

### **3.4 Traffic and Transportation**

#### **3.4.1 Introduction**

This section of the DGEIS examines the current and future traffic into and out of the Village of Kiryas Joel relative to the proposed annexation consisting of approximately 507 acres from the Town of Monroe to the Village of Kiryas Joel.

Current traffic operating conditions based on the existing transportation network and traffic activities are referred to herein as the Existing Conditions. Future transportation operations are examined for the No Build Conditions (development in the study area without the annexation) and Build Conditions (development in the study area with the annexation) thus:

- “No Build” traffic is without annexation and with anticipated growth
- “Build” traffic is with annexation and with anticipated growth

The future conditions (No Build and Build) analyze traffic operations in order to make a direct comparison of the traffic associated specifically with the annexation. The No Build Condition is the future baseline upon which change in traffic is compared. The Build Condition represents traffic patterns that would result from development of the properties after being annexed. As explained in the Project Description there will not be additional traffic, dwelling units, or facilities from the annexation action itself. Additional traffic, dwelling units, and facilities will occur from the projected growth of the population in the study area regardless of annexation. The traffic will change as a result of the differences in construction of dwelling units and community facilities, their types, location, and density. These are induced changes to growth.

A 2025 Build scenario is discussed to put these changes in context with long range transportation development plans.

The transportation analysis is a projection into the future which is subject to numerous potential changes. This can be seen in the past studies where anticipated regional growth slowed, and new issues such as casinos have appeared. Concepts such as Smart Growth, active transportation design drawing on the connection to health, and new vehicle and facility design are redrawing the landscape of transportation. Thus the broad brush of long ranging planning will eventually assist in the later detailed plans to be developed for site specific developments and transportation facilities.

### Background Reports

A subregional transportation and land use study<sup>1</sup> was published in 2005 (completed in 2004) for the Orange County Department of Planning which projected traffic growth in the area including Kiryas Joel. Transportation conditions and improvements were recommended based on the expected traffic through 2020. This study was comprehensive and is Orange County's blueprint for the future transportation network in the region. Some of the improvements recommended in the study have already been completed and others are included on the County's current Transportation Improvement Program (TIP) for funding, encompassing a five year funding plan.

The Community Advisory Group/Technical Advisory Group for the *2005 Southeastern Orange County Traffic and Land Use Study* consisted of four county legislators, Orange County Department of Public Works commissioner, three towns (Blooming Grove, Monroe, and Woodbury), three villages (Harriman, Monroe, and Kiryas Joel), the Monroe-Woodbury School District, Mid-Hudson South Transportation Coordinating Committee, New York State (Department of Transportation, Police, and Thruway Authority), Metropolitan Transportation Authority Metro-North Railroad, Orange County Transportation Council, Orange County Citizen Foundation, and the Chelsea Group.

A series of transportation improvements, design studies, and other planning studies subsequent to 2005 have been based on recommendations of the Southeastern Orange County study.

### **3.4.2 Existing Network**

#### The Regional Network

The Village of Kiryas Joel is located in the Town of Monroe, Orange County, New York as shown in Figure 3.4-1.

Major state roads are located outside the boundaries of the Village of Kiryas Joel. These major roads (or road segments<sup>2</sup>) include the following:

- ◆ The New York State Thruway, Interstate-87,
- ◆ The Quickway (Future Interstate-86),
- ◆ US Route 6,
- ◆ NYS Route 208,
- ◆ NYS Route 32, and
- ◆ NYS Route 17.

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<sup>1</sup> AKRF, Inc., "Southeastern Orange County Traffic and Land Use Study", February 2005.

<sup>2</sup> Portions of the listed roads overlap each other, then depart in separate directions, such as the Quickway and NYS Route 17 so they are listed separately.

None of these major roads has direct access into Kiryas Joel although the Quickway follows the Village's southern boundary. US Route 6 and NYS Route 17 overlap the Quickway along this border.

All of these roads are described in more detail in the *Southeast Orange County Traffic and Land Use Study* in Appendix F4.1. See also Figure 2-1 for further regional context.

#### *County Roads*

There are three key Orange County roads in the area (see Figure 3.4-2). County Road (CR) 44 connects NYS Route 208 in Blooming Grove to NYS Route 32 in Woodbury. CR 44 (Seven Springs Mountain Road) passes through the northern part of Kiryas Joel.

CR 105 connects the Village of Monroe to Highland Mills in Woodbury. CR 105 runs through the southern corner of Kiryas Joel.

CR 64 (Dunderberg Road) connects CR 105 south of Kiryas Joel and NYS Route 32 to the east. CR 64 provides the most direct path to the Quickway interchange with the Thruway and Woodbury Common Premium Outlets (Woodbury Commons), a regional shopping destination. The northwestern-most part of CR 64 runs along the most southern tip of Kiryas Joel.

All of the County roads are two lane roads.

#### *The Local Road Network*

Figure 3.4-2 shows the road network in the vicinity of Kiryas Joel. The key local roadways that provide access to local destinations in the study area include the following:

- Larkin Drive
- Acres Road
- Forest Avenue
- Bakertown Road

Larkin Drive is the only key local road not in the Village of Kiryas Joel. Larkin Drive connects CR 105 at the south corner of the Village and NYS Route 17 to the east. At the intersection of Larkin Drive and NYS Route 17 there is a ramp onto US Route 6 eastbound. Larkin Drive also provides access to the Village's Kinder Park and the Harriman Business Park, which has numerous retail opportunities including Target, The Home Depot, Walmart, and other stores.

All the aforementioned roads are two lane Village streets.

Bakertown Road is a north-south road providing access to CR 105 and is the primary route toward Larkin Drive and CR 64 for accesses NYS Route 17, US Route 6, and the NYS Thruway.

Acres Road is an east-west route providing a northern connection in Kiryas Joel to Bakertown Road. Acres Road also connects directly with CR 105 for access north toward Highland Mills in Woodbury.

Forest Avenue provides a connection between Kiryas Joel and the Town of Monroe via a bridge over the Quickway. It is the only bridge over the Quickway between NYS Route 208 and CR 105. Forest Avenue is a route into the Village of Monroe and can be used as an alternative route to the US Route 208 interchange with the Quickway.

Village road intersections are mostly either two-way STOP-controlled or all-way STOP controlled. Bakertown Road at CR 105 is a key intersection. This three-way intersection was recently reconstructed. The CR 105 section that overlaps part of Bakertown Road is referred to herein as CR 105. Left and right turn lanes are provided from the STOP sign controlled southbound Bakertown Road. A left turn lane is provided on CR 105 onto Bakertown Road northbound.

Key signalized intersections are outside the Village at the Route 208 ramps with the Quickway, CR 64 at CR 105, and along Route 32/Route 17 from Dunderberg CR 64 to the US Route 6 ramps. These locations are important to providing access to and from the interstate system in the study area. Other important intersections include:

1. CR 44 and NYS Route 208 (Town of Monroe)
2. Schunemunk Road at NYS Route 208 and CR 105 (Village of Monroe)
3. Seven Springs Mountain Road at Mountain Road (proposed annexation from Town of Monroe)
4. Schunemunk Road at Forest Avenue north of the bridge over NYS Route 17 (Town of Monroe)

CR 44 (Mountain Road) and NYS Route 208 is a three-way intersection with STOP sign control on CR 44.

Schunemunk Road at NYS Route 208 and CR 105 are four-way signalized intersection with a single lane in each direction.

Seven Springs Mountain Road at Mountain Road forms three intersections as a large triangle with Seven Springs Road being the primary through movement. Each leg is a single lane in each direction.

Schunemunk Road at Forest Avenue north of the bridge over NYS Route 17 is a three way intersection with one lane in each direction. There is a STOP sign controlled northbound approach from the bridge.

The Exit 130 interchange between NYS Route 208 and the Quickway (NYS Route 17 and US Route 6) is composed of loop ramps on the east side of NYS Route 208. Right turns from and to NYS Route 208 are from channels outside the control of the signals handling left turns from and to NYS Route 208. The signal on the north side of the Quickway handles westbound Quickway traffic and on the south side provides movement for eastbound Quickway traffic. The signals are at "T" intersections with each leg being two-way with one lane in each direction.

The intersections of CR 105 with Larkin Drive has the same configuration as CR 105 and Dunderberg Road (CR 64). Both intersections are signal controlled. Both Larkin Drive and Dunderberg Road are on the east side of CR 105 and each has exclusive right and left turn lanes. CR 105 has a southbound left turn lane and a northbound right turn lane in addition to the through lanes at both intersections.

### **3.4.3 Existing Traffic**

Existing traffic patterns in Kiryas Joel reflect the culture of the residents of this community. Most Kiryas Joel residents do not drive from sundown Friday to sundown Saturday. Saturday traffic is lighter than most other communities where retail activity on Saturdays generate considerable amounts of traffic.

The *Southeastern Orange County Traffic and Land Use Study* examined Saturday and weekday commuter periods in the subregion. The NYS Route 32 and NYS Route 17 corridor (NYS Route 17 south of the Quickway) provides access to two major commercial centers, Woodbury Commons and Harriman Business Park. Woodbury Commons in particular experiences higher weekend traffic in November, December, and on certain holidays.

Machine counts of traffic on major County roads are maintained by Orange County and processed by the New York State Department of Transportation (Appendix F1). Table 3.4-1 shows peak hour and average annual daily traffic for midweek and Saturday at various locations. These indicate the daily Saturday traffic is less than daily weekday traffic and generally Saturday peak hour traffic is less than weekday peak hour traffic.

Table 3.4-1 Weekday Vs. Saturday Traffic <sup>6</sup>						
Location	Direction	Peak Hour Traffic			Average Daily Traffic	
		AM Peak <sup>4</sup>	PM Peak <sup>5</sup>	Saturday	Weekday	Saturday
CR 105						
Bakertown Road to CR 64 <sup>1</sup>	Northbound	274	491	284	6530	3418
	Southbound	346	398	242	5964	3203
	Total	620	889	526	12,494	6621
CR 44 Mountain Road						
Monroe town line to Seven Springs Mountain Road <sup>2</sup>	Eastbound	93	122	54	1415	718
	Westbound	79	96	45	1368	667
	Total	172	218	99	2783	1405
CR 64 Dunderberg Rd.						
CR 105 to Woodbury town line <sup>3</sup>	Eastbound	250	378	242	4827	2708
	Westbound	336	256	211	4340	2658
	Total	586	634	453	9167	5366
<sup>1</sup> Orange County Count Station <sup>6</sup> 8184 see Appendix F1.						
<sup>2</sup> Orange County Count Station <sup>6</sup> 8086 see Appendix F1.						
<sup>3</sup> Orange County Count Station <sup>6</sup> 8119 see Appendix F1.						
<sup>4</sup> Based on average weekday hours (axle factored, Monday to Friday 8 a.m. to 9 a.m.).						
<sup>5</sup> Based on average weekday hours (axle factored, Monday to Thursday afternoons).						
<sup>6</sup> County data Traffic Count Hourly Reports analysis run by the New York State Department of Transportation.						

Traffic counts were also taken for purposes of this DGEIS to ascertain the amount of traffic entering and leaving Kiryas Joel in 2014 at four key locations.

1. Bakertown Road
2. Acres Road
3. Forest Avenue
4. Seven Springs Mountain Road (CR 44)

Counts at these locations capture the primary routes of travel with either an origin or destination in the Village of Kiryas Joel or passing through the Village of Kiryas Joel. (See Appendix F2, Count Location Map.)

These counts do not include trips passing around or bypassing the Village (bypass trips) or trips originating and terminating within the Village (internal trips). Trips passing through the Village of Kiryas Joel on these roads were counted. Machine traffic counts were taken for the mid-weekday (Tuesday, January 28, 2014, through Thursday, January 30, 2014) and weekend (Saturday, February 1, 2014 and Sunday, February 2,

2014) and are shown on Figures 3.4-3 to 3.4-6. The entrances to the Village have very low Saturday traffic compared to either Sunday or normal mid-week commuter traffic.

Generally, weekday peak traffic occurred between 8 a.m. and 10 a.m. and between 5 p.m. and 6:30 p.m. These are typical commuter peaks found throughout the region. Bakertown peaked earlier, between 2:30 p.m. and 4:00 p.m. This occurred for all three midweek days. Since Bakertown Road is a primary route toward New York City, this could relate to people that left early in the morning returning just prior to normal commuter peak in combination with retail traffic to Woodbury Commons, Harriman Business Park, and other nearby retail shopping opportunities.

