



WOOLPERT

# Memo

**To:** Jeff Newby, PE

**From:** Keegan Anderson, PE

**Date:** June 6, 2023

**Subject:** Proposed Mixed Use Development, Kenwood Trip Generation Comparison

## Introduction

Capital Investment Group (CIG) is proposing to modify the land use mix of their Kenwood Road development. The Traffic Impact Study was prepared and approved in 2018. This memo documents the trip generation comparison of the previously approved development with the modified proposed development on the southwest corner of Kenwood Road and Happiness Way in Kenwood, Ohio. The previously approved Traffic Impact Study consisted of:

- 163 units of multifamily housing (low-rise),
- 120 hotel rooms,
- 108,000 SF of general office building,
- 3,250 SF of variety store, and
- 19,122 SF high-turnover (sit-down) restaurant space.

It should be noted the 2018 Traffic Impact Study included two different numbers for the number of housing units. The description on Page 7 of the report cited 259 units (consistent with development plans approved by the Township), while Table 2 on Page 8 references 163 units. The projected number of trips in the Table and the accompanying analysis used the 163 units. The difference results in an additional 40 vehicles in the AM peak hour and 41 vehicles in the PM peak hour that should have been included in the analysis. Rechecking the analysis at Happiness Way, adding the additional 40 vph does not change the resulting Level of Service.

## Trip Generation

Since the 2018 traffic study approval, the development has moved forward. Recommended traffic changes have been constructed, apartments have constructed, and the hotel is under construction. CIG is proposing to modify the building that originally included 108,000 sf of office space and 22,372 sf of retail/restaurant space to now consist of 36,400 sf office space, 19,122 sf of restaurant space, and 128 residential units.

The total modified site will consist of:

- 376 units of multifamily housing (248 existing units and 128 new high-rise units),
- 132 hotel rooms,
- 36,400 SF of general office building,
- 19,122 SF high-turnover (sit-down) restaurant space.

The *Institute of Transportation Engineers (ITE) Trip Generation Manual*, 11<sup>th</sup> edition was used to calculate the anticipated trips generated by the modified proposed development (10<sup>th</sup> Edition was used in 2018). The following land codes provided reasonable trip generation for the proposed floor area; multifamily housing (low-rise) code 220, hotel code 310, general office building code 710, and high-turnover (sit-down) restaurant code 932. The net increase/decrease of trips are shown in the table below.

Trip Generation Comparison (ITE 11<sup>th</sup> Edition)

ITE Trip Generation		Unit	Weekday Trip Ends						SAT Trip Ends	
ITE Code	Description		AM Peak (In/Out)		MID Peak (In/Out)		PM Peak (In/Out)		SAT Peak (In/Out)	
Modified Proposed Development										
220	Multifamily Housing (Low-Rise)	376 Units	33	101	81	48	110	65	159	93
310	Hotel	132 Rooms	33	26	27	21	36	34	54	43
710	General Office Building	36,400 SF	62	8	27	23	12	60	10	9
932	High-Turnover (Sit-Down) Restaurant	19,122 SF	100	83	128	122	106	67	109	104
Total Trips (Proposed Development)			446		477		490		582	
Total Internal Capture			85		91		93		111	
Total Pass By Trips			0		107		74		92	
Total Primary Site Trips			361		280		323		379	

<b>Previous Proposed Development (from 2018 Study) (ITE 10<sup>th</sup> Edition)</b>										
220	Multifamily Housing (Low-Rise)	163 Units	18	58	41	24	57	34	90	53
310	Hotel	120 Rooms	32	23	25	20	33	31	49	38
710	General Office Building	108,000 SF	110	18	64	55	20	102	31	26
814	Variety Store	3,250 SF	6	4	9	9	11	11	11	11
932	High-Turnover (Sit-Down) Restaurant	19,122 SF	104	86	134	128	116	71	109	105
<b>Total Trips (Existing Development)</b>			<b>459</b>		<b>509</b>		<b>486</b>		<b>523</b>	
<b>Total Internal Capture</b>			<b>101</b>		<b>107</b>		<b>102</b>		<b>109</b>	
<b>Total Pass By Trips</b>			<b>0</b>		<b>118</b>		<b>87</b>		<b>100</b>	
<b>Total Primary Site Trips</b>			<b>358</b>		<b>284</b>		<b>297</b>		<b>314</b>	
<b>Trip Increase (+) or Decrease (-)</b>			<b>3</b>		<b>-4</b>		<b>26</b>		<b>65</b>	

## Conclusion

The trip generation comparison shows a net increase of 3 trips in the AM peak period, a net decrease of total primary trips in the Midday peak period, a net increase of 26 trips in PM peak period and a net increase of 65 trips in the Saturday peak period.

A quick review of the Level of Service of the Kenwood/Happiness Way intersection shows the 2040 traffic conditions remains a LOS B for the PM Peak Hour for Year 2040 traffic conditions with the added trips. In our engineering judgement, this increase is negligible when compared to the total amount of traffic on Kenwood Road, and when distributed across the roadway network. When spread across the peak hour, the total increase is less than 1 car per signal cycle length and is not sufficient to require an update to the originally approved TIS.