



To: Marc McKellar, Kuhn Rogers PLC

Date: September 27, 2024

From: Robert Verschaeve, P.E., GCES

Re: Traffic Assessment - Maple City Parcel Rezoning

1.0 INTRODUCTION & PURPOSE

It is understood that a Kuhn Rogers PLC client is proposing to rezone property located just north of the intersection of S. Maple City Rd (CR 667) and W. Burdickville Rd (CR 616) in Maple City. See the figures below for the vicinity and site location maps. The subject parcel is further identified as 8419 S. Maple St., parcel number 007-002-013-01 within Kasson Township in Leelanau County. It is understood that if the rezoning is granted and additional property is acquired, up to eight dwelling units could be allowed to be constructed at this location. This memo is being provided as requested to provide an assessment of traffic that could be generated from an eight residential unit build out of the site.

Figure 1 – Vicinity Map

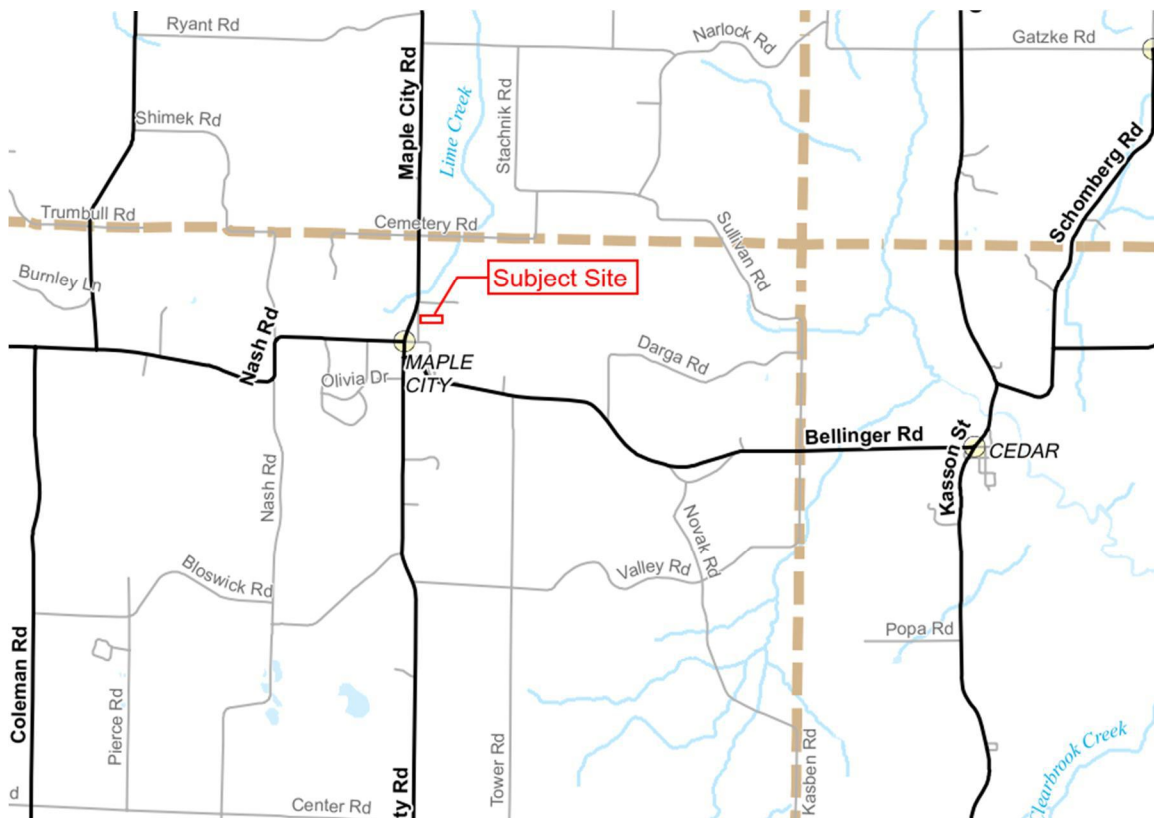
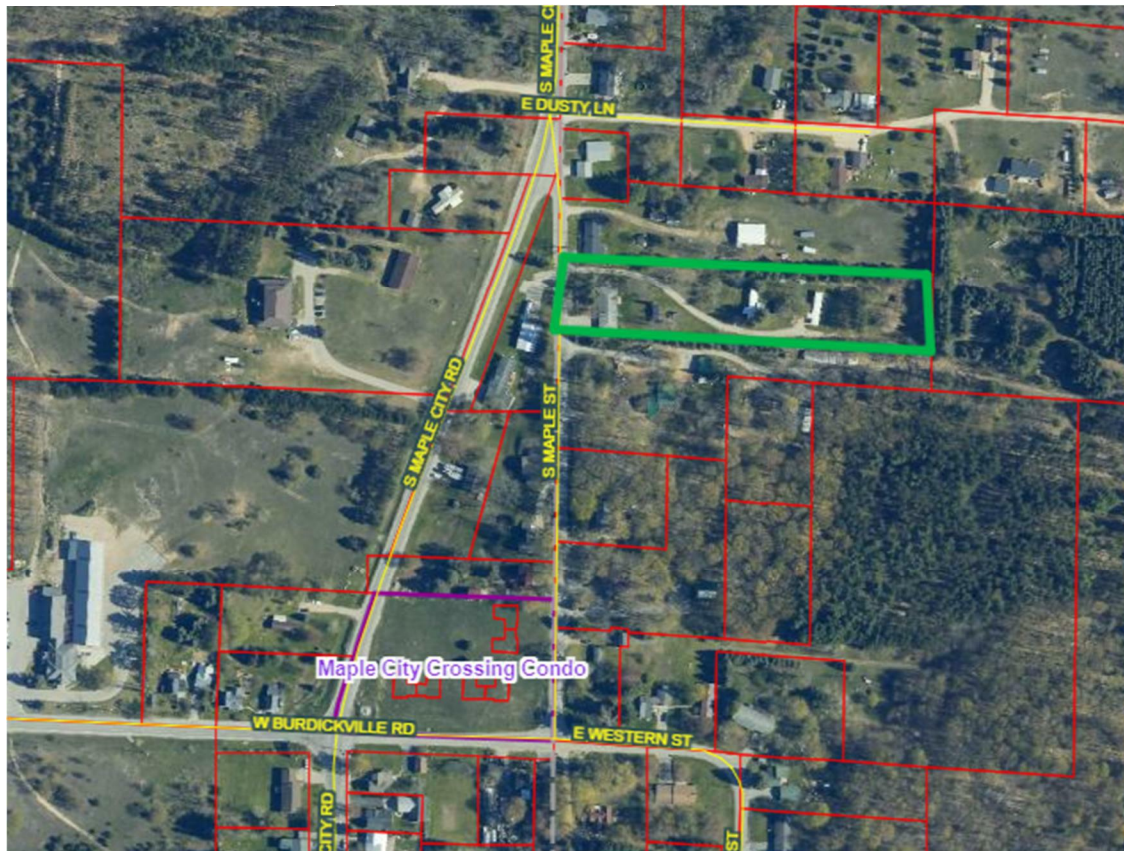