The Jewish Sabbath begins Friday at sundown. Figures 3.4-3 and 3.4-6 show Friday traffic with three distinctive features. There is a normal morning peak spike in traffic. There is a midday peak representing both commuters and shopping before the Sabbath. The peak declines and then sharply drops as the Sabbath approaches, falling below Sunday traffic. It flattens slightly during the standard commuter peaks possibly as a result of through commuter traffic, before declining again. Thus the Friday traffic as Sabbath approaches is one of the few times weekday traffic is below weekend traffic.

The Saturday peak traffic occurs late, falling between 8:00 p.m. and 10:00 p.m. Sunset was after 7 p.m. on Saturday, February 1, 2014. With the Jewish Sabbath ending at sunset, Village residents resume driving after sunset. Thus, while most of Saturday has very low traffic, it spikes after sunset on Saturday. (There are 75 days per year including Saturdays when the local population does not drive in observance of Jewish holidays. A similar peak hour shift would be expected on these days.) CR 44 has the highest portion of Saturday trips. The Saturday traffic is a relative indicator of the amount of traffic traveling through Kiryas Joel on the four key roads.

Sunday traffic is much higher than Saturday traffic, but lower than weekday traffic. Sunday does not have the distinctive morning and afternoon commuter traffic peaks. Figures 3.4-3 to 3.4-6 show Sunday traffic in comparison to other days of the week. Acres Road Sunday traffic is relatively low and sharp changes are suspected to be event-related traffic.

While the Southeastern Orange County study centered on midweek peak commuting periods and Saturday midday peak shopping period, the Saturday midday period for the study area is not affected by Village of Kiryas Joel residents.

The counts in Table 3.4-2 indicate the traffic levels for the a.m. and p.m. mid-weekday periods are of the same magnitude typical for commutation areas.

Table 3.4-2 Weekday Traffic Counts		
	2014 Weekday Count <sup>1</sup>	
Locations	AM Peak Hour	PM Peak Hour
Bakertown Road	544	509
Acres Road	75	72
Forest Avenue	422	432
Seven Springs Mountain Road	205	192
Total	1246	1205

<sup>1</sup> Counts from 2014, see Appendix F2 Location Map.

*Modal Split*

Car ownership of families residing in Kiryas Joel is much lower than a typical American Metropolitan Statistical Area (AMSA). The number of vehicles per household in Kiryas Joel is 0.47 (US Census 2000, SF3 Table H46) whereas the typical AMSA vehicle per household is 1.65, three times higher (US Census Bureau American Community Survey 2012, Table CP04).

In Kiryas Joel, the women residents do not drive. There are 3,437 households with a total number of workers of 3,674, or 1.07 workers per household (2006-2010 ACS Table B19001 and B23001). With only one vehicle per two households, over half of journey-to-work trips are by transit, carpooling, or walking as shown in Appendix F3, Table F3-1. Taxis and car services are also common in Kiryas Joel and are efficient modes of transportation, reducing parking needs and adding to the efficiencies of the local transportation network. There are 12 taxi/car service companies operating in the Village of Kiryas Joel.

Bus routes have specific stops and schedules while taxis, car services, ride sharing, and the Monroe Dial-a-bus provide more flexible time and location services. General public transit is not used to replace school bus transportation for students.

*Pedestrians*

The Village of Kiryas Joel is highly interconnected with sidewalks on most Village streets (see Figure 3.4-7). Certain key connecting roads such as Bakertown Road, Acres Road, Mountain Road, and CR 44 have no or only limited sidewalks. However, given the size of the existing community at 1.1 square miles, all of the Village’s shopping, places of work, and government, social, and recreational facilities are within walking distance of its residences.



The mean travel time to work for those that use taxi or walking was 11.6 minutes (2006-2010 ACS Table SO802 and CO8136) reflecting a high degree of local employment. Pedestrian facilities do not extend into neighboring community commercial areas outside Kiryas Joel. The relative distances suggest that pedestrian trips to work are almost exclusively internal Village trips. The Village of Kiryas Joel Department of Public Works (DPW) routinely clears the sidewalks of snow allowing for year around use.

Appendix F3, Table F3-2, shows that the numbers of jobs and workers in Kiryas Joel are increasing at about the same level. The commute to work by walking or working at home together account for nearly a third of work trips (see Appendix F3, Table F3-1).

#### *Bus Transportation and Park and Rides*

Public bus transportation and the use of Park and Ride lots is strong in Kiryas Joel. There are six regular bus routes, including four operated by the Village with local routes within the Village of Kiryas Joel and two with destinations in Monroe and Woodbury. Village buses operate six days per week and reportedly provide approximately 100,000 trips per year. Figure 3.4-8 shows local bus routing.<sup>3</sup> Monroe Bus Corporation provides daily commuter and off-peak service between New York City and the Village of Kiryas Joel. The main pick up and drop off points in the Village are at its Park and Ride lots.

USA Coach buses stop regularly at Park and Ride lots for passenger pick up. The largest lots can be found in the Town of Monroe. There are two parking lots at Orange and Rockland Road that have the largest number of parking spaces, with access from NYS Route 208. Three Park and Ride lots were constructed by the Village within Kiryas Joel with capacity for approximately 200 cars -- one at Bakertown Road and CR 105 and two off of Forest Road near the Kiryas Joel Shopping Center.

Appendix F3, Table F3-3 shows the size of Park and Ride facilities. Figure 3.4-8 shows the location of railroad and the mentioned Park and Ride facilities.

Metro North Station in Harriman is the closest commuter rail station. The Harriman station has 985 parking spaces operated by LAZ Parking and is 69 percent utilized (approved Orange County Transportation Council Long Range Transportation Plan, December 2011). See Figure 3.4-8 for railroad station location.

The longest journey-to-work trips are by public transit averaging 52.7 minutes. These longer trips include destinations in New York City.

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<sup>3</sup> [http://www.transitorange.info/pdf/Monroe\\_map.pdf](http://www.transitorange.info/pdf/Monroe_map.pdf)

*Midday Trips*

With many vehicles driven to work destinations, carpool lots, or the train station, midday trips in the Village are accomplished mostly by walking, taxi, car service, and bus.

The high population densities within the Village support the use of mass transit, car services, and sidewalks as primary transportation modes. Local neighborhood shopping and employment opportunities support midday mobility.

*Peak Hour Trips*

Table 3.4-3 shows traffic originating or ending in the Village of Kiryas Joel along four key routes, based on the traffic counts collected in January 2014. CR 44 serves as a connection between southern Woodbury and NYS Route 208 and thus has a higher percentage of through traffic (lower percentage of internal-external Village of Kiryas Joel traffic Table 3.4-3)

<b>Table 3.4-3 Internal to External Traffic</b>					
	<b>Weekday AM Peak Hour</b>		<b>Weekday PM Peak Hour</b>		
<b>Locations</b>	<b>2014 Count <sup>1</sup></b>	<b>Kiryas Joel External <sup>2</sup></b>	<b>2014 Count <sup>1</sup></b>	<b>Kiryas Joel External <sup>2</sup></b>	<b>External Percentage <sup>3</sup></b>
Bakertown Road	544	462	509	433	85%
Acres Road	75	53	72	50	70%
Forest Avenue	422	359	432	367	85%
Seven Springs Mountain Road	205	82	192	77	40%
<b>Total</b>	<b>1246</b>	<b>956</b>	<b>1205</b>	<b>927</b>	<b>77% <sup>4</sup></b>
<sup>1</sup> Counts from 2014 Appendix F-4 Location Map.					
<sup>2</sup> Traffic with origin or destination in Kiryas Joel based on External Percentage <sup>3</sup>					
<sup>3</sup> Computed based on Saturday traffic being pass through traffic as a percentage of Sunday traffic for the day ending 5 p.m.					
<sup>4</sup> Based on overall volumes 23% of the traffic is passing through the Village of Kiryas Joel.					

*Trip Generating Characteristics of Kiryas Joel*

Trip generation for the Village was computed using the ITE publication Trip Generation<sup>4</sup>. Projected trip rates are shown in Table 3.4-4. Based on modal split these volumes were adjusted to estimate total trips to and from the Village as shown in Table 3.4-5.

<sup>4</sup> Institute of Transportation Engineers, Trip Generation, 9th edition, Washington D.C., 2012.

<b>Table 3.4-4 Trip Generation</b>						
	<b>Weekday AM Peak Hour</b>			<b>Weekday PM Peak Hour</b>		
<b>Dwelling Units in The Village of Kiryas Joel<sup>1</sup></b>	<b>In<sup>4</sup></b>	<b>Out<sup>4</sup></b>	<b>Total</b>	<b>In<sup>4</sup></b>	<b>Out<sup>4</sup></b>	<b>Total<sup>1</sup></b>
Single Family 123 dwelling units	29	86	115	95	56	151
Condo <sup>2</sup> 1060 dwelling units	58	283	341	279	138	417
Apartment <sup>3</sup> 2903 dwelling units	284	1141	1425	1048	566	1614
<b>Total 4086 dwelling units, Traffic Unadjusted</b>	<b>371</b>	<b>1510</b>	<b>1881</b>	<b>1422</b>	<b>760</b>	<b>2182</b>
<sup>1</sup> Number of dwelling by type based on 2010 Census distribution for 4086 units (2014). Traffic from an additional 27 single family units in area to be annexed included in trips generated and not shown in dwelling unit numbers.						
<sup>2</sup> Owner occupied attached.						
<sup>3</sup> Rental attached dwelling units.						
<sup>4</sup> See Appendix F3 Table F3-4 Trip Generation Rates Existing Condition.						

<b>Table 3.4-5 Vehicle Trip Generation with Modal Split</b>						
	<b>Weekday AM Peak Hour</b>			<b>Weekday PM Peak Hour</b>		
<b>Dwelling Units in The Village of Kiryas Joel<sup>1</sup></b>	<b>In</b>	<b>Out</b>	<b>Total</b>	<b>In</b>	<b>Out</b>	<b>Total</b>
Total 4086 dwelling units, Traffic Unadjusted	371	1510	1881	1422	760	2182
<b>Vehicle Trips adjusted for modal split</b>	<b>186</b>	<b>755</b>	<b>941</b>	<b>604</b>	<b>323</b>	<b>927</b>
<sup>1</sup> Adjusted vehicle trips represents a reduction based on modal split (walkers, carpooling, public transit), and internal trips.. The relative adjusts 0.50 in the a.m. peak and 0.425 in the p.m. peak.						

Village of Kiryas Joel trips based on Trip Generation were compared to the internal/external counts. As shown in Table 3.4-6 the trip generation numbers are within five percent of the counts and thus are a reasonable estimator of trips from the Village of Kiryas Joel.

Table 3.4-6 Internal-External Trip Comparison		
Method of Analysis	Weekday AM Peak	Weekday PM Peak
Generated Trips Adjusted for Modal Split <sup>1</sup>	941	927
Total Internal-External from Counts <sup>2</sup>	956	927
Percentage Difference Trip Generation Estimate of Actual Counts	-2%	+0%
<sup>1</sup> From Table 3.4-5.		
<sup>2</sup> From Table 3.4-3.		

### 3.4.4 Future Traffic Without Annexation

#### No Build Traffic (Anticipated growth without annexation)

Typically, the traffic impact of a proposed action is determined by comparing projected future traffic conditions without project traffic (No Build) to the traffic conditions with project-generated traffic in the Build Year. In this case, the anticipated change in conditions resulting from the annexation action will be a redistribution of the traffic that will occur from the natural growth of the population and change in density in the study area. The Build Year for this study is 2025.

The No-Build Condition establishes a future baseline condition projected from existing traffic count data. In addition to existing counts, the No-Build Condition accounts for a number of predictable factors anticipated up to the build year: (1) improvements in the local road network that are planned or underway; (2) traffic from general population growth in the region; and (3) traffic from identified major development projects in the project vicinity. In this case the No-Build Condition anticipates the area's population growth and no annexation.

#### *Infrastructure Projects*

The County and State in cooperation with the local municipalities conducted a regional transportation study<sup>5</sup>, developing transportation improvements to meet the future needs and has continued to monitor growth and individual projects. The *Southeastern Orange County Traffic and Land Use Study* laid out various development and infrastructure improvement scenarios. The recommended development scenario was called the "Village Center" Scenario. A series of improvements were outlined including high feasibility, early action items mid-level feasibility, low feasibility, and soft (management and planning) initiatives.

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<sup>5</sup> AKRF, Inc., Southeastern Orange County Traffic and Land Use Study, February 2005.

Improvements were incorporated into the County's long range transportation plan<sup>6</sup>.

