APPENDIX I

Traffic Impact Study

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TRAFFIC IMPACT STUDY

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PATRICK FARM

TOWN OF RAMAPO, NEW YORK

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This Study has been updated to address comments by the Town's Traffic Consultant.

A. INTRODUCTION

This study has been prepared to evaluate the potential traffic impacts of the proposed Patrick Farm development on the surrounding roadway network. The following sections provide a description of the proposed Project and the tasks undertaken in completing our evaluation.

B. PROJECT DESCRIPTION AND LOCATION (Figures No. 1 and 1A)

Patrick Farm is proposed for 87 single family homes and 410 apartment/townhouse units on property located on the south side of U.S. Route 202 and on the west side of NYS Route 306. As shown on Figure No.1, access to the primary development area is proposed via two driveways, a driveway to U.S. Route 202 and a driveway to NYS Route 306. Access to the Emergency Service worker apartments (24 units) will have direct access to NYS Route 306 and 5 single family homes will have access to Scenic Drive via Hidden Valley Drive.

C. DESCRIPTION OF EXISTING ROADWAY NETWORK (Figures No. 2 and 2A)

As discussed above, the site will have access to U.S. Route 202 and NYS Route 306. The following is a description of U.S. Route 202, NYS Route 306 and the Palisades Interstate Parkway (PIP) in the vicinity of the site. In addition, Figures No. 2 and 2A graphically shows the existing street system

illustrating the existing geometry, lane widths and traffic control for each of the study area intersections as well as existing land uses, pedestrian linkages and posted speed limits. Section L also provides a description of the existing geometry, traffic control and a summary of the existing and future Levels of Service for each of the study area intersections.

1. U.S. Route 202 – U.S. Route 202 is a major east/west road which intersects with Wilder Road and Spook Rock Road to the west of the site at unsignalized intersections and intersects with NYS Route 306, Camp Hill Road, the Palisades Interstate Parkway Southbound On/Off Ramp, Thiells - Mt. Ivy Road and NYS Route 45 to the east of the site at signalized intersections. In the vicinity of the site, U.S. Route 202 has a posted speed limit of 45 mph-50 mph.

2. NYS Route 306 – NYS Route 306 is a major north/south road which intersects with U.S. Route 202 north of the site at a signalized intersection and intersects with Pomona Road at an unsignalized intersection and with Lime Kiln Road, Willow Tree Road and Grandview Avenue at signalized intersections south of the site. In the vicinity of the site, NYS Route 306 has a posted speed limit of 45 mph.

3. Palisades Interstate Parkway – The Palisades Interstate Parkway is a major north/south limited access facility which originates in New Jersey and traverses throughout Rockland County and into Orange County, New York. Access to/from the PIP southbound is provided via U.S. Route 202. Access to the PIP northbound is provided via NYS Route 45 and access

from the PIP northbound is provided vial Thiells - Mt. Ivy Road. The Palisades Interstate Parkway has a posted speed limit of 55 mph.

D. YEAR 2008 EXISTING TRAFFIC VOLUMES (Figures No. 3, 3A, 4 and 4A)

In order to establish the existing traffic volumes for the key intersections in the vicinity of the site, manual turning movement traffic counts were conducted by John Collins Engineers, P.C. during May and September 2008 when school was in session between the hours of 7:00AM and 9:30AM and between the hours of 4:00PM and 6:30PM. Previous counts conducted in the area by John Collins Engineers, P.C., Tim Miller Associates, Inc. and NYSDOT were also referenced and used together to balance (where appropriate) the Year 2008 Existing Traffic Volumes for the Weekday Peak AM and Weekday Peak PM Highway Hours for the following locations as per the Scoping Document.

The following key intersections were evaluated.

- U.S. Route 202 and NYS Route 45
- U.S. Route 202 and Thiells - Mt. Ivy Road
- U.S. Route 202 and P.I.P Southbound On/Off Ramp
- Thiells - Mt. Ivy Road and P.I.P Northbound Off Ramp
- U.S. Route 202 and Camp Hill Road
- U.S. Route 202 and NYS Route 306
- U.S. Route 202 and Wilder Road
- NYS Route 306 and Pomona Road
- NYS Route 306 and Lime Kiln Road
- Wilder Road and Lime Kiln Road

- NYS Route 306 and Hudson Valley Drive
- U.S. Route 202 and Spook Rock Road/Lime Kiln Road
- NYS Route 306 and Willow Tree Road
- NYS Route 306 and Grandview Avenue

Based on these traffic counts, the existing peak hours are generally identified as follows:

- Weekday Peak AM Highway Hour - 7:30 AM to 8:30 AM
- Weekday Peak PM Highway Hour - 5:00 PM to 6:00 PM

The resulting balanced Year 2008 Existing Traffic Volumes for each of the study area locations are shown on Figures No. 3, 3A and 4, 4A for the Weekday Peak AM and Weekday Peak PM Hours, respectively.

