# 3.8 Traffic and Transportation

# 3.8.1 Introduction

This section examines the current and future transportation operations in the vicinity of the Lost Lake Resort. The description of current operations is based on the existing transportation network and are referred to herein as the Existing Conditions. Future transportation operations are examined for the No Build Conditions (without the Lost Lake Resort) and Build Conditions (with the Lost Lake Resort). The future conditions (No Build and Build) are further divided to analyze transportation operations after five years (after the planned beginning of construction) in 2016 and operations for full development after ten years, in 2021. The No Build Condition is the future baseline upon which project traffic is based and the Build Condition represents the combination of the No Build Condition plus the traffic that will result from development and operation of the Proposed Project.

# 3.8.2 Existing Traffic Conditions

#### The Regional Network

The subject site is located in the Town of Forestburgh, Sullivan County, New York, in the vicinity of St. Joseph's Road and Cold Spring Road. Two major regional roadways servicing the site vicinity are Interstate 84 south of the site and NYS Route 17 north of the site. NYS Route 17 is being reconstructed for redesignation as Interstate 86. Refer to Figure 3.8-1, Regional Transportation Map, for a depiction of the roadway network in the vicinity of the project site.

Interstate 84 between Pennsylvania and Connecticut connects with major north-south highways including the Taconic State Parkway, Interstate 684, and Interstate 87. Interstate 84 intersections NYS Route 17 near the City of Middletown, New York. The Town of Forestburgh can be accessed through the City of Port Jervis using NYS Route 42 and NYS Route 6 off of Interstate 84, or though the Village of Monticello using NYS Route 17 and NYS Route 42.

# The Local Road Network

Figure 3.8-2 shows the local road network in the vicinity of the subject site. The primary local roadways in the vicinity of the site include St. Joseph's Road, Cold Spring Road, Waverly Avenue, St. John Street, Rose Valley Road, Forestburgh Road, and Broadway (West and East).

St. Joseph's Road crosses the approximate middle of the property providing lengthy road frontage on both sides of the road, and Cold Spring Road touches a small portion of the boundary in the northeastern corner of the site. Both roadways are two lane rural roads.

The following intersections were investigated in this traffic study and are indicated on Figure 3.8-2. All of the intersection figures depicting traffic volumes simplify the intersection layouts for clarity. The actual lane configurations at each studied intersection are shown in Appendix P2 Aerials 1 to 7.

- 1. St Joseph's Road (CR 108), and Cold Spring Road (CR 102)
- 2. Cold Spring Road (CR 102) and Rose Valley Road

- 3. Cold Spring Road (CR 102) and Waverly Avenue (Thompson)
- 4. Rose Valley Road and East Broadway (CR 42), Monticello
- 5. St. John Street (CR 102), Bank Street, and Broadway (NYS Route 42), Monticello
- 6. Forestburgh Road (NYS Rt. 42), W. Broadway, and Broadway (NYS Rt. 42), Monticello
- 7. St Joseph's Road (CR 108), and Forestburgh Road (NYS Route 42)

Broadway is the main pedestrian thoroughfare in the Village of Monticello with short sections of sidewalk branching off on many intersecting streets including Bank Street, Forestburgh Road, and the east side of St. John Street.

Posted speed limits are shown on Figure 3.8-3; and lane widths are shown on Figure 3.8-4. Except for Broadway (including parts of East and West Broadway), all study roads are two way with one lane in each direction. Warning signs are posted on St. Joseph's Road recommending speeds of 15 miles per hour and 35 miles per hour. Several of the warning signs have been shot repeatedly.

Descriptions of the seven study intersections are provided below:

# St Joseph's Road (CR 108) and Cold Spring Road (CR 102)

St Joseph's Road and Cold Spring Road form a three way "T" intersection. Both roads have one travel lane in each direction. The County roads are paved with dirt shoulders. A dirt driveway is located approximately opposite St. Joseph's Road and is gated. St. Joseph's Road is stop controlled. The actual lane configurations at this intersection are shown in Appendix P2 Aerial 1.

# Cold Spring Road (CR 102) and Rose Valley Road

Cold Spring Road (CR 102) and Rose Valley Road form a three way "Y" shaped intersection. Rose Valley Road is stop controlled and is treated as a westbound approach for analysis purposes although it is oriented in the southbound direction. Rose Valley Road is a more direct route north to NYS Route 17 from this location than Cold Spring Road. Both roads have one travel lane in each direction. The roads are paved with dirt shoulders. The actual lane configurations at this intersection are shown in Appendix P2 Aerial 2.

# Cold Spring Road (CR 102) and Waverly Avenue (Town of Thompson)

The Cold Spring Road (CR 102) and Waverly Avenue intersection is a three way "T" intersection. Waverly Avenue is stop controlled. There is a dirt pulloff across the northerly corner of the intersection with evidence that vehicles pull off the pavement ("cut the corner") to make a turn either into or out of Waverly Avenue. Both roads have one travel lane in each direction. The roads are paved with dirt shoulders. The actual lane configurations at this intersection are shown in Appendix P2 Aerial 3.

#### Rose Valley Road and E. Broadway (CR 42), Village of Monticello

Rose Valley Road and East Broadway (CR 42) form a four way intersection at a skewed angle. The southbound approach of Rose Valley Road is slightly offset from the northbound approach.

The southbound segment is short and narrow, ending approximately 220 feet north of CR 42 and thus has limited potential for future traffic growth. East Broadway is the major road, with Rose Valley Road stop controlled. A service station/convenience store occupies the southeast corner with access onto both Rose Valley Road and East Broadway. Both roads have one travel lane in each direction. The roads are paved with dirt shoulders. The actual lane configurations at this intersection are shown in Appendix P2 Aerial 4.

