Spack CONSULTING
ENGINEERING TRAFFIC FORWARD

Technical Memorandum

To: Ben Krsnak, Hempel Companies
From: Mike Spack, P.E., P.T.O.E.
Date: October 2, 2017
Re: Vehicle Forecasts for Cobblestone Outlot A Retail

The purpose of this memorandum is to forecast the traffic generated by Outlot A for:

- Scenario 1: Previously approved 8,148 square feet of general retail
- Scenario 2: Proposed building with 5,148 square feet of general retail and 3,000 square feet of fast-casual restaurant with a drive-through lane.

The forecasts include a.m. and p.m. peak hour turning movements for each scenario at the 157th Street/Pilot Knob, Cobblestone Lakes Pkwy/Elmhurst Lane, and Cobblestone Lakes Pkwy/Embry Path intersections to demonstrate traffic distribution to and from the site.

Traffic Forecasts

The Institute of Transportation Engineers' *Trip Generation Manual* is a dataset of traffic generated by different land use types and is the industry standard for forecasting the amount of traffic generated by developments. I conducted a trip generation analysis for the two study scenarios of Outlot A per the *Trip Generation Manual, 10th Edition*. The results are in Table 1.

Table 1 - Trip Generation Comparison

		Daily Trips		AM Peak Hour		PM Peak Hour	
	Description (Source)	Entering	Exiting	Entering	Exiting	Entering	Exiting
Scenario 1	Retail - 8,148 SF (ITE – 814)	**258**	**258**	**15**	**11**	**30**	**27**
Scenario 2	Retail - 5,148 SF (ITE – 814)	164	164	9	7	18	17
	Fast Casual – 3,000 SF (ITE – 930)	473	473	4	2	23	19
	Total	***637***	***637***	***13***	***9***	***42***	***36***
Change in Traffic with Proposed Site Plan		**379**	**379**	**-2**	**-2**	**12**	**9**

I distributed the above a.m. and p.m. peak hour trips to the roadway with the following pattern based on the daily traffic volumes of the surrounding roadway network as well as the area population centers:

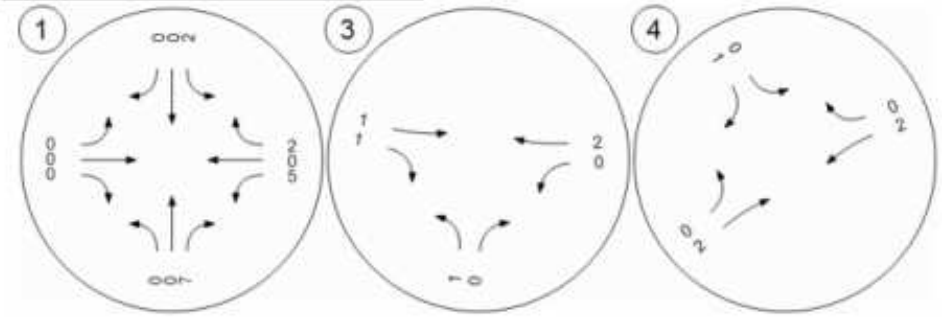
- 16% to/from the south on Pilot Knob Rd
- 21% to/from the north on Pilot Knob Rd
- 4% to/from the west on 155th Street
- 18% to/from the east on 160th Street
- 16% to/from the west on 160th Street
- 10% to/from the south on Cobblestone Lake Parkway
- 15% to/from the north on Cobblestone Lake Parkway

The resultant a.m. and p.m. peak hour vehicle turning movements forecasts for each scenario are in Figure 1.

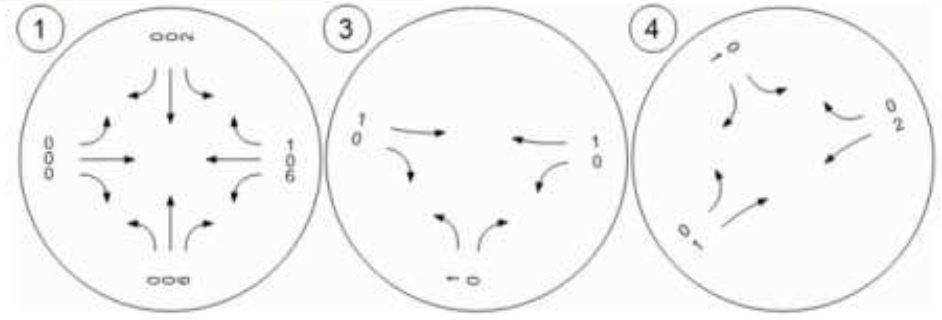
Figure 1 – Turning Movement Volume Forecasts



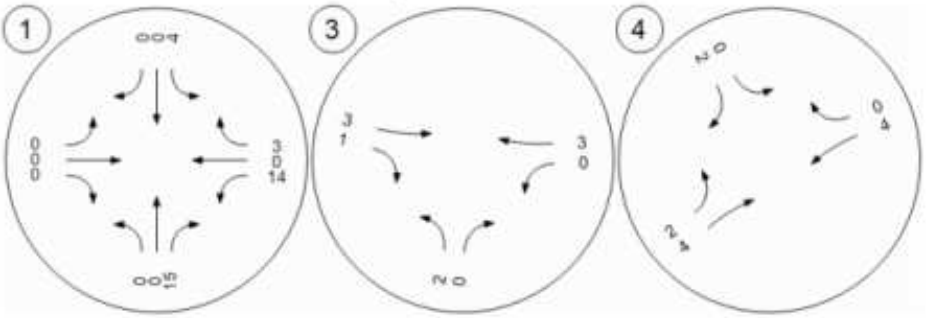
Scenario 1 – A.M. Peak Hour Vehicle Forecasts



Scenario 2 – A.M. Peak Hour Vehicle Forecasts



Scenario 1 – P.M. Peak Hour Vehicle Forecasts



Scenario 2 – P.M. Peak Hour Vehicle Forecasts

