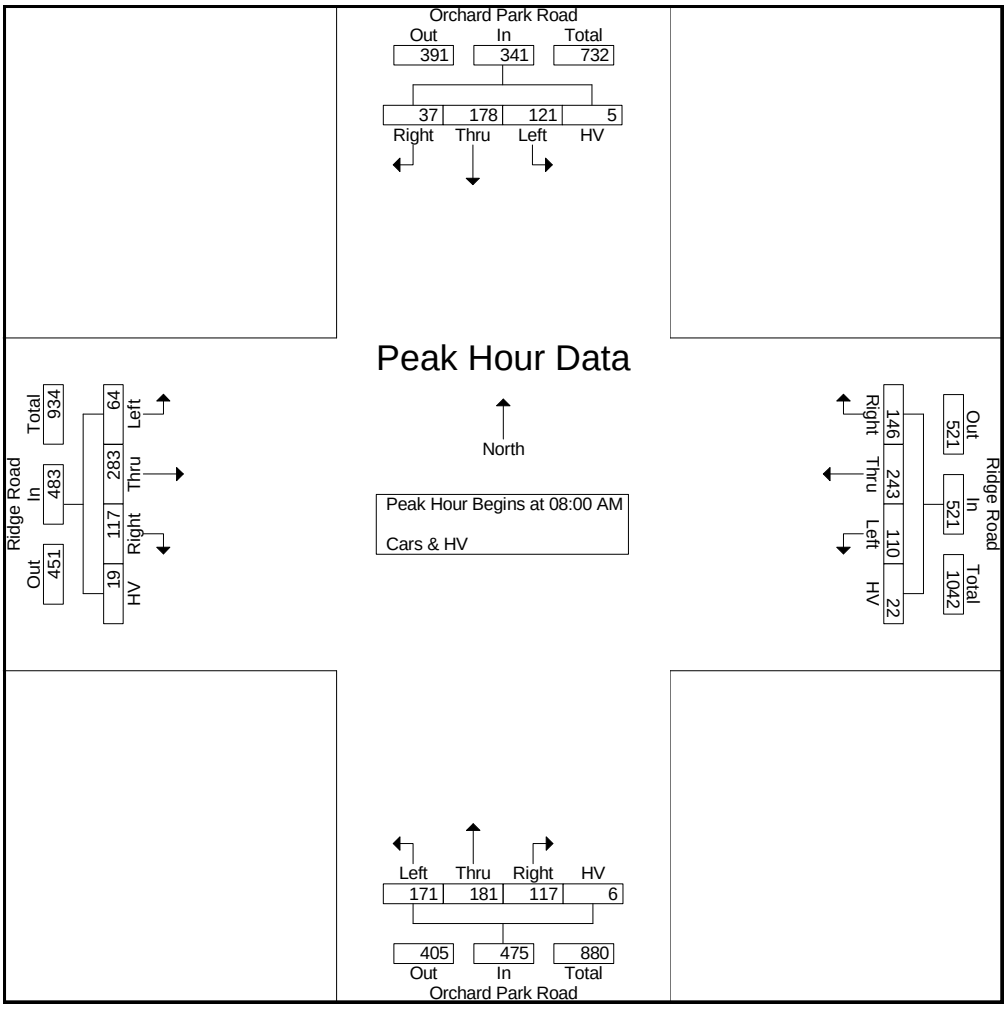
File Name : Ridge Road @ Orchard Park Road
Site Code : 00000000
Start Date : 1/19/2022
Page No : 1

Groups Printed- Cars & HV

	Orchard Park Road Southbound				Ridge Road Westbound				Orchard Park Road Northbound				Ridge Road Eastbound				
Start Time	Right	Thru	Left	HV	Right	Thru	Left	HV	Right	Thru	Left	HV	Right	Thru	Left	HV	Int. Total
07:00 AM	4	21	26	1	28	33	14	6	38	38	32	1	15	60	7	3	327
07:15 AM	4	37	43	2	38	69	29	7	69	47	39	2	11	73	9	4	483
07:30 AM	4	55	44	2	32	57	30	4	21	50	61	3	12	53	15	2	445
07:45 AM	3	47	22	2	27	67	26	4	22	42	51	2	29	93	20	4	461
Total	15	160	135	7	125	226	99	21	150	177	183	8	67	279	51	13	1716
08:00 AM	7	38	27	1	31	59	22	6	19	42	39	1	25	76	15	5	413
08:15 AM	6	48	21	2	40	64	18	6	28	43	37	2	34	73	20	5	447
08:30 AM	10	46	44	1	43	52	28	4	42	40	42	2	31	62	15	4	466
08:45 AM	14	46	29	1	32	68	42	6	28	56	53	1	27	72	14	5	494
Total	37	178	121	5	146	243	110	22	117	181	171	6	117	283	64	19	1820
04:00 PM	6	62	58	2	42	78	37	4	35	48	39	0	48	87	9	2	557
04:15 PM	17	61	48	0	44	80	52	0	25	54	39	2	47	79	20	4	572
04:30 PM	17	59	45	4	48	78	60	4	31	45	42	2	40	88	11	0	574
04:45 PM	17	61	60	2	54	69	46	6	28	51	33	4	50	71	19	4	575
Total	57	243	211	8	188	305	195	14	119	198	153	8	185	325	59	10	2278
05:00 PM	13	91	48	2	61	84	50	0	30	51	24	2	37	91	7	2	593
05:15 PM	14	72	50	0	39	89	42	2	34	66	40	0	42	83	14	2	589
05:30 PM	10	72	52	2	61	71	35	4	41	47	39	2	45	69	9	4	563
05:45 PM	12	67	36	0	43	93	31	0	20	43	21	0	41	93	8	0	508
Total	49	302	186	4	204	337	158	6	125	207	124	4	165	336	38	8	2253
Grand Total	158	883	653	24	663	1111	562	63	511	763	631	26	534	1223	212	50	8067
Apprch %	9.2	51.4	38	1.4	27.6	46.3	23.4	2.6	26.5	39.5	32.7	1.3	26.4	60.6	10.5	2.5	
Total %	2	10.9	8.1	0.3	8.2	13.8	7	0.8	6.3	9.5	7.8	0.3	6.6	15.2	2.6	0.6	