St. John Street (CR 102), Bank St., and Broadway (NYS Route 42), Village of Monticello

St. John Street (CR 102), Bank Street, and Broadway (NYS Route 42) form an offset, four way, signalized intersection. St. John Street and Bank Street are offset with their traffic signals functioning as a unit. Green times on Broadway are held to allow turning vehicles from St John Street and Bank Street to pass through the adjacent signal. St. John Street has one travel lane in each direction; is curbed, with a sidewalk on one side separated from the curb by a grass strip and a sidewalk adjacent to the curb on the other side. Bank Street has one travel lane in each direction, is curbed with a sidewalk on one side separated from the curb by a grass strip and a small park on the other side. Broadway is two lanes in each direction with paved shoulders, curbs, planted strip and sidewalks on both sides. Broadway was under reconstruction during the period of this study. The actual lane configurations at this intersection are shown in Appendix P2 Aerial 5.

# Forestburgh Rd. (NYS Rt. 42), West Broadway, and Broadway (NYS Rt. 42), Village of Monticello

Forestburgh Road (NYS Rt. 42), West Broadway, and Broadway (NYS Rt. 42) form a three way intersection with a flashing light. NYS Route 42 is the primary route with West Broadway being stop controlled. The left turn from Forestburgh Road has a separate lane and is flashing red. This turn is a difficult turn as the corner is raised hindering sight lines. Broadway is slightly offset. For analysis purposes, NYS Route 42 is treated as the through north-south road, although Broadway turns to the east. West Broadway and Broadway have one travel lane in each direction. Forestburgh Road is one travel lane in each direction plus the left turn center lane. The roads are paved with paved shoulders and sidewalks. The actual lane configurations at this intersection are shown in Appendix P2 Aerial 6.

# St. Joseph's Road (CR 108) and Forestburgh Road (NYS Route 42)

The intersection of St Joseph's Road (CR 108) and Forestburgh Road (NYS Route 42) is a three legged intersection. St Joseph's Road is stop controlled. St. Joseph Hill Road intersects St. Joseph Road a short distance to the east of the main intersection with a park located in the northeast corner. The queue storage is limited on the St. Joseph's Road approach to Forestburgh Road without blocking St. Joseph Hill Road. All three roads have one travel lane in each direction. *St. Joseph's Road* and *St. Joseph Hill Road* are paved with dirt shoulders; Forestburgh Road is paved with paved shoulders. The actual lane configurations at this intersection are shown in Appendix P2 Aerial 7.

#### Pavement Conditions

Local roads are typically constructed of flexible pavement (asphalt) rather than rigid pavement (concrete) or an overlay (asphalt on concrete). Local roads were visually rated for flexible pavement condition on a scale of one to three with one (1) being poor condition (distress is

frequent and may be severe), two (2) being fair (distress is clearly visible) to good (distress symptoms are beginning to show) and three (3) being excellent or newly paved (no pavement distress). Table 3.8-1 provides a summary of local roadway conditions.

Table 0.0.4					
Table 3.8-1					
Existing Roadway Conditions					
Road	Condition				
St. Joseph's Road	1 to 2*				
Cold Spring Road north of Cantrell Road	2				
Cold Spring Road south of Cantrell Road	3**				
Waverly Avenue	2				
Rose Valley Road (south of Broadway)	2				
Bank Street	2				
John Street	2				
NYS Route 42					
St. Joseph Road to	3**				
Lake Sacklett Road	3				
Sacklett Lake Road to	2				
Broadway	_				
Broadway	2***				
* Portions of the road are in condition 2 and portions	in condition				
1.					
** Travel way recently overlayed.					
*** Portions of Broadway are under reconstruction. The					
Forestburgh/ Broadway intersection has some potholes.					
Source: Tim Miller Associates, August and November 2009, .					

# Traffic Counts

The Existing Conditions evaluation is based on 2009 summer traffic counts. The existing data form the basis of the interim year 2016 and year 2021 future conditions (each future year with and without the proposed action).

Automatic Traffic Recorder counts were conducted on NYS Route 42 and Cold Spring Road in front of the project site. New York State Department of Transportation counts on NYS Route 42 from 2007 were also examined. As traffic analysis is primarily concerned with peak hour traffic, comparisons were made regarding peak hour volumes and such indicate that summer Friday has typically the highest weekday traffic and summer Sunday traffic is the highest for the weekend. Cold Spring Road, being a low volume road receiving the site generated traffic, will ultimately have its peak volume time defined by the summer peak hour of the site.

A May 2009 count on NYS Route 42 south of St. Joseph's Road indicated that Saturday traffic of 206 vehicles is higher than Sunday traffic at 177 vehicles. Also, Friday traffic at 260 fell within the range of midweek traffic (from 248 to 278). The NYSDOT count in 2007 in the same general area indicated Saturday traffic slightly above 200 vehicles, however Sunday traffic was at 275 vehicles. The Friday peak remained strong and the midweek volumes dropped below Friday, shown in Appendix P2 Figure 1. Manual counts (further described below) indicated 285 vehicles on summer Friday and 310 on summer Sunday; see Figures 3.8-5 and 3.8-6. Another NYS DOT count on NYS Route 42 in Monticello (Jefferson Street to East Broadway) shows a stronger influence with Friday traffic eclipsing all days from 9 a.m. to 7 p.m. and Sunday remaining above Saturday from midnight to the following sunset, shown in Appendix P2 Figure

2. The low volumes on Cold Spring Road show the 2009 Friday peak about equal to the highest peak during the week and Sunday peaking above Saturday; see Appendix P2 Figure 3. The overall traffic volumes and the influence of summer traffic in this area generally declines as distance from NYS Route 17 increases. Much of the recreational traffic is arriving on Friday and leaving on Sunday, increasing volumes during those times. As the summer trips increase for the weekends, so do the local populations in Forestburgh, Thompson, Monticello, and Fallsburg. A portion of the summer population does not drive from Friday sundown to Saturday sundown (for religious reasons), further effecting an increase in trips that occur earlier Friday afternoons and on Sundays.

Figures 3.8-5 and 3.8-6 provide existing summer Friday p.m. and summer Sunday afternoon peak hour traffic, respectively, at the studied intersections.