Figure 2 – Site Location Map



2.0 TRAFFIC VOLUMES

Traffic generated from this site will likely feed onto CR 667 directly from Maple Street. Traffic could also take Maple Street south to Western Street to the CR 667 / CR 616 intersection. Recent traffic counts for CR 667 just south of Cemetery Road were provided by the Leelanau County Road Commission. The Average Daily Traffic (ADT) counts and the peak hours are summarized in Table 1 below.

Table 1.

EXISTING TRAFFIC VOLUME DATA			
CR 667 at Cemetery Road Intersection	ADT	A.M. Peak	P.M. Peak
12/27/2023	1,247	103	128
		11 A.M.	3 P.M.
12/28/2023	1,254	85	121
		11 A.M.	5 P.M.

Data provided by Leelanau County Road Commission traffic count data

An estimate of traffic volumes generated from this site can be obtained from Institute of Traffic Engineers (ITE) Trip Generation publications. The ITE publications are a widely used and accepted resource for estimating traffic volumes. Traffic data for hundreds of various land uses was used by ITE to develop models and formulas for estimating traffic generated from new developments. The land use selected to estimate traffic generation for this site is a Mobile Home Park (ITE Code 240). This type of land use is described in the ITE reference as “trailers that are sited and installed on permanent foundations and typically home community facilities.” While the exact nature of a proposed development at this site is not entirely known, the Mobile Home Park category most closely resembles a likely development scenario for this property. Table 2 below, shows the traffic generation estimate for an 8-dwelling unit development on this property. According to the traffic counts completed by the county road commission, the AM peak occurred during the 11 am hour both days while the PM peaks occurred during the 3 pm hour on December 27 and the 5 pm hour on December 28.