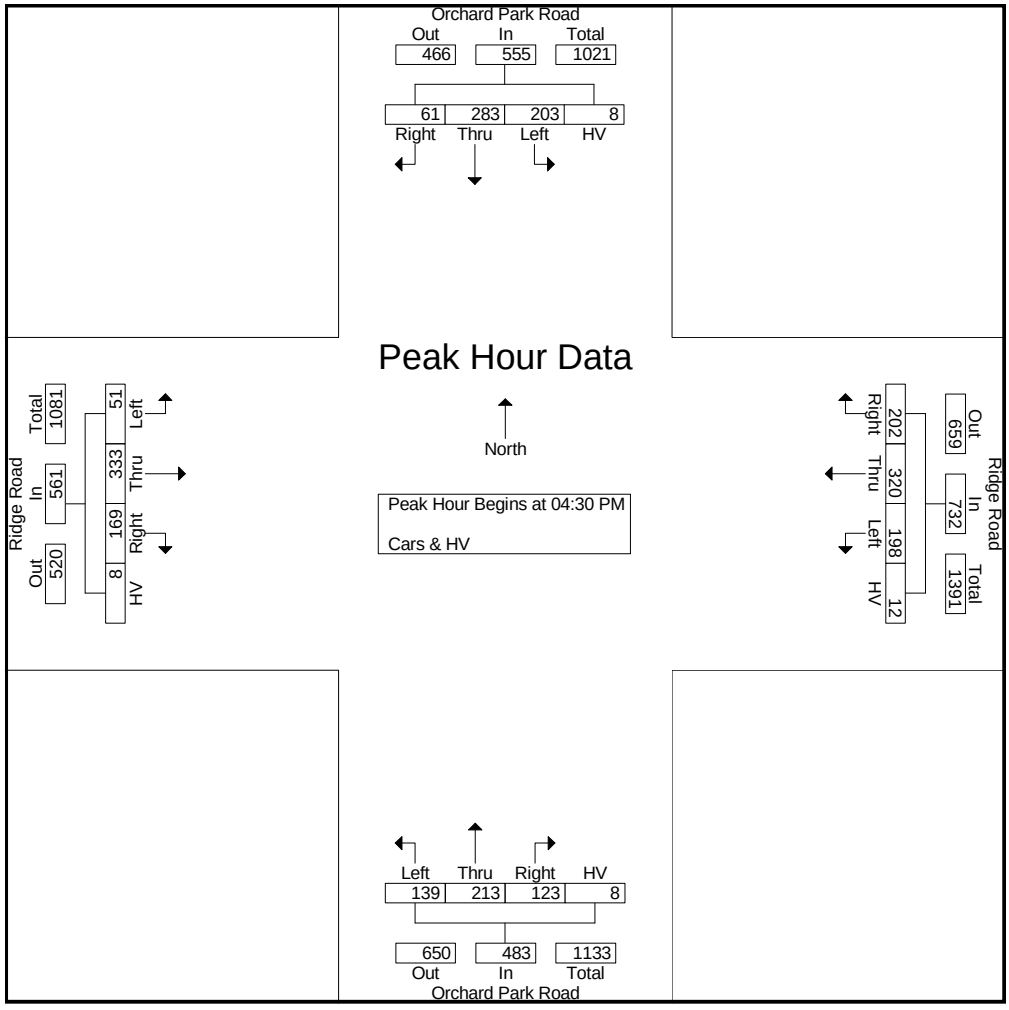
File Name : Ridge Road @ Orchard Park Road
Site Code : 00000000
Start Date : 1/19/2022
Page No : 2

