

MEMO

VIA EMAIL: wwatch@firstcommercial.net

To: **Bill Watch**
Morton Township Residents for Responsible Development (MTRFRD)

From: **Jacob Swanson, PE, PTOE**
Salman Ahmad
Fleis & VandenBrink

Date: **May 13, 2024**

Re: **Proposed Campground & RV Park Development**
Morton Township, Michigan
Rezoning Traffic Study

1 INTRODUCTION

This memorandum presents the results of the Rezoning Traffic Study (RTS) for the proposed campground & RV park development in Morton Township, Michigan. The project site is located on approximately 45-acres of property, located generally in the southeast quadrant of the 105th Avenue & Lake Drive intersection, as shown in **Figure 1**.

Figure 1: Site Location Map



2960 Lucerne Drive SE
Grand Rapids, MI 49546
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www.fveng.com

The proposed development includes the construction of a campground & RV park on vacant property. The project site includes five (5) parcels of land; one (1) parcel is currently zoned Residential District I (R-1) and the remaining four (4) parcels are currently zoned Agricultural District II (A-2). As part of this development project, the subject property is proposed to be rezoned from the existing R-1 & A-2 zoning classifications to a Conditional Zoning, in order to accommodate the proposed campground use.

2 BACKGROUND INFORMATION

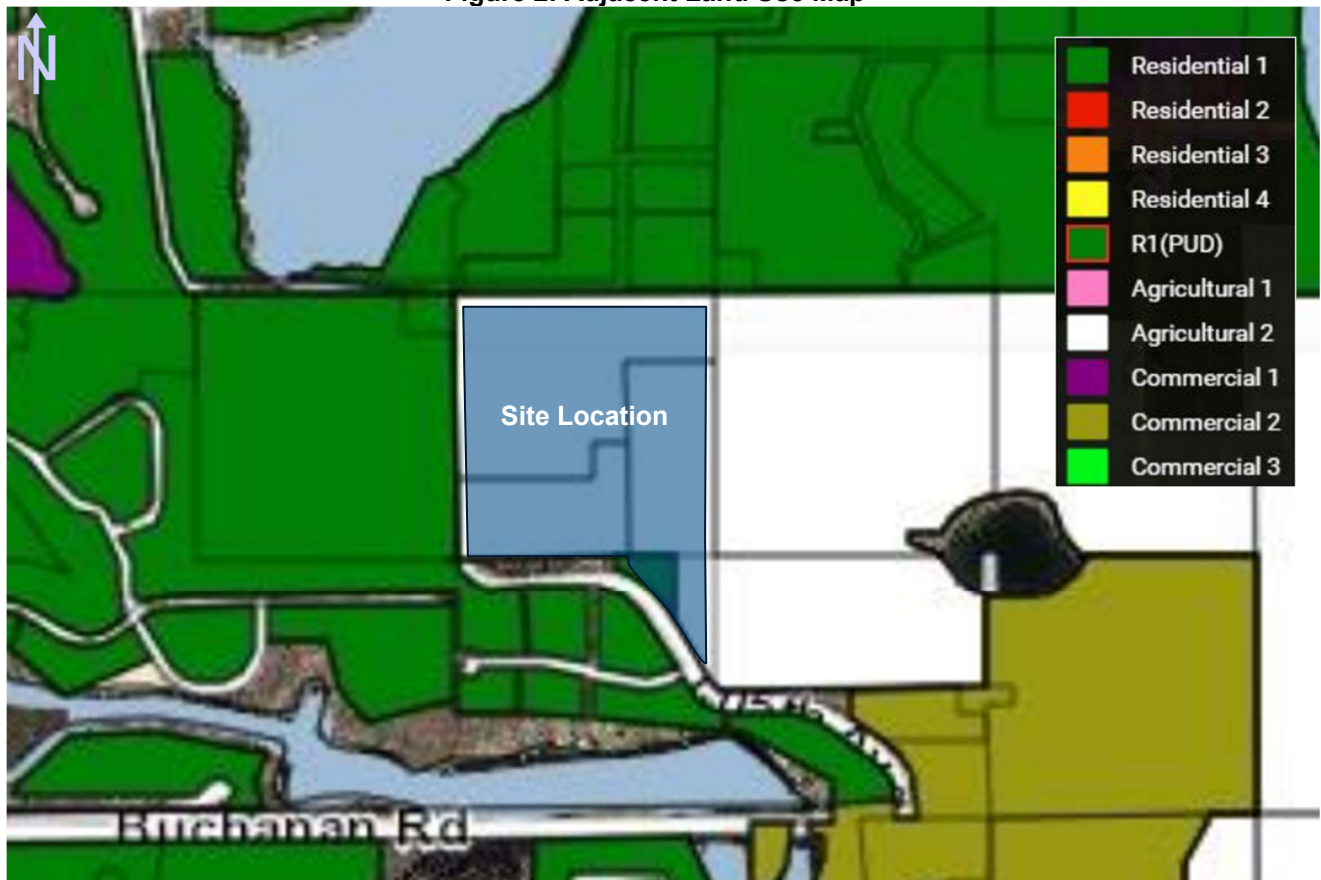
The project site is located generally in the southeast quadrant of the 105th Avenue and Lake Drive intersection, in Morton Township, Michigan. The study section of 105th Avenue is under the jurisdiction of the Mecosta County Road Commission (MCRC). Additionally, roadway information is summarized in **Table 1**.