A copy of the traffic count data (manual/machine) are contained in Appendix "G" of this Study.

In addition, Saturday and Summer Conditions have been addressed in Section I and Section J, respectively.

E. YEAR 2013 NO-BUILD TRAFFIC VOLUMES (Figures No. 5, 5A through 10, 10A)

For the purposes of analysis, a Design year of 2013 has been utilized to evaluate future traffic conditions.

Based on historical data, the background growth in the area is between 1% to 1½%. However, as per the Scope, a 2% per year background growth factor was utilized for a total background growth of 10%. The resulting Year 2013 Projected Traffic Volumes are shown on Figures No 5, 5A and 6, 6A for the Weekday Peak AM and Weekday Peak PM Hours, respectively.

In addition, the Scope outlined other proposed/potential developments in the area. The other developments included the Pomona Heights Office Building, H.A.S.C. of Rockland, Mesifta Beth Shraga, Bobover Yeshiva of Monsey and Congregation Kahal Torath Charm of Rockland as well as two large developments, Minisceongo Park and Tartikov.

Traffic for the Pomona Heights Office Building, H.A.S.C. of Rockland, Mesifta Beth Shraga, Bobover Yeshiva of Monsey and Congregation Kahal Torath Charm of Rockland as well as for Cumberland Farms (which was not included in the Scope) was also included as part of the future background traffic growth. The other development traffic volumes are shown on Figures No 7, 7A and 8, 8A. (Trip Generation Table and Other Development Location Map are contained in Appendix "E" of this Study.)

The resulting Year 2013 No-Build Traffic Volumes are shown on Figures No. 9, 9A and 10, 10A for the Weekday Peak AM and Weekday Peak PM Hours, respectively.

Due to its size and the overlap in timing with Patrick Farm, Minisceongo Park was evaluated as an alternate Build Condition. Since there is no current site plan application for Tartikov, an initial phase of development (250 units) for the 2013 Design Year was evaluated based on conversations with the Town and was also evaluated as an alternate Build Condition. (See Section H)

F. SITE GENERATED TRAFFIC VOLUMES (Table No. 1)

In order to estimate the amount of traffic to be generated by the proposed Patrick Farm development during each of the peak hours, the Hourly Trip Generation rates and Anticipated Site Generated Traffic Volumes were developed based on information published by the Institute of Transportation Engineers (ITE) as outlined in their report titled, "Trip Generation", 7th Edition, 2003.

Table No. 1 summarizes the trip generation rates and anticipated site generated traffic volumes for the Weekday Peak AM and Weekday Peak PM Highway Hours.

G. ARRIVAL AND DEPARTURE DISTRIBUTIONS (Figures No. 11, 11A through 16, 16A)

In order to assign the site generated traffic volumes to the roadway network, it is necessary to establish an arrival/departure distribution. Based on a review of the existing traffic volumes and expected travel patterns for this development, the arrival and departure distributions were established. The resulting arrival and departure distributions are shown on Figures No. 11, 11A and 12, 12A for the primary development area, are shown on Figures No. 13, 13A and 14, 14A for the 24

Emergency Worker Apartments and are shown on Figures No. 15, 15A and 16, 16A for the 5 single family homes with access to Scenic Drive.

H. YEAR 2013 BUILD TRAFFIC VOLUMES (Figures No. 17, 17A through 28, 28A)

The site generated traffic volumes for the proposed development were assigned to the roadway network based on the above referenced distribution patterns. The resulting site generated traffic volumes are shown on Figures No. 17, 17A and 18, 18A for each of the peak hours.

These volumes were then added to the Year 2013 No-Build Traffic Volumes to obtain the Year 2013 Build Traffic Volumes (with the proposed development). The resulting Year 2013 Build Traffic Volumes are shown on Figures No. 19, 19A and 20, 20A for the Weekday Peak AM and Weekday Peak PM Highway Hours, respectively.

As discussed in Section E, the Year 2013 Build Traffic Volumes were also analyzed with the Minisceongo Park and Tartikov developments. The Minisceongo Park Traffic Volumes are shown on Figures No. 21, 21A and 22, 22A with the resulting Year 2013 Build Traffic Volumes with Minisceongo Park shown on Figures No. 23, 23A and 24, 24A and the Tartikov Traffic Volumes are shown on Figures No. 25, 25A and 26, 26A with the resulting Year 2013 Build Traffic Volumes with Minisceongo Park and Tartikov shown on Figures No. 27, 27A and 28, 28A for the Weekday Peak AM and Weekday Peak PM Highway Hours, respectively.