	Orchard Park Road Southbound					Ridge Road Westbound					Orchard Park Road Northbound					Ridge Road Eastbound					
Start Time	Right	Thru	Left	HV	App. Total	Right	Thru	Left	HV	App. Total	Right	Thru	Left	HV	App. Total	Right	Thru	Left	HV	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	7	38	27	1	73	31	59	22	6	118	19	42	39	1	101	25	76	15	5	121	413
08:15 AM	6	48	21	2	77	40	64	18	6	128	28	43	37	2	110	34	73	20	5	132	447
08:30 AM	10	46	44	1	101	43	52	28	4	127	42	40	42	2	126	31	62	15	4	112	466
08:45 AM	14	46	29	1	90	32	68	42	6	148	28	56	53	1	138	27	72	14	5	118	494
Total Volume	37	178	121	5	341	146	243	110	22	521	117	181	171	6	475	117	283	64	19	483	1820
% App. Total	10.9	52.2	35.5	1.5		28	46.6	21.1	4.2		24.6	38.1	36	1.3		24.2	58.6	13.3	3.9		
PHF	.661	.927	.688	.625	.844	.849	.893	.655	.917	.880	.696	.808	.807	.750	.861	.860	.931	.800	.950	.915	.921



File Name : Ridge Road @ Orchard Park Road
Site Code : 00000000
Start Date : 1/19/2022
Page No : 3

Start Time	Orchard Park Road Southbound					Ridge Road Westbound					Orchard Park Road Northbound					Ridge Road Eastbound					Int. Total
	Right	Thru	Left	HV	App. Total	Right	Thru	Left	HV	App. Total	Right	Thru	Left	HV	App. Total	Right	Thru	Left	HV	App. Total	
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	17	59	45	4	125	48	78	60	4	190	31	45	42	2	120	40	88	11	0	139	574
04:45 PM	17	61	60	2	140	54	69	46	6	175	28	51	33	4	116	50	71	19	4	144	575
05:00 PM	13	91	48	2	154	61	84	50	0	195	30	51	24	2	107	37	91	7	2	137	593
05:15 PM	14	72	50	0	136	39	89	42	2	172	34	66	40	0	140	42	83	14	2	141	589
Total Volume	61	283	203	8	555	202	320	198	12	732	123	213	139	8	483	169	333	51	8	561	2331
% App. Total	11	51	36.6	1.4		27.6	43.7	27	1.6		25.5	44.1	28.8	1.7		30.1	59.4	9.1	1.4		
PHF	.897	.777	.846	.500	.901	.828	.899	.825	.500	.938	.904	.807	.827	.500	.863	.845	.915	.671	.500	.974	.983



File Name : Ridge Road @ Orchard Park Road
Site Code : 00000000
Start Date : 1/19/2022
Page No : 1

Groups Printed- Peds

	Orchard Park Road Southbound				Ridge Road Westbound				Orchard Park Road Northbound				Ridge Road Eastbound				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
Grand Total	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	3
Apprch %	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	100	
Total %	0	0	0	0	0	0	0	0	0	0	0	66.7	0	0	0	33.3	

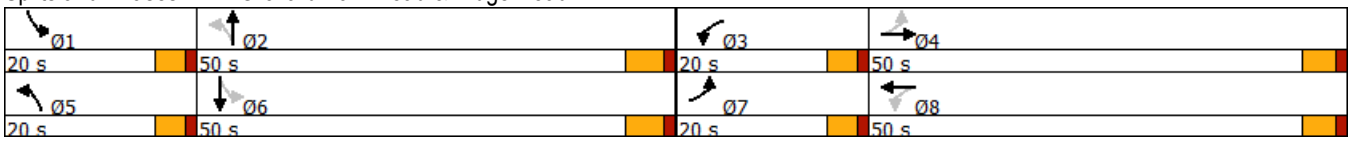
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	311	129	121	267	161	188	199	129	133	196	41
Future Volume (vph)	70	311	129	121	267	161	188	199	129	133	196	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	195		0	125		0	170		270	375		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	75			75			75			75		
Satd. Flow (prot)	1770	3325	0	1770	3301	0	1770	3330	0	1770	3439	0
Flt Permitted	0.447			0.329			0.501			0.526		
Satd. Flow (perm)	833	3325	0	613	3301	0	933	3330	0	980	3439	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		48			95			111			19	
Link Speed (mph)		35			35			40			40	
Link Distance (ft)		309			706			663			592	
Travel Time (s)		6.0			13.8			11.3			10.1	
Confl. Peds. (#/hr)			1	1			1					1
Peak Hour Factor	0.91	0.91	0.91	0.88	0.88	0.88	0.86	0.86	0.86	0.84	0.84	0.84
Heavy Vehicles (%)	2%	4%	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	77	484	0	138	486	0	219	381	0	158	282	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
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)	7.0	15.0		7.0	15.0		7.0	15.0		7.0	14.6	
Minimum Split (s)	11.3	20.3		11.3	20.3		11.3	20.3		11.3	20.3	
Total Split (s)	20.0	50.0		20.0	50.0		20.0	50.0		20.0	50.0	
Total Split (%)	14.3%	35.7%		14.3%	35.7%		14.3%	35.7%		14.3%	35.7%	
Maximum Green (s)	15.7	45.1		15.7	45.1		15.7	44.7		15.7	44.7	
Yellow Time (s)	3.2	3.5		3.2	3.5		3.2	3.9		3.2	3.9	
All-Red Time (s)	1.1	1.4		1.1	1.4		1.1	1.4		1.1	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.3	4.9		4.3	4.9		4.3	5.3		4.3	5.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Act Effct Green (s)	28.5	19.6		31.7	23.4		31.6	18.0		27.4	15.8	
Actuated g/C Ratio	0.37	0.26		0.41	0.31		0.41	0.23		0.36	0.21	
v/c Ratio	0.19	0.55		0.35	0.45		0.42	0.44		0.34	0.39	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	14.3	25.1		16.0	19.9		17.5	20.6		16.9	27.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.3	25.1		16.0	19.9		17.5	20.6		16.9	27.8	
LOS	B	C		B	B		B	C		B	C	
Approach Delay		23.6			19.0			19.4			23.9	
Approach LOS		C			B			B			C	
Queue Length 50th (ft)	20	91		37	78		61	54		43	55	
Queue Length 95th (ft)	50	161		79	138		128	110		92	101	
Internal Link Dist (ft)		229			626			583			512	
Turn Bay Length (ft)	195			125			170			375		
Base Capacity (vph)	563	2013		513	2017		579	2024		575	2052	
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	0.14	0.24		0.27	0.24		0.38	0.19		0.27	0.14	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 76.6
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 21.3 Intersection LOS: C
Intersection Capacity Utilization 57.7% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1: Orchard Park Road & Ridge Road



