

MEMORANDUM TO: Sean Devine
Newcastle Properties

FROM: Kelly Pachowicz
Consultant

Luay R. Aboona, PE, PTOE
Principal

DATE: June 3, 2022

SUBJECT: Parking and Traffic Evaluation
Proposed East Gate Crossing Outlot Development
Naperville, Illinois

This memorandum summarizes the results of a parking and traffic evaluation prepared by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) for the proposed outlot development to be located within the East Gate Crossing shopping center located in the northwest quadrant of the intersection of Ogden Avenue with Naperville Wheaton Road in Naperville, Illinois. As proposed, the outlot building will be approximately 8,300 square feet in size containing two restaurants and two retail establishments. One of the restaurants will provide a pick-up lane for online orders. Also proposed is a 3,600 square-foot restaurant to be located at the southeast corner of the H Mart building. As a result of the addition of the proposed outlot development and H Mart building addition, there will be a net loss of 111 parking spaces in the shopping center. The purpose of the parking study is to evaluate whether the proposed parking supply will be adequate in accommodating the parking demand of the projected development as well as the existing parking demand of the shopping center. In addition, the amount of traffic that will be generated and the use of the pick-up lane was also addressed.

Existing Shopping Center Characteristics

The East Gate Crossing shopping center is located in the northwest quadrant of the intersection of Ogden Avenue (US Route 34) with Naperville Wheaton Road. **Figure 1** shows the site location and the adjacent roadway system. The shopping center has approximately 100,000 square feet of commercial space and is anchored by H Mart and Dollar Tree. Existing outlots are occupied by CVS, Panera Bread, and Citibank. The Costco Wholesale store is located to the west.



Site Location

Figure 1

Existing Parking Demand

In order to determine the existing parking demand at the East Gate Crossing shopping center, KLOA, Inc. conducted hourly parking occupancy surveys on Thursday, March 10, 2022, Saturday, March 12, 2022, and Sunday, April 10, 2022, from 10:00 A.M. to 6:00 P.M. A zone diagram is included in the Appendix which shows the parking fields that were surveyed.

The results of the surveys are summarized in **Tables 1** through **3**. The following are descriptions of the parking zones surveyed:

- Zone 1 is the surface parking lot serving the center of the shopping center, primarily serving H Mart and Dollar Tree. This parking lot provides approximately 366 parking spaces. The proposed outlot development will primarily be in Zone 1.
- Zone 2 is the surface parking lot between Zone 1 and Zone 3 serving H Mart and CVS. This parking lot provides approximately 87 parking spaces. A small portion of the proposed development will be located in Zone 2.
- Zone 3 is the surface parking lot surrounding CVS, providing approximately 20 parking spaces.
- Zone 4 is the surface parking lot serving the Panera Bread outlot, providing approximately 72 parking spaces.
- Zone 5 is the surface parking lot serving the Citibank outlot, providing approximately 20 parking spaces.
- Zone 6 is the surface parking lot serving the rear of the H Mart and Dollar Tree building and is ideally where employees of these retail establishments park their vehicles. This parking lot provides approximately 132 parking spaces.

Table 1

PARKING OCCUPANCY RESULTS – THURSDAY, MARCH 10, 2022

Time	Zone						Total
	1	2	3	4	5	6	
11:00 AM	105	15	10	32	6	5	173
12:00 PM	149	23	14	29	10	14	239
1:00 PM	165	24	9	30	7	17	252
2:00 PM	184	25	13	36	5	18	281
3:00 PM	206	24	15	39	5	23	312
4:00 PM	177	23	12	28	8	22	270
5:00 PM	163	20	11	29	8	19	250
6:00 PM	156	23	11	27	6	14	237
Inventory	366	87	20	72	20	132	697

Table 2

PARKING OCCUPANCY RESULTS – SATURDAY, MARCH 12, 2022

Time	Zone						Total
	1	2	3	4	5	6	
10:00 AM	101	17	12	25	8	11	174
11:00 AM	132	27	9	26	8	15	217
12:00 PM	167	31	11	22	10	19	260
1:00 PM	185	30	13	29	9	24	290
2:00 PM	187	27	12	30	7	25	288
3:00 PM	194	25	9	36	5	23	292
4:00 PM	196	26	11	32	11	21	297
5:00 PM	190	25	15	29	4	22	285
6:00 PM	161	21	14	28	7	20	251
Inventory	366	87	20	72	20	132	697