Table 2.

ESTIMATED TRAFFIC VOLUME - MOBILE HOME PARK					
MOBILE HOME PARK (240)	Trip Generation Rate	Directional Distribution	Total Generated	Enter	Exit
Weekday A.M. Peak Hour	0.43	26% Enter/74% Exit	11	3	8
Weekday P.M. Peak Hour	0.58	62% Enter/38% Exit	7	4	3

Estimated from Institute of Traffic Engineers Trip Generation 6th Edition for a Mobile Home Park

3.0 EXISTING GEOMETRY

The existing configuration of S. Maple City Road (CR-667) in the area of Maple Street is a two-lane uncurbed road section. The general configuration appears to be 12-foot-wide lanes and 3-foot to no shoulder in each direction. Maple Street appears to be 24 feet wide without shoulders. The geometrical configurations of CR 667 and the surrounding road network are appropriate and adequate for the traffic volumes. A proposed driveway to serve the 8 dwelling units would likely be paved without curb and be at least 20 feet wide. This shared driveway would need to meet local agency standards for driveways serving multiple residential units.

4.0 CONCLUSIONS

Any dwelling units developed at this site will have access to a robust network of county roads. S. Maple City Road (CR-667) is one of these well-traveled county roads. An average ADT of 1,251 was reported for the two days that traffic data collected by the Leelanau County Road Commission at a nearby collection point. The estimated traffic generated by eight dwelling units during the weekday AM/PM peak hours of 11/7 trips is comparatively small to the ADT and peak hour counts on S. Maple City Road (CR-667). The county roads have the capacity to handle the traffic generated from this site if rezoning occurs to allow up to 8 new dwelling units on the subject parcel.



Default Report Title
 Use Preferences to Define Titles

Site Code: {Site Code}
 Station ID: {Station ID}
 Location 1: {Location 1}
 Location 2: {Location 2}
 Location 3: {Location 3}
 Location 4: {Location 4}

Comment 1: {Comment 1}
 Comment 2: {Comment 2}
 Comment 3: {Comment 3}
 Comment 4: {Comment 4}
 Latitude: {Latitude}
 Longitude: {Longitude}

12/27/2023	Unknown, 1	Unknown, 2	Total
Time			
12:00 AM	0	0	0
1:00	2	1	3
2:00	2	0	2
3:00	0	0	0
4:00	1	0	1
5:00	4	4	8
6:00	16	26	42
7:00	36	34	70
8:00	47	29	76
9:00	32	34	66
10:00	33	38	71
11:00	58	45	103
12:00 PM	46	52	98
1:00	58	32	90
2:00	65	48	113
3:00	65	63	128
4:00	51	62	113
5:00	49	48	97
6:00	31	24	55
7:00	27	14	41
8:00	22	14	36
9:00	13	5	18
10:00	7	4	11
11:00	3	2	5
Total	668	579	1247
Percent	53.6%	46.4%	
AM Peak	11:00	11:00	11:00
Volume	58	45	103
PM Peak	2:00	3:00	3:00
Volume	65	63	128

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 Location 4: {Location 4}

Comment 1: {Comment 1}
 Comment 2: {Comment 2}
 Comment 3: {Comment 3}
 Comment 4: {Comment 4}
 Latitude: {Latitude}
 Longitude: {Longitude}

12/28/2023	Unknown, 1	Unknown, 2	Total
Time			
12:00 AM	3	1	4
1:00	0	0	0
2:00	2	2	4
3:00	0	1	1
4:00	2	0	2
5:00	1	3	4
6:00	14	24	38
7:00	34	37	71
8:00	38	41	79
9:00	35	30	65
10:00	39	42	81
11:00	44	41	85
12:00 PM	47	49	96
1:00	48	41	89
2:00	50	55	105
3:00	62	55	117
4:00	43	52	95
5:00	68	53	121
6:00	40	32	72
7:00	19	18	37
8:00	20	15	35
9:00	20	17	37
10:00	9	3	12
11:00	1	3	4
Total	639	615	1254
Percent	51.0%	49.0%	
AM Peak	11:00	10:00	11:00
Volume	44	42	85
PM Peak	5:00	2:00	5:00
Volume	68	55	121

Mobile Home Park (240)

