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SUBJECT: Site Circulation and Parking Evaluation  
Proposed Residential Development  
Warrenville, Illinois

This memorandum summarizes the results and findings of a site circulation and parking evaluation conducted by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) for the proposed townhome development to be located at 28301 Ferry Road in Warrenville, Illinois. As proposed, the site (which currently contains a surface parking lot) will be redeveloped to provide 48 townhome units and 141 parking spaces. As a result of the proposed townhome development, the existing parking lot, which serves the office building and provides approximately 473 parking spaces, will be modified to provide 412 parking spaces. Main access to the site is provided via the existing signalized access drive off Ferry Road. Additional access will continue to be provided via the two existing cross access connections to the office development to the east. **Figure 1** shows an aerial view of the site location. The purpose of this evaluation is to determine the trip and parking generation characteristics of the proposed development, determine the adequacy of the proposed parking supply in accommodating the projected parking demand, and evaluate the site plan for adequacy of on-site circulation.

### Existing Traffic Conditions

The site is located on the south side of Ferry Road, approximately one third of a mile west of Winfield Road, and is bound by I-88 on the south. The site is located within one-half mile of the I-88 interchange with Winfield Road. Land-uses in the vicinity of the site include two office buildings to the east, Arden of Warrenville to the north, and Bower Elementary School to the west. Access to the site is provided off Ferry Road, which is described below.

*Ferry Road* is generally an east-west roadway that provides two lanes in each direction in the vicinity of the site. At its signalized intersection with the access drive serving the site, Ferry Road provides two through lanes and an exclusive right-turn lane on the eastbound approach and an exclusive left-turn lane and two through lanes on the westbound approach. It should be noted that Ferry Road currently provides pavement for a striped eastbound left-turn lane and a westbound right-turn lane should the north leg of the intersection be constructed. Ferry Road is under the jurisdiction of the DuPage County Division of Transportation (DuDOT), carries an Annual Average Daily Traffic (AADT) volume of approximately 17,400 vehicles (DuDOT 2016), and has a posted speed limit of 40 miles per hour. Based on DuDOT hourly counts from 2011, Ferry Road carries two-way traffic volumes of approximately 2,072 vehicles during the weekday morning peak hour and 1,877 vehicles during the weekday evening peak hour.



Aerial View of Site

Figure 1

## Traffic Characteristics of the Office Development

The proposed townhome development will occupy a portion of the parking lot serving the existing approximately 136,900 square-foot office building. As part of the proposed residential development, the existing 136,900 square-foot office building will be repurposed for co-op/shared office space.

Coworking office spaces differ from traditional office spaces as these types of offices provide a shared office space for different companies. This type of office space allows for many companies cost savings with shared infrastructure, equipment, utilities, receptionists, and custodial services. The spaces are primarily utilized by workers while telecommuting, traveling, or working from home as it provides a space to avoid the feeling of isolation and can eliminate distractions. It should be noted that based on information provided from a similar type office space in Deer Park, co-op/shared office spaces are typically only 50 percent occupied at any given time.

Access to the site is provided via a signalized access drive off Ferry Road which provides one inbound lane and two outbound lanes. Additional access to the office building is provided via two cross access connections to the office development to the east. As a result of the proposed townhome development, the existing parking lot will be modified to provide 412 parking spaces.

## Traffic Characteristics of the Proposed Townhome Development

The development site, which is currently occupied by a surface parking lot, will be developed to provide 48 townhome units with 141 parking spaces. Main access to the proposed townhome development will be provided via the existing signalized access drive off Ferry Road and via the two existing cross access connections to the office development to the east.

## Development Traffic Generation

The estimates of traffic to be generated by the proposed development are based upon the proposed land use type and size using data published in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 10<sup>th</sup> Edition. Land-Use Code 220 (Multifamily Housing Low-Rise) was utilized for the proposed townhome development and Land-Use Code 710 (General Office) was utilized for the existing office building. It should be noted that Land-Use Code 710 was utilized as it was the closest type of land-use. However, as previously indicated, the proposed operations of the office space will be approximately 50 percent less than a typical office space. As such, the trip generation summarized is conservative. **Table 1** shows the vehicle trips estimated to be generated by both developments during the weekday morning and weekday evening peak hours in addition to the weekday daily volumes.