Table 3

PARKING OCCUPANCY RESULTS – SUNDAY, APRIL 10, 2022

Time	Zone						Total
	1	2	3	4	5	6	
10:00 AM	60	11	15	31	0	0	117
11:00 AM	89	20	12	33	0	15	169
12:00 PM	129	24	14	26	0	15	208
1:00 PM	148	22	19	29	0	20	238
2:00 PM	156	25	16	34	0	23	254
3:00 PM	165	21	12	36	0	22	256
4:00 PM	170	16	15	30	0	19	250
5:00 PM	141	24	17	29	0	15	226
6:00 PM	129	28	14	28	0	16	215
Inventory	366	87	20	72	20	132	697

While the survey included the entirety of the East Gate Crossing parking supply, as the proposed outlot development will only impact the main parking field, the analysis was only based on Zones 1 and 2, which provide a total of 453 parking spaces. The following summarizes the results of the parking occupancy surveys:

- On Thursday, Zone 1 and Zone 2 had a peak parking demand of 230 vehicles at 3:00 P.M. This translates into an occupancy of 51 percent.
- On Saturday, Zone 1 and Zone 2 had a peak parking demand of 222 vehicles occurring at 4:00 P.M. This translates into an occupancy of 49 percent.
- On Sunday, Zone 1 and Zone 2 had a peak parking demand of 186 vehicles occurring at 3:00 P.M. and 4:00 P.M. This translates into an occupancy of 41 percent.

Future Outlot Traffic Operations

The proposed outlot will provide a single 8,300 square-foot retail building that will contain two fast casual restaurants and two retail establishments. The fast casual restaurants will be 2,300 square feet and 3,000 square feet in size. The retail establishments will be 1,200 square feet and 1,800 square feet in size. A site plan is included in the Appendix.

The 3,000 square-foot restaurant will provide a pick-up window. The expected operating hours are 11:30 A.M. to 10:00 P.M. It is assumed that the peak dining hours will be 5:00 to 8:00 P.M. Three parking spaces will be designated as pick-up waiting spaces.

The proposed outlot will require the reconfiguration of the parking lots within Zones 1 and 2, which will result in a net loss of 111 parking spaces for a total proposed supply of 342 parking spaces, including the 59 spaces that will be provided to serve the outlot parcel.

Access to the proposed outlot development will be provided via two full-movement access drives located on the south side of the outlot. Circulation around the building will be provided with two-way drive aisles. Outbound movements from the outlot to the main drive aisle of the East Gate Crossing shopping center should be under stop sign control.

Proposed Outlot Estimated Parking Demand

Based on the City of Naperville Code of Ordinances, eating establishments exclusive of fast-food establishments are required to provide 10 parking spaces for every 1,000 square feet of floor area. General retail establishments are required to provide 4.5 parking spaces for every 1,000 square feet of floor area. Utilizing 5,300 square feet for the fast casual restaurants and 3,000 square feet for the retail establishments, 53 parking spaces are required for the proposed fast casual restaurants and 13 parking spaces are required for the proposed retail establishments. This results in 66 required parking spaces for the proposed outlot development based on the City of Naperville requirements.

It should be noted that, based on the Institute of Transportation Engineers (ITE) *Parking Generation Manual*, 5th Edition, the average parking ratio for a fast casual restaurant is 9.93 spaces per 1,000 square-feet on a weekday and 8.75 spaces per 1,000 square-feet on a Saturday and Sunday. The average parking ratio for a shopping center is 1.95 parking spaces for every 1,000 square feet on a weekday, 2.91 parking spaces per 1,000 square-feet on a Saturday, and 1.89 parking spaces per 1,000 square-feet on a Sunday. Utilizing 5,300 square feet for the fast casual restaurants and 3,000 square feet for the retail establishments, on a weekday, 53 parking spaces are required for the proposed fast casual restaurants and 6 parking spaces are required for the proposed retail establishments. On a Saturday, 46 parking spaces are required for the proposed fast casual restaurants and 8 parking spaces are required for the proposed retail establishments. On a Sunday, 46 parking spaces are required for the proposed fast casual restaurants and 5 parking spaces are required for the proposed retail establishments. This results in 59, 54, and 51 required parking spaces for the proposed outlot development based on ITE requirements on a weekday, Saturday, and Sunday, respectively.

The hourly distribution for the outlot (based on the 66 required parking spaces from city requirements, which yields the most conservative parking demand) was based on information published in the ITE *Parking Generation Manual*, 5th Edition. **Table 4** summarizes the hourly distribution of parking demand for the proposed outlot development.