A third study examined Route 17 in Sullivan and Orange counties, making the following recommendations:

Highlights of final recommendations in the study include:

- Add a general use third lane, in each direction, from Interstate 87 in Harriman to just west of Middletown, Orange County.
- Improve key interchanges in Orange and Sullivan counties.
- Provide new and expanded park & ride lots at strategic locations in Orange and Sullivan counties.
- Recommend provisions for future transit.<sup>7</sup>

The Orange County Transportation Council's Transportation Improvement Program (TIP) identifies and tracks transportation projects over a five year program period. Some projects have been completed as shown in Table 3.4-7. Within the context of this traffic study, Table 3.4-8 shows planned area projects and their status. Since the TIP tracks short range improvements, other improvement projects will be added in subsequent TIPs within the time frame of the anticipated development of the study area. The projects in the TIP are based on the County long range plan, NYS Route 17 corridor study, and the southeast county area study (Appendix F4, Reports).

The expansion of Route 17 and nearby interchanges is unlikely to be completed in the next ten years, however, traffic will increase in these areas prior to the implementation of improvements.

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<sup>6</sup> Orange County Transportation Council, Long Range Transportation Plan 2011-2040, December 2011.

<sup>7</sup> HDR, et.al., Final Route 17 Transportation Corridor Study, Sullivan and Orange Counties, Prepared for New York State Department of Transportation, May 2013. <https://www.dot.ny.gov/rt17corridor> Accessed March 25, 2014.

Table 3.4-7 Recently Completed TIP and Other Projects	
Project	Status
Additional Capacity on Route 17	Route 17/I-86 Transportation Study to study need for capacity Improvements in the Route 17/I-86 Corridor. Complete <sup>2</sup>
Forest Street Bridge	Forest Street Bridge over Route 17&6 PIN 8006.98. Complete
Park and Ride lot with improved bus scheduling	Kiryas Joel Park and Ride Lot PIN 8759.16. Complete
Realignment of curve at Bakertown Road and CR 105	Complete
New Traffic Signal at the intersection of CR 105 and Dunderberg Road	Complete
Enhanced Pedestrian Facilities, Kiryas Joel <sup>1</sup>	PIN 8761.00, 8759.84, 8759.49. Complete
<sup>1</sup> The Orange County Transportation Council's Transportation Improvement Program 2011 to 2015 (June 2011).	
<sup>2</sup> HDR, Final Route 17 Transportation Corridor Study, Sullivan and Orange Counties (NYS DOT), May 2013.	

<b>Table 3.4-8 TIP and Other Planned Projects</b>	
<b>Project</b>	<b>Status</b>
Route 32 Loop Ramp To Route 17	PIN 8006.96 Route 17 upgrade to I-86 Exit 130A to exit 131 adding ramp from Route 32 southbound to Route 17 eastbound Towns of Woodbury and Monroe <sup>1,4</sup>
Additional Capacity on Route 17	Route 17/I-86 Transportation Study to study need for capacity Improvements in the Route 17/I-86 Corridor complete <sup>6</sup> future PIN 8006.95 and Stage 2 PIN 8006.84 <sup>4</sup>
Larkin Drive West (Extension from NYS Route 208 to CR 105)	Right-of-way acquisition programmed PIN 8759.23. <sup>2,3,4,10</sup>
Larkin Drive West (Extension)	Design Phase (Orange County project PIN 8759.23 <sup>9</sup>
Kiryas Joel Roadway and Pedestrian Improvements	Designed <sup>5</sup> Elements programmed for construction <sup>3</sup> PIN 8759.65 <sup>4</sup> and 8780.20
Route 208 at Orange & Rockland Lakes Road Intersection reconfiguration	Programmed PIN 8487.45 (improves route to Park & Ride lots) <sup>3,4</sup>
Monroe Lot A Park & Ride improvements	Programmed PIN 8823.39 <sup>3,4</sup>
Monroe Lot B Park & Ride improvements	Programmed PIN 8823.40 <sup>3,4</sup>
Orange County Park & Ride Expansion	Programmed PIN 8823 47 <sup>7</sup>
Parking Facility for Buses and other improvements	Programmed PIN 8TR O60 <sup>3</sup>
Monroe Bus Corp. Storage Facility	Programmed PIN 8TR O61 <sup>3</sup>
Park and Ride lot, Phase II, Bakertown Road	Planned by Village of Kiryas Joel <sup>8</sup>
Emergency Connector Road - Rimenev Court to Meron Drive	Under construction by Village of Kiryas Joel <sup>8</sup>
<sup>1</sup> Orange County Transportation Council, Long Range Transportation Plan 2011-2040, December 2011.	
<sup>2</sup> The Orange County Transportation Council's Transportation Improvement Program 2014 to 2018 (March 2014).	
<sup>3</sup> The Orange County Transportation Council's Transportation Improvement Program 2014 to 2018 (October 2014).	
<sup>4</sup> <a href="https://www.dot.ny.gov/regional-offices/region8/projects/rt17-i86-ex131-stg1">https://www.dot.ny.gov/regional-offices/region8/projects/rt17-i86-ex131-stg1</a>	
<sup>5</sup> New York State Department of Transportation, Final Design Report P.I.N. 8759.65 and 8780.20 Kiryas Joel Roadway and Pedestrian Improvements Village of Kiryas Joel, Orange County, July 2013.	
<sup>6</sup> HDR, Final Route 17 Transportation Corridor Study, Sullivan and Orange Counties (NYS DOT), May 2013.	
<sup>7</sup> Locations to be determined.	
<sup>8</sup> Village Administrator, December 2014.	
<sup>9</sup> See Appendix C, Chris Viebrook, P.E., Orange County Department of Public Works, letter to Town of Monroe Planning Board, October 31, 2014.	
<sup>10</sup> WSP - Sells, "Larkin Drive West (CR 105 to NYS Route 208) PIN 8759.23 Establishing Right-of-Way and Preliminary Design", SEOC Traffic Task Force, Orange County, October 11, 2011, power point.	

*Background Growth - Various Studies*

Traffic in the study area is partially insulated from regional north-south traffic by the New York State Thruway and east-west regional growth by the Quickway (US Route 6 and NYS Route 17, proposed Interstate 86).

The *Southeastern Orange County Traffic and Land Use Study* evaluates growth to year 2020. Projections of the *Southeastern* study used 170 dwelling units per year as the anticipated growth for Kiryas Joel through 2020. Actual Census data listed in Table 3.4-9 show that over the last ten-year period the number of dwellings in the Village has grown by 120 per year from 2000 to 2009. Table 3.4-9 shows that prior to the Village forming, growth was low. The Village incorporation began a period of increasing rate of growth through 2009.

<b>Table 3.4-9 Dwelling Units Built in the Study Area</b>		
<b>Time Period</b>	<b>Dwelling Units</b>	
	<b>Dwelling Units Built<sup>1</sup></b>	<b>Annual Growth (Dwelling Units)</b>
Pre 1939	37	---
1940-1949	6	0.6
1950-1959	78	7.8
1960-1969	66	6.6
1970-1979 (Village formed 1977)	567	56.7
1980-1989	642	64.2
1990-1999	1044	104.4
2000-2009	1203	120.3
2010-2012	135	45

<sup>1</sup> 2008-2012 American Community Survey 5-Year Estimates, US Census Bureau, Selected Housing Characteristics, Table DP-04.

Historical data indicates growth of 120 to 150 units per year as noted below:

- 120 units per year (Table 3.4-8, American Community Survey)
- 140 units per year (Table 3.4-9, 2000 and 2010 Census)
- 150 housing permits per year (Table 3.4-9, KJ Business Plan Supplement and KJ Building Department)

The effective overall housing growth in traffic for this study is projected equivalent to 142 units per year from 2010 to 2025. (This figure discounts an anomaly in the 2010-2012



number of units reported in the ACS.) The *Southeastern Orange County* study (projecting 170 units per year) used Traffic Analysis Zones (TAZ) in compiling its data to evaluate several scenarios. The zones represented geographical areas based on the traffic network for the purposes of the County analysis. The zones encompassing Kiryas Joel and small parts of Monroe and Woodbury were projected to have 8,148 dwelling units and 409,832 square feet of commercial/non-residential supporting development for its 2020 Village Center Scenario.

Similarly, the future scenario for the study area established in this DGEIS projects 7,911 dwelling units (4,086 existing and 3,825 growth) and a complement of supporting commercial development by 2025. Table 3.4-10 shows the future projected growth to 2025 of similar magnitude to what was projected for 2020 in the *Southeastern* study.

Table 3.4-10 Dwelling Units in the Study Area			
Source	Dwelling Units		
	Number	Growth from 2010 except as noted	Annual Growth <sup>1</sup>
<b>Short Term Growth</b>			
Census 2000 <sup>2</sup>	2273	---	---
Census 2010 and derived growth from 2000	3666 <sup>3</sup>	1393	140 <sup>5</sup>
Housing Permits 2011 to 2013 <sup>4</sup>	---	450 <sup>4</sup>	150
SE Orange County Study <sup>5</sup>			170
Existing Units (2014) in 2014 DGEIS for Annexation	4086	420	110
<b>Long Term Growth</b>			
Projected Units 2020, SE Orange County Study (Village Center Scenario) <sup>7</sup>	7948	4282	430
Projected Units 2025, in 2014 DGEIS for Annexation	7911	4245 <sup>8</sup>	140 <sup>6</sup>
<sup>1</sup> Figures rounded up to nearest ten dwelling units.			
<sup>2</sup> Household Units from Census 2000 SF 3 Table P10.			
<sup>3</sup> Household Units from Census 2010 Table QT-P11.			
<sup>4</sup> Housing permits does not account for dwelling units demolished, destroyed, or yet to be constructed whereas Census provides information on actual units. 2011 building permits for new units: 125 and 2012 building permits for new units: 211. Data from KJ Business Plan Supplement, Appendix S5. 2013 building permits for dwelling units: 114. Data from the KJ Building Department.			
<sup>5</sup> Source: Southeastern Orange County Traffic and Land Use Study. Building Permits projected for growth estimate based on 3 year average from Orange County Department of Planning and US Census Bureau.			
<sup>6</sup> Traffic equivalent dwelling units based on adjustments for modal split and internal circulation for annual growth over 15 years of 280 dwelling units.			
<sup>7</sup> Recommendations (page 5-16) and projections from Southeastern Orange County Traffic and Land Use Study less 200 units in the TAZs not in Village area.			
<sup>8</sup> From DGEIS 2014 projection of 4,086 dwelling units, a growth of 3825 dwelling units.			

### *Study Area Background Growth*

This DGEIS reviews growth in the study area projected to 2025. As described in the Project Description, future development in the study area is anticipated to be 3,825 dwelling units. For the purpose of the traffic analysis, the 507-acre annexation territory is evaluated in two areas: 164 acres in the north and east of the Village and 343 acres to the west of the Village. Without Annexation, the distribution is anticipated to be 375 units in the 164 acres and 1,056 units in the 343 acres. Without Annexation, 2,394 dwelling units would be added to the Village of Kiryas Joel.

Table 3.4-11 shows the modal split of the Village and the Town annexation lands based on US Census information (2006-2012 ACS). A future modal split assigned to the annexation area is based on Harriman Village due to its lower density than the Village of Kiryas Joel. Harriman has better access to regional bus transit and a railroad station than is provided in the annexation lands and is conservatively low in anticipating vehicular traffic volumes. Commercial development in support of growing residential needs is anticipated to continue the existing balance of truck and vehicular traffic along with the proportion of internal trips with such commercial destinations. Truck-centric land uses such as heavy industrial and large warehousing is not anticipated in this area, rather would be likely to locate in industrial parks along the Quickway, Interstate 84, and Steward Airport.

<b>Table 3.4-11 Mode of Transportation To Work</b>		
<b>Mode of Travel</b>	<b>Village of Kiryas Joel</b>	<b>Monroe Annexation Area*</b>
Drive Alone	29%	63%
Carpool	15%	5%
Public Transit	24%	19%
Walk	26%	5%
Bicycle	0%	1%
Other (Taxi, Motorcycle)	0%	2%
Work At Home	6%	4%
* Based on the Village of Harriman. Source: US Census American Community Survey.		

Trip generation data published by the Institute of Transportation Engineers (ITE)<sup>8</sup> and modified based on existing counts and modal split is used for this analysis. Table 3.4-12 shows the anticipated trips generated from each area.

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<sup>8</sup> Institute of Transportation Engineers, *Trip Generation, 9th Edition*, Washington D.C., 2012.

<b>Table 3.4-12 Trip Generation without Annexation Summary</b>						
	<b>Weekday AM Peak Hour</b>			<b>Weekday PM Peak Hour</b>		
	<b>In<sup>1</sup></b>	<b>Out<sup>1</sup></b>	<b>Total<sup>1</sup></b>	<b>In<sup>1</sup></b>	<b>Out<sup>1</sup></b>	<b>Total<sup>1</sup></b>
Vehicle Trips adjusted for modal split Kiryas Joel 2394 dwelling units	105	436	541	347	183	530
Vehicle Trips adjusted for modal split Monroe 164 acres 375 dwelling units	27	115	142	112	58	170
Vehicle Trips adjusted for modal split Monroe 343 acres 1056 dwelling units	71	302	373	286	151	437
<b>Total 3825 dwelling units</b>	<b>203</b>	<b>853</b>	<b>1056</b>	<b>745</b>	<b>392</b>	<b>1137</b>
<sup>1</sup> See Appendix F, Table F3-5, Trip Generation Rates and Table F3-6 for trips.						