I. SATURDAY CONDITIONS (Appendix "C" – Figures No. 29 - 38 and Tables No 5, 6 & 7)

The Scoping Document requested a detailed analysis of the Weekday Peak AM and Weekday Peak PM Hours. The Saturday Peak Hour was not included in the Project Scope since Saturday traffic volumes are typically lower than Weekday traffic volumes in the area. However, the Town of Ramapo suggested a sensitivity analysis for Saturday Conditions be prepared for the following intersections.

- U.S. Route 202 and Camp Hill Road
- U.S. Route 202 and NYS Route 306
- U.S. Route 202 and Wilder Road
- NYS Route 306 and Pomona Road
- NYS Route 306 and Hidden Valley Drive
- U.S. Route 202 and Proposed Site Access
- U.S. Route 306 and Proposed Site Access

The resulting Saturday Year 2008 Existing, Year 2013 Projected, Other Development Traffic, Year 2013 No-Build and Year 2013 Build Traffic Volumes, Trip Generation Table (Table No. 5), Level of Service Summary Table (Table No. 6), Queue Summary Table (Table No. 7) and SYNCHRO Analysis are contained in Appendix "C" of this Study. As shown on the Level of Service Summary Table, satisfactory Levels of Service will be experienced at the above locations during the Saturday Peak Hour.

J. SUMMER CONDITIONS (Appendix "D" – Figure No. 39)

The Scoping Document requested a sensitivity analysis of summer conditions due to summer camps in the area. It should be noted that the Weekday AM Peak Summer Hour (8:15AM –9:15AM) occurs after the Weekday Peak AM Highway Hour (7:30AM – 8:30AM) and the Weekday PM Peak Summer Hour (3:30PM - 4:30PM) occurs before the Weekday Peak PM Highway Hour (5:00PM – 6:00PM). However, for comparison purpose we have compared each of these peak hours.

Appendix "D" contains a comparison (Figure No. 39) of the Weekday Peak AM and Weekday Peak PM Highway Hour Traffic Volumes (when school was in session) and the Weekday AM and Weekday PM Peak Summer Traffic Volumes (effect of camp traffic) at the U.S. Route 202/NYS Route 306 intersection. As shown on Figure No. 39, the Weekday Peak AM and Weekday Peak PM Highway Hour Traffic Volumes with school in session (typical conditions) are higher than Summer Conditions. In addition, we have conducted a Level of Service comparison to reflect camp/school bus activity in the area. Based upon a review of the capacity analysis, the overall Levels of Service during the summer hours would be similar to the Levels of Service under typical conditions (when school is in session).

K. DESCRIPTION OF ANALYSIS

As requested, a SYNCHRO analysis was conducted to determine existing and future traffic operating conditions at the study area locations. SYNCHRO calculates intersection Levels of Service, approach delays, volume-to-capacity (v/c) ratios as well as queue lengths. SYNCHRO is also used in corridor analysis for coordination of traffic segments.

Levels of Service and Delay

Level of Service (LOS) is a rating system defined in terms of capacity (the maximum hourly rate at which a vehicle can pass through an intersection) and delay, which is a measure of travel time for signalized and unsignalized intersections. Six LOS are defined ranging from A to F, with LOS A representing the best (operating conditions) and LOS F the worst. Each level of service represents a range of delays (operating conditions) experienced by drivers.

Volume-To-Capacity (v/c) Ratio

The volume-to-capacity (v/c) ratio is an approximate indicator of the overall sufficiency of an intersection. The volume-to-capacity (v/c) ration is based on a comparison of the volume to capacity of individual movements as well as for the overall intersection and can help determine if an individual movement or the overall intersection is near or at capacity.

Queuing

Queuing is another performance measure to determine the number of vehicles that are queued depending on arrival patterns of vehicles and vehicles that do not clear the intersection.

Additional information concerning signalized and unsignalized Levels of Service can be found in Appendix "I" of this Study.

L. TRAFFIC IMPACT ANALYSIS (Tables No. 2 and 3)

In order to evaluate current and future traffic operating conditions, a SYNCHRO analysis was conducted at each of the study area intersections as described above.

The SYNCHRO analysis shows the existing geometrics, lane widths, existing traffic control, signal timings/phasing (based on field observations)[(2)] where applicable and any recommended improvements including signal timings/phasing changes. The SYNCHRO analysis also shows the resulting LOS, delays, v/c ratios and queues for each of the study area intersections.

[(2)]The traffic signal timing/phasing were based on field observations. The NYSDOT indicated that the timing plans may not reflect the actual timings/phasing of the traffic signal and recommended that the timings/phasing be checked in the field.

The resulting Levels of Service, delays and volume-to-capacity (v/c) ratios are summarized on Table No. 2. Table No. 2 also shows any recommended improvements including signal timing improvements. The storage and resulting queues are shown on Table No. 3.

