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Jeep & Blazer, LLC

From: Brent Coulter, PE PTOE

Date: 8/26/2013



Re: Groot Siting Application for a Waste Transfer Facility in Round Lake Park, Illinois - Traffic Analysis/Opinion

I. OVERVIEW

Per your request, I have reviewed the proposed Groot Lake Transfer Station in Round Lake Park, Illinois at the northeast corner of IL 120 and Porter Drive with respect to Section 39.2 of the Illinois Environmental Protection Act (and the Village of Round Lake Park) solid waste facility siting criterion related to traffic flow, routing and operations as follows:

- Criterion 6 – The facility has traffic patterns (to and from) designed to minimize the impact on existing traffic flows.

My traffic review was based on the Groot facility application (in particular Figure M.3-1 -“Vehicle Queuing Areas” exhibit) and the KLOA traffic study for the proposed waste transfer facility (6/13/2013).

II. FINDINGS

1. Trip Generation

a. The KLOA report argues that the preponderance of site trips will be generated outside the AM peak hour and the PM peak hour of IL 120. Inspection of the 3-hour morning and afternoon peak period counts provided in the report, however, indicates that traffic volumes in the hour before and after each of the AM and PM peak hours are nearly as high as those single peak hours. This means at least 6 hours, a significant part of a typical week work day, will experience peak or near peak traffic conditions on IL 120. This time period also coincides with the higher frequency of commuter train use and blockage (gate down time) of the IL 120/Milwaukee Road railroad crossing just east of Porter Drive.

b. The duration of high peak period background traffic conditions as discussed previously combined with the long length of travel between the transfer facility and the Winnebago Landfill (+/- 64 over-the-road miles) means that it will be difficult to schedule the larger waste transfer semi trucks so as to avoid “peak period” traffic conditions in the immediate area.

TCH EXHIBIT

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c. The KLOA traffic report makes a point of emphasizing the proximity of the Groot Industries North Facility and states that “the impact of the proposed transfer station will be further minimized as a large percentage of the traffic that will be generated by the facility is already on area roadways and many trucks will not have to traverse the external arterial roadway system when leaving the proposed transfer station”.

However, in many cases a single collection truck may make several visits to the transfer station during the day and this purported benefit is realized only for the last “dead-head” trip at the end of the work day for a particular truck. The general synergistic benefit of facility proximity is valid but is overstated in the traffic report’s qualitative discussion (in any event, KLOA states that they did not apply any reduction in facility trip generation or assignment based on this factor).

2. Trip Distribution

Based on the KLOA report analysis, the proposed waste transfer station would result in 55% of waste collection vehicles coming to and from the east through the closely spaced IL 120 intersections at IL 134 and at Hainesville Road. The latter intersection operates at a poor LOS E under existing conditions and at a very poor LOS F under projected 2016 traffic conditions. Under these operating conditions, even a small increase in traffic can have a disproportionate impact on delay and congestion. Although some signal and turn lane improvements are contemplated at these intersections, they are presently unfunded.

3. Site Plan Design – Internal Stacking and Operation for Inbound Transfer Trucks

The KLOA report states that neither a southbound left-turn lane or a northbound right-turn lane on Porter Drive is warranted based on IDOT volume warrant charts. While no discussion of internal truck flow and queuing was in the KLOA traffic study, my independent review of Figure M.3-1 – “Vehicle Queuing Areas” suggests that sufficient stacking area exists on-site and a northbound right-turn lane on Porter Drive at the site access would not be needed to mitigate potential inbound truck spillback onto Porter Drive.

4. Proposed IL 120/Porter Road Intersection Improvements

a. Off-Site Intersection Improvements at Porter Drive/IL 120.

The KLOA traffic study recommends, and I concur with, the following off-site improvements at the intersection of IL 120 and Porter Road:

- Add an eastbound left-turn lane and a westbound right-turn lane on IL 120 at Porter Road.
- Widen Porter Road to Convert the existing southbound shared right-turn/left-turn lane into two exclusive turn lanes (SB right-turn and SB left-turn).

The study states that eastbound traffic on IL 120 often queues back from the IL 134 intersection to or past the site during these time period noted above., and crash data in the report appendix seems to confirm a predominant EB rear-end involvement

The proposed left-turn lane (deceleration taper and full-width storage) length should be the greater of: 1) minimum IDOT deceleration requirements, or 2) be long enough to accommodate expected EB left-turn queues at Porter Drive and provide for eastbound left-turn lane entry in advance of the eastbound through traffic queued to the west on IL 120 during the peak periods. Based on the orientation of Porter Drive north of the site it appears to me that there is little or no potential for added cut-through traffic on Porter Drive between IL 120 and IL 134 with an EB left-turn lane in place.