The background traffic growth rate used in this traffic study is one percent per year, and has been applied to through traffic. For this study, the 27 existing homes in the annexation area are presumed to remain as part of the existing traffic, resulting in slightly more conservative future traffic volumes.

The background growth traffic and traffic generated by other identified developments in the vicinity of the subject territory are used to estimate the No-Build traffic volumes. The No-Build traffic volumes represent future traffic with anticipated growth and without annexation and are the benchmark against which potential Build traffic volumes can be measured. Below is the discussion of traffic anticipated to be generated by other area projects.

The 2025 no annexation traffic volumes are presented graphically in Figures 3.4-9 and 3.4-10.

*Other Area Projects*

Two potential major projects have not been quantitatively evaluated in this study since their traffic would pass by the study area. The State of New York made an announcement in December 2014 concerning the potential siting of a casino in Thompson, Sullivan County.<sup>9,10</sup> The casino project was not considered in the *Southeastern Orange County Traffic and Land Use Study*. The Thompson location would increase Thruway traffic at least up to the Harriman Exit east of the study area and would result in significant additional traffic on the Quickway.

<sup>9</sup> <http://www.gaming.ny.gov/pdf/GFLB%20Resolution%20as%20adopted%20December%2017%202014.pdf>; <http://www.gaming.ny.gov/pdf/12.17.14.GFLBSelection.pdf>

<sup>10</sup> See also <http://www.gaming.ny.gov/gaming/montreign.php>

Casino projects will generate sufficient traffic such that they will require their own project-specific traffic studies and project-specific mitigation. A Sullivan County casino may require specific improvements to the Quickway. Typically such traffic study areas and mitigation focus on the areas near the casino as was done for the casino planned in Thompson NY.<sup>11</sup> A major interchange improvement was completed as part of the recent upgrading of the Quickway at NYS Route 42 and in anticipation of growth in the area near the proposed Sullivan County casino. Peak casino related travel times are anticipated to be late Friday, and Sunday afternoon. During part of the year the late Friday traffic will occur after sunset when most Kiryas Joel traffic is already off the network.

Project-specific approvals, including extensive environmental reviews, and finally construction make opening of the mentioned casino unlikely to be sooner than 2017. The additional traffic on the Thruway and the Quickway when a casino opens would pass by the study area with little if any effect on local traffic. Since the Village of Kiryas Joel is off the state highway system and casino traffic is anticipated to pass by the Village and not through it, the traffic is not considered further in this transportation analysis.

The second major development is Woodbury Commons which has an ongoing expansion program.<sup>12</sup> Woodbury Commons is a major component of Saturday traffic near the Quickway interchange with NYS Route 32. However, this Saturday traffic does not compete with Kiryas Joel traffic. While the Woodbury Commons expansion may attract some additional study area residents, the bulk of its traffic passes by on the Quickway or exits before reaching Kiryas Joel.

Project-specific plans for future casinos and Woodbury Common future expansions would need to incorporate projected Kiryas Joel traffic into their reviews and evaluations.

### **3.4.5 Future Traffic with 507-Acre Annexation**

#### *Description of Primary Study Area Access Points*

The four aforementioned roads -- CR 44, Bakertown Road, Forest Avenue, and Acres Road -- will be the primary roads used by new traffic related to the annexation. These roads provide access toward the Quickway, the Thruway, park and ride lots, and the nearest train station.

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<sup>11</sup>Saccardi & Schiff, Inc., *Concord Resort GDEIS*, Aug 2006.

<sup>12</sup> Information on the most recent plans is available at <http://www.woodbury-commons.com/news/expansion-enhancement-plans-woodbury-commons-outlet/>.

*Trip Generation Comparison*

With annexation, all 3,825 units are projected to be constructed in the proposed annexation territory. The resulting density in the annexation lands is sufficient to support a similar level of journey-to-work modal split and a similar level of business development to what now exists in Kiryas Joel.

Appendix F, Table F3-7 provides trip generation rates applicable to the With Annexation scenario. Table F3-8 below shows the anticipated trips generated from the annexed lands. Table 3.4-13 shows the anticipated additional trips with origins or destinations in the expanded Village of Kiryas Joel.

<b>Table 3.4-13 Internal-External Trip Generation with 507 Acre Annexation Summary</b>						
	<b>Weekday AM Peak Hour</b>			<b>Weekday PM Peak Hour</b>		
	<b>In<sup>1</sup></b>	<b>Out<sup>1</sup></b>	<b>Total<sup>1</sup></b>	<b>In<sup>1</sup></b>	<b>Out<sup>1</sup></b>	<b>Total<sup>1</sup></b>
Vehicle Trips adjusted for modal split, Kiryas Joel, 0 dwelling units	0	0	0	0	0	0
Vehicle Trips adjusted for modal split, Monroe, 164 acres, 1001 dwelling units	46	191	237	154	81	235
Vehicle Trips adjusted for modal split, Monroe, 343 acres, 2824 dwelling units	122	511	633	405	214	619
<b>Total 3825 dwelling units</b>	<b>168</b>	<b>702</b>	<b>870</b>	<b>559</b>	<b>295</b>	<b>854</b>
<sup>1</sup> See Appendix F, Table F3-7, Trip Generation Rates, and Table F3- 8, Trip Generation Summary.						

Overall, the proposed annexation compared to no annexation is anticipated to result in a reduction of 18 to 25 percent in the growth peak hour trips into and out of Kiryas Joel as shown in Table 3.4-14. Within the context of these volumes, the number of trips generated is effectively reduced by developing within the annexation territory.

Table 3.4-14 Trip Generation Comparison - 507 Acre Scenario						
Condition	Weekday AM Peak Hour			Weekday PM Peak Hour		
	In	Out	Total	In	Out	Total
With Annexation <sup>1</sup>	168	702	870	559	295	854
Without Annexation <sup>2</sup>	203	853	1056	745	392	1137
<b>Difference</b>	<b>-35</b>	<b>-151</b>	<b>-186</b> <b>(-18%)</b>	<b>-186</b>	<b>-97</b>	<b>-283</b> <b>(-25%)</b>
<sup>1</sup> See Table 3.4-13.						
<sup>2</sup> See Table 3.4-12.						

The distribution of site generated trips is shown in Figures 3.4-11 and 3.4-12 for the a.m. and p.m. peaks, respectively. As the annexation lands border the west, north, and east edge of the Village of Kiryas Joel, the distribution of traffic in either scenario will be similar.

As with No Annexation, commercial development is anticipated to grow in step with the growing residential needs, generally comprised of the existing balance of truck and vehicle traffic along with a similar proportion of internal trips with commercial destinations. Truck-centric land uses such as heavy industry and large warehousing is not anticipated in the study area, but rather would likely locate in industrial parks along the Quickway, Interstate 84, or near Stewart Airport. As the distribution of vehicles is anticipated to be no different for either annexation scenario so the distribution of truck traffic would not be anticipated to be different.

### 3.4.6 Noise and Air Quality Related to Traffic

#### 3.4.6.1 Noise - Existing Conditions

Land use in the Village of Kiryas Joel consists of mixed development including single family residential, multi-family residential, neighborhood commercial and community services, including parochial schools and other religious facilities. (Land use is more fully described in DGEIS Section 3.1 Land Use and Zoning.) The nearby lands around Kiryas Joel in the towns of Monroe, Blooming Grove, Woodbury and the Village of Monroe also have a mix of uses, including primarily single family homes, with mixed commercial uses, community services, as well as a small amount of agriculture.

Existing noise in the study area can be characterized as typical for a suburban/rural locale. Ambient noise results mostly from local vehicle traffic, and periodically from outdoor activities such as lawn maintenance, other property maintenance activities, and construction. No significant noise-generating industrial or manufacturing uses are located in the study area. Most notably however, NYS Route 17 borders the Village to

the south and as a regional transportation corridor is the source of the greatest levels of noise and most persistent traffic noise.

The study area includes numerous noise receptors which can be sensitive to noise energy when it is greater than the prevailing ambient levels. Land uses that are typically considered to be sensitive to noise include residences, schools, hospitals, churches, libraries, nature preserves and certain types of outdoor recreation areas. The following tables illustrate characteristics of sound in the environment when it is considered noise.

<b>Table 3.4-15</b>	
<b>Human Perception of Changes in Sound Levels</b>	
<b>Change (dBA)</b>	<b>Average Ability to Perceive Changes in Noise Levels</b>
2-3	Barely perceptible
5	Readily Noticeable
10	A doubling or halving of the loudness of sound
20	A dramatic change
40	Difference between a faintly audible sound and a very loud sound

Source: Bolt Baranek and Neuman, Inc. Fundamentals and Abatement of Highway Traffic Noise, Report No. PB-222-703. Prepared for Federal Highway Administration, June 1973.

<b>Table 3.4.16</b>		
<b>Community Response to Increase in Sound Levels</b>		
<b>Change (dBA)</b>	<b>Category</b>	<b>Description</b>
0	None	No observed reaction
5	Little	Sporadic complaints
10	Medium	Widespread complaints
15	Strong	Threats of community action
20	Very strong	Vigorous community action

Source: International Standard Organization, *Noise Assessment with Respect to Community Reactions*, 150/TC 43. (New York: United Nations, November 1969.)

### **3.4.6.2 Noise - Potential Impacts**

Changing the Village of Kiryas Joel boundaries through annexation will not in and of itself change ambient noise conditions, however as the population grows and there is greater development activity, ambient noise levels in and around the study area will likely increase modestly. To the extent that the development is spread out, so too is any noise that is typical from such development.



Under no annexation and with annexation, traffic related to the projected area growth could double in some locations and is projected to result in a 3 decibel (dBA<sup>13</sup>) increase in ambient noise from traffic. Such increase would occur at a slow rate over a decade of growth. (Table F3-9 identifies locations where increased traffic generation is anticipated under no annexation and with annexation.) This level of noise increase will not be perceptible.

The traffic analysis demonstrates that the total traffic generation would be less in the with-annexation scenario than the no-annexation scenario, while some routes may experience greater change in traffic than other routes because of the geographical location of development in either scenario. However, the potential noise from overall growth will be spread geographically over the study area and the various routes in the community, and the projected growth will occur incrementally over time. Thus, changes in ambient noise are anticipated to be imperceptible along all key routes.

#### **3.4.6.3 Air Quality - Existing Conditions**

Ambient air monitoring is conducted by the NYS DEC throughout the State. Ambient air quality is measured and regulated under rules established by the United States Environmental Protection Agency (US EPA) and the New York State Department of Environmental Conservation (NYS DEC). Air quality data applicable to the study area (in and around Kiryas Joel) are listed in the table below from conditions measured at established NYS DEC monitoring stations.

National and New York State Ambient Air Quality Standards (N/SAAQS) have been issued in accordance with the Clean Air Act and its amendments for air pollutants considered to be harmful to public health and the environment. Six pollutants have thresholds for use in evaluating air quality compliance. These pollutants, called criteria pollutants, are: sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), ozone (O<sub>3</sub>), lead (Pb), carbon monoxide (CO) and particulate matter (PM). The PM standard is actually two standards, one for particles with a diameter of less than 10 microns (PM<sub>10</sub>) and one for particles with a diameter less than 2.5 microns (PM<sub>2.5</sub>).

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<sup>13</sup>One decibel (dB) is the smallest change in sound level that is detectable by the human ear under laboratory conditions. Under normal conditions, a change of two or three decibels is necessary for the average person to perceive any difference in sound level. The A-weighted sound level (dBA) is reflective of the characteristics of human hearing.