Manual counts for the weekday p.m. peak hour and Saturday peak hour were collected on Thursday, May 7, 2009, from 3:00 p.m. to 6:00 p.m., and on Saturday, May 9, 2009 from 10:30 a.m. to 4:00 p.m. at all study intersections. These counts represent typical non-summer days. Anecdotal evidence, however, indicated that summertime weekend traffic is greater than weekday peak traffic in the Fallsburg/Monticello area. This is consistent with the findings cited in a prior area study: *Trip Generation Study of Summer Recreational Homes in the Town of Fallsburg* by Tim Miller Associates, Inc., October, 2007. Therefore, the study intersections were also manually counted on Friday, July 31, 2009 from 1:00 p.m. to 6:00 p.m. and Sunday August 2, 2009 from 12:00 p.m. to 6:00 p.m. The summer counts were found to be generally higher than non-summer days and thus summer counts are used in this study as a conservative traffic estimate. Since the proposed project is a resort that features a golf course, its traffic will be expected to peak in the summer, as well.

Intersection counts were used to ascertain the hour with the greatest traffic volume or "peak hour". The peak hours for weekday p.m., and Sunday midday traffic for the different intersections are shown in Table 3.8-2, Occurrence of Peak Traffic, based on the data collected. Weekday p.m. peak hours for area intersections vary only slightly and therefore are a close representation of the area-wide peak. The individual peak hours are used in all level of service calculations as they represent the highest volume and therefore typically the worst case.

The occurrence of the weekday traffic peaks are mainly due to commuter traffic traveling to and leaving from the work place, while the Saturday trips are attributed to shopping or recreational trips. Summer Friday and Sunday traffic also have an element of traffic arriving and leaving recreational homes for the weekend, a common occurrence in Sullivan County. The Summer Friday peak hours on Route 42 Broadway were found to be fairly close while other traffic peaks in the local area were found to vary wildly in part due to lower volumes and relatively constant traffic flows. The Summer Sunday peak hour occurred earlier than the Summer Friday peak hour.

Table 3.8-2           Occurrence of Summer Peak Traffic						
Intersections	Friday P.M. Peak Hour	Sunday P.M. Peak Hour				
St Joseph's Road (CR 108), and Cold Spring Road (CR 102), Town of Forestburgh	4:30 p.m. to 5:30 p.m.	3:30 p.m. to 4:30 p.m.				
Cold Spring Road (CR 102) and Rose Valley Road, Town of Forestburgh	5:00 p.m. to 6:00 p.m.	2:30 p.m. to 3:30 p.m.				
Cold Spring Road (CR 102) and Waverly Avenue, Town of Thompson	3:45 p.m. to 4:45 p.m.	2:45 p.m. to 3:45 p.m.				
Rose Valley Road and East Broadway (CR 42), Town of Thompson	3:00 p.m. to 4:00 p.m.	2:00 p.m. to 3:00 p.m.				
St. John Street (CR 102), Bank Street, and Broadway (NYS Route 42), Village of Monticello	4:15 p.m. to 5:15 p.m.	1:45 p.m. to 2:45 p.m.				
Forestburgh Road (NYS Rt. 42), W. Broadway, and Broadway (NYS Rt. 42), Village of Monticello	4:00 p.m. to 5:00 p.m.	2:00 p.m. to 3:00 p.m.				
St. Joseph's Road (CR 108), and Forestburgh Road (NYS Route 42), Town of Forestburgh	4:30 p.m. to 5:30 p.m.	2:15 p.m. to 3:15 p.m.				
<sup>1</sup> See Figure 3.8-2 for intersection locations.						

# **3.8.3 Future Traffic Without the Project**

#### No Build Traffic

Typically, a project's traffic impact is determined by comparing projected future traffic conditions without the project's traffic in the Build Year to the projected traffic conditions with project-generated traffic in the Build Year. In this case, given the lengthy build-out anticipated for Lost Lake Resort (anticipated to be decades), an Interim 2016 condition is evaluated for five years after start of construction and a 2021 Full Build condition is evaluated for ten years after start of construction.

The No-Build Condition is a scenario that establishes the future baseline volumes. No-Build Conditions are ascertained based on a number of predictable factors: (1) improvements in the local road network that are planned or underway; (2) traffic from general population growth in the local area; and (3) traffic from identified development projects in the project site vicinity.

#### Roadway Improvements

The New York State Department of Transportation (NYSDOT) has several projects listed in the Statewide Transportation Improvement Program (TIP) and other project in development. The currently approved TIP (August 2008) covers traffic improvement projects to be initiated and or

completed during the period between October 1, 2008 and September 30, 2012. These projects are:

- a) Numerous projects to upgrade NYS Route 17 to interstate standards for eventual designation as Interstate 86, addressing safety, bridge clearance, and interchange upgrades, including Project Identification Numbers (PIN) 901330, 906687, 906696, 906710, and 906717. The Exit 106 project is already designed and ready to be bid however this project has been on hold awaiting the casino development which could force a major upgrade and redesign.
- b) The Route 17B corridor study will lead to improvements along the corridor (903619).
- c) Landscaping project on Route 42 between Broadway and Pleasant Street (901333).
- d) Reconstruction of NYS Route 42 from Broadway to Pleasant Street (901326).

The Route 17B corridor study, b) above, is intended as maintenance improvement and will not add capacity to the road network. Projects under a) should improve roadway capacity and safety on and to NYS Route 17 but is outside the study area. Project b) will permit future capacity increase on the Route 17B corridor which is to the west of the study area. Project c) is a landscaping project and thus will not alter the roadway capacity but might improve safety and will make the area more visually appealing. Project d) is under construction with new sewer pipes being set. As Broadway already has four lanes this project is expected to primarily provide improved bicycle and pedestrian movement, safety and rehabilitate the pavement. The average lane width on Broadway is increased slightly and signal timings will be modified. Demand-responsive signal timings are assumed to adapt to increasing relative demand from St. John Street partially due to the Thompson Manor project.

Although construction has already started on Broadway, construction activity is closed down on the weekends.

#### Background Growth

To evaluate the impact of the proposed development, traffic projections were prepared for the interim year (2016) and planned build-out year (2021). Again, while this project is not anticipated to be fully built and occupied for decades based on the model for development experienced at Eagle Rock Resort in Pennsylvania, another resort developed by this applicant, for purposes of this study Phases I, II, and III are assumed to be built in 2016 and the project fully built in the year 2021.