Table 1: Roadway Information

Roadway Segment	105 th Avenue
Number of Lanes	2-lanes (1-lane each direction)
Functional Classification	Local Road
Speed Limit	55-mph (prima facie, unposted)
Traffic Volumes	1,402 vpd (MCRC 2021)

The land uses adjacent to the project site are residential land uses to the south, west, and north, agricultural land uses to the east, and commercial land uses located approximately ½-mile southeast of the project site. The neighboring zoning classification are shown below on **Figure 2**.

Figure 2: Adjacent Land Use Map



3 TRIP GENERATION

The proposed development includes the construction of a campground & RV park on vacant property. As part of this development project, the subject property is proposed to be rezoned from the existing R-1 & A-2 zoning classifications to a Conditional Zoning, in order to accommodate the proposed campground use.

3.1 Existing Zoning

The Morton Township Zoning Ordinance describes various land uses permitted by-right under the existing R-1 & A-2 zoning classifications. In order to determine the maximum site trip generation potential under the existing and proposed zoning classifications, the principal uses permitted under each zoning classification must be matched to the land use categories (LUC) described by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual, 11th Edition*. ITE publishes trip generation data using different independent variables (such as square feet (SF), units, and rooms) for various uses. Therefore, the maximum allowable density within the existing R-1 and A-2 zoning was determined based on the minimum lot sizes outlined in the Zoning Ordinance.

The uses permitted under the R-1 zoning includes:

- Single-Family detached units.

The uses permitted under the A-2 zoning includes:

- Agricultural and timber production, farming, greenhouses, and other associated agricultural uses.
- Single-family and mobile homes.

Review of the ITE land use descriptions indicates that the **Single-Family Detached Housing (LUC 210)** land use generates the highest number of trips and best matches the uses defined by the Ordinance and permitted by right under the existing R-1 and A-2 zoning classifications.

3.2 Proposed Zoning

The proposed development plan includes a conditional zoning for the property to accommodate the proposed use. Development and use of the conditionally zoned property shall be restricted to only allow the use that is proposed, which includes a campground and RV park. No other use of the property would be permitted.

Review of the ITE descriptions indicates that the **Campground / Recreational Vehicle Park (LUC 416)** land use best matches the proposed use of the site.

3.3 Rezoning Comparison

An analysis was performed in order to determine the maximum site trip generation potential currently permitted by right under the existing R-1 and A-2 zoning classifications, as compared to the trip generation associated with the proposed Conditional zoning to accommodate the proposed campground. The number of weekday peak hour (AM and PM) and daily vehicle trips that would be generated by the existing and proposed zoning classifications were calculated based on the rates and equations published by ITE in *Trip Generation Manual, 11th Edition*. The results of the trip generation analysis comparison are summarized in **Table 2**.