Table 3.4-17 Regional Air Quality Data Summary (2013)				
Nearest Monitoring Location	Pollutant	Concentration	Air Quality Standard (N/SAAQs)	Within Standard?
Valley Central	Ozone (O <sub>3</sub> )	0.063 ppm <sup>(2)</sup>	0.075 ppm <sup>(2)</sup>	Yes
Mt. Ninham	Sulfur Dioxide (SO <sub>2</sub> )	0.72 ppb <sup>(1)</sup>	30 ppb <sup>(1)</sup>	Yes
Newburgh	Inhalable Particulates (PM <sub>2.5</sub> ) (98 <sup>th</sup> percentile)	19.8 ug/m <sup>3</sup> <sup>(1)</sup>	50 ug/m <sup>3</sup> <sup>(1)</sup>	Yes
Newburgh	Inhalable Particulates (PM <sub>2.5</sub> ) (Annual mean)	7.6 g/m <sup>3</sup> <sup>(4)</sup>	15 ug/m <sup>3</sup> <sup>(4)</sup>	Yes
Wallkill	Lead (Pb)	0.03 g/m <sup>3</sup> <sup>(3)</sup>	-----	Yes

NOTES:  
 (1) Annual Arithmetic Mean in parts per billion (ppb).  
 (2) 4th Highest Daily Maximum 8-Hour Average - not to exceed an avg of 0.075 over the last 3 years, in parts per million (ppm).  
 (3) Maximum Quarterly Average in grams per cubic meter (g/m<sup>3</sup>).  
 (4) Three year average of annual mean. Average of last 3 years' annual means not to exceed 15 ug/m<sup>3</sup>.  
 Source: NYSDEC, "New York State 2013 Ambient Air Quality Report," 2014, <http://www.dec.state.ny.us>.

In addition to the criteria pollutants listed above, New York has adopted ambient air quality guidelines for over 1,000 toxic compounds. Since the annexation area does not involve sources of permitted air emissions, these standards do not apply to this evaluation.

The air quality data tabulated in Table 3.14.18 presents the background ambient air quality concentrations collected at the monitoring stations nearest to Kiryas Joel and is from the most up-to-date report available. A comparison to the N/SAAQs for each pollutant in the last column shows the ambient air quality is typically within the established air quality standards.

#### 3.4.6.4 Air Quality Impacts without and with Annexation

Potential air quality impacts related to growth are primarily associated with traffic resulting from development. Growth in the study area is projected to occur without and with annexation. Air quality impacts related to heating and cooling of buildings can be considered minor impacts associated with growth, absent any major stationary air emission sources.

The primary pollutants associated with vehicular exhaust emissions are nitrogen dioxide (NO<sub>2</sub>), hydrocarbons (HC), and carbon monoxide (CO). Short term exposure to elevated CO concentrations can have acute health impacts, therefore state and Federal AAQS have been developed for ambient CO concentrations to protect the health and welfare of the general public, with an adequate margin of safety. There are no short term health standards currently enforced for NO<sub>2</sub> and HC.

Mobile source emissions are evaluated on a local (microscale) basis. The determination for whether or not a microscale analysis is warranted is based on the consideration of various criteria identified in the NYS DOT Environmental Procedures Manual.<sup>14</sup> Review of the criteria will establish the need for a microscale air quality analysis.

As described in the discussion of future traffic in Section 3.4.5, the growth in traffic will be similar with and without annexation. Overall traffic growth is slightly less with annexation compared to without annexation as shown in Table 3.4-14. Based upon the criteria provided in the NYS DOT Environmental Procedures Manual, traffic generated by the incremental growth on annexation lands is insufficient to require a microscale air analysis of any of the study intersections. Therefore, with annexation and without annexation, the projected growth in traffic will not result in significant air quality impacts from vehicular air emissions.

Localized conditions may need to be reviewed on a project by project basis where a traffic capacity analysis is recommended under SEQR.

### **3.4.7 Mitigation Measures**

#### *Traffic and Transportation*

As the traffic impacts are not expected as a direct result of the annexation action, mitigation measures are not required for the annexation action. In fact the traffic analysis shows that a reduction in traffic growth outside the Village of Kiryas Joel is anticipated as standard Village transportation services such as sidewalks are extended into the annexation area with annexation, as compared to without annexation. Particular traffic-related mitigation is anticipated regardless of whether the annexation occurs or not.

The *Southeastern Orange County Traffic and Land Use Study* (the "Study") identified a series of transportation improvements (discussed in section 3.4.4), some of which have already been implemented (see Table 3.4-7) and others are funded within the Transportation Improvement Program to be implemented in the short term (see Table 3.4-8). The Village Center Scenario envisioned years ago in the regional transportation study embraces the concepts of Smart Growth and Active Design. The growth of traffic anticipated in the Study and earlier reports is expected to occur with or without the annexation, therefore transportation improvements should continue to be planned and programmed. In addition to identified transportation projects already discussed in the

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<sup>14</sup> New York State Department of Transportation Environmental Analysis Bureau, "Environmental Procedure Manual," January 2001, (Albany, New York)

Study, the following may also be considered in the planning and implementation of specific development projects as mitigation measures.

- The NYS DEC SEQR workbook recommends projects exceeding 100 trips generated in a peak hour may require a traffic study. A set of criteria are proposed for when to study traffic capacity which is higher than the above recommendation because of the lower automobile ownership and related higher use of transit and walking modes of transportation typical of the study area.
- The 2004 *Southeastern Orange County Traffic and Land Use Study Executive Summary*<sup>15</sup> identified 1) the Larkin Drive Extension (NYS Route 208 to CR 105), 2) the NYS Route 32 loop ramp to NYS Route 17, and 3) improvements for additional capacity on Route 17 as three of over a dozen High Feasibility Projects. Planning for these three projects is progressing although none has been built. Particularly relevant to the growth around Kiryas Joel, the extension of Larkin Drive on the south side of the Village, if implemented, would spread out the traffic generated in the Village (more than the traffic generated from growth in the proposed annexation lands), with or without annexation.
- Mid Level Feasibility Projects listed in the Study included a CR 105 interchange and a Collector-Distributor Road from I-87 and CR 105 along Dunderberg/Nininger Road north of NYS Route 17. These are not being studied at this time nor are they included in the Final Route 17 Transportation Corridor Study.<sup>16</sup> Thus such construction would not occur within the time frame of this DGEIS study to year 2025.

Based on national guidelines for interchange spacing in an urbanized area, a new interchange to CR 105 would be potentially feasible if future area growth warrants an additional Route 17 interchange near Kiryas Joel (about a mile from the US Route 6 interchange and the NYS Route 208).<sup>17</sup> The Orange County Transportation Council Long Range Transportation Plan (2011-2040) indicates that “All Route 17 projects are being designed not to preclude future improvements.”<sup>18</sup> At some point outside the study period, a future CR 105 interchange might be constructed to relieve pressure on the nearby NYS 208 and NYS Route 32 interchanges (Exits 129 and 131).

- Road network improvements in the local area should consider implementing roundabouts wherever feasible. Roundabouts significantly reduce vehicle/

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<sup>15</sup>AKRF, *Southeastern Orange County Traffic and Land Use Study, Executive Summary*, December 2004, pages S-15 and S-16.

<sup>16</sup>HDR, “Final Route 17 Transportation Study, Sullivan and Orange County”, May 2013.

<sup>17</sup>Kittelson & Associates, Inc., *Guidelines for Ramp and Interchange Spacing*. Transportation Research Board, National Cooperative Highway Research Program, NCHRP Report 687, Washington D.C. 2011.

<sup>18</sup>*Orange County Transportation Council Long Range Transportation Plan*, December 2011.

pedestrian collisions and calm traffic, while increasing the efficiency of moving traffic. Traffic calming measures were considered a High Feasibility Project in the Southeastern Orange County study.<sup>19</sup>

- Under the annexation scenario the existing sidewalk network of the Village would be extended in accordance with the Village code wherever new development occurs to service the new population. Major developments should have an internal sidewalk network connecting to the external sidewalks.
- Bus routing is expected to be periodically reviewed by the service companies as growth takes place to accommodate new populations. Private transportation services can be expected to adapt more quickly than the public transportation services. This would occur with or without annexation. Expanded Transit Service is considered a High Feasibility Project in the Southeastern Orange County study.<sup>20</sup>
- Development in the Village of Kiryas Joel should include neighborhood retail uses as recommended as part of the Village Center vision in the Southeastern Orange County study.<sup>21</sup>

#### *Noise Mitigation Measures*

No noise mitigation measures for traffic-generated noise are warranted for the annexation action. Currently over fifty percent of trips to and from work are by transit, carpooling or walking. This transportation characteristic is unique to this community and will lessen the potential for noise from traffic. Additionally, the future Larkin Drive Extension project, if implemented, will remove traffic from other routes thereby shifting traffic noise to the corridor that parallels the Quickway.

#### *Air Quality Mitigation Measures*

Based on the traffic screening analysis performed, no quantitative air quality analysis was warranted and therefore, air quality impacts related to the annexation scenarios are considered insignificant. No air quality measures are warranted for the annexation action. Inherent in the anticipated growth scenarios as air quality mitigation is the anticipated use of transit and walking, which replaces trips otherwise made in private vehicles. The Larkin Drive Extension described above would spread traffic out and reduce the potential for congestion at key points in the network. Since traffic signals are a significant localized cause of reduced air quality, incorporation of roundabouts into future intersection improvements would keep traffic flowing and preserve air quality.

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<sup>19</sup>AKRF, Southeastern Orange County Traffic and Land Use Study, Executive Summary, December 2004, page S-15.

<sup>20</sup>AKRF, Southeastern Orange County Traffic and Land Use Study, Executive Summary, December 2004, page S-15.

<sup>21</sup>AKRF, Inc., "Southeastern Orange County Traffic and Land Use Study", February 2005.

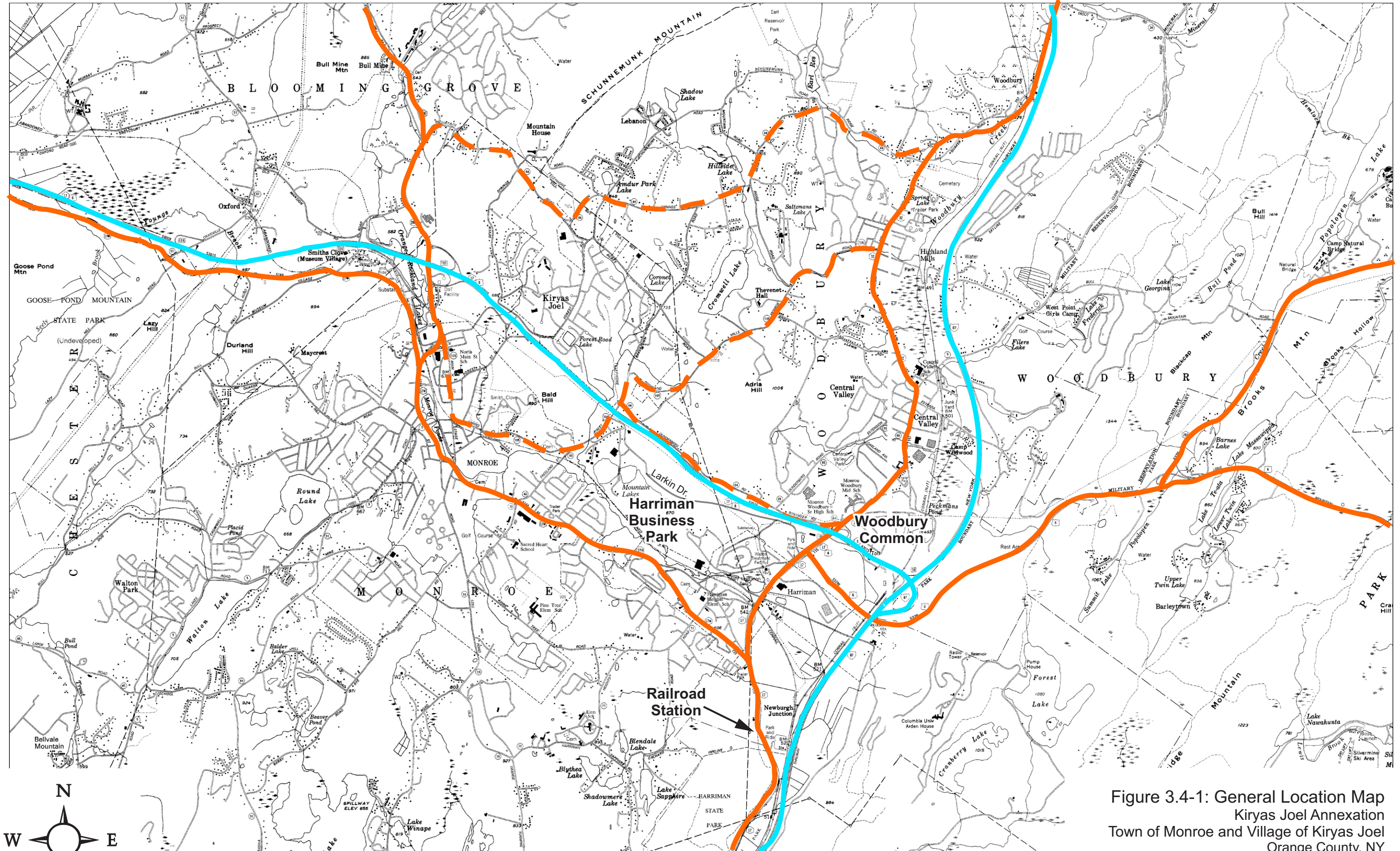


Figure 3.4-1: General Location Map  
 Kiryas Joel Annexation  
 Town of Monroe and Village of Kiryas Joel  
 Orange County, NY  
 Source: NYS DOT Planimetric Quad, 1991  
 Scale: 1" = 3,500'