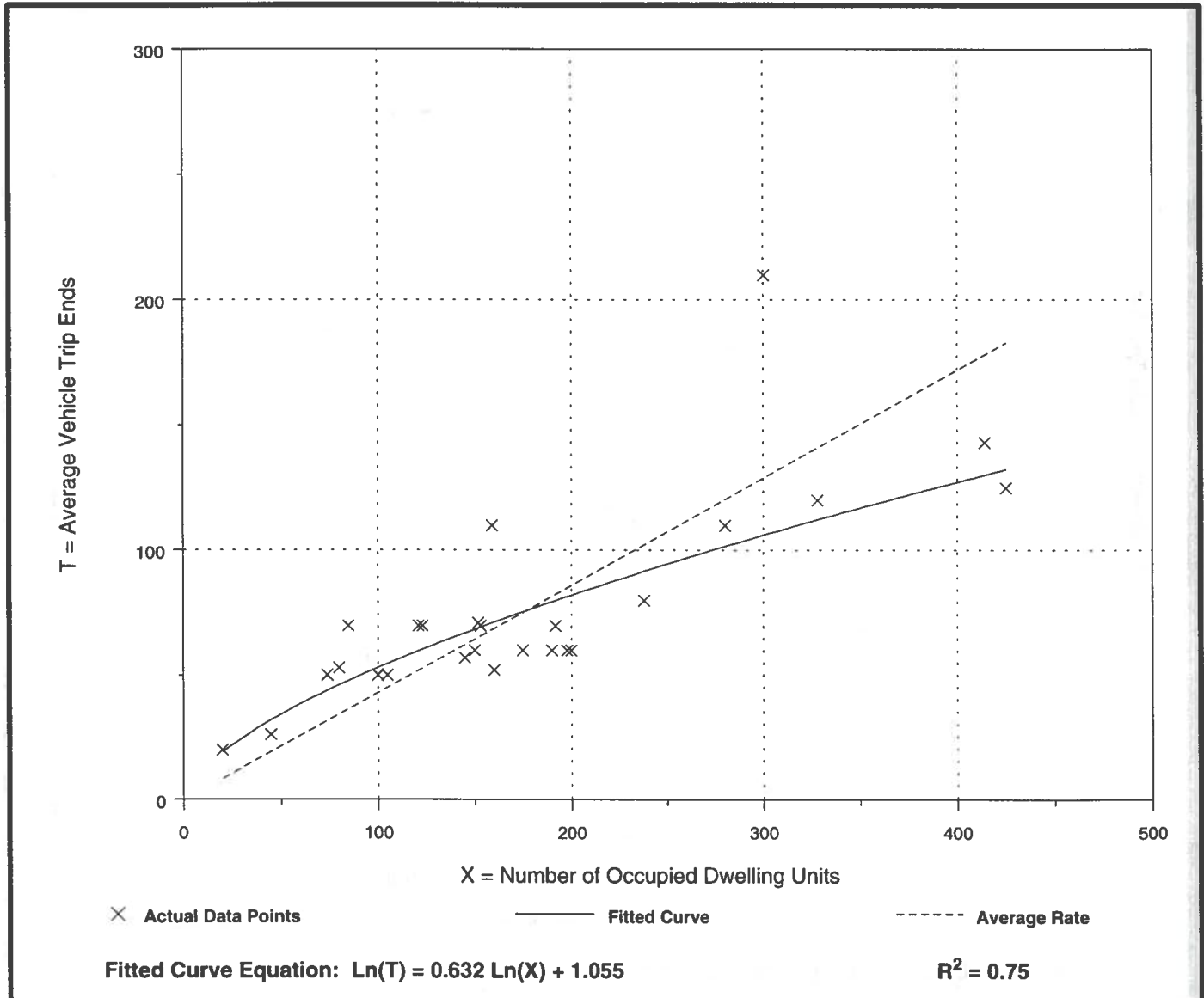
Average Vehicle Trip Ends vs: Occupied Dwelling Units
On a: Weekday,
A.M. Peak Hour of Generator

Number of Studies: 26
 Avg. Num. of Occupied Dwelling Units: 177
 Directional Distribution: 26% entering, 74% exiting

Trip Generation per Occupied Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.43	0.29 - 1.00	0.67

Data Plot and Equation



Mobile Home Park (240)

Average Vehicle Trip Ends vs: Occupied Dwelling Units
On a: Weekday,
P.M. Peak Hour of Generator

Number of Studies: 26
 Avg. Num. of Occupied Dwelling Units: 177
 Directional Distribution: 62% entering, 38% exiting

Trip Generation per Occupied Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.58	0.35 - 1.07	0.77

Data Plot and Equation