Table 2: Rezoning Trip Generation Comparison

Zoning	Land Use	ITE Code	Amount	Units	Average Daily Traffic (vpd)	AM Peak Hour (vph)			PM Peak Hour (vph)		
						In	Out	Total	In	Out	Total
Existing Zoning (R-1 & A-2)	Single-Family Detached Housing	210	45	D.U.	485	9	27	36	30	17	47
Proposed Conditional Zoning	Campground / Recreational Vehicle Park	416	246	Occupied Campsites	590	19	33	52	43	23	66
Difference					105	10	6	16	13	6	19

Note: VPD = Vehicles Per Day, VPH = Vehicles Per Hour, D.U. = Dwelling Units

The results of the trip generation comparison indicates that the proposed development is expected to generate more trips, during the peak hours and throughout the day, as compared to the maximum potential trip generation currently permitted under the existing zoning. Therefore, the proposed development is expected to have a greater impact to the roadway network, as compared to what is currently allowed on the project site.

4 SITE-GENERATED IMPACT

The proposed Campground and RV Park development will be constructed adjacent to the north and east sides of 105th Avenue. Existing traffic volume data was obtained from MCRC for the study section of roadway in order to determine the percentage increase in traffic volume along 105th Avenue associated with the proposed development. The traffic volume data and projected increase are summarized below in **Table 3**.

Review of the existing traffic volume data and projected site-generated traffic volumes indicates that the proposed development is expected to increase the traffic volumes by nearly 600 vehicles per day along 105th Avenue, resulting in an approximately **42% increase** from current volumes.

Table 3: Traffic Volume Data – 105th Avenue

Daily Traffic Volumes	
Existing	1,402 vpd
Site-Generated	590 vpd
Total New	1,992 vpd
Percent Increase	42%

5 CONCLUSIONS

- The results of the trip generation comparison indicates that the proposed Conditional zoning classification will generate *more* trips than the potential trip generation that is currently permitted under the existing R-1 and A-2 zoning classifications.
- Review of existing traffic volume data indicates that the site-generated traffic volume from the proposed development is expected to result in an approximately **42% increase** from existing traffic volumes along 105th Avenue.
- The proposed Conditional Zoning is expected to have a higher impact on the adjacent roadway system than the potential use(s) of the property as currently zoned.

Any questions related to this memorandum, study, analysis, and results should be addressed to Fleis & VandenBrink.



I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Michigan.