——— Limited Access Highways    
 ——— Other State Highways    
 ——— Key County Roads

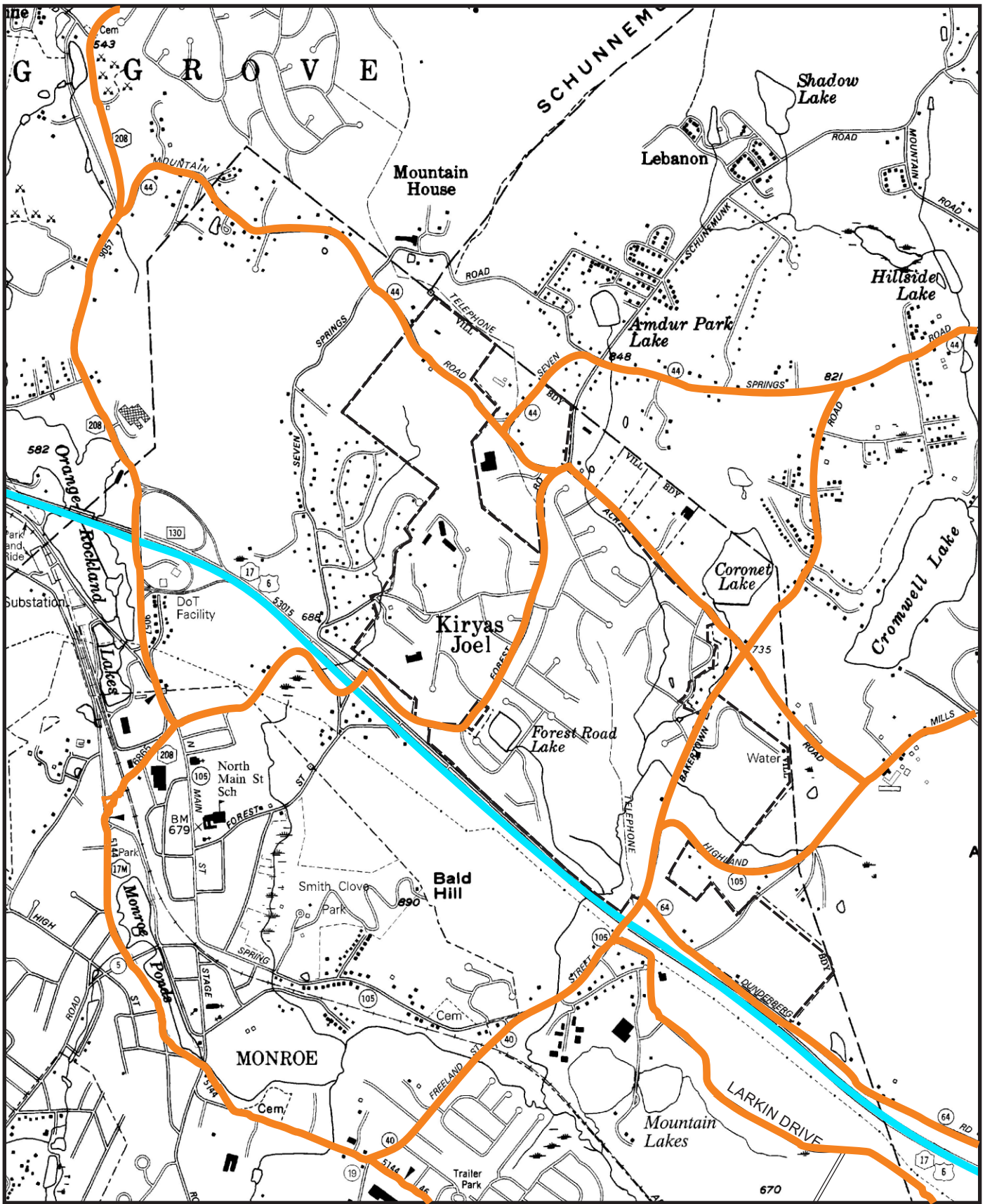
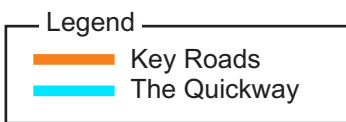
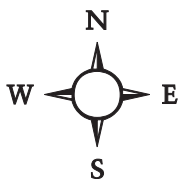


Figure 3.4-2: Local Transportation Network

Kiryas Joel Annexation  
 Town of Monroe and Village of Kiryas Joel  
 Orange County, NY

Source: NYS DOT Planimetric Quad, 1991  
 Scale: 1" = 2,000'



# Forest Avenue Hourly Traffic Volumes

Figure 3.4-3

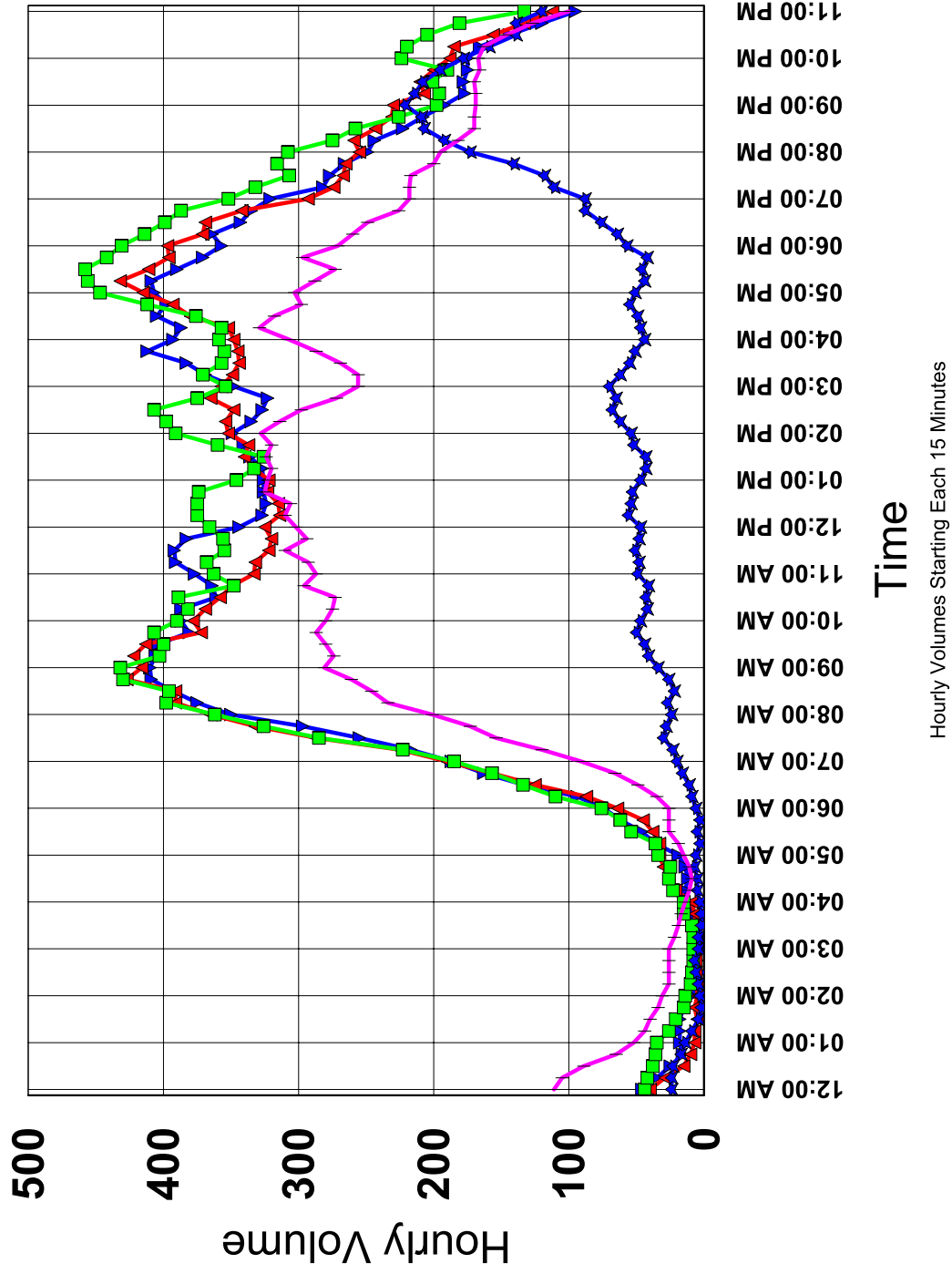


Figure 3.4-3: Forest Ave. Hourly Traffic Volumes  
 Kiryas Joel Annexation  
 Town of Monroe and Village of Kiryas Joel  
 Orange County, NY  
 Source: TMA



# Bakertown Hourly Traffic Volumes

Figure 3.4-4

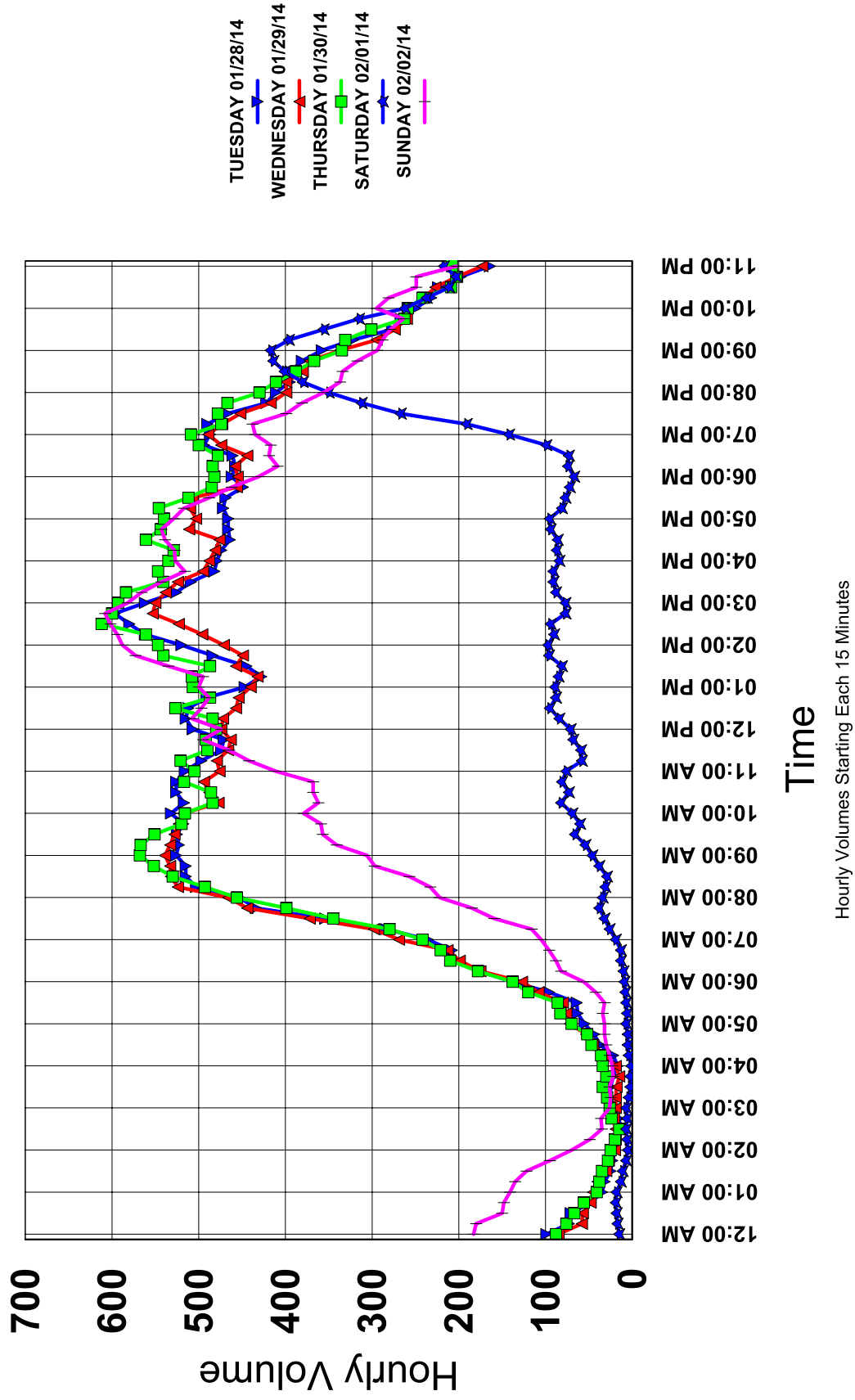


Figure 3.4-4: Bakertown Hourly Traffic Volumes  
 Kiryas Joel Annexation  
 Town of Monroe and Village of Kiryas Joel  
 Orange County, NY  
 Source: TMA

