

FREDERICK P. CLARK ASSOCIATES, INC.

PLANNING, TRANSPORTATION, ENVIRONMENT AND DEVELOPMENT
RYE, NEW YORK
FAIRFIELD, CONNECTICUT

Mr. Harold Lepler

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New Turning Movement Counts

At the request of the Town's Planning Consultant, manual turning movement counts were conducted by Frederick P. Clark Associates, Inc. on Tuesday, March 29, 2016 from 7:00 to 9:00 A.M. and 4:00 to 6:00 P.M. Automatic Traffic Recorder (ATR) counts were also conducted by Clark Associates on Doansburg Road to the west of the Mount Ebo Road South/Powers Lane intersection for a one week period beginning Wednesday, April 13, and continuing through Thursday, April 21, 2016.

Figure 1 graphically illustrates the Study Area and Figure 2 graphically illustrates the Study Area intersection at which counts were conducted and the relative location of the ATR.

The results of the traffic counting program are provided in Table 1 and the 2016 baseline traffic volumes are graphically illustrated in Figures 3 and 4 for the weekday morning and weekday afternoon peak hours, respectively. The 2016 baseline traffic volumes were adjusted and balanced (where necessary) to both Clark Associates and New York State Department of Transportation (NYSDOT) ATR data collected for Doansburg Road within the area. Figure 5 graphically illustrates the hourly traffic volumes collected by Clark Associates for Doansburg Road, West of Mount Ebo Road on a typical weekday. Figure 6 graphically illustrates the hourly traffic volumes collected by NYSDOT for Doansburg Road, approximately 0.4 of a mile south of Gage Road on a typical weekday.

Recent Traffic Volume Trends within the Area

As anticipated two-way daily and peak hour traffic volumes on Doansburg Road, specifically west of Mount Ebo Road North have not increased significantly since the 2005 Traffic Impact and Access Study for the proposed residential Housing Development on Mount Ebo Lot 6 was conducted. For reference an annual growth rate of 0.8 percent per year is typically employed for this region as per the 2010 to 2015 New York Metropolitan Transportation Plan, Chapter 2, Socio-Economic and Demographic Forecasts. For comparison purposes, during the weekday afternoon peak hour, the two-way total traffic volume on Doansburg Road was found to have only increased by 4.7 percent over an 11 year period, which is much less than predicted by the Metropolitan Transportation Plan. Table 2 provides a comparison of two-way daily and peak hour traffic volumes for Doansburg Road, west of Mount Ebo Road North. Figures 7 and 8

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graphically illustrate the 2018 no-build (base) traffic volumes for Doansburg Road at Mount Ebo Road South/Powers Lane in addition to Doansburg Road at Mount Ebo Road North for the weekday morning and weekday afternoon peak hours, respectively. The 2018 no-build traffic volumes utilized the annual growth rate provided by the New York Metropolitan Transportation Plan to provide the most conservative analysis. Based on discussions with the Town Planning Consultant, Crossroad 312 traffic was added and Maco Land and Stateline developments were included in the growth rate. Table 3 provides a comparison of two-way peak hour traffic volumes for NYS Route 22, south of Doansburg Road, between 2005 and 2015. The 2015 traffic volumes for NYS Route 22 were obtained from the Crossroads 312 Traffic Impact and Access Study conducted by Clark Associates in 2013. New York State Route 22 traffic volumes are provided for reference purposes only as this roadway was not part of the 2016 limited updated Traffic Impact and Access Analysis for the proposed residential housing development.

A comparison of the traffic volumes on Doansburg Road, west of the Mt. Ebo Road North intersection indicates that during the weekday morning peak hour the eastbound volume increased significantly and the westbound increased very little. However, overall the two-way volume during the 11-year period increased by 14.3 percent during the weekday morning peak hour.

During the weekday afternoon peak hour the eastbound volume decreased by almost 21 percent; however, increased by 44 percent westbound during the same one-hour period. Overall the two-way volume only increased by 1.1 percent.

For comparison purposes the daily volume on Doansburg Road indicated an increase in the two-way volume of 4.7 percent. A comparison of the traffic volumes on NYS Route 22, south of the Doansburg Road intersection, indicated an increase of 48.5 percent during the 11-year period during the weekday morning peak hour and 13.4 percent during the weekday afternoon peak hour.

