TRAFFIC ANALYSIS – Midtown PMDD (Coconut Creek, Florida)

Trip Generation at Project Buildout

A trip generation analysis was performed using the trip generation equations published in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual* (9th Edition). The trip generation analysis was undertaken for daily, AM peak hour, and PM peak hour conditions. The analysis was based on the following assumption:

PROPOSED LAND USE

- 308 Residential Units (Apartments)

According to ITE's *Trip Generation* manual (9th Edition), the trip generation equations used for the proposed land use are:

APARTMENT (ITE Land Use 220)

Daily Trip Generation
T = 6.06 (X) + 123.56
Where T = number of daily trips
X = number of dwelling units

AM Peak Hour
T = 0.49 (X) + 3.73 (20% inbound and 80% outbound)
Where T = number of AM peak hour trips
X = number of dwelling units

PM Peak Hour
T = 0.55 (X) + 17.65 (65% inbound and 35% outbound)
Where T = number of PM peak hour trips
X = number of dwelling units

Using the above-listed equations from the ITE document, a trip generation analysis was undertaken for the proposed land use. The results of this effort are documented in Table 1.

TABLE 1
Trip Generation Analysis
Midtown PMDD

		Number of Trips		
Land Use	**Size**	**Daily**	**AM Peak**	**PM Peak**
PROPOSED LAND USE				
Residential	308 units	1,990	155	187

Source: ITE Trip Generation Manual (9th Edition)

As indicated in Table 1, the proposed 308-unit residential development is projected to generate approximately 1,990 daily trips, approximately 155 new AM peak hour trips (31 inbound and 124 outbound), and approximately 187 new trips during the typical afternoon peak period (122 inbound and 65 outbound).

Figure 1 documents the projected trips at the proposed right-turn in/right-turn out driveway off of Sample Road. Based on the projected driveway trips, the following lane geometry is recommended at the main project entrance off of Sample Road:

- Two ingress lanes (one for visitors and one for residents)
- One egress lane restricted to right-turns only
- One westbound right-turn lane at the project driveway

The vehicular access connections on the future north-south roadway located adjacent to the east property line does not require turn lane improvements since they will be restricted for egress movements only and/or pedestrian access purposes.

Queuing at Entry Gate

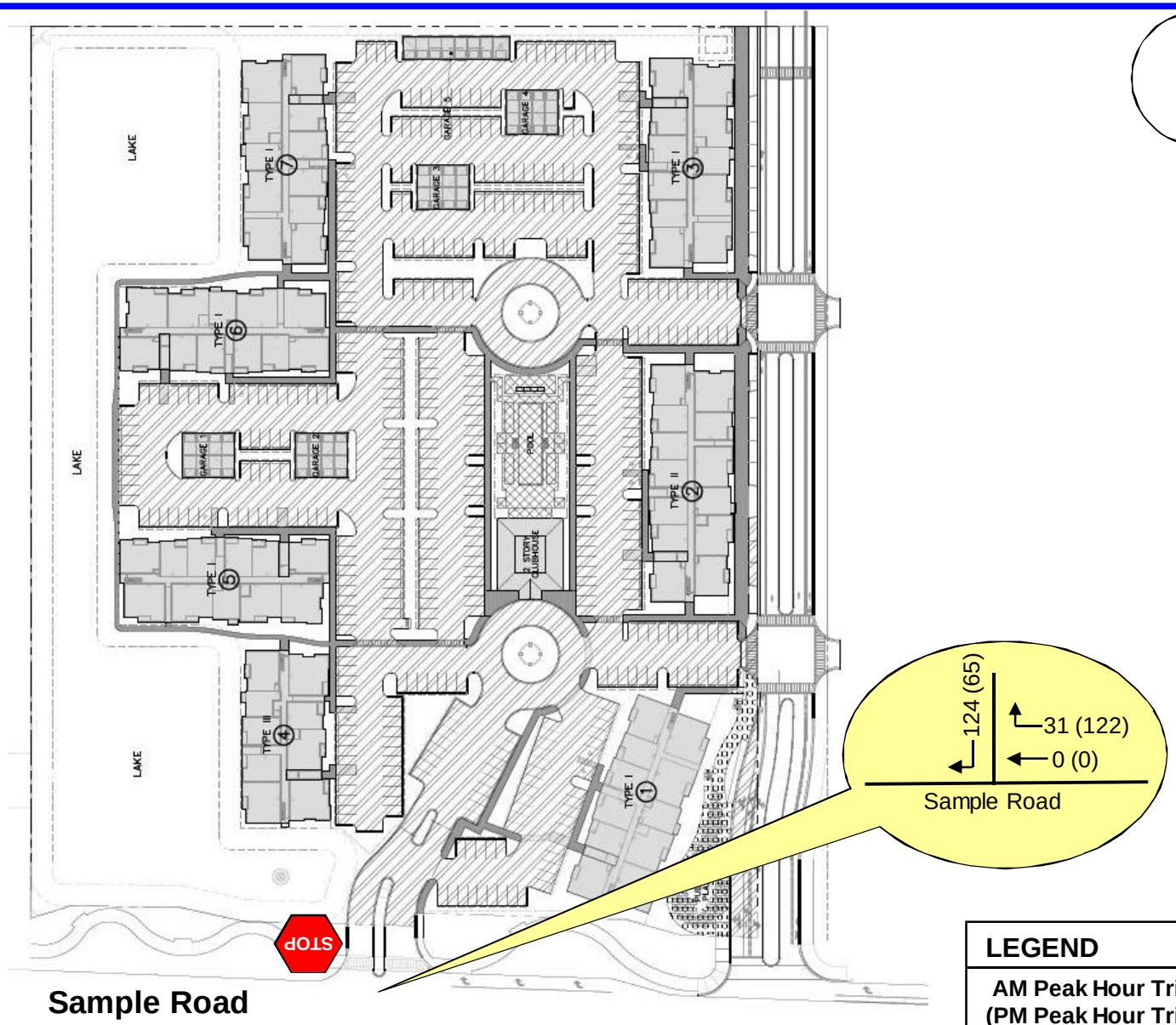
A queuing analysis was conducted for the visitors-only lane (this is the critical lane from a queuing standpoint). The analysis evaluates the potential length of queues. The maximum calculated length of queue was compared against the total number of vehicles that can be stored at the visitor's lane.

The length of queue anticipated was determined using information contained in ITE's *Transportation and Land Development*, Chapter 8 – Drive-In Facilities[1]. For this analysis, the following input variables were used:

- Service Rate: Based on the assumption that a visitor's vehicle can be processed within a 2-minute period, the visitors-only lane can process approximately 30 vehicles in a one-hour period.
- Demand Rate: Based on the above trip generation analysis, the maximum inbound vehicles off of Sample Road is 122 vehicles during the highest inbound demand hour. According to ULI, approximately eight percent (8%) of residential trips are associated with visitors. Hence, approximately 10 visitors are anticipated to arrive via the main entrance off of Sample Road during the highest inbound demand hour.

[1] By Vergil G. Stover and Frank J. Koepke.

Using equation 8-9b and Table 8-11 of ITE's *Transportation and Land Development*, the maximum length of queue anticipated, at the 95% confidence level, is approximately one (1) vehicle. In reviewing the storage capacity provided at the visitor's lane, at least three (3) vehicles can be accommodated between the call box and the pedestrian crosswalk at the main entrance. Therefore, the projected maximum length of queue associated with the visitor's lane can be accommodated without interfering with the public street system located adjacent to the project site (Sample Road).



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PROJECT TRIPS

FIGURE 1
Midtown Residences
Coconut Creek, Florida