Table 1  
PROJECTED SITE-GENERATED TRAFFIC VOLUMES

ITE Land Use Code	Type/Size	Weekday Morning Peak Hour			Weekday Evening Peak Hour			Weekday Two-Way Daily
		In	Out	Total	In	Out	Total	
710	General Office <sup>1</sup> (136,900 s.f.)	133	22	155	24	129	153	1,438
220	Multifamily Housing (57 Units)	6	22	28	23	13	36	390
<b>Total</b>		<b>139</b>	<b>44</b>	<b>183</b>	<b>47</b>	<b>142</b>	<b>189</b>	<b>1,828</b>

1 – Trip generation estimates are conservative as it assumes 100 percent occupancy of the office space during the peak hours.

## Traffic Evaluation

When the estimated weekday morning peak hour, weekday evening peak hour, and daily traffic volumes anticipated to be generated by the proposed residential development are compared to the DuDOT peak hour two-way traffic and AADT traffic volumes, the proposed residential development traffic will amount to approximately two percent or less of the existing traffic along Ferry Road. Given the low estimated traffic to be generated by the proposed development, the existing signalized access drive and area roadway system will be adequate in accommodating the future traffic volumes generated by the proposed townhome units.

## Development Parking Generation

As proposed, the residential development will provide a total of 141 parking spaces consisting of 96 garage spaces and 45 guest parking spaces. Furthermore, the proposed residential development will result in a modification to the parking field serving the existing office buildings that will result in a total of 412 parking spaces or 61 spaces less than the existing supply.

The parking estimated to be generated by the proposed land-uses was based on the City of Warrenville Zoning Ordinance and the ITE *Parking Generation Manual* 5<sup>th</sup> Edition. The estimated parking demand for each methodology is as follows:

### City of Warrenville Zoning Ordinance:

- Office Building: Four space per 1,000 square-feet of the first 30,000 square-feet of office space and 3.3 spaces per 1,000 square-feet for the remaining of the building
  - 473 spaces required, resulting in a deficit of 61 parking spaces.
- Townhomes: Four spaces per unit
  - 192 spaces required, resulting in a deficit of 51 spaces.

## ITE Parking Generation Manual, 5<sup>th</sup> Edition

- General Office: Land-Use Code 710
  - Weekday: 85<sup>th</sup> Percentile Parking Demand: 452 spaces or 3.30 spaces per 1,000 s.f.
  - Saturday: 85<sup>th</sup> Percentile Parking Demand: 100 spaces or 0.73 spaces per 1,000 s.f.
  
- Multifamily Housing (Low-Rise): Land-Use Code 220
  - Weekday: 85<sup>th</sup> Percentile Parking Demand: 73 spaces or 1.52 spaces per unit
  - Saturday: 85<sup>th</sup> Percentile Parking Demand: 77 spaces or 1.61 spaces per unit

It should be noted that, the parking estimated to be generated by the proposed office space based on both City of Warrentville Zoning Ordinance and the *ITE Parking Generation Manual* assumes traditional office uses. As previously indicated, the proposed operation of the office space as a co-op/shared office will result in an occupancy of up to 50 percent at any given time. As such, the estimated peak parking demand based on the City of Warrentville Zoning Ordinance is estimated to be approximately 237 spaces and the 85<sup>th</sup> percentile parking demand based on the *ITE Parking Generation Manual* is estimated to be 226 spaces, both of which can be accommodated by the proposed 412 parking spaces. It should be noted that the proposed supply of 412 parking spaces equals to approximately 87 percent of the required parking by the City of Warrentville Zoning Ordinance, which is far less than the 50 percent maximum occupancy anticipated.

## Shared Parking Evaluation

The existing office building and proposed townhome units offer a good synergy of land-uses from a parking standpoint as peak residential parking occurs in the evenings and on weekends whereas the peak parking for the office occurs during the day. To determine the adequacy of the parking supply for the entirety of the development, a shared parking analysis was performed utilizing hourly time of day distribution data provided in the *ITE Parking Generation Manual* for low-rise multifamily residential and office developments. This analysis was performed taking into consideration the CanteraDevelopment Control Regulations (DCR) shared parking methodology which assumes that all required office parking spaces will be occupied during the period from 7:00 AM to 6:00 PM on weekdays. As such, it was assumed that the 412 parking spaces were not available for residential use during these times on a weekday. On Saturday, based on *ITE Parking Generation Manual* data comparing the weekday to Saturday, it was assumed that peak office parking demand on Saturday was 25 percent of the weekday. The results of the shared parking analysis are summarized in **Table 2**.