Trip Generation Rates for the Proposed Development Based on Apartments Type Land Use

The proposal is for a residential housing development comprising 64 one-bedroom and 104 two-bedroom units. Assuming a worst case for site traffic estimated, the trip rates used in the analysis do not include any reduction to account for seniors, disabled

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operate/will operate at Level of Service "A" during both peak hours and under all conditions. The STOP controlled Powers Lane southbound lane group (left-through-right movement) operates/will operate at Level of Service "B" and "C" during the weekday morning and weekday afternoon peak hours, respectively, under all conditions. The STOP controlled Mount Ebo Road South northbound right-turn lane group operates/will operate at Level of Service "A" and "B" during the weekday morning and weekday afternoon peak hours, respectively, under all conditions. The STOP controlled Mount Ebo Road South northbound left-through lane group operates/will operate at Level of Service "C" during the weekday morning peak hour under all conditions; the northbound left-through lane group will decrease in Level of Service, from "E" to "F," during the weekday afternoon peak hour from the no-build to build conditions.

Average control delay per vehicle on the northbound left-through lane group will increase by only 14.0 seconds and vehicle queuing will not exceed available storage. Furthermore, SimTraffic micro-simulation of the Doansburg Road at the Mount Ebo Road South/Powers Lane intersection for the weekday afternoon peak hour under 2018 build conditions suggests that the average control delay per vehicle of all movements and lanes groups will be significantly lower than estimates provided using the SYNCHRO 8.0/HCM 2010 analysis. Specifically, the SimTraffic micro-simulation for this condition indicates that average control delay on the Mount Ebo Road South northbound left-through lane group will be approximately 35.0 seconds per vehicle. Although this limited SimTraffic micro-simulation model does not account for the upstream signalized intersections; it is our opinion that results of the analysis would be more favorable (decreased delay on the Mount Ebo Road South northbound left-through lane group) if the gaps created on westbound Doansburg Road by the traffic signal at Mount Ebo Road North were accounted for in the analysis. SimTraffic micro-simulation results for the 2018 build conditions weekday afternoon peak hour are provided in the Appendix of this report. Table 5 provides a more detailed summary of the results of the capacity analysis including Level of Service, volume-to-capacity ratio, and control-delay per vehicle. Table 6 provides a more detailed summary of the results of the storage/queue analysis.

Table 7 provides a comparison between the capacity analysis results for the approved senior adult housing development as obtained from the 2005 Traffic Study and the currently proposed rental apartment development based on the most recent traffic volumes obtained for Doansburg Road. It should be noted that the capacity analyses completed in 2005 utilized Synchro 6.0 software and HCM 2000 methodology. The

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For comparison purposes the daily volume on Doansburg Road indicated an increase in the two-way volume of 4.7 percent. A comparison of the traffic volumes on NYS Route 22, south of the Doansburg Road intersection, indicated an increase of 48.5 percent during the 11-year period during the weekday morning peak hour and 13.4 percent during the weekday afternoon peak hour.

For comparison purposes and a worst case scenario for the purposes of completing this analysis, the proposed 168-unit development is based on trip generation rates provided by the most recent publication from the Institute of Transportation Engineers (ITE) and indicates that a development of this type and size could generate 86 and 110 vehicle trip ends during a typical weekday morning and weekday afternoon peak hour, respectively. Although it is assumed this development will include senior citizens, potentially Town employees, potentially Veterans with disabilities, to represent a worst case analysis, credits have not been applied to these estimates to reduce the potential site traffic generation. It is possible that depending on the mix of residents the level of site traffic could decrease during peak hours.

The results of the analyses of the one STOP sign controlled intersection of Doansburg Road at Mt. Ebo Road South/Power's Lane indicates that under existing conditions this intersection operates at acceptable Levels of Service, except for the northbound left/through movement during the weekday afternoon peak hour. Under a no-build condition for 2018 this approach would continue to operate at Level of Service "E," although all other approaches to the intersection would operate at acceptable Levels of Service. With the increase in traffic based on adding site traffic generation to this intersection, which would be along Doansburg Road there would be no change in Level of Service during the weekday morning peak hour and an insignificant, if any, increase in vehicle delay due to site traffic. However, during the weekday afternoon peak hour the northbound left/through movement from Mt. Ebo Road South changed from Level of Service "E" to "F" due to an increase in vehicle delay of 14.0 seconds. Although this may be considered significant by general standards since it is a change in Level of Service from "E" to "F" the increase in delay per vehicle is only 14.0 seconds. For a STOP sign controlled intersection motorists entering Doansburg Road, which is a busy east-west, collector-arterial-type of roadway serving the entire area, this increase in delay may not be considered significant.