Table 4

ESTIMATED OUTLOT HOURLY PARKING OCCUPANCY

Time Period	Fast Casual		Retail		Total	
	Weekday	Weekend	Weekday	Weekend	Weekday	Weekend
10:00 AM	--	4	--	9	--	13
11:00 AM	10	14	9	11	19	25
12:00 PM	53	37	13	12	66	49
1:00 PM	40	42	13	13	53	55
2:00 PM	24	53	12	13	36	66
3:00 PM	16	30	11	12	27	42
4:00 PM	12	23	11	11	23	34
5:00 PM	26	32	11	10	37	42
6:00 PM	41	46	11	9	52	55

H Mart Restaurant Space Estimated Parking Demand

Also included in the proposed plans will be the addition of a 3,600 square-foot restaurant to be located on the southeast side of the H Mart building. This expansion will result in the reconfiguration of the parking area immediately to the east resulting in a net increase of approximately eight spaces.

Based on the City of Naperville Code of Ordinances, eating establishments exclusive of fast-food establishments are required to provide 10 parking spaces for every 1,000 square feet of floor area. Utilizing the proposed 3,600 square feet for the restaurant, 36 parking spaces are required for the proposed restaurant next to H Mart based on the City of Naperville requirements.

It should be noted that, based on the Institute of Transportation Engineers (ITE) *Parking Generation Manual*, 5th Edition, the average parking ratio for a fast casual restaurant is 9.93 spaces per 1,000 square-feet on a weekday and 8.75 spaces per 1,000 square-feet on a Saturday and Sunday. Utilizing 3,600 square feet for the restaurant, 36 parking spaces are required for the proposed restaurant next to H Mart based on ITE requirements on a weekday and 32 parking spaces are required on a Saturday and Sunday.

The hourly distribution for the restaurant (based on the 36 required parking spaces from ITE requirements, which yields the most conservative parking demand for both methodologies) was based on information published in the ITE *Parking Generation Manual*, 5th Edition. **Table 5** summarizes the hourly distribution of parking demand for the proposed restaurant adjacent to H Mart.

Table 5
ESTIMATED RESTAURANT HOURLY PARKING OCCUPANCY

Time Period	Fast Casual	
	Weekday	Weekend
10:00 AM	--	3
11:00 AM	6	10
12:00 PM	36	25
1:00 PM	27	29
2:00 PM	16	36
3:00 PM	11	21
4:00 PM	8	15
5:00 PM	18	22
6:00 PM	28	31

East Gate Shopping Center Projected Parking Demand

Tables 6A, 6B, and 6C show the hourly distribution of the parking demand for the East Gate Crossing shopping center Zone 1 and Zone 2. Total projected occupancy is compared to the proposed number of parking spaces to be provided (342). As can be seen, the peak occupancy will be as follows:

- On Thursday, the peak parking demand of Zones 1 and 2 will be 274 spaces (80 percent occupancy) occurring at 12:00 P.M.
- On Saturday, the peak parking demand of Zones 1 and 2 will be 316 spaces (92 percent occupancy) occurring at 2:00 P.M.
- On Sunday, the peak parking demand of Zones 1 and 2 will be 283 spaces (83 percent occupancy) occurring at 2:00 P.M.

Therefore, the parking supply within the East Gate Crossing shopping center will be adequate in accommodating the future parking demand of the existing center, as well as the proposed outlot development and the proposed H Mart building addition.

Table 6A

PROJECTED TOTAL HOURLY PARKING OCCUPANCY (ZONES 1 & 2) – THURSDAY

Time Period	Existing Demand	Proposed Outlot	H Mart Restaurant	Total Projected Occupancy	Percent Occupied
11:00 AM	120	19	6	146	43%
12:00 PM	172	66	36	274	80%
1:00 PM	189	53	27	269	79%
2:00 PM	209	36	16	261	76%
3:00 PM	230	27	11	269	79%
4:00 PM	200	23	8	231	68%
5:00 PM	183	37	18	238	69%
6:00 PM	179	52	28	259	76%

Table 6B

PROJECTED TOTAL HOURLY PARKING OCCUPANCY (ZONES 1 & 2) – SATURDAY

Time Period	Existing Demand	Proposed Outlot	H Mart Restaurant	Total Occupancy	Percent Occupied
10:00 AM	118	13	3	133	39%
11:00 AM	159	25	10	194	57%
12:00 PM	198	49	25	273	80%
1:00 PM	215	55	29	300	88%
2:00 PM	214	66	36	316	92%
3:00 PM	219	42	21	282	82%
4:00 PM	222	34	15	272	79%
5:00 PM	215	42	22	279	82%
6:00 PM	182	55	31	269	79%