The Weekday SYNCHRO analyses are contained in Appendix "J" of this Study.

1. U.S. Route 202 and NYS Route 45

NYS Route 45 intersects with U.S. Route 202 opposite Old Country Road at a signalized intersection. The U.S. Route 202 eastbound approach consists of three lanes in the form of a separate left turn lane, a separate through lane and a separate right turn lane and the U.S. Route 202 westbound approach consists of two lanes in the form of a separate left turn lane and a shared through/right lane. The NYS Route 45 northbound approach consists of three lanes in the form of a separate left turn lane, a shared left/through lane and a separate right turn lane. The Old County Road southbound approach consists of one lane for left, through and right turn movements.

Capacity analysis conducted utilizing the Year 2008 Existing Traffic Volumes indicates that the intersection is currently operating at an overall Level of Service "B" during the Weekday Peak AM Highway Hour and is currently operating at an overall Level of Service "C" during the Weekday Peak PM Highway Hour.

Capacity analysis conducted utilizing the Year 2013 No-Build Traffic Volumes indicates that the intersection is projected to operate at an overall Level of Service "C" during the Weekday Peak AM Highway Hour and is projected to operate at an overall Level of Service "D" during the Weekday Peak PM Highway Hour.

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes indicates that the intersection is projected to continue to operate at an overall Level of Service "C" during the Weekday Peak AM Highway Hour and is projected to continue to operate at an overall Level of Service "D" during the Weekday Peak PM Highway Hour.

With Minisceongo Park

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park indicates that the intersection is projected to operate at an overall Level of Service "C" during the Weekday Peak AM Highway Hour and is projected to operate at an overall Level of Service "D" during the Weekday Peak PM Highway Hour.

With Minisceongo Park and Tartikov

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park and Tartikov indicates that the intersection is projected to operate at an overall Level of Service "C" during the Weekday Peak AM Highway Hour and is projected to operate at an overall Level of Service "D" during the Weekday Peak PM Highway Hour.

2. U.S. Route 202 and Thiells - Mt. Ivy Road

Thiells - Mt. Ivy Road intersects with U.S. Route 202 opposite the existing Park and Ride at a signalized intersection. The U.S. Route 202 eastbound approach consists of two lanes in the form of a separate left turn lane and a shared through/right lane and the U.S. Route 202 westbound approach consists of three lanes in the form of a separate left turn lane, a separate through lane and a separate right turn lane. The Thiells - Mt. Ivy Road southbound approach consists of two lanes in the form of a shared left/through lane and a separate right turn lane. The existing Park and Ride northbound approach consists of one lane for left, through and right turn movements.

Capacity analysis conducted utilizing the Year 2008 Existing Traffic Volumes indicates that the intersection is currently operating at an overall Level of Service "E" during the Weekday Peak AM Highway Hour and is currently operating at an overall Level of Service "C" during the Weekday Peak PM Highway Hour.

The NYSDOT currently has an improvement project in place (P.I.N. 8093.48) to improve the operation of this intersection by eliminating the existing park and ride entrance opposite Thiells - Mt. Ivy Road and replacing it with a right turn entry only driveway to the west and a right turn exit only driveway to the east. In addition, the U.S. Route 202 westbound approach will be widened to provide an additional through lane which will tie into westbound right turn lane at the Palisades Interstate Parkway southbound on/off ramp. As part of this improvement project, the U.S. Route 202 eastbound right turn lane at NYS Route

45 will be extended to the west past the Thiells - Mt. Ivy Road intersection. A copy of the NYSDOT plans is contained in Appendix "H" of the Study.

Capacity analysis conducted utilizing the Year 2013 No-Build Traffic Volumes (w/ the NYSDOT improvements) indicates that the intersection is projected to operate at an overall Level of Service "D" during the Weekday Peak AM Highway Hour and is projected to operate at an overall Level of Service "B" during the Weekday Peak PM Highway Hour.

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes indicates that the intersection is projected to continue to operate at an overall Level of Service "D" during the Weekday Peak AM Highway Hour and is projected to operate at an overall Level of Service "C" during the Weekday Peak PM Highway Hour.

With Minisceongo Park

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park indicates that the intersection is projected to operate at an overall Level of Service "D" during the Weekday Peak AM Highway Hour and is projected to operate at an overall Level of Service "D" during the Weekday Peak PM Highway Hour.

With Minisceongo Park and Tartikov

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park and Tartikov indicates that the intersection is projected to operate at an

overall Level of Service "D" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

3. U.S. Route 202 and P.I.P. Southbound On/Off Ramp

The P.I.P. Southbound On/Off Ramp intersects with U.S. Route 202 opposite the Mt. Ivy Diner at a signalized intersection. The U.S. Route 202 eastbound approach consists of two lanes in the form of a separate left turn lane and a shared through/right lane and the U.S. Route 202 westbound approach consists of three lanes in the form of a separate left turn lane, a separate through lane and a separate right turn lane. The P.I.P. Southbound On/Off Ramp approach (southbound approach) consists of two lanes in the form of a shared left/through lane and a separate right turn lane. The Mt. Ivy Diner approach (northbound approach) consists of one lane for left, through and right turn movements.