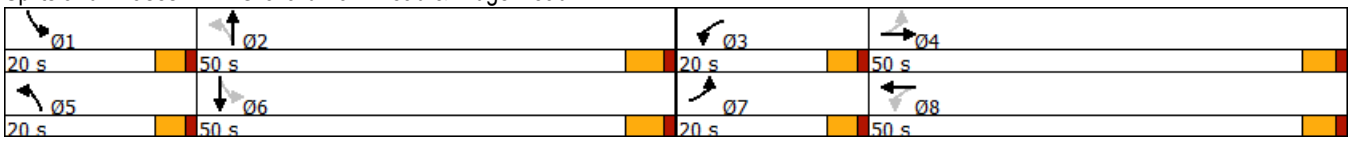
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	416	211	248	400	253	174	266	154	254	354	76
Future Volume (vph)	64	416	211	248	400	253	174	266	154	254	354	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	195		0	125		0	170		270	375		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	75			75			75			75		
Satd. Flow (prot)	1770	3362	0	1770	3334	0	1770	3345	0	1770	3454	0
Flt Permitted	0.334			0.224			0.365			0.290		
Satd. Flow (perm)	622	3362	0	417	3334	0	680	3345	0	540	3454	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		67			105			87			17	
Link Speed (mph)		35			35			40			40	
Link Distance (ft)		309			706			663			592	
Travel Time (s)		6.0			13.8			11.3			10.1	
Peak Hour Factor	0.99	0.99	0.99	0.92	0.92	0.92	0.85	0.85	0.85	0.90	0.90	1.00
Shared Lane Traffic (%)												
Lane Group Flow (vph)	65	633	0	270	710	0	205	494	0	282	469	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
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)	7.0	15.0		7.0	15.0		7.0	15.0		7.0	14.6	
Minimum Split (s)	11.3	20.3		11.3	20.3		11.3	20.3		11.3	20.3	
Total Split (s)	20.0	50.0		20.0	50.0		20.0	50.0		20.0	50.0	
Total Split (%)	14.3%	35.7%		14.3%	35.7%		14.3%	35.7%		14.3%	35.7%	
Maximum Green (s)	15.7	45.1		15.7	45.1		15.7	44.7		15.7	44.7	
Yellow Time (s)	3.2	3.5		3.2	3.5		3.2	3.9		3.2	3.9	
All-Red Time (s)	1.1	1.4		1.1	1.4		1.1	1.4		1.1	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.3	4.9		4.3	4.9		4.3	5.3		4.3	5.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Act Effct Green (s)	36.6	27.7		46.7	36.5		36.0	21.8		38.6	23.1	
Actuated g/C Ratio	0.38	0.28		0.48	0.37		0.37	0.22		0.40	0.24	
v/c Ratio	0.20	0.63		0.69	0.54		0.51	0.61		0.71	0.56	
Control Delay	16.7	30.5		26.0	23.2		24.5	32.1		32.1	35.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	16.7	30.5		26.0	23.2		24.5	32.1		32.1	35.8	
LOS	B	C		C	C		C	C		C	D	
Approach Delay		29.2			24.0			29.9			34.4	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	21	164		100	160		82	123		118	133	
Queue Length 95th (ft)	50	249		181	253		149	185		#237	215	
Internal Link Dist (ft)		229			626			583			512	
Turn Bay Length (ft)	195			125			170			375		
Base Capacity (vph)	473	1642		425	1652		452	1631		425	1646	
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	0.14	0.39		0.64	0.43		0.45	0.30		0.66	0.28	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 97.4
Natural Cycle: 70
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 29.0 Intersection LOS: C
Intersection Capacity Utilization 74.2% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Orchard Park Road & Ridge Road