In determining future traffic volumes, existing traffic volumes are projected forward to the Interim and Build-out years using a generalized growth factor that accounts for non-project-specific, area-wide growth. Traffic anticipated to be generated by developments in the vicinity of the subject project are then added to these Interim and Build-out Year traffic volumes to obtain the No-Build traffic volumes. The No-Build traffic volumes represent future traffic operating conditions without the development of the subject project and are a benchmark against which potential project-related traffic impacts can be measured.

The intersection of NYS Route 42 with Bank Street and St. John Street was used to establish a background growth rate. Using the summer PM weekday traffic from 1998 and projected 2026 from the NYSDOT, a growth rate was estimated at about 0.6 percent per year. It is noted that the summer 2009 weekday counts actually indicate a decline in local area traffic of about 4

percent per year. The drop in traffic is partially related to the increase in commercial activity north of NYS Route 17 along NYS Route 42, a down turn in the economy, and vacancies in Broadway businesses.

Typically for heavily developed areas, a one percent growth rate is used. Within the long time frame of this project, returning to a one percent growth rate is reasonable given an improving economy, the current reconstruction of Broadway, and available vacant buildings in Monticello. This growth rate is used for this analysis, in addition to adding other area projects south of NYS Route 17. It is these projects that will use area roads not only to access NYS Route 17, but they will also have the Village of Monticello as the nearest major commercial center. There is also a growing trend to increase the bicycle and pedestrian accessibility of villages to entice people to leave their automobile behind and shop locally. This trend may offset background motorized vehicular growth with non-motorized traffic.

In this case, an 2016 interim build year was defined as 5 years from a projected 2011 start of construction and 10 years as full build-out in 2021. The other area projects were assumed completed by 2016.

The No Build peak hour traffic volumes are shown in Figures 3.8-7 through 3.8-10.

# Other Area Projects

Planned, pending, or approved projects in the area that might add a significant volume of traffic to any of the intersections in the study area were identified through consultation with officials and review of available planning documents. The development projects considered in this traffic analysis are those currently under review (pending) by the Planning Boards in the Town of Forestburgh and Town of Thompson that have not yet been built. There are no pending projects identified in the Village of Monticello. These No Build projects are listed in Table 3.8-3, Approved or Pending Projects in Site Vicinity.

For the No Build and Build conditions, the traffic generated by the area developments is projected to occur by 2016 and is also added to the 2021 conditions. Therefore, to estimate non-project-specific background traffic growth, the existing traffic volumes were grown from 2009 to 2016 for the initial phases and to 2021 for the ultimate build-out by an annual growth rate of one (1) percent to yield the Horizon Year traffic volumes. The traffic volumes of certain approved or pending projects in site vicinity (see Table 3.8-3) were added to the 2016 Interim and 2021 Build-out Year traffic volumes, resulting in the No-Build volumes, which are presented graphically in Figures 3.8-7 through 3.8-10.

Table 3.8-3           Approved or Pending Projects in Site Vicinity					
Project	Size and Type	Location			
Thompson Heights***	184 Apartments	Cold Spring Road and Waverly Avenue, Town of Thompson			
Congregation OHR North***	75 residential units	Rod and Gun Club Road, Town of Thompson			
Forest Park Estates*	61 detached units	Anawana Lake Rd. north of Frazier Road, Town of Thompson			
RNR Mobile Home Park*	120 units	Pittaluga Road and Old Liberty Road, Town of Thompson			
Thompson Living*	46 residential units	Old Liberty Road CR 107, Town of Thompson			
Rockhill Town Center*	60,000 square feet commercial 217 single family 1012 townhomes, 384 Multifamily	Rock Hill Road, Rock Hill			
Frontier Insurance Building*	Building currently (August 2009) 125,000 square feet vacant of 163,000 square feet	195 Lake Louise Marie Road, Rock Hill			
Rexhepi Development*	48 townhouses	Bridgeville Road and Edwards Road, Town of Thompson			
Sho Fu Den Garden Inn and Spa***	80 transient villa units with accessory 50 seat restaurant** and a spa for residents only**	Merriewold Park, Town of Forestburgh			
The Falls at Black Creek***	Restaurant, fitness center ** 18 hole golf course, 280 residential units (single family and townhomes)	Tannery Road, Town of Forestburgh			
* Based on their location, these projects will contribute to background traffic only.					
<ul> <li>** No reduction taken for accessory uses during Friday and Sunday peak hours.</li> <li>*** Trips generated by these projects are shown in Table 1 in Appendix P2.</li> </ul>					

# 3.8.4 Site Generated Traffic

# **Description of Site Access**

A privately owned and maintained entrance road will provide access to the Lost Lake Resort from Cold Spring Road north of Rose Valley Road. A Highway Work permit from the County will be required for the site access, and any other work in the County right-of-way. This site access will provide a single, gated entrance to the entire resort development. In addition, four points for emergency access are proposed along St. Joseph's Road. Emergency access will be established to Phase I development both north and south of the public road on the west side of the project. Emergency access will also be constructed on the east side of the project in Phase II and Phase IV. The internal road crossing at St. Joseph's Road is proposed to be via a tunnel, with no road connection to St. Joseph's Road.

# Trip Generation

The Proposed Action is development of a residential resort area with numerous recreational facilities, many of which will be open to the public. For the purpose of this analysis, a 100 percent Build-out 2021 scenario and Interim 2016 scenario (Phase I, II and III) are evaluated. Completion of these three phases will finish the 18-hole golf course with clubhouse and driving range, and make some 1032 lots available for house construction.

Some facilities in the project are considered to be accessory to others in this study. This accessory designation does not prohibit public use, rather it recognizes that these facilities are more often accessory to a hotel, golf course or other facility and thus are included in the trip generation multipliers for the primary uses. For Resort Hotels, ITE specially notes a wide variety of recreational facilities including golf courses, tennis courts, beach access and other amenities. In this case, the golf course will be treated as a separate entity with its own trip generation. The beach access, marina, tennis courts, fitness center and spa will be treated as accessory to either the hotel or golf course. The sales office is considered accessory to the residential use since activities associated with sales of house lots and home building by the lot owners will precede any trip generation from developed house lots.