Capacity analysis conducted utilizing the Year 2008 Existing Traffic Volumes indicates that the intersection is currently operating at an overall Level of Service "B" during the Weekday Peak AM Highway Hour and is currently operating at an overall Level of Service "B" during the Weekday Peak PM Highway Hour.

Capacity analysis conducted utilizing the Year 2013 No-Build Traffic Volumes indicates that the intersection is projected to operate at an overall Level of Service "B" during the Weekday Peak AM Highway Hour and is projected to operate at an overall Level of Service "B" during the Weekday Peak PM Highway Hour.

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes indicates that the intersection is projected to continue to operate at an overall Level of Service "B" during the Weekday Peak AM Highway Hour and is projected to continue to operate at an overall Level of Service "B" during the Weekday Peak PM Highway Hour.

With Minisceongo Park

As part of the Minisceongo Park development, this section of U.S. Route 202 will be widened to provide an additional eastbound lane. This would also provide additional storage for the U.S. Route 202 eastbound left turn. In addition, the westbound right turn lane will be converted to a shared through/right turn lane. This widening together with the coordination of the traffic signal at the Minisceongo Park development should improve operating conditions at this location to an overall Level of Service "C". A copy of the Minisceongo Park plan is contained in Appendix "H" of the Study.

With Minisceongo Park and Tartikov

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park and Tartikov indicates that the intersection is projected to operate at an overall Level of Service "C" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

4. Thiells - Mt. Ivy Road and P.I.P. Northbound Off Ramp

The P.I.P. Northbound Off Ramp intersects with Thiells - Mt. Ivy Road at an unsignalized intersection. The Thiells - Mt. Ivy Road northbound approach consists of one through lane and the Thiells - Mt. Ivy Road southbound approach consists of one through lane. The P.I.P. Northbound Off Ramp (eastbound approach) consists of two lanes in the form of a separate left turn lane and a separate right turn lane.

Capacity analysis conducted utilizing the Year 2008 Existing Traffic Volumes indicates that the P.I.P. Northbound Off Ramp is currently operating at a Level of Service "E" during the Weekday Peak AM Highway Hour and is currently operating at a Level of Service "F" during the Weekday Peak PM Highway Hour.

Capacity analysis conducted utilizing the Year 2013 No-Build and Year 2013 Build Traffic Volumes indicates that the P.I.P. Northbound Off Ramp is projected to operate at a Level of Service "F" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

With Minisceongo Park

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park indicates that the P.I.P. Northbound Off Ramp is projected to operate at a Level of Service "F" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

With Minisceongo Park and Tartikov

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park and Tartikov indicates that the P.I.P. Northbound Off Ramp is projected to operate at a Level of Service "F" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

5. U.S. Route 202 and Camp Hill Road

Camp Hill Road intersects with U.S. Route 202 at a signalized intersection. All approaches to the intersection consist of one lane.

Capacity analysis conducted utilizing the Year 2008 Existing Traffic Volumes indicates that the intersection is currently operating at an overall Level of Service "B" during the Weekday Peak AM Highway Hour and is currently operating at an overall Level of Service "A" during the Weekday Peak PM Highway Hour.

Capacity analysis conducted utilizing the Year 2013 No-Build Traffic Volumes indicates that the intersection is projected to operate at an overall Level of Service "C" during the Weekday Peak AM Highway Hour and is projected to operate at an overall Level of Service "B" during the Weekday Peak PM Highway Hour.

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes indicates that the intersection is projected to continue to operate at an overall Level of Service "C" during the Weekday Peak AM Highway hour and is projected to continue to operate at an overall Level of Service "B" during the Weekday Peak PM Highway Hour.

With Minisceongo Park

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park indicates that the intersection is projected to operate at an overall Level of Service "C" during the Weekday Peak AM Highway Hour and is projected to operate at an overall Level of Service "C" during the Weekday Peak PM Highway Hour.

With Minisceongo Park and Tartikov

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park and Tartikov indicates that the intersection is projected to operate at an overall Level of Service "C" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

6. U.S. Route 202 and NYS Route 306

NYS Route 306 intersects with U.S. Route 202 at a signalized intersection. The U.S. Route 202 eastbound and westbound approaches each consists of two lanes in the form of a separate left turn lane and a shared through/right lane. The NYS Route 306 northbound and southbound approaches each consists of one lane for left, through and right turn movements.

