

Memo

To: City of Milford, Planning Commission
From: Jamal A. Adhami
cc: Mark Pottebaum, File - 21063
Date: December 1, 2021
Re: Proposed Residential Development – Milford, Ohio

This Memorandum is in connection with the proposed residential development in City of Milford Ohio with access on Garfield Road, east of the intersection with High Street. The new development will include 13 single family dwelling units.

The new trips are estimated using the 10th edition of ITE Trip Generation Manual typically used for estimating trips generated by the new developments. The manual is developed using several years of research data and widely used by the planners and engineers. Table 1 below summarizes the new trips for the two alternatives.

Table 1 – Estimated New Trips

Land Use	Unit (Dwelling Units)	Weekday			AM Peak			PM Peak		
		In	Out	Tot.	In	Out	Tot.	In	Out	Tot.
210 – Single Family Residential Units	13	62	61	85	3	7	10	8	5	13

The trips estimated during AM and PM Peak hours are used for evaluating impact of a new development on adjacent roadway infrastructure. State of Ohio Access Management Manual provides detailed guidelines for the requirements of Traffic Impact Study for a new development. Section 2.2 of Access Management Manual provides details on the requirement of Traffic Impact Study or Traffic Analysis for the new development. If the estimated new trips during Peak Hours are greater than 60, Traffic Analysis may be required. In case the new trips during the peak hours are less than 60, analysis is not required. The estimated new trips during AM and PM Peak Hours identified in Table 1 are significantly less than 60, threshold required for Traffic Analysis for a new development.

The other critical item that needs to be evaluated is the safety of traffic operations at the Proposed Access for the development. The Access Drive should meet the minimum intersection sight distance,

so that the vehicles can safely make left and right turns from the Access Drive. Proposed Access Drive is located on a section of Garfield Road with fairly straight alignment. There are no visible vertical curves exists on this section of Garfield Road. The Garfield Road in the vicinity of the Proposed Access Drive is posted at 25 mph. As per the information shown in Table 201-5 of ODOT Location and Design Manual, volume 1, the required intersection sight distance for the vehicles making left turns is 280', and 240' for the vehicles making right turns. The field conditions indicate adequate intersection sight distance at the Proposed Access Drive exists.

Conclusion

The estimated new trips generated by 13 single family dwelling units are significantly less than 60, typically required for completing Traffic Analysis Report. Therefore, Traffic Analysis Study is not required for the proposed development.

INTERSECTION SIGHT DISTANCE	201-5
	REFERENCE SECTION 201.3, 201.3.1, 201.3.2 & 201.3.3

(See Following Page for Additional Figures & Notes)

HEIGHT OF EYE 3.50'

HEIGHT OF OBJECT 3.50'

DESIGN SPEED (mph)	Passenger Cars Completing a Left Turn from a Stop (assuming a t_g of 7.5 sec.)		Passenger Cars Completing a Right Turn from a Stop or Crossing Maneuver (assuming a t_g of 6.5 sec.)	
	ISD (ft.)	K-CREST VERT. CURVE	ISD (ft.)	K-CREST VERT. CURVE
15	170	10	145	8
20	225	18	195	14
25	280	28	240	21
30	335	40	290	30
35	390	54	335	40
40	445	71	385	53
45	500	89	430	66
50	555	110	480	82
55	610	133	530	100
60	665	158	575	118
65	720	185	625	140
70	775	214	670	160

If ISD cannot be provided due to environmental or R/W constraints, then as a minimum, the SSD for vehicles on the major road should be provided.

$$ISD = 1.47 \times V_{major} \times t_g$$

ISD = intersection sight distance (ft.)

V_{major} = design speed of major road (mph)

t_g = time gap for minor road vehicle to enter the major road (sec.)

Using: S = Intersection Sight Distance

L = Length of Crest Vertical Curve

A = Algebraic Difference in Grades (%), Absolute Value

K = Rate of Vertical Curvature

- For a given design speed and an "A" value, the calculated length "L" = $K \times A$

- To determine "S" with a given "L" and "A", use the following:

For $S < L$: $S = 52.92 \sqrt{K}$, where $K = L/A$

For $S > L$: $S = 1400/A + L/2$

2.0 Access Permit Applications and Approval

2.1 Purpose

This section sets forth the procedures and requirements governing the issuance and approval of access permits for use or occupancy of right-of-way on state highways.

2.2 Access Requests

Ohio’s 88 counties are divided between twelve ODOT Districts. Requests for an access permit should be directed to the District based on the county location of the proposed access. Refer to **Appendix A** for a map showing which ODOT district has authority for which county. **Appendix A** also provides contact information for each district. Requests related to an access should be directed to the District Permit Coordinator (DPC).

The DPC will provide information regarding submission requirements based upon the location, the land use and traffic the proposed access point(s) will service. A Traffic Analysis is required for any development that adds 60-200 trips (in and out) and a Traffic Impact Study is required for any development that adds over 200 trips (in and out). For proposed access points that generating more than 60 Trips (entering and leaving) in an hour; the applicant should request a preliminary meeting with ODOT to discuss the proposed development prior to making a formal access request. This will help ensure that all of the required information is submitted with the subsequent application.

For reference, **Table 2-1** illustrates some possible developments that may generate 60 and 200 trips (based on ITE Trip Generation Manual 10th Edition):

Table 2-1

Code	Land Use	Unit	60-200 Peak Hour Trips (Requires Traffic Analysis)	>200 Peak Hour Trips (Requires TIS)
110	General Light Industrial	Sq. Ft. Gross Floor Area	66,500	260,000
140	Manufacturing	Sq. Ft. Gross Floor Area	42,000	276,000
210	Single-Family Detached Housing	Dwelling Units	55	200
220	Multifamily Housing (Low-Rise)	Dwelling Units	85	300
221	Multifamily Housing (Mid-Rise)	Dwelling Units	140	480
710	General Office Building	Sq. Ft. Gross Floor Area	31,500	123,500
720	Medical-Dental Office Building	Sq. Ft. Gross Floor Area	15,000	48,000
760	Research and Development Center	Sq. Ft. Gross Floor Area	45,000	180,000
814	Variety Store (i.e., Dollar Store)	Sq. Ft. Gross Leasable Area	8,100	N/A
820	Shopping Center	Sq. Ft. Gross Leasable Area	4,400	23,700
853	Convenience Market with Gasoline Pumps	Fueling Positions	4	N/A
912	Drive-In Bank	Sq. Ft. Gross Floor Area	2,900	9,800
932	High-Turnover (Sit-Down) Restaurant	Sq. Ft. Gross Floor Area	6,000	N/A
934	Fast Food Restaurant With Drive-Through Window	Sq. Ft. Gross Floor Area	1,200	3,900
960	Super Convenience Market/Gas Station	Fueling Positions	N/A	8