The condominiums and the cabins (cottages), which are planned for Phases IV and V construction, are allotted to the full build-out and none are included in the interim build-out analysis.

Table 3.8-4 Lost Lake Resort Trip Rate Summary Full Build Scenario						
		Peak Hour Trip Rates				
	Weekda	ay P.M.	Satu	irday	Sun	day
Land Uses {ITE Code}	IN (Trips/ Unit)	OUT (Trips/ Unit)	IN (Trips/ Unit)	OUT (Trips/ Unit)	IN (Trips/ Units)	OUT (Trips/ Unit)
Build out						
Condominiums/Townhouses 40 units {230}	0.135	0.574	0.254	0.216	0.221	0.230
Hotel 32 rooms {310}	0.313	0.249	0.462	0.363	0.258	0.302
Golf Course 18 Holes {430}	1.251	1.529	2.249	2.341	2.171	2.259
Cabins 30 units {330}	0.146	0.194	0.689	0.541	0.566	0.664
Recreational homes 2,557 units {260}	0.117	0.149	0.173	0.187	0.166	0.194
Unit is dwelling units, rooms, or holes as noted. <u>Trip Generation</u> , Institute of Transportation Engineers, 8th edition, Washington, DC, 2008.						
Rates are based on collective size of specific uses for all phases.						

Cabins are treated as resort hotel assuming short term rentals that are family recreational oriented.

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		Peak Hour Trip					
	Weekda	Weekday P.M. Saturday Sunda				lay	
Land Uses	IN (Trips)	OUT (Trips)	IN (Trips)	OUT (Trips)	IN (Trips)	OUT (Trips)	
Phase I							
Recreational Homes 400 units	47	60	69	75	66	78	
Nine Hole Golf Course	12	14	20	21	20	21	
Phase II							
Recreational Homes 235 units	27	35	41	44	39	46	
Nine Hole Golf Course	11	14	20	21	20	21	
Phase III							
Recreational Homes 397 units	46	59	69	74	66	77	
Driving Range, Clubhouse and Restaurant *							
Subtotal Phases I to III	143	182	219	235	211	243	
Phase IV							
Recreational Homes 399 units	47	59	69	75	66	77	
15 Cabins	2	3	11	8	9	10	
Tennis Court **							
20 Condos	3	12	5	5	5	5	
Phase V							
Recreational Homes 405 units	47	60	70	76	67	79	
Phase VI							
Recreational Homes 401 units	47	60	69	75	67	78	
15 Cabins	2	3	10	8	8	10	
Hotel 32 rooms	10	8	15	12	8	10	
Beach and Boat Dock **							
20 Condos	2	11	5	4	4	4	
Phase VII							
Recreational Homes 320 units	38	48	55	60	53	62	
Spa and Conference Center **							
Bushkill Park ***							
Subtotal Phases IV to VII	198	264	309	323	287	335	
TOTAL ALL PHASES	341	446	528	558	498	578	

\*\* Presumed to be accessory to the golf course or hotel.

\*\*\* Accessory to recreational homes

\*\*\*\* Trips are loaded to early phase where rounding occurs

Rates are based on collective size of specific uses for all phases.

The trip rates used to calculate the trip generation for this project are summarized in Table 3.8-4, Lost Lake Resort Trip Rate Summary.

The Proposed Action is projected to generate 325 external trips during the summer Friday p.m. peak hour, and 454 trips during the summer Sunday p.m. peak hour for Phases I through III. The remainder of the site development will generate 462 external trips during the summer Friday p.m. peak hour, and 622 trips during the summer Sunday p.m. peak hour. The projected numbers of trips exiting and entering the development are shown in Table 3.8-5, Lost Lake Resort Trip Generation.

The addition of generated trips is anticipated to alter traffic patterns at low volume intersections.

The distribution of site trips is shown in Figures 3.8-11 and 3.8-12. The site generated trips during the summer Friday p.m. and Sunday peak hours are shown in Figures 3.8-13 through 3.8-16. The interim site generated trips are added to No Build trips (Figures 3.8-7 and 3.8-8) to obtain interim Build Conditions Figures 3.8-17 and 3.8-18. Site generated trips Figures 3.8-15 and 3.8-16 are added to Figures 3.8-9 and 3.8-10 to obtain Build Condition trips (Figures 3.8-19 through 3.8-20) for the development, assuming it is built out in 2021.

#### Comparison to Similar Developed Project

Projected trip rates for Lost Lake Resort were compared to actual traffic data collected at a similar type of resort development that is experiencing a long term build out as is projected for Lost Lake Resort. Comparative data from Eagle Rock Resort, a similar developed facility built by this applicant, are provided in Appendix P2 Tables 2 to 4 based on a traffic study conducted at Eagle Rock Resort in 2007. Table 2 lists the amount of development completed and occupied at Eagle Rock Resort and a comparable level of development at Lost Lake Resort. Table 3 lists the trips generated (counted) at Eagle Rock Resort and trips generated (calculated for comparable uses) at Lost Lake Resort. Table 4 calculates trip rates based on housing units and the trip generation in Table 3. Evaluating a comparable amount of development at each resort, the projected weekday p.m. peak hour and Saturday trip rates for Lost Lake Resort were found to be higher than actual rates reported at Eagle Rock Resort. The volumes projected for Lost Lake Resort were 44 to 77 percent higher for the weekday peak and 84 to 141 percent higher for Saturday than the actual trips at Eagle Rock Resort, as shown in Table 4 (Appendix P2). The low level of trip generation actually experienced at a similar type of resort development demonstrates the conservative nature of the trip generation projections for Lost Lake Resort in this traffic study. In part, the lower actual rates would be a result of internal trips between uses while the trip generation at Lost Lake Resort is being counted as both arriving and departing external trips. For example, a trip from the recreational home to the golf course remains on-site and not counted in the Eagle Rock Resort traffic study, while the trip generation for Lost Lake considers this a trip departing the recreational home and a second trip arriving at the golf course.