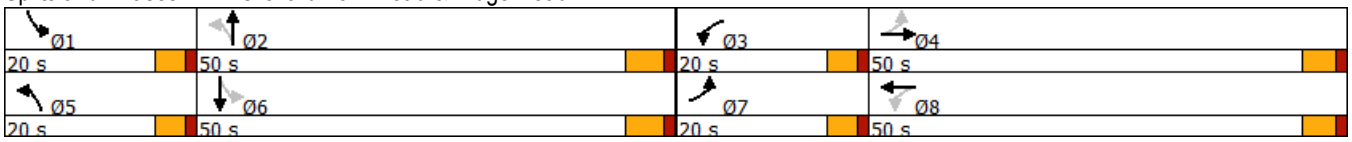
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	313	130	122	268	162	189	200	130	137	197	41
Future Volume (vph)	70	313	130	122	268	162	189	200	130	137	197	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	195		0	125		0	170		270	375		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	75			75			75			75		
Satd. Flow (prot)	1770	3325	0	1770	3301	0	1770	3330	0	1770	3440	0
Flt Permitted	0.444			0.327			0.504			0.517		
Satd. Flow (perm)	827	3325	0	609	3301	0	938	3330	0	963	3440	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		48			96			112			19	
Link Speed (mph)		35			35			40			40	
Link Distance (ft)		309			706			663			592	
Travel Time (s)		6.0			13.8			11.3			10.1	
Confl. Peds. (#/hr)			1	1			1					1
Peak Hour Factor	0.91	0.91	0.91	0.88	0.88	0.88	0.86	0.86	0.86	0.84	0.84	0.84
Heavy Vehicles (%)	2%	4%	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	77	487	0	139	489	0	220	384	0	163	284	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
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)	7.0	15.0		7.0	15.0		7.0	15.0		7.0	14.6	
Minimum Split (s)	11.3	20.3		11.3	20.3		11.3	20.3		11.3	20.3	
Total Split (s)	20.0	50.0		20.0	50.0		20.0	50.0		20.0	50.0	
Total Split (%)	14.3%	35.7%		14.3%	35.7%		14.3%	35.7%		14.3%	35.7%	
Maximum Green (s)	15.7	45.1		15.7	45.1		15.7	44.7		15.7	44.7	
Yellow Time (s)	3.2	3.5		3.2	3.5		3.2	3.9		3.2	3.9	
All-Red Time (s)	1.1	1.4		1.1	1.4		1.1	1.4		1.1	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.3	4.9		4.3	4.9		4.3	5.3		4.3	5.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Act Effct Green (s)	28.6	19.7		31.9	23.5		31.7	17.9		27.6	15.9	
Actuated g/C Ratio	0.37	0.26		0.41	0.31		0.41	0.23		0.36	0.21	
v/c Ratio	0.19	0.55		0.35	0.45		0.42	0.45		0.36	0.39	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	14.4	25.3		16.1	19.9		17.6	20.8		17.1	27.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.4	25.3		16.1	19.9		17.6	20.8		17.1	27.9	
LOS	B	C		B	B		B	C		B	C	
Approach Delay		23.8			19.1			19.6			23.9	
Approach LOS		C			B			B			C	
Queue Length 50th (ft)	20	92		37	78		62	55		44	56	
Queue Length 95th (ft)	50	163		80	140		129	112		95	102	
Internal Link Dist (ft)		229			626			583			512	
Turn Bay Length (ft)	195			125			170			375		
Base Capacity (vph)	561	2007		511	2013		578	2019		571	2046	
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	0.14	0.24		0.27	0.24		0.38	0.19		0.29	0.14	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 76.9
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 21.4 Intersection LOS: C
Intersection Capacity Utilization 57.9% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1: Orchard Park Road & Ridge Road