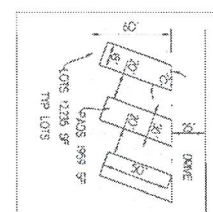
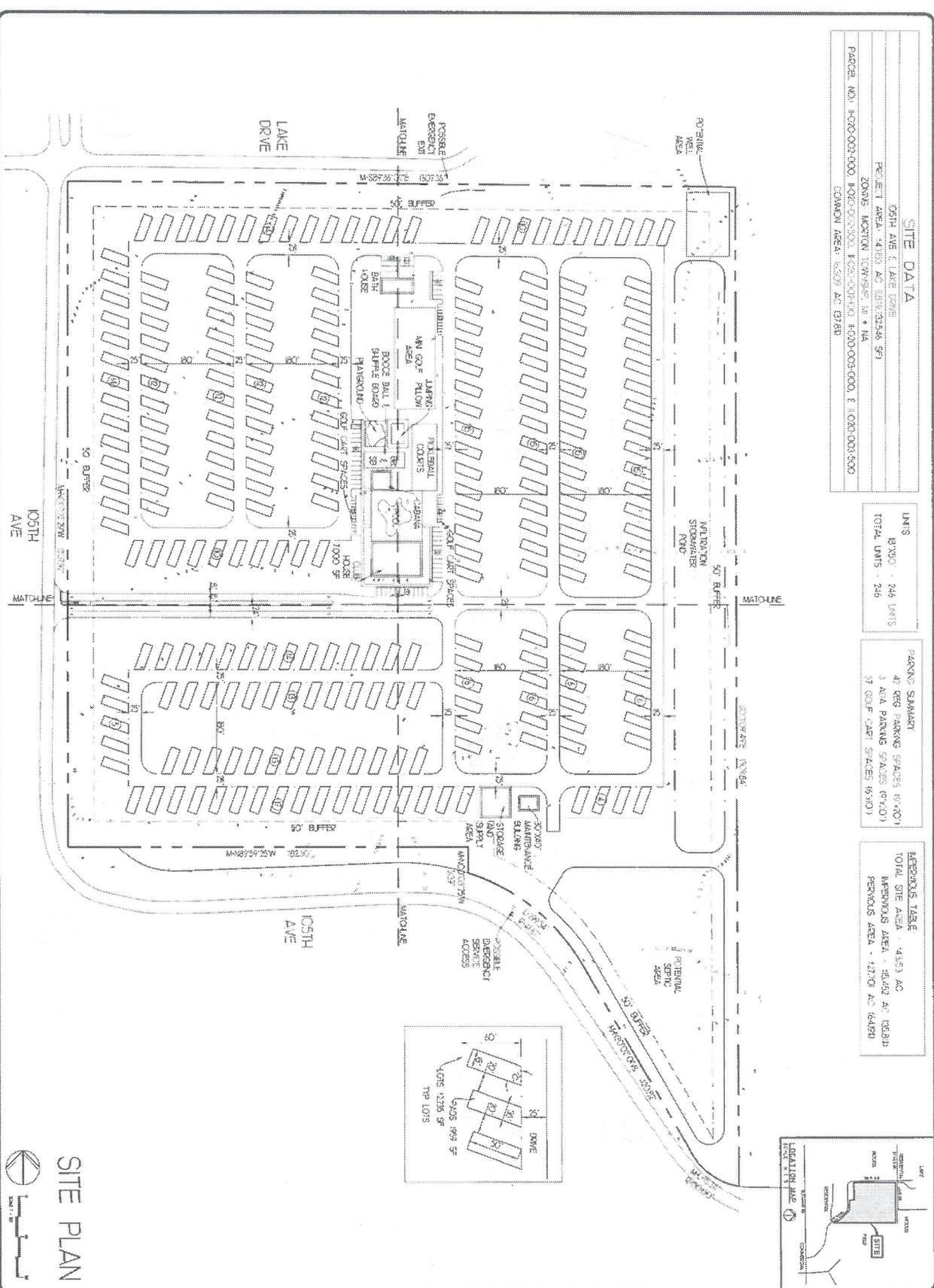
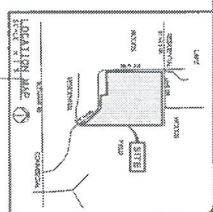
Attachments: Site Plan
 Traffic Count Data

SITE DATA	
50TH AVE & LAKE DRIVE	PROJECT AREA - 4.183 AC (55,221.6 SF)
103TH AVE	ZONE: MOTION TEMPERATE * NA
PARCEL NO: P000-002-000	COMMON AREA: R339 AC (37,815 SF)

UNITS	
RV	245 UNITS
TOTAL UNITS	245

PARKING SUMMARY	
RV	245 SPACES (9'x30')
ADA	3 SPACES (9'x10')
STREET	97 SPACES (5'x10')

PREVIOUS TABLE	
TOTAL SITE AREA	4.183 AC
PREVIOUS AREA	10,400 AC (435,512 SF)
PREVIOUS AREA	1,170 AC (50,850 SF)