#### **3.8.5 Measure of Effectiveness Criteria**

'Level of service' is used as the measure of effectiveness for traffic flow conditions. Peak hour average vehicle delays were calculated to establish the quality of operation (level of service). Level of service is identified on a scale of level of service "A" representing the most efficient conditions to level of service "F" representing the least efficient conditions. Detailed information

concerning measures of effectiveness criteria (delay and level of service) can be found in Appendix P1.

# 3.8.6 Projected Changes in Level of Service

## Existing Levels of Service

The results of the existing level of service analyses for the study intersections are summarized in Appendix P3, Table 1 and Table 2. The capacity analysis calculations are provided in Appendix P4 (on the accompanying CD). For the Sunday peak hour traffic on St. Joseph's Road at Cold Spring Road, a left turning vehicle was added to provide some volume for the program to analyze.

#### No Build Level of Service

Level of service summary Tables 1 and 2 (Appendix P3) list the levels of service for the studied intersections for the No Build Conditions for 2016 and 2021. The studied signalized intersection (St. John Street/ Bank Street/ NYS Route 42 in the Village of Monticello) operates at an overall level of service D or better during peak hours. Levels of service for the unsignalized intersections are A or B except West Broadway at Forestburgh Road. On Forestburgh Road there is level of service F in the Friday peak hour and E in Sunday peak hour.

#### Build Condition Level of Service

With the projected development of the project site there will be decreases in levels of service at a number of intersections (future Build Condition) when compared to the future No Build Condition. The minor movements of Waverly Avenue and Rose Valley Road show declines in level of service in both the Interim Build and Full Build Conditions, although remain no worse than level of service D. Other unsignalized intersections remain at levels of service A and B. At the signalized intersection of NYS Route 42, St. John Street, and Bank Street in the Build condition, level of service for NYS Route 42 west is projected to decline to D on the Summer Friday peak hour and C in the Summer Sunday peak hour as a result of additional left turning vehicles. Refer again to the level of service summary Tables 1 and 2 in Appendix P3.

# 3.8.7 Site Transportation Elements

#### Site Access

The project is proposed to have a single vehicular access and additional emergency access points. The primary access will be completed in Phase I to serve as the main access for all phases. Emergency access points will be constructed onto St. Joseph's Road from Phase I at two points on the west side of the project, and two more emergency access points added in subsequent phases as development progresses. The main entrance road is proposed as two lanes. Under the Interim condition, levels of service are projected to be A and B. Under the Full Build condition, levels of service are projected to E on the Friday peak and F on the Sunday peak.

#### Pedestrian Circulation

As the resort is designed as a rural style development there are no sidewalks proposed along the roadways. This model is similar to the Eagle Rock Resort. Given the low volume of internal vehicular traffic anticipated, pedestrian travel will occur along the interior roads, which will also facilitate safe travel by bicycle, golf cart, moped and the like. Informal pedestrian circulation will be facilitated on multipurpose trails that are proposed to meander in the interior of the development. The trails will provide access for passive recreation from adjoining house lots and road crossings through the perimeter of some of the open space areas including the central wetland and parallel to St. Joseph's Road along most of the frontage. In the golf course, cart paths will provide circulation for golfers.

#### Transportation Services

The resort will not operate formal transportation services for residents or guests, given the low population anticipated in the foreseeable future. Like at Eagle Rock Resort, the sales/hospitality staff will be available to provide transportation within the resort if requested. It is entirely possible that if a demand for such services develops over time, the resort will consider offering transportation on site to residents and guests.

There are several taxi and limousine services in Monticello and vicinity that will provide transportation from the site to destinations such as the Monticello and Thompson business districts, Monticello Race Track, Sullivan International Airport, and Otisville train station.

#### Internal Traffic Circulation

The anticipated development scenario (a long term buildout as experienced at Eagle Rock Resort) will result in minimal traffic on the internal streets. Most internal traffic circulation will be focused toward the amenity area where the hotel, golf, spa, tennis, beach and other activities will be located. The proposed road system is laid out with two primary loops. The first internal loop will be completed in Phase II, circulating from the main entrance around the central amenity area and Lost Lake, returning to the main entrance. The second loop will be completed in Phase IV, circulating from the first loop via the St. Joseph's Road tunnel around the central large wetland area and returning to the tunnel. Smaller loops and short cul-de-sacs branch off of the main loops in a design that is intentionally circuitous to create opportunities to view the natural features on the property and preserve the leisure resort atmosphere.

The interior road system within the gated community will allow ease of access to the golf course, spa and fitness center, and other activities without having to leave the site. Intersections will be stop sign controlled with posted speed limits of 20 mph.

#### Special Events

Special events at the resort will consist of weddings held at the clubhouse or conference center, golf tournaments and conferences at the conference center. Anticipated frequency is up to six of each type of event per year and involving up to 80 people. These activities will be expected to occur between April and October, the weddings and conferences being either daytime or night events. Such activities will be coordinated through the hospitality office to avoid simultaneous events. Parking has been centralized in the amenity area to avoid vehicles driving

throughout the residential areas and will allow cross use of parking facilities during special events. No major spectator events are anticipated at Lost Lake Resort.

#### Facility Maintenance Operations

A centralized facility maintenance building will be located on site. On-site maintenance work conducted out of this facility will include the golf course operations and landscape maintenance. Road and utility maintenance, garbage removal, and large scale maintenance work will be contracted out.

#### Access to Public Parks on the Site

Access to all facilities within Lost Lake Resort will require passing through the main entrance gate. Site facilities are primarily available to resort residents, their guests, prospective resort members, and visitors who wish to use the commercial/ recreational facilities (i.e., golf course, restaurant, spa, or conference center).

Bush Kill Park West is proposed as a semipublic park area adjacent to the Bush Kill in the Phase IV area to provide resident and visitor access to passive recreation areas on and near the Bush Kill. A small parking area is proposed at this park. In addition, multiuse trails will be developed around the resort as described above (see Pedestrian Circulation). There will be no restriction on use of these facilities by any resort resident or visitor.

