

memorandum



Date: September 16, 2021

To: Bill Huotari, PE
From: Sara Merrill, PE, PTOE

Re: Pine View Condominiums
Anticipated Traffic Impacts

The purpose of this memorandum is to provide an overview of anticipated traffic impacts resulting from Pine View Condominiums, a proposed site condominium development consisting of 7-attached, 2.5 story single-family buildings with a total of 25 dwelling units. The development will utilize a shared driveway with an existing Taco Bell. The site is located on the east side of Dequindre Road, north of East Long Lake Road. In the immediate vicinity of the site, Dequindre Road is a 5-lane roadway, with two through lanes in each direction plus a center left turn lane.

The Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition, provides trip generation rates for numerous land uses, based on thousands of studies throughout the United States and Canada. This data can then be used to estimate the number of vehicle trips generated by a development. For residential housing, traffic impacts are usually most noticeable during the peak hour of adjacent street traffic – that is, during morning and evening “rush hour”, when traffic on the roads is most congested. In most areas, the morning (AM) peak is a one hour period that occurs between 7 am – 9 am, and the evening (PM) peak is a one hour period usually between 4 pm – 6 pm.

The table below provides the calculated number of trips generated for the proposed Pine View Condominiums, based on the ITE Trip Generation Manual for Multi-Family Housing, Low Rise (ITE Land Use Code #220). For comparison, the table also shows trip generation for a theoretical “by-right” project, a 20,000 square foot General Office Building (ITE Land Use Code #710).

Land Use	Number of Site-Generated Trips								
	AM Peak Hour			PM Peak Hour			Daily		
	In	Out	Total	In	Out	Total	In	Out	Total
Multi-Family Housing, Low-Rise (25 Units)	3	10	13	11	6	17	74	74	148
General Office Building (20,000 gross sq. ft.)	39	6	45	4	21	25	111	111	222

During the morning (AM) peak hour, the proposed Pine View Condominiums development is expected to generate 13 new trips: 3 inbound (entering the site), and 10 outbound (exiting the site). During the evening (PM) peak hour, the proposed site is expected to generate 17 new vehicle trips: 11 inbound (entering the site) trips, and 6 outbound (exiting the site). This pattern coincides with residents typically leaving in the morning for work, and returning home in the evening.

Under the NN zoning, office use would also be considered a by-right development. If, instead of a 25-unit multi-family development, this site was instead developed as 20,000 square foot office building, the site would be expected to generate 45 new trips (39 inbound, 6 outbound) during the morning peak hour, and 25 new trips (4 inbound, 21 outbound) during the evening peak hour. An office use would generate more trips than a comparably sized residential development.



As a multi-family land use, the traffic generated by the proposed development would be minimal, adding less than two dozen vehicle trips during the peak ("busiest") hour. The traffic impact of this site on the adjacent road network is negligible and would be imperceptible to the majority of road users.

As a point of comparison Dequindre Road (at East Long Lake Road/ 18 Mile Road) carries over 2,200 vehicles during the PM peak hour, and with an annual average daily traffic count of almost 25,000 vehicles in 2020 (during the pandemic). Even amongst typical weekdays, traffic volumes during the peak hours alone often vary by 10%+ from one day to the next. The day-to-day fluctuations result in peak hour traffic volumes that vary by upwards of a couple hundred vehicles. The proposed Pine View Condominium homes are expected to generate fewer than 20 new vehicle trips during the peak hour.