SITE PLAN

DATE	BY	DESCRIPTION

PROPOSED RV PARK

BOLLMAN FAMILY FRESHWATER HOSPITALITY
STANWOOD, MI

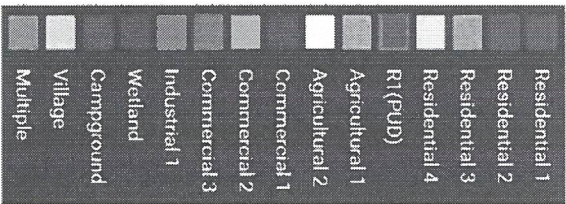
PRELIMINARY
NOT FOR
CONSTRUCTION

FREELAND and KAUFFMAN, INC.
Engineers & Landscape Architects
209 West State Avenue
Greenville, South Carolina 29609
864-233-5477
fax: 864-233-6766

NO.	DATE	DESCRIPTION



Morton Township Sectional Zoning



Updated Aug 24, 2023

LOCATION MAP

DATE	
BY	
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BY	
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PROPOSED RV PARK

**BOLLMAN FAMILY
FRESHWATER HOSPITALITY
STANWOOD, MI**

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**Mecosta County Road Commission
Morton Township
Traffic Counts**

Township	Road Name	Between	Classification	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Morton	10 Mile Road	West of 90th Avenue	Local			372						420		
Morton	105th Avenue	Buchanan Road to St. Ives/Lake Dr.	Local						1186			1402		
Morton	7 Mile Road	100th Avenue to Madison Avenue	Local	1257		1950				1511				
Morton	7 Mile Road	80th Avenue to Madison Avenue	Local							575				819
Morton	80th Avenue	6 Mile Road to 7 Mile Road	Local							468				800
Morton	80th Avenue	7 Mile Road to Buchanan Road	Local							442				753
Morton	80th Avenue	Buchanan Road to 9 Mile Road	Local					718						1065
Morton	90th Avenue	11 Mile (M-20) to 12 Mile Road	Local					1454					991	
Morton	Buchanan Road	100th Avenue to 105th Avenue	Local			4110				3923				
Morton	Buchanan Road	80th Avenue to 90th Avenue	Local	488		612					647			
Morton	Buchanan Road	Alpine to Timberlane	Local							2787				
Morton	Buchanan Road	West of 105th Avenue	Local			2870					3084			
Morton	Grant Road	E. Blue Lake to 90th Avenue	Local						98					139
Morton	Hayes Road	85th Avenue to 90th Avenue	Local						200					209
Morton	Lake Drive	105th Avenue to 10 Mile	Local									318		
Morton	Mid State Dr.	North of Morton Twp. Recycle center 8/1/15	Local			439								
Morton	Mid State Dr.	South of Morton Twp. Recycle center 8/1/15	Local			32								
Morton	St. Ives	105th Avenue to Marywood Dr.	Local						1050			1239		
Morton	St. Ives	Pritchard Drive to Oak Road	Local	325					332				304	
Morton	W. School Section Lk Dr.	North of Buchanan Road	Local			412				319				
Morton	100th Avenue	South of Buchanan Road	Primary			4882				3585				
Morton	70th Avenue	6 Mile Road to 7 Mile Road	Primary					909				1225		
Morton	70th Avenue	8 Mile Road to 9 Mile Road	Primary					1105				1468		
Morton	80th Avenue	11 Mile (M-20) to Garfield	Primary					1291				1058		
Morton	9 Mile Road	70th Avenue to 80th Avenue	Primary			2145				2486				3297
Morton	9 Mile Road	80th Avenue to 90th Avenue	Primary			2700				2287				2828
Morton	90th Avenue	9 Mile Road to 10 Mile Road	Primary					3012					2385	
Morton	90th Avenue	Buchanan Road to 9 Mile Road	Primary						4071				3781	
Morton	90th Avenue	Hayes Road to 11 Mile (M-20)	Primary					2790					2213	
Morton	Buchanan Road	90th Avenue to 100th Avenue	Primary		2476	4808				4152				
Morton	Hayes Road	Village of Mecosta to 11 Mile	Primary					603					658	
Morton	Pierce Road	East of 110th Avenue	Primary			2478				2232				
Morton	Pierce Road	East of 120th Avenue	Primary			1228				1621				
Morton	Pierce Road	West of Tullymore Golf Course	Primary		1448	1749					1908			