Table 2  
SHARED PARKING ANALYSIS

Time	City of Warrenville Zoning Ordinance					
	Residential		Office		Total	
	Weekday	Saturday	Weekday	Saturday	Weekday	Saturday
7:00 AM	148	184	412	103	560	287
8:00 AM	108	177	412	103	520	280
9:00 AM	86	154	412	103	498	257
10:00 AM	77	150	412	103	489	253
11:00 AM	71	136	412	103	483	239
12:00 PM	69	131	412	103	481	234
1:00 PM	69	127	412	103	481	230
2:00 PM	71	125	412	103	483	228
3:00 PM	83	131	412	103	495	234
4:00 PM	86	134	412	103	498	237
5:00 PM	106	140	412	103	518	243
6:00 PM	127	148	412	103	539	251

Note: Residential provides 141 parking spaces and office provides 412 parking spaces.

As can be seen from Table 2, the total development parking will be adequate in accommodating the parking for the proposed development except for at 7:00 A.M. on a weekday. However, as previously indicated, this shared parking analysis assumes the office parking will not be available for residential use between 7:00 A.M. and 6:00 P.M. on weekdays and that this parking demand assumes typical operation of office developments. Overall, the proposed parking supply for the townhome and office uses should not result in a deficit taking into consideration a shared parking scenario based on the following:

- 1) The office space will be a Co-op/shared office space and parking demand expected to be significantly lower than that of a traditional office space.
- 2) Based on ITE *Parking Generation Manual* hourly time of day distribution data provided, an office development on weekday at 7:00 A.M. generates 13 percent of its peak parking demand.

### Parking Evaluation

As can be seen from the above, while the proposed development will have a deficit of parking compared to the City of Warrenville Zoning Ordinance, the proposed parking supply will be adequate in accommodating the average peak parking demand for both residential and office land-uses based on the ITE *Parking Generation Manual*, 5<sup>th</sup> Edition. Additionally, should any overflow parking be required for the proposed townhome units, this parking can be accommodated by the proposed office parking spaces which are underutilized during the evening hours and on weekends.

## On-Site Circulation Evaluation

Overall, the existing office building and proposed townhome development provide great synergy from a traffic standpoint. During the weekday morning peak hour when the majority of office generated traffic is arriving, the majority of residential generated traffic will be departing the site. Similarly, during the weekday evening peak hour when the majority of office generated traffic is departing, the majority of residential traffic is arriving to the site.

Under existing conditions, the internal intersection located approximately 250 feet southeast of Ferry Road is signed so that inbound movements from Ferry Road operate under a free-flow condition, with the three other approaches under stop-sign control. With the development of the proposed residential uses, it is recommended that the traffic control at this intersection remains the same.

Furthermore, the proposed site layout minimizes interaction between residential and office traffic. None of the parking garage driveways are located off of the main drive-aisles serving the site and the residential access roadways are designed such that they do not provide any benefit to be traversed by office generated traffic.

To reduce the amount office generated traffic that may unknowingly utilize the residential access roadways, “Dead End” and/or “Not a Thru Street” signage should be provided. Additionally, outbound movements from the residential access roadways onto the circulation drive-aisles should be under stop-sign control.

## Conclusion

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

- The proposed residential development will be a low traffic generator and will not significantly increase traffic on the adjacent roadway system.
- Given the low estimated traffic to be generated by the proposed residential development, the existing access system consisting of a signalized access roadway with Ferry Road and two cross access connections to the office development to the east will be adequate in accommodating the future traffic volumes.
- The proposed parking supply of 141 residential parking spaces and 412 office parking spaces will be adequate in accommodating the parking demand of the development based on information published in the *ITE Parking Generation Manual*, 5<sup>th</sup> Edition.
- Should additional parking for the proposed townhomes be required, this demand can be accommodated by the surface parking lot when the office building is not being utilized in the evenings and on weekends.