Capacity analysis conducted utilizing the Year 2008 Existing Traffic Volumes indicates that the intersection is currently operating at an overall Level of Service "B" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

Capacity analysis conducted utilizing the Year 2013 No-Build Traffic Volumes indicates that the intersection is projected to operate at an overall Level of Service "B" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes indicates that the intersection is projected to continue to operate at an overall Level of Service "B" during the Weekday Peak AM Highway Hour and is projected to operate at an overall Level of Service "C" during the Weekday Peak PM Highway Hour.

With Minisceongo Park

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park indicates that the intersection is projected to operate at an overall Level of Service "C" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

With Minisceongo Park and Tartikov

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park and Tartikov indicates that the intersection is projected to operate at an overall Level of Service "C" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

7. U.S. Route 202 and Wilder Road

Wilder Road intersects with U.S. Route 202 at an unsignalized intersection. All approaches to the intersection consist of one lane.

Capacity analysis conducted utilizing the Year 2008 Existing Traffic Volumes indicates that the Wilder Road approach (minor movements) is currently operating at a Level of Service "B" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

Capacity analysis conducted utilizing the Year 2013 No-Build Traffic Volumes indicates that the Wilder Road approach is projected to operate at a Level of Service "C" or better during the Weekday Peak AM and Weekday Peak PM Highway Hours.

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes indicates that the Wilder Road approach is projected to continue to operate at a Level of Service "C" or better during the Weekday Peak AM and Weekday Peak PM Highway Hours.

With Minisceongo Park

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park indicates that the intersection is projected to operate at a Level of Service "C" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

With Minisceongo Park and Tartikov

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park and Tartikov indicates that the intersection is projected to operate at a Level of Service "C" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

8. NYS Route 306 and Pomona Road

Pomona Road intersects with NYS Route 306 at an unsignalized intersection. All approaches to the intersection consist of one lane.

Capacity analysis conducted utilizing the Year 2008 Existing Traffic Volumes indicates that the Pomona Road approach (minor movements) is currently operating at a Level of Service "B" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

Capacity analysis conducted utilizing the Year 2013 No-Build Traffic Volumes indicates that the Pomona Road approach is projected to operate at a Level of Service "C" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes indicates that the Pomona Road approach is projected to continue to operate at a Level of Service "C" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

With Minisceongo Park

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park indicates that the Pomona Road approach is projected to operate at a Level of Service "C" during the Weekday Peak AM Highway Hour and is projected to operate at a Level of Service "D" during the Weekday Peak PM Highway Hour.

With Minisceongo Park and Tartikov

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park and Tartikov indicates that the Pomona Road approach is projected to operate at a Level of Service "C" during the Weekday Peak AM Highway Hour and is projected to operate at a Level of Service "E" during the Weekday Peak PM Highway Hour.

9. NYS Route 306 and Lime Kiln Road

Line Kiln Road intersects with U.S. Route 202 at a signalized intersection. All approaches to the intersection consist of one lane.

Capacity analysis conducted utilizing the Year 2008 Existing Traffic Volumes indicates that the intersection is currently operating at an overall Level of Service "A" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

Capacity analysis conducted utilizing the Year 2013 No-Build Traffic Volumes indicates that the intersection is projected to operate at an overall Level of Service "A" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes indicates that the intersection is projected to continue to operate at an overall Level of Service "A" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

With Minisceongo Park

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park indicates that the intersection is projected to operate at an overall Level of Service "A" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

With Minisceongo Park and Tartikov

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park and Tartikov indicates that the intersection is projected to operate at an overall Level of Service "A"during the Weekday Peak AM and Weekday Peak PM Highway Hours.

10. Wilder Road and Lime Kiln Road

Lime Kiln Road intersects with Wilder Road at an unsignalized intersection. All approaches to the intersection consist of one lane.

Capacity analysis conducted utilizing the Year 2008 Existing Traffic Volumes indicates that all approaches to the intersection are currently operating at a Level of Service "B" or better during the Weekday Peak AM and Weekday Peak PM Highway Hours.

Capacity analysis conducted utilizing the Year 2013 No-Build Traffic Volumes indicates that all approaches to the intersection are projected to operate at a Level of Service "B" or better during the Weekday Peak AM and Weekday Peak PM Highway Hours.

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes indicates that all approaches to the intersection are projected to continue to operate at a Level of Service "B" or better during the Weekday Peak AM and Weekday Peak PM Highway Hours.

With Minisceongo Park

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park indicates that all approaches to the intersection are projected to operate at a Level of Service "B" or better during the Weekday Peak AM and Weekday Peak PM Highway Hours.

With Minisceongo Park and Tartikov

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park and Tartikov indicates that all approaches to the intersection are projected to operate at a Level of Service "B" or better during the Weekday Peak AM and Weekday Peak PM Highway Hours.