# CR 44 Traffic Volumes

Figure 3.4-5

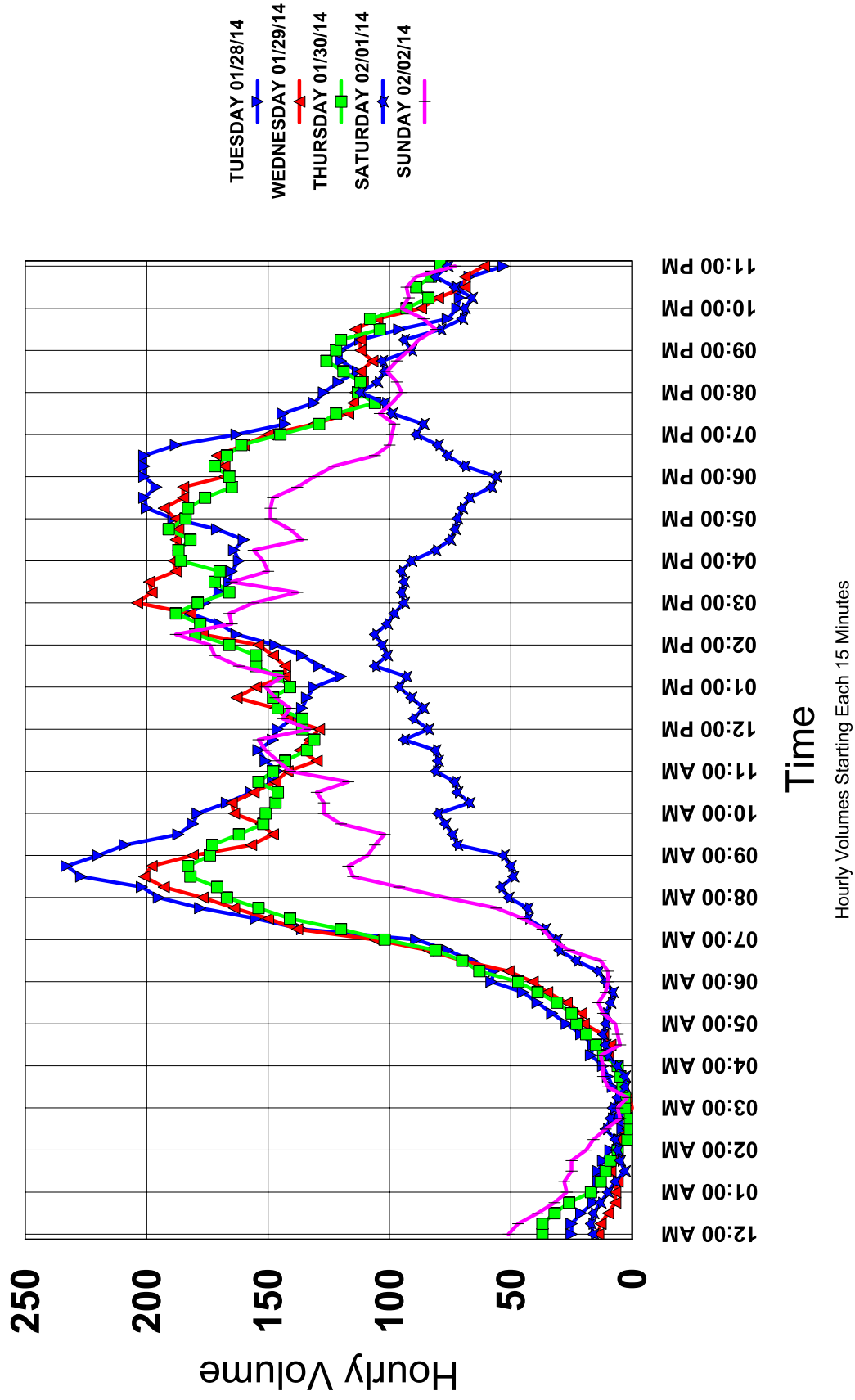


Figure 3.4-5: CR 44 Hourly Traffic Volumes  
 Kiryas Joel Annexation  
 Town of Monroe and Village of Kiryas Joel  
 Orange County, NY  
 Source: TMA

# Acres Road Hourly Traffic Volumes

Figure 3.4-6

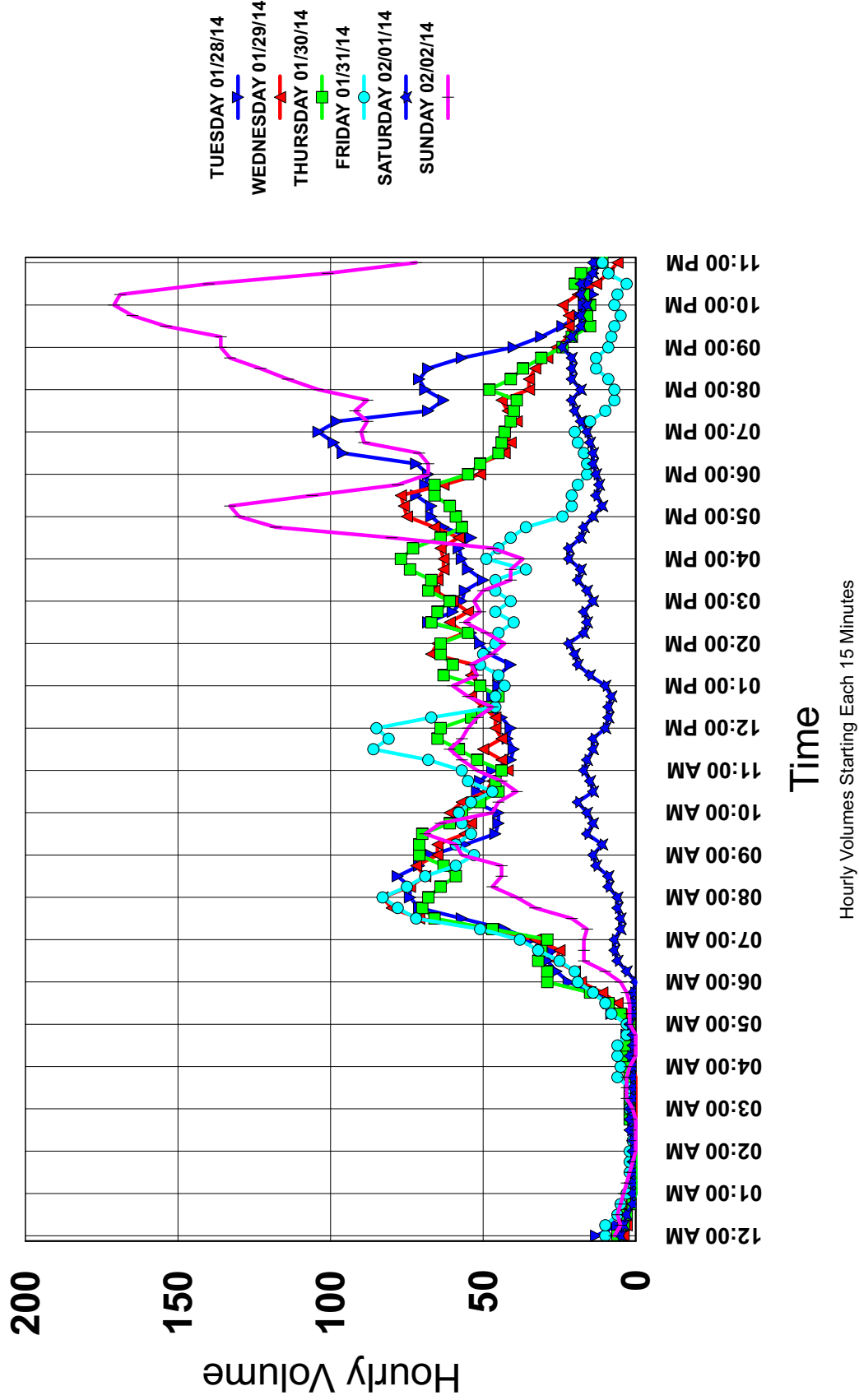
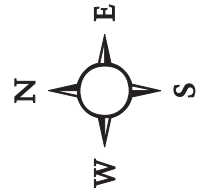
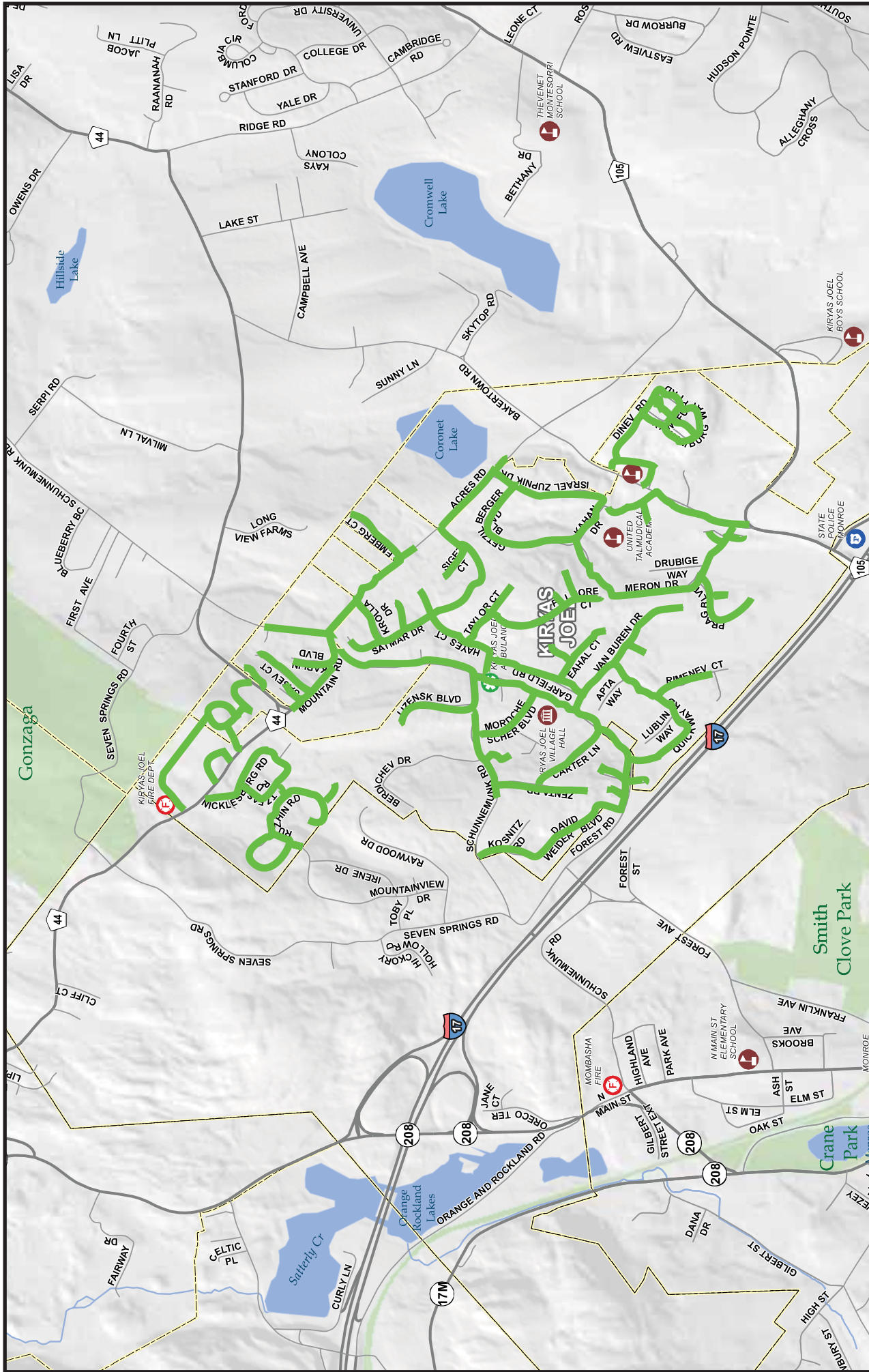


Figure 3.4-6: Acres Rd. Hourly Traffic Volumes  
 Kiryas Joel Annexation  
 Town of Monroe and Village of Kiryas Joel  
 Orange County, NY  
 Source: TMA