Table 6C

PROJECTED TOTAL HOURLY PARKING OCCUPANCY (ZONES 1 & 2) – SUNDAY

Time Period	Existing Demand	Proposed Outlot	H Mart Restaurant	Total Occupancy	Percent Occupied
10:00 AM	71	13	3	87	25%
11:00 AM	109	25	10	144	42%
12:00 PM	153	49	25	228	67%
1:00 PM	170	55	29	254	74%
2:00 PM	181	66	36	283	83%
3:00 PM	186	42	21	249	73%
4:00 PM	186	34	15	236	69%
5:00 PM	165	42	22	229	67%
6:00 PM	157	55	31	244	71%

Traffic Evaluation

The number of daily trips estimated to be generated by the proposed outlot development and H Mart building addition was based on vehicle trip generation rates contained in *Trip Generation Manual*, 11th Edition, published by the Institute of Transportation Engineers (ITE). The “Fast Casual Restaurant” (Land-Use Code 930) rate was used for the restaurants. The “Shopping Center” (Land-Use Code 820) was used for the retail establishments. It should be noted that typical of these types of uses, not all of the trips will be new with a significant amount diverted from the existing traffic on the adjacent roadway system. Furthermore, given the location of the proposed outlot within an existing shopping center and adjacent to Costco and the location of the proposed restaurant adjacent to H Mart, the number of new trips will be further reduced due to internal capture. The trips estimated to be generated by the proposed outlot and H Mart building addition are summarized in **Table 7**.

Table 7
ITE TRIP GENERATION

ITE Land-Use Code	Type/Size	Weekday Morning Peak Hour			Weekday Evening Peak Hour			Weekend Midday Peak Hour			Daily Two-Way Trips		
		In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
930	Fast Casual Restaurant (5,300 s.f.)	4	4	8	37	30	67	95	78	173	258	258	516
820	Shopping Center (3,000 s.f.)	2	1	3	5	5	10	7	6	13	56	56	112
Total New Vehicle Trips		6	5	11	42	35	77	102	84	186	314	314	628

Site Access

Main access to the East Gate Crossing shopping center is provided via three main access drives that connect internally with a main drive aisle within the shopping center. These access drives are as follows:

- The main entrance access drive is a right-in/right-out access drive on Ogden Avenue. This drive includes a landscaped median separating the inbound and outbound lanes.
- The west access drive is a full-movement access drive on the west side of the shopping center providing access from Iroquois Avenue.
- The east access drive is a full-movement access drive on the east side of the shopping center providing access from Naperville Wheaton Road.

Access to the proposed outlot development will be provided via two full-movement access drives located on the south side of the outlot. Circulation around the building will be provided with two-way drive aisles. Outbound movements from the outlot to the main drive aisle of the East Gate Crossing shopping center should be under stop sign control.

Pick-Up Window Operations and Stacking

The proposed pick-up lane for the fast casual restaurant will have a single lane operating in a counterclockwise direction. To reinforce the one-way direction, “Do Not Enter” signs should be posted at the exit of the pick-up lane and wayfinding signage should be provided directing vehicles to the pick-up lane entrance. The lane will be separated from the parking lot by a landscaped median. Based on the proposed site plan, the pick-up lane has been designed to allow for a total of approximately three vehicles to be stored within the pick-up lane without interfering with traffic circulation patterns on-site. Also to be provided will be two to three designated parking spaces for vehicles to wait, should the service time exceed the expected wait time at the pick-up window.

It should be noted that the proposed pick-up window will operate differently than a traditional drive-through. Customers utilizing the lane must order their food and pay in advance as the pick-up window will only be utilized for picking up orders already placed. There will be no ordering board and payment will not be accepted at the pick-up window, which allows for quicker service times than a typical fast-food restaurant drive-through lane.

Conclusion

Based on the preceding parking evaluation, the following conclusions have been made:

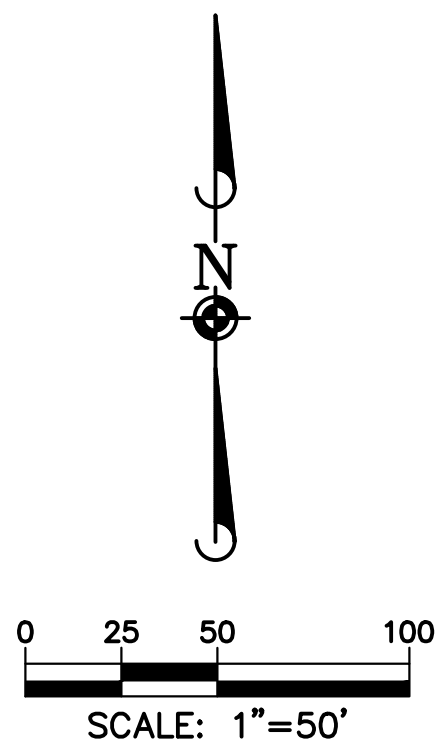
- The proposed addition of the outlot development and the restaurant adjacent to the H mart building will result in a net loss of 111 parking spaces within the East Gate Crossing shopping center.
- The number of parking spaces within Zone 1 and Zone 2 will be reduced from approximately 453 to approximately 342.
- Based on the results of the parking occupancy surveys, the existing peak parking demand within Zone 1 and Zone 2 was determined to be 230 spaces occurring at 3:00 P.M. on Thursday, 222 spaces occurring at 4:00 P.M. on Saturday, and 186 spaces occurring at 3:00 P.M. and 4:00 P.M. on Sunday. This peak parking demand translates into an occupancy of 51, 49, and 41 percent, respectively.
- Based on the City of Naperville's Code of Ordinances, the proposed outlot development should provide 66 parking spaces.
- Based on ITE, the proposed outlot development should provide 59 parking spaces on a weekday, 54 parking spaces on a Saturday, and 51 parking spaces on a Sunday.
- Based on the City of Naperville's Code of Ordinances, the proposed H Mart restaurant should provide 36 parking spaces.
- Based on ITE, the proposed H Mart restaurant should provide 36 parking spaces on a weekday and 32 parking spaces on a Saturday and Sunday.
- Based on the results of the hourly shared parking analyses, the proposed parking supply of 342 spaces within Zones 1 and 2 will be sufficient to accommodate the peak parking demand of the shopping center and the proposed outlot.
- The proposed pick-up lane for the proposed restaurant will be restricted to customers who pre-order only and will help reduce the parking demand, as customers will not have to park to enter the restaurant.
- The pick-up lane has been designed to provide stacking for three vehicles with two to three spaces designated for vehicles waiting for their orders should it be necessary.

Appendix



EXHIBIT D

June 3, 2022 -- 11:45 Dwg Name: P:\Ncrv001\den\Yea\Final Drawings\Exhibit - Retail 1A.dwg Updated By: Miller



LOCATION	PROPOSED NUMBER OF PARKING SPACES	REQUIRED NUMBER OF PARKING SPACES (CITY OF NAPERVILLE)
ZONE 1 (OUTLOT, H MART AND DOLLAR TREE BUILDING)	293	--
ZONE 2 (H MART AND CVS)	49	--
ZONE 3 (CVS)	34	--
ZONE 6 (H MART AND DOLLAR TREE BUILDING, UNIT 101/105)	131	--
TOTAL	507	495

LOCATION	SQUARE FOOTAGE (SF)	REQUIRED NUMBER OF PARKING SPACES (CITY OF NAPERVILLE)
H MART	55,811	251
DOLLAR TREE	12,649	57
UNIT 101	2,584	12
UNIT 105	2,724	13
OUTLOT 2A	3,000	30
OUTLOT 1A	2,300	23
OUTLOT 1B	1,200	5
OUTLOT 1C	1,800	8
CVS	13,300	60
H MART RESTAURANT	3,600	36
TOTAL	--	495

REQUIRED NUMBER OF SPACES FOR ZONE 1, 2, AND 6 USERS: 461 SPACES
REQUIRED NUMBER OF SPACES FOR ZONE 1 AND 2 USERS*: 436 SPACES
PROPOSED NUMBER OF SPACES IN ZONE 1 AND 2: 342 SPACES
PROPOSED NUMBER OF SPACES IN ZONE 1, 2, AND 6: 473 SPACES

REQUIRED NUMBER OF SPACES FOR OUTLOT: 76 SPACES
TOTAL NUMBER OF SPACES (IN ZONE 1 AND 2) WITHIN 300 FT OF OUTLOT: 319 SPACES

*H-MART AND DOLLAR TREE MAY USE ZONE 6 PARKING FOR ALL USES, BUT IS INTENDED TO BE EMPLOYEE PARKING.

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DRAWN BY

DATE

REVISIONS

PROJ. MGR.: KJC

PROJ. ASSOC.: JRM

DRAWN BY: ASA

DATE: 06-03-22

SCALE: 1"=50'

SHEET

1 OF 1

NCP.NVL01

EASTGATE CROSSING- COMMERCIAL OUTLOT

CITY OF NAPERVILLE, ILLINOIS

PARKING EXHIBIT

EXHIBIT D