11. NYS Route 306 and Hidden Valley Drive

Hidden Valley Drive intersects with NYS Route 306 at an unsignalized intersection. All approaches to the intersection consist of one lane. As previously discussed, the 5 single family homes to Scenic Drive will have access via Hidden Valley Drive.

Capacity analysis conducted utilizing the Year 2008 Existing Traffic Volumes indicates that the Hidden Valley Drive approach (minor movements) is currently operating at a Level of Service "A" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

Capacity analysis conducted utilizing the Year 2013 No-Build Traffic Volumes indicates that the Hidden Valley Drive approach is projected to operate at a Level of Service "B" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes indicates that the Hidden Valley Drive approach is projected to continue to operate at a Level of Service "B" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

With Minisceongo Park

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park indicates that the Hidden Valley Drive approach is projected to operate at a Level of Service "B" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

With Minisceongo Park and Tartikov

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park and Tartikov indicates that the Hidden Valley Drive approach is projected to operate at a Level of Service "B" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

12. U.S. Route 202 and Primary Development Area Site Access

As shown on Figure No. 1, access to the primary development area is proposed via a driveway connection to U.S. Route 202. A separate left turn lane will be provided on U.S. Route 202 for entering left turns.

As shown on the site plan, the sight distance that will be provided at this driveway is 665+ feet to the left and 665+ feet to the right. Based on the 85th percentile speed of 55mph (Appendix "G") and based on "New York State Department of Transportation, Policy and Standards for the Design of Entrances to State Highways," which uses AASHTO Standards as contained in "A Policy on Geometric Design of Highways and Streets – 2004," the stopping sight distance is 495 feet and the intersection sight distance is 610 feet looking to left and 530 feet looking to right. Based on the above, there will be adequate sight distance at this driveway.

Capacity analysis utilizing the Year 2013 Build Traffic volumes indicated that the U.S. Route 202 site driveway is projected to operate at a Level of Service "C" during the Weekday Peak AM Highway Hour and is projected to operate at a Level of Service "D" during the Weekday Peak PM Highway Hour.

With Minisceongo Park

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park indicates that the U.S. Route 202 site driveway is projected to operate at a Level of Service "D" during the Weekday Peak AM Highway Hour and is projected to operate at a Level of Service "E" during the Weekday Peak PM Highway Hour.

With Minisceongo Park and Tartikov

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park and Tartikov indicates that the U.S. Route 202 site driveway is projected to operate at a Level of Service "D" during the Weekday Peak AM Highway Hour and is projected to operate at a Level of Service "E" during the Weekday Peak PM Highway Hour.

13. NYS Route 306 and Primary Development Area Site Access

As shown on Figure No. 1, access to the primary development area is also proposed via a driveway connection to NYS Route 306. A separate left turn lane on NYS Route 306 will be provided for entering left turns.

As shown on the site plan, the sight distance that will be provided at this driveway is 600+ feet to the left and 600+ feet to the right. Based on the 85th percentile speed of 50mph (Appendix "G") and based on "New York State Department of Transportation, Policy and Standards for the Design of Entrances to State Highways," which uses AASHTO Standards as contained in "A Policy on Geometric Design of Highways and Streets – 2004," the stopping sight distance is 425 feet and the intersection sight distance is 555 feet looking to left and 480 feet looking to right. Based on the above, there will be adequate sight distance at this driveway.

Capacity analysis utilizing the Year 2013 Build Traffic volumes indicated that the NYS Route 306 site driveway is projected to operate at a Level of Service "B" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

With Minisceongo Park

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park indicates that the NYS Route 306 site driveway is projected to operate at a Level of Service "B" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

With Minisceongo Park and Tartikov

The Tartikov development is proposed to have access to NYS Route 306. It is recommended that the Patrick Farm and Tartikov driveways be aligned opposite each other.

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park and Tartikov indicates that the NYS Route 306 site driveway is projected to operate at a Level of Service "C" or better during the Weekday Peak AM and Weekday Peak PM Highway Hours.

14. NYS Route 306 and Proposed Access to the 24 Emergency Worker Apartments

As shown on Figure No. 1, access to the 24 emergency worker apartments is also proposed via a driveway connection to NYS Route 306.

As shown on the site plan, the sight distance that will be provided at this driveway is 600+ feet to the left and 600+ feet to the right. Based on the 85th percentile speed of 50mph (Appendix "G") and based on "New York State Department of Transportation, Policy and Standards for the Design of Entrances to State Highways," which uses AASHTO Standards as contained in "A Policy on Geometric Design of Highways and Streets – 2004," the stopping sight distance is 425 feet and the intersection sight distance is 555 feet looking to left and 480 feet looking to right. Based on the above, there will be adequate sight distance at this driveway.