Bush Kill Park East is proposed as a public, passive recreation area located on the east side of the Bush Kill. This area will be adjacent to existing New York State owned land, affording connectivity to the Neversink River Unique Area, and could be accessible from Cold Spring Road via a trail over the State land.

#### Sight Distances

Based on an on-site survey, the available sight distances at the proposed project main entrance are approximately 569 feet looking north and 775 feet looking south. These sight lines are shown on the project plan (Sheet C-3). These distances meet AASHTO stopping distance requirements for the posted speed along Cold Spring Road. The project design does not preclude the provision of adequate area to allow future road widening along the project frontage, if determined by the County to be needed.

At site buildout during the summer months, the site generated traffic will represent as much as 95 percent of the traffic at the site access point. Lowering of the speed limit on Cold Spring Road south of Rose Valley Road and north of the site access should be considered to reduce the speed differential between through vehicles governed by the 55 mile per hour limit and turning vehicles below 30 miles per hour. Under these conditions the 85th percentile speed, which is the key indicator of actual operating speeds, will be below the vehicle turning speed. The length and exact location of the speed zone will be established by Sullivan County.

A field reconnaissance survey was done at the three unsignalized intersections for approaches anticipated to receive the majority of site traffic. Sight line surveys were made and photographs were taken of the key sight lines and are presented in Appendix P2. At all of these intersections, vehicles making left turns from the major street were well positioned in the intersection and slightly higher than the minor street and thus have better sight lines than the

minor street. Sight lines at the existing intersections looking to the left and right from the minor street were found to meet the required stopping sight distances. Appendix P2 Table 5 lists the sight distance measurements.

Rose Valley Road at Cold Spring Road has a sight line to the right partially blocked by vegetation. (Refer to Aerial 2 and Photos 2A and 2B in Appendix P2.) Although no additional sight distance is needed, the removal of trees closest to the road will improve safety and slightly improve the sight line. The tree to the left appears to be damaged. The trees to the right appear to have had one trunk topped already. This tree does not hinder the sight line to vehicles turning left into Rose Valley Road. It is not clear if these trees are in the County right-of-way. The speed limit in this area is 55 miles per hour.

At the intersection of Cold Spring Road and Waverly Avenue, Cold Spring Road is on a horizontal curve and near the vertical low point of a curve at the intersection of Waverly Avenue. The curve has a recommended speed of 30 miles per hour for the posted 40 mile per hour road. Waverly Avenue also is horizontally curved and rises to meet Cold Spring Road. Waverly Avenue has a STOP AHEAD sign and STOP signs on both sides of the Waverly Avenue approach to Cold Spring Road to increase drivers' awareness of the stop condition at this intersection. The sight line to the right is limited in part by a CHILDREN AT PLAY sign. The sight line to the left is limited by the horizontal curve. (Refer to Aerial 3 and Photos 3A and 3B in Appendix P2).

The northbound approach of Rose Valley Road to East Broadway (CR 173) was reviewed for sight distance. (Refer to Aerial 4 and Photos 4A, 4B and 4C in Appendix P2.) The Rose Valley Road intersection with CR 173 has very large curb radii resulting in a wide approach. There is also a paved area on the gas station frontage that might be used for occasional parking. The sight line to the right assuming no obstruction from a parked vehicle is nearly to the end of the bridge over US Route 17. Vehicles coming off of the bridge will have a clear sight line to left turning vehicles into Rose Valley Road. Sight distance to the left from Rose Valley Road is blocked by a slight rise in terrain on the interior of the curve. CR 173 drops slightly from Rose Valley Road and is curving. Left turning vehicles into Rose Valley Road have longer sight lines that are not impeded by the rise in terrain. The eastbound 40 mile per hour speed limit ends at Rose Valley Road and thus the sight distance to the right is based on 55 miles per hour.

#### **Emergency Access**

There are four emergency access points proposed onto St. Joseph's Road from the internal roadway network. These are not intended for general vehicular use but will be designed to allow emergency access to or from the property. Two of the emergency access drives are to the portion of the site north of St. Joseph's Road and two to the south. The emergency access drives are situated to provide one access to the northwest portion of the resort in Phase I, one to the southwest in Phase I, one to the northeast portion of the site in Phase II, and one to the southeast in Phase IV. This not only decreases the distance to an emergency access, it also will permit emergency vehicles to use two accesses to bypass a blockage on St. Joseph's Road or at the proposed tunnel.

In addition to the emergency accesses to the public road at St. Joseph's Road, most of the internal circulation system is designed with more than one route to any particular location in the resort that will allow emergency vehicles to navigate around a blockage within the development.

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#### Impact on Condition of Area Roads

As previously described, the condition of existing roads upon which site traffic will travel is generally fair. Most of the site traffic is anticipated to be non-trucks. Most of the site generated traffic will occur during the warmer months of the year, attracted to the resort for seasonal recreation and leisure activities. These characteristics of site traffic will reduce the potential for road damage during the winter freezing and thawing cycles that is difficult to repair until temperatures improve. Cold Spring Road, Rose Valley Road, and Waverly Avenue will see the highest increases in traffic volumes. See also the discussion on construction traffic.

#### Construction Traffic

The primary components of construction traffic are the construction vehicles arriving at the beginning of the construction period, trucks carrying materials onto the site, and daily trips of construction workers. Equipment storage areas will be identified on-site to reduce trips of construction equipment during the construction season. Project plans will be detailed to the extent that on-site earthwork will be balanced, with soil stockpile areas designated on site. The site roadways and infrastructure will be constructed in phases to reduce the intensity of construction. Truck access for construction activity will be possible from either Cold Spring Road at the main entrance location or St. Joseph's Road at the emergency access points, depending on the phase of construction and origin of the truck.

Throughout the construction process the NYSDOT list of posted and restricted bridges will need to be reviewed to ensure proper truck routing. The Thompson bridges are north of NYS Route 17 and therefore will not hinder truck movements between the site and NYS Route 17. Below is a listing of bridge restrictions currently in the area.