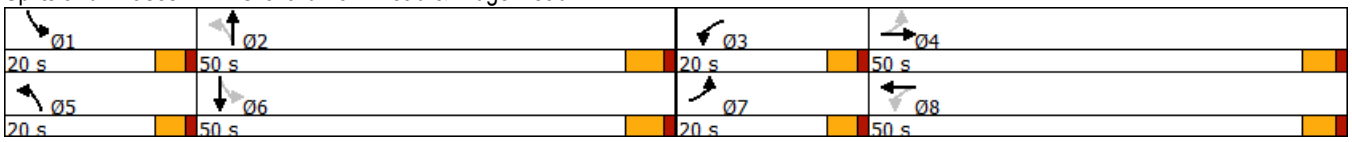
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	418	213	249	402	254	175	267	155	255	356	76
Future Volume (vph)	64	418	213	249	402	254	175	267	155	255	356	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	195		0	125		0	170		270	375		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	75			75			75			75		
Satd. Flow (prot)	1770	3359	0	1770	3334	0	1770	3345	0	1770	3454	0
Flt Permitted	0.333			0.223			0.364			0.287		
Satd. Flow (perm)	620	3359	0	415	3334	0	678	3345	0	535	3454	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		68			106			87			17	
Link Speed (mph)		35			35			40			40	
Link Distance (ft)		309			706			663			592	
Travel Time (s)		6.0			13.8			11.3			10.1	
Peak Hour Factor	0.99	0.99	0.99	0.92	0.92	0.92	0.85	0.85	0.85	0.90	0.90	1.00
Shared Lane Traffic (%)												
Lane Group Flow (vph)	65	637	0	271	713	0	206	496	0	283	472	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
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)	7.0	15.0		7.0	15.0		7.0	15.0		7.0	14.6	
Minimum Split (s)	11.3	20.3		11.3	20.3		11.3	20.3		11.3	20.3	
Total Split (s)	20.0	50.0		20.0	50.0		20.0	50.0		20.0	50.0	
Total Split (%)	14.3%	35.7%		14.3%	35.7%		14.3%	35.7%		14.3%	35.7%	
Maximum Green (s)	15.7	45.1		15.7	45.1		15.7	44.7		15.7	44.7	
Yellow Time (s)	3.2	3.5		3.2	3.5		3.2	3.9		3.2	3.9	
All-Red Time (s)	1.1	1.4		1.1	1.4		1.1	1.4		1.1	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.3	4.9		4.3	4.9		4.3	5.3		4.3	5.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Act Effct Green (s)	37.0	28.1		47.2	37.0		36.2	22.0		38.9	23.3	
Actuated g/C Ratio	0.38	0.29		0.48	0.38		0.37	0.22		0.40	0.24	
v/c Ratio	0.20	0.63		0.69	0.54		0.52	0.61		0.72	0.57	
Control Delay	16.8	30.6		26.2	23.2		24.8	32.3		32.6	36.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	16.8	30.6		26.2	23.2		24.8	32.3		32.6	36.0	
LOS	B	C		C	C		C	C		C	D	
Approach Delay		29.3			24.1			30.1			34.7	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	21	166		100	160		83	124		120	135	
Queue Length 95th (ft)	51	253		183	256		150	186		#242	217	
Internal Link Dist (ft)		229			626			583			512	
Turn Bay Length (ft)	195			125			170			375		
Base Capacity (vph)	471	1628		423	1641		450	1618		421	1632	
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	0.14	0.39		0.64	0.43		0.46	0.31		0.67	0.29	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 98.1
Natural Cycle: 70
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 29.2 Intersection LOS: C
Intersection Capacity Utilization 74.5% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Orchard Park Road & Ridge Road



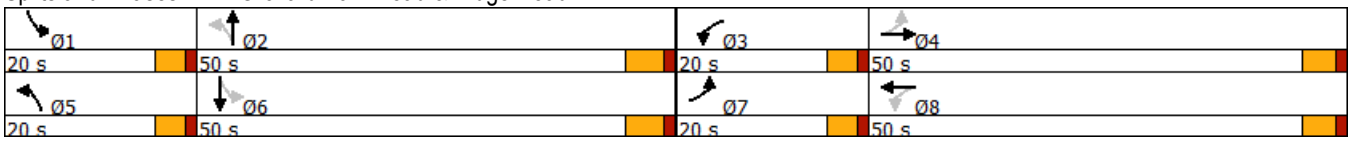
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	326	142	120	282	160	202	197	128	132	196	49
Future Volume (vph)	78	326	142	120	282	160	202	197	128	132	196	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	195		0	125		0	170		270	375		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	75			75			75			75		
Satd. Flow (prot)	1770	3318	0	1770	3307	0	1770	3330	0	1770	3424	0
Flt Permitted	0.427			0.314			0.475			0.528		
Satd. Flow (perm)	795	3318	0	585	3307	0	884	3330	0	984	3424	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		51			84			113			23	
Link Speed (mph)		35			35			40			40	
Link Distance (ft)		309			706			663			592	
Travel Time (s)		6.0			13.8			11.3			10.1	
Confl. Peds. (#/hr)			1	1			1					1
Peak Hour Factor	0.91	0.91	0.91	0.88	0.88	0.88	0.86	0.86	0.86	0.84	0.84	0.84
Heavy Vehicles (%)	2%	4%	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	86	514	0	136	502	0	235	378	0	157	291	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
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)	7.0	15.0		7.0	15.0		7.0	15.0		7.0	14.6	
Minimum Split (s)	11.3	20.3		11.3	20.3		11.3	20.3		11.3	20.3	
Total Split (s)	20.0	50.0		20.0	50.0		20.0	50.0		20.0	50.0	
Total Split (%)	14.3%	35.7%		14.3%	35.7%		14.3%	35.7%		14.3%	35.7%	
Maximum Green (s)	15.7	45.1		15.7	45.1		15.7	44.7		15.7	44.7	
Yellow Time (s)	3.2	3.5		3.2	3.5		3.2	3.9		3.2	3.9	
All-Red Time (s)	1.1	1.4		1.1	1.4		1.1	1.4		1.1	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.3	4.9		4.3	4.9		4.3	5.3		4.3	5.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Act Effct Green (s)	30.0	20.8		32.7	24.4		32.7	18.5		27.6	15.9	
Actuated g/C Ratio	0.38	0.26		0.42	0.31		0.42	0.24		0.35	0.20	
v/c Ratio	0.21	0.56		0.35	0.46		0.45	0.43		0.35	0.41	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	14.5	25.3		16.1	20.8		18.5	20.8		17.5	28.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.5	25.3		16.1	20.8		18.5	20.8		17.5	28.5	
LOS	B	C		B	C		B	C		B	C	
Approach Delay		23.7			19.8			19.9			24.6	
Approach LOS		C			B			B			C	
Queue Length 50th (ft)	23	100		37	86		70	55		44	60	
Queue Length 95th (ft)	54	172		78	148		140	110		93	104	
Internal Link Dist (ft)		229			626			583			512	
Turn Bay Length (ft)	195			125			170			375		
Base Capacity (vph)	553	1964		503	1971		561	1980		566	1996	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.16	0.26		0.27	0.25		0.42	0.19		0.28	0.15	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 78.5
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.56
Intersection Signal Delay: 21.8 Intersection LOS: C
Intersection Capacity Utilization 59.3% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1: Orchard Park Road & Ridge Road