Capacity analysis utilizing the Year 2013 Build Traffic volumes indicated that the NYS Route 306 site driveway is projected to operate at a Level of Service "B" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

With Minisceongo Park

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park indicates that the NYS Route 306 site driveway is projected to operate at a Level of Service "B" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

With Minisceongo Park and Tartikov

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park and Tartikov indicates that the 24 emergency worker apartments site driveway is projected to operate at a Level of Service "B" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

15. U.S. Route 202 and Spook Rock Road/Lime Kiln Road

Spook Rock and Lime Kiln Road intersects with U.S. Route 202 at an unsignalized intersection. All approaches to the intersection consist of one lane.

Capacity analysis conducted utilizing the Year 2008 Existing Traffic Volumes indicates that the Spook Rock Road and Lime Kiln approaches are currently operating at a Level of Service "C" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

Capacity analysis conducted utilizing the Year 2013 No-Build Traffic Volumes indicates that the Spook Road and Lime Kiln approaches are projected to operate at a Level of Service "C" during the Weekday Peak AM and Peak PM Highway Hours.

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes indicates that the Spook Road and Lime Kiln approaches are projected to continue to operate at a Level of Service "C" during the Weekday Peak AM and Peak PM Highway Hours.

With Minisceongo Park

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park indicates that the Spook Rock Road and Lime Kiln approaches are projected to operate a Level of Service "C" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

With Minisceongo Park and Tartikov

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park and Tartikov indicates that the Spook Rock Road and Lime Kiln approaches are projected to operate a Level of Service "C" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

16. NYS Route 306 and Willow Tree Road

Willow Tree Road intersects with NYS Route 306 at a signalized intersection. The NYS Route 306 northbound and southbound approaches each consists of two lanes in the form of a separate left turn lane and a shared through/right turn lane. The Willow Tree Road eastbound and westbound approaches each consists of one lane for left/through and right turn movements.

Capacity analysis conducted utilizing the Year 2008 Existing Traffic Volumes indicates that the intersection is currently operating at an overall Level of Service "B" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

Capacity analysis conducted utilizing the Year 2013 No-Build Traffic Volumes indicates that the intersection is projected to operate at an overall Level of Service "B" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes indicates that the intersection is projected to continue to operate at an overall Level of Service "B" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

With Minisceongo Park

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park indicates that the intersection is projected to operate at an overall Level of Service "B" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

With Minisceongo Park and Tartikov

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park and Tartikov indicates that the intersection is projected to operate at an overall Level of Service "B" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

17. NYS Route 306 and Grandview Avenue

Grandview Avenue intersects with NYS Route 306 at a signalized intersection. The NYS Route 306 northbound and southbound approaches each consists of two lanes in the form of a separate left turn lane and a shared through/right turn lane. The Grandview Avenue eastbound and westbound approaches each consists of one lane for left/through and right turn movements.

Capacity analysis conducted utilizing the Year 2008 Existing Traffic Volumes indicates that the intersection is currently operating at an overall Level of Service "C" or better during the Weekday Peak AM and Weekday Peak PM Highway Hours.

Capacity analysis conducted utilizing the Year 2013 No-Build Traffic Volumes indicates that the intersection is projected to operate at an overall Level of Service "C" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes indicates that the intersection is projected to continue to operate at an overall Level of Service "C" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

With Minisceongo Park

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park indicates that the intersection is projected to operate at an overall Level of Service "C" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

With Minisceongo Park and Tartikov

Capacity analysis conducted utilizing the Year 2013 Build Traffic Volumes with Minisceongo Park and Tartikov indicates that the intersection is projected to operate at an overall Level of Service "C" during the Weekday Peak AM and Weekday Peak PM Highway Hours.

M. ACCIDENT DATA (Table No. 4 - Appendix "K")

Accident data was obtained from the New York State Department of Transportation Records Access Office along the U.S. Route 202 and NYS Route 306 Corridors (Study Area) for the latest available five year period (January 1, 2003 through December 31, 2007).

A summary of the accident data by year for the U.S. Route 202 and NYS Route 306 Corridors are shown on Table No. 4.

Based on a review of the Accident Reports, the type of accidents are typical type of accidents, such as rear-end accidents and turning accidents with apparent contributing factors such as failure to yield right of way and driver inattention/driver inexperience. It is not expected that this Project will have an impact on the accident rate on the area roadways.

A copy of the NYSDOT Accident Summary Tables and Accident Reports are contained in Appendix "K" of this Study.

N. SUMMARY AND CONCLUSION

As summarized in this study, the proposed Patrick Farm development will not significantly affect the roadway system in the vicinity of the site. In addition, left turn lanes are proposed at the site's driveways to reduce the impact on through traffic along U.S. Route 202 and NYS Route 306 in the vicinity of the site. These improvements will be determined by the Lead Agency.

Respectfully Submitted,
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