The widening of Porter Drive should provide for a continuous southbound through (right-turn) lane and full width left-turn storage extending back north to the site access drive (the taper entry into this southbound left-turn lane can extend across the site's driveway opening).

b. Truck Left-Turn Restrictions.

In the "Conclusions and Recommendations" Section of the KLOA traffic study report, it is recommended (on page 6-24) that SB transfer truck left-turns from Porter Drive onto IL 120 be prohibited during the time periods (7:00 am to 9:00 am and 3:00 pm to 5:00 pm) due to frequent blockage of EB traffic queues extending back from the Milwaukee Road Railroad or IL 120/IL 134 intersection. This is less restrictive than a recommendation cited earlier on page 6-19 of the KLOA study that reads; "all transfer station and Eco-Campus truck traffic will be required to make a right-turn on to IL 120" during those same time periods.

The latter SB left-turn restriction for transfer station and Eco-Campus trucks on Porter Drive at IL 120 on the proposed facility, makes more sense given the lack of adequate truck gaps onto EB IL 120 and frequent blockages of SB left-turn entry onto EB IL 120.

c. On-Going Monitoring of Traffic Flow/Safety at Porter Drive/IL 120.

Finally, the traffic study recommends periodic monitoring of the IL120/Porter Drive intersection turning volumes to assess whether traffic signal volume warrants are met.

I would recommend defining this on-going "signal justification" monitoring to include safety and operational conditions that may justify signal installation. This monitoring should begin a minimum of 3 years, but no later than 5 years after operations have begun at the waste transfer facility. Subsequent routine monitoring of traffic turning movements/classification counts and review of crash data should occur at least every 5 years, unless operating concerns or issues raised by IDOT or other local government jurisdictions require an earlier evaluation. Siting approval, if granted, should address cost responsibilities in the event traffic signals are justified and are approved by IDOT (and the Village of Round Lake Park)

5. Transfer Truck Routing To the Winnebago County Landfill

No discussion of potential waste transfer truck routings to the Winnebago County Landfill with respect to highway suitability (i.e. truck route designation, structural adequacy, bridge weight limitations, cross-section width, etc.) was provided in the KLOA report.

The proposed waste transfer facility is located in an area where most major state-marked and many county highways are diagonally oriented from northwest to southeast (see Figure 1). The approximate airline distance from the proposed site to the Winnebago County Landfill near New Milford, Illinois (generally due west of the site) is 52 miles with an over-the-road routing length of approximately 64 miles. The closest major east-west expressway route is I-90, approximately 16 miles to the south. Otherwise, a routing to the west would follow 2-lane highways for much of this length.

The application states that all waste transfer semi trucks will exit onto IL 120 westbound but provides no recommended routing over the nearly 64 mile travel distance to the Winnebago County Landfill. Although access to I-294 is only 8.2 miles to the east, with an interchange with I-90 further south for the westbound trip to the landfill, the eastbound routing on IL 120 is heavily congested and operationally problematic.

The KLOA report generally discusses the use of Cedar Lake Road or Fairfield Road west of, and in close proximity, to the site for potential use by waste transfer trucks. I would note, however, that neither route appears to be a Designated Truck Route and Cedar Lake Road is a two-lane highway with several single-family residential neighborhoods and residential access points along its length to its terminus on the south at IL 60, which is not a Designated Truck Route. None of these routes appears any better than using IL 120, the only Designated Truck Route in the immediate area of the transfer facility.

The routing of waste transfer trucks between the proposed waste transfer station and the Winnebago Landfill should be addressed more fully, with more specific route delineation, in the KLOA traffic study.

6. Potential Impact to the Timber Creek Residential Area

The KLOA traffic report states that all truck traffic using the proposed waste transfer facility will be directed to access the site via the IL 120/Porter Drive intersection. If this recommendation is made a condition of siting approval/permitting, there would seem to be little or no direct solid waste traffic flow impact on the Timber Creek residential area north of the site on Porter Drive.

However, to the extent that Timber Creek residential traffic uses the IL 120/Porter Drive intersection, indirect impact such as increased delay/congestion and safety implications of mixing concentrated heavy trucks and lighter passenger car vehicles, will still exist. Such impacts can be at least partially mitigated by intersection improvements proposed in the KLOA traffic study as described previously.

III. CONCLUSION

Based on the findings above, it is my professional opinion that the Groot Waste Transfer Siting Application has not demonstrated that no adverse traffic impact will be created, or can be mitigated, in accordance with Criterion 6 of Section 39.2 of the Illinois Environmental Protection Act.