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	505	198	43	504	5	11
Future Volume (vph)	505	198	43	504	5	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	80		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			75		75	
Satd. Flow (prot)	3343	0	1770	3471	1668	0
Flt Permitted			0.950		0.984	
Satd. Flow (perm)	3343	0	1770	3471	1668	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	677			124	168	
Travel Time (s)	13.2			2.4	3.8	
Peak Hour Factor	0.91	0.91	0.88	0.88	0.90	0.90
Heavy Vehicles (%)	4%	2%	2%	4%	2%	2%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	773	0	49	573	18	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 37.0% ICU Level of Service A
Analysis Period (min) 15

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	505	198	43	504	5	11
Future Vol, veh/h	505	198	43	504	5	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	80	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	88	88	90	90
Heavy Vehicles, %	4	2	2	4	2	2
Mvmt Flow	555	218	49	573	6	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	773	0	1049	387
Stage 1	-	-	-	-	664	-
Stage 2	-	-	-	-	385	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	838	-	223	611
Stage 1	-	-	-	-	474	-
Stage 2	-	-	-	-	657	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	838	-	210	611
Mov Cap-2 Maneuver	-	-	-	-	338	-
Stage 1	-	-	-	-	474	-
Stage 2	-	-	-	-	619	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	12.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	488	-	-	838	-
HCM Lane V/C Ratio	0.036	-	-	0.058	-
HCM Control Delay (s)	12.7	-	-	9.6	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	516	0	0	533	14	30
Future Volume (vph)	516	0	0	533	14	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	3471	0	0	3471	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	3471	0	0	3471	1770	1583
Link Speed (mph)	35			35	30	
Link Distance (ft)	124			309	154	
Travel Time (s)	2.4			6.0	3.5	
Peak Hour Factor	0.91	0.91	0.88	0.88	0.90	0.90
Heavy Vehicles (%)	4%	2%	2%	4%	2%	2%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	567	0	0	606	16	33
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 24.7% ICU Level of Service A
Analysis Period (min) 15

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↰	↱
Traffic Vol, veh/h	516	0	0	533	14	30
Future Vol, veh/h	516	0	0	533	14	30
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	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	88	88	90	90
Heavy Vehicles, %	4	2	2	4	2	2
Mvmt Flow	567	0	0	606	16	33

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	870	284
Stage 1	-	-	-	-	567	-
Stage 2	-	-	-	-	303	-
Critical Hdwy	-	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	-	0	0	-	291	713
Stage 1	-	0	0	-	531	-
Stage 2	-	0	0	-	723	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	291	713
Mov Cap-2 Maneuver	-	-	-	-	406	-
Stage 1	-	-	-	-	531	-
Stage 2	-	-	-	-	723	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	406	713	-	-
HCM Lane V/C Ratio	0.038	0.047	-	-
HCM Control Delay (s)	14.2	10.3	-	-
HCM Lane LOS	B	B	-	-
HCM 95th %tile Q(veh)	0.1	0.1	-	-