Table 3.8-6 Posted and Restricted Bridges						
Municipality	Bridge Identification Number	Posted Load	Bridge Carries	Feature Crossed	Location	Ownership
Forestburgh	3356570	15 tons	Mill Road	Black Brook	0.4 miles west of Forestburgh	County
Monticello		none				
Thompson	3357350	14 tons	Chalet Road	Kiamesha Creek	1.2 miles southeast of Kiamesha	County
Thompson	3357370	20 tons	River Road	Sheldrake Stream	2 miles north of Bridgeville	County
New York State Department of Transportation listing of Post and R-Rated Bridges August 2, 2009, http://ftp.dot.state.ny.us/ien/reports/postedbridges/posted.pdf.						

Most construction truck traffic will be routed to the main access on Cold Spring Road except for local contractors. As a result, it is expected that heavy construction truck traffic will not travel local roads to reach the site except Rose Valley Road. This should minimize road damage and limit impacts on the Town's roads resulting from construction vehicles. Local contractors will

generally use State and County roads to move their equipment except between the contractor's yard and the site. These contractors already use local roads to move equipment between their yards and job sites.

Construction workers typically arrive and depart a construction site prior to the peak hours of traffic as will the initial construction equipment vehicles. Trucks will bring construction materials (concrete, steel, wood, doors, windows) and remove the excess construction materials during the day. The grading plan will be designed to closely balance earthwork thereby avoiding movement of excess materials on- or off-site. The non-local construction traffic will primarily be routed via NYS Route 17 at exit 106 using CR 173A (East Broadway and Rose Valley Road), with local contractor traffic using NYS Route 42, Cold Spring Road, and Rose Valley Road.

# **3.8.8 Transportation Impacts**

Site traffic is anticipated to cause noticeable increases of traffic particularly on Cold Spring Road, Rose Valley Road, and Waverly Avenue during summer Friday and Sunday afternoons. These roads allow access from the site to the Broadway commercial center and access toward NYS Route 17. Nevertheless, level of service should remain adequate for studied intersections.

Cold Spring Road to the south is part of the shortest route toward New Jersey and thus is anticipated to see traffic increases as site residents arrive and leave for the weekend. Site area traffic will be the highest at the site access itself. This location is anticipated to need turn lanes as all project traffic will be turning at this location and affecting nearby vehicle speeds on Cold Spring Road. Evaluation for this need is recommended before Phase IV. A sight line survey determined that the available sight distances meet AASHTO stopping distance requirements for the posted speed along Cold Spring Road.

The Existing Condition of the NYS Route 42 intersection of Forestburgh Road and West Broadway is less than desirable in the existing condition and will likely worsen with development in the NYS Route 42 Forestburgh Road area. Traffic will seek alternate routes during summer peak hours. The Lost Lake Resort access is positioned away from St. Joseph's Road thereby routing less traffic westward to Route 42 and thus is not anticipated to contribute much traffic to this intersection.

The site could increase the demand on local taxi and limousine services on weekends and construction and maintenance services during the week as the site is developed.

# 3.8.9 Traffic Mitigation

It is recommended that when a turning movement into or out of the site reaches 150 vehicles in one hour the need for a turning lane be reviewed. This should be reduced to 100 vehicles per hour if subsequent large developments occur in the town that increases the through movements on Cold Spring Road past the site. To provide for this possible future mitigation, the project design provides adequate area along the project frontage and along the main entrance road to allow future road widening for turn lanes if determined to be needed. Where possible new utilities along the frontage should be located to avoid the need to move them in the future. In addition, as detailed project design continues, considerations for optimizing sight distances at Cold Spring Road will need to be detailed on the plans.

As the turning volumes increase at the site access the County will need to consider a speed reduction in this area. This will reduce the speed differential between the majority of vehicles turning into and out of the site and the through Cold Spring Road traffic.

The Applicant will fund up to six speed limit and/or speed warning signs prior to entering Phase IV, if determined to be needed by the County. The County could use these funds for purchase of such signs if needed in the section between Monticello and 1000 feet south of Rose Valley Road.

It is recommended that before Phase IV construction, the Applicant coordinate with the County to evaluate the then-existing traffic conditions. Intersection traffic counts will be submitted for its consideration. If needed, the Applicant will prepare a plan for turn lanes and any needed land transfers. The concept plan will be used to estimate a bond to ensure future turning lane improvements. These turning lane improvements are anticipated to be a second exiting lane, a right turn-in lane southbound, and a left turn lane northbound. Table 3.8-7 shows levels of service C or better with turning lane improvements for Sunday and a more than fifty percent reduction in delay for the site access on Friday.

Table 3.8-7           Mitigation Level of Service Summary All Conditions					
		Levels of Service (Delay in seconds per vehicle) Volume to Capacity Ratio			
	Lane Group	Summer Friday Summer Sunday P.M. Peak Hour Peak Hour			
Intersection Road	Approach Direction - Movement	Mitigation Mitigation			
Site Access and Cold Sp	ring Road (unsig	gnalized)			
Cold Spring Road	NB - L	A (8.1) 0.18	A (8.6) 0.18		
Site Access	EB - L	F (58.7) 0.91	C (20.3) 0.49		
	EB - R	A (9.1) 0.15	B (10.5) 0.39		
NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound.					
L = left, R= right, T = through, (e.g. WB-L = Westbound left).					
See Level of Service Summary Tables 1 and 2 (Appendix P3) for level of service without mitigation.					

Along both sides of the St. Joseph's Road right-of-way, a one hundred foot buffer is proposed to preserve existing vegetation on this rural roadway. The buffer will set the nearest property line for individual residential dwelling lots at least 100 feet from the St. Joseph's Road right-of-way. Grading within the buffer will be limited to accommodate utility work, and the emergency access roads and private road tunnel with approaches within the 100 feet. Areas of grading will be stabilized at completion of the construction. Areas cleared or disturbed for sight lines at emergency accesses will be appropriately revegetated.

A reduced speed limit is recommended to be posted on St. Joseph's Road. This speed would be more consistent with the rural nature of the existing roadway (physical condition, narrow width and short horizontal and vertical curves).







