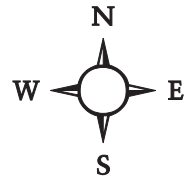


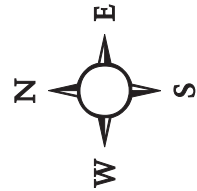
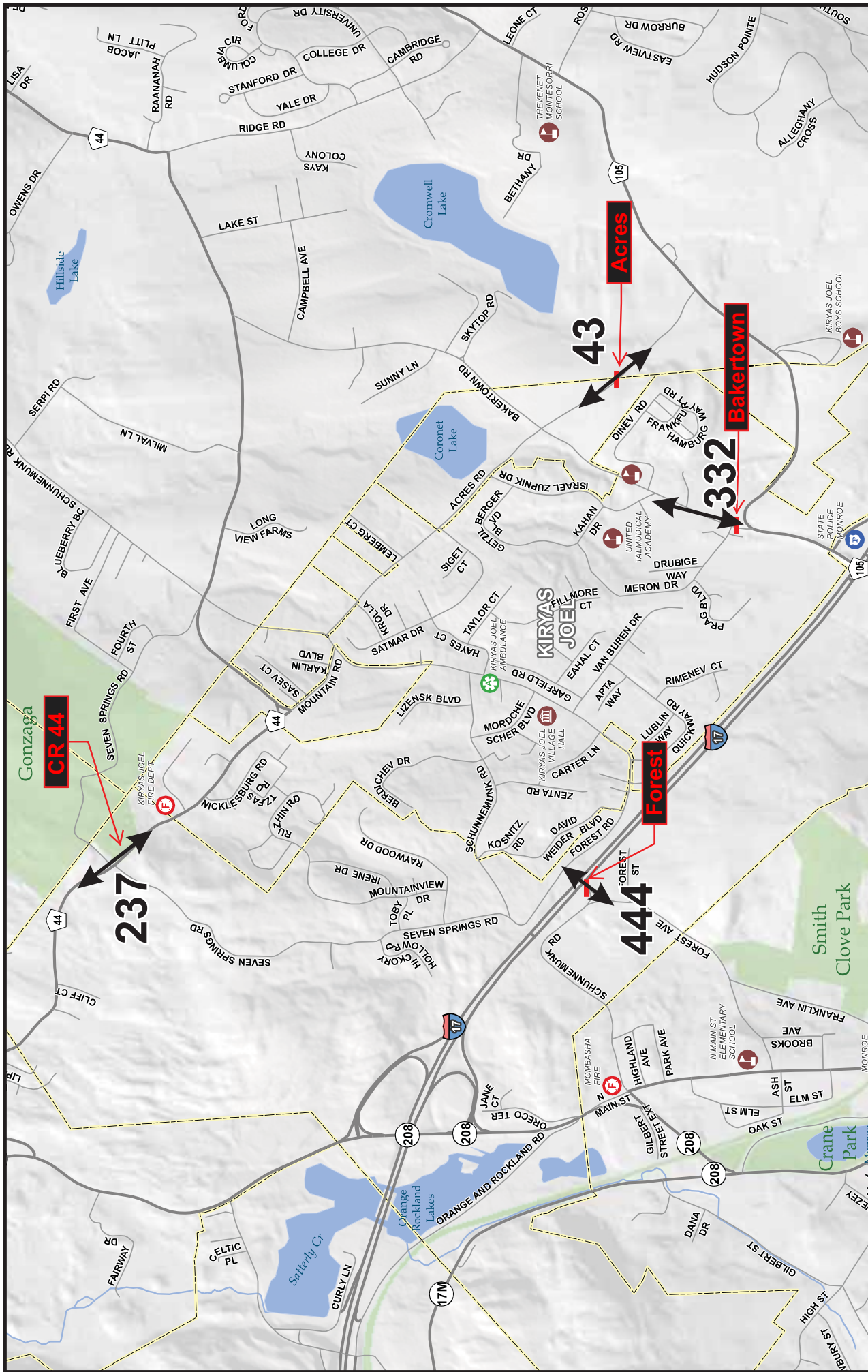
— Sidewalks

**Figure 3.4-7: Area Sidewalks**  
 Kiryas Joel Annexation  
 Town of Monroe and Village of Kiryas Joel  
 Orange County, NY  
 Base Map: Google Maps  
 Scale: NTS

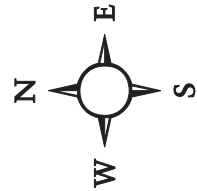
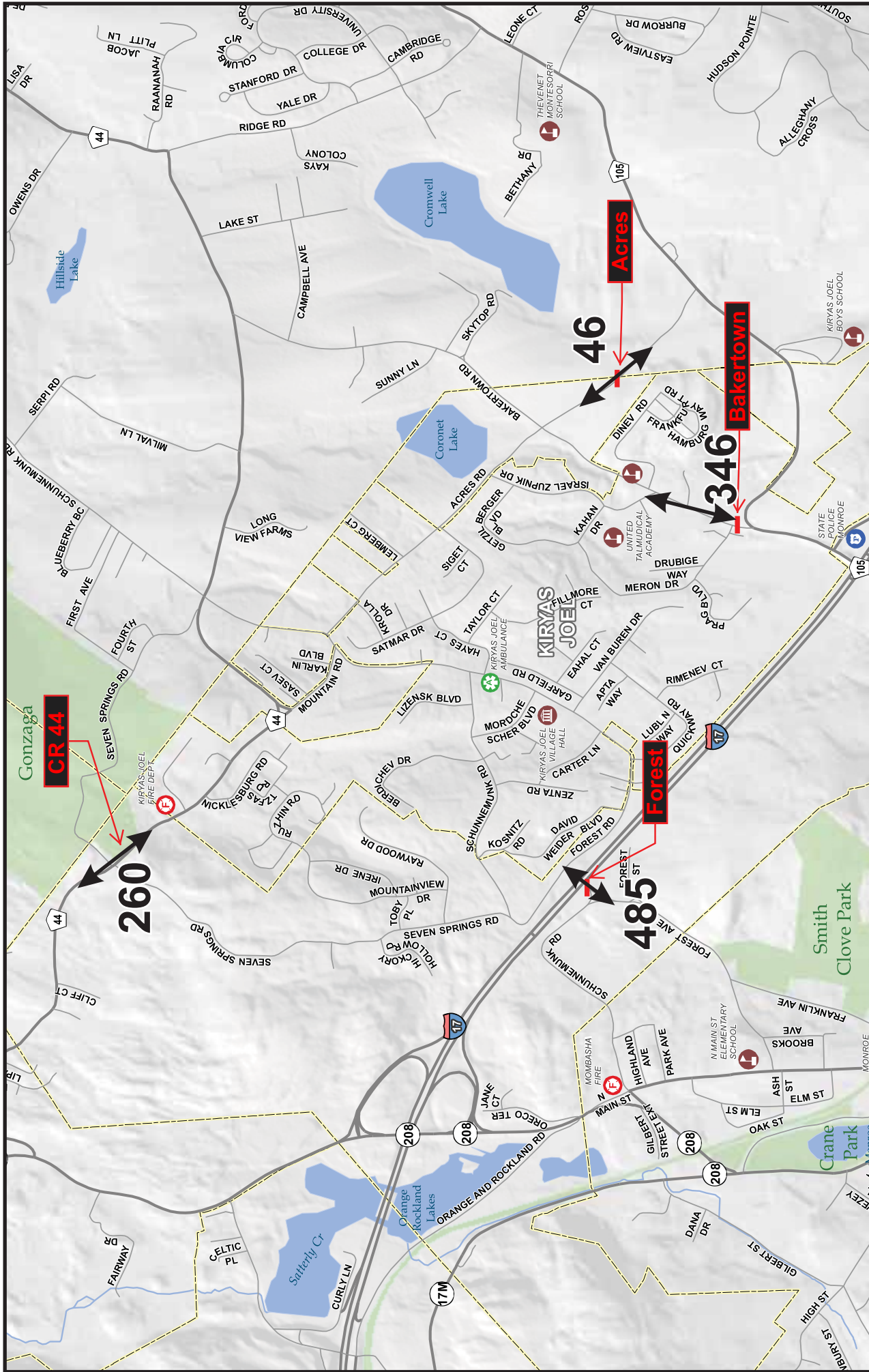


Figure 3.4-8: Bus Routes  
 Kiryas Joel Annexation  
 Town of Monroe and Village of Kiryas Joel  
 Orange County, NY  
 Source: Orange County Transit, <http://www.transitorange.info/routes/monroe.html>, 2014  
 Scale: NTS

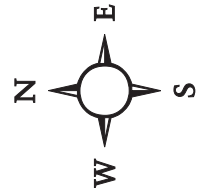
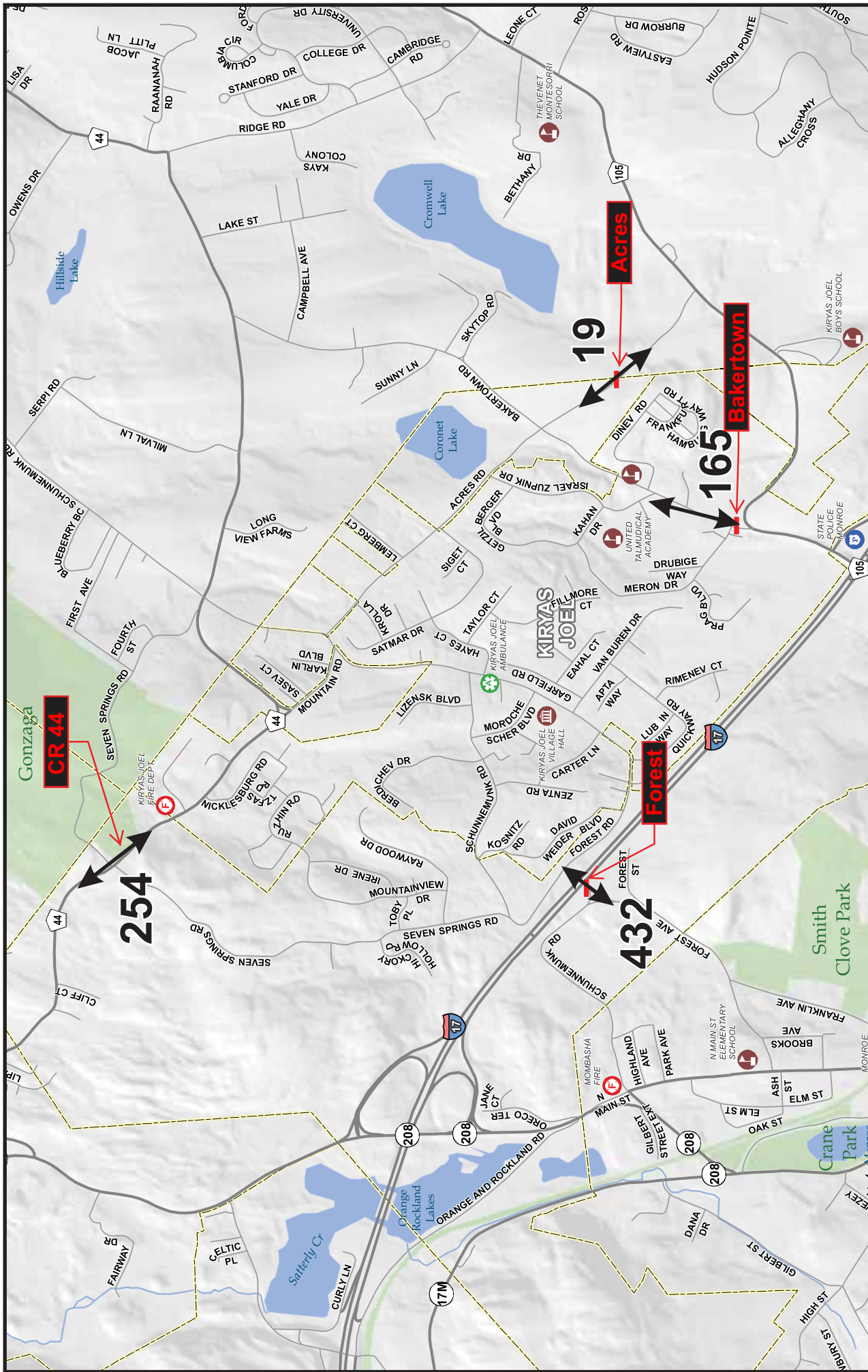




**Figure 3.4-9: 507 Acre No Annexation AM Peak Hour Trips Generated**  
 Kiryas Joel Annexation  
 Town of Monroe and Village of Kiryas Joel  
 Orange County, NY  
 Base Map: Google Maps  
 Scale: NTS

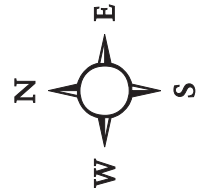