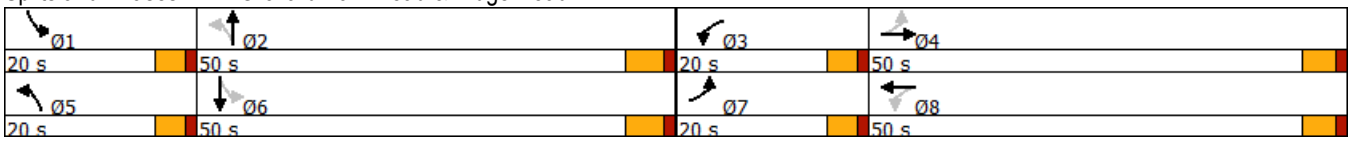
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	428	223	247	413	252	184	265	154	253	353	84
Future Volume (vph)	70	428	223	247	413	252	184	265	154	253	353	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	195		0	125		0	170		270	375		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	75			75			75			75		
Satd. Flow (prot)	1770	3359	0	1770	3337	0	1770	3345	0	1770	3447	0
Flt Permitted	0.325			0.216			0.348			0.293		
Satd. Flow (perm)	605	3359	0	402	3337	0	648	3345	0	546	3447	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		71			97			88			19	
Link Speed (mph)		35			35			40			40	
Link Distance (ft)		309			706			663			592	
Travel Time (s)		6.0			13.8			11.3			10.1	
Peak Hour Factor	0.99	0.99	0.99	0.92	0.92	0.92	0.85	0.85	0.85	0.90	0.90	1.00
Shared Lane Traffic (%)												
Lane Group Flow (vph)	71	657	0	268	723	0	216	493	0	281	476	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
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)	7.0	15.0		7.0	15.0		7.0	15.0		7.0	14.6	
Minimum Split (s)	11.3	20.3		11.3	20.3		11.3	20.3		11.3	20.3	
Total Split (s)	20.0	50.0		20.0	50.0		20.0	50.0		20.0	50.0	
Total Split (%)	14.3%	35.7%		14.3%	35.7%		14.3%	35.7%		14.3%	35.7%	
Maximum Green (s)	15.7	45.1		15.7	45.1		15.7	44.7		15.7	44.7	
Yellow Time (s)	3.2	3.5		3.2	3.5		3.2	3.9		3.2	3.9	
All-Red Time (s)	1.1	1.4		1.1	1.4		1.1	1.4		1.1	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.3	4.9		4.3	4.9		4.3	5.3		4.3	5.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Act Effct Green (s)	38.1	29.0		48.2	37.7		36.7	22.1		38.7	23.1	
Actuated g/C Ratio	0.38	0.29		0.49	0.38		0.37	0.22		0.39	0.23	
v/c Ratio	0.21	0.64		0.69	0.54		0.55	0.61		0.72	0.58	
Control Delay	16.9	30.5		26.3	23.7		26.1	32.7		33.2	36.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	16.9	30.5		26.3	23.7		26.1	32.7		33.2	36.9	
LOS	B	C		C	C		C	C		C	D	
Approach Delay		29.2			24.4			30.7			35.5	
Approach LOS		C			C			C			D	
Queue Length 50th (ft)	23	172		99	167		89	124		120	138	
Queue Length 95th (ft)	55	263		182	266		161	188		#244	223	
Internal Link Dist (ft)		229			626			583			512	
Turn Bay Length (ft)	195			125			170			375		
Base Capacity (vph)	468	1617		418	1632		439	1605		419	1616	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.15	0.41		0.64	0.44		0.49	0.31		0.67	0.29	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 99.2
Natural Cycle: 70
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 29.5 Intersection LOS: C
Intersection Capacity Utilization 74.8% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Orchard Park Road & Ridge Road



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	690	14	33	657	3	8
Future Volume (vph)	690	14	33	657	3	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	80		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			75		75	
Satd. Flow (prot)	3529	0	1770	3539	1655	0
Flt Permitted			0.950		0.988	
Satd. Flow (perm)	3529	0	1770	3539	1655	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	677			124	168	
Travel Time (s)	13.2			2.4	3.8	
Peak Hour Factor	0.99	0.99	0.92	0.92	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	711	0	36	714	12	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 36.2% ICU Level of Service A
Analysis Period (min) 15

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	690	14	33	657	3	8
Future Vol, veh/h	690	14	33	657	3	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	-	-	80	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	99	99	92	92	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	697	14	36	714	3	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	711	0	1133	356
Stage 1	-	-	-	-	704	-
Stage 2	-	-	-	-	429	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	884	-	197	640
Stage 1	-	-	-	-	452	-
Stage 2	-	-	-	-	624	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	884	-	189	640
Mov Cap-2 Maneuver	-	-	-	-	319	-
Stage 1	-	-	-	-	452	-
Stage 2	-	-	-	-	598	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	12.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	502	-	-	884	-
HCM Lane V/C Ratio	0.024	-	-	0.041	-
HCM Control Delay (s)	12.4	-	-	9.2	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↰	↱
Traffic Volume (vph)	698	0	0	681	9	23
Future Volume (vph)	698	0	0	681	9	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	3539	0	0	3539	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3539	1770	1583
Link Speed (mph)	35			35	30	
Link Distance (ft)	124			309	154	
Travel Time (s)	2.4			6.0	3.5	
Peak Hour Factor	0.99	0.99	0.92	0.92	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	705	0	0	740	10	26
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 29.3% ICU Level of Service A
Analysis Period (min) 15

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↰	↱
Traffic Vol, veh/h	698	0	0	681	9	23
Future Vol, veh/h	698	0	0	681	9	23
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	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	99	99	92	92	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	705	0	0	740	10	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	1075	353
Stage 1	-	-	-	-	705	-
Stage 2	-	-	-	-	370	-
Critical Hdwy	-	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	-	0	0	-	214	643
Stage 1	-	0	0	-	451	-
Stage 2	-	0	0	-	669	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	214	643
Mov Cap-2 Maneuver	-	-	-	-	338	-
Stage 1	-	-	-	-	451	-
Stage 2	-	-	-	-	669	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	338	643	-	-
HCM Lane V/C Ratio	0.03	0.04	-	-
HCM Control Delay (s)	16	10.8	-	-
HCM Lane LOS	C	B	-	-
HCM 95th %tile Q(veh)	0.1	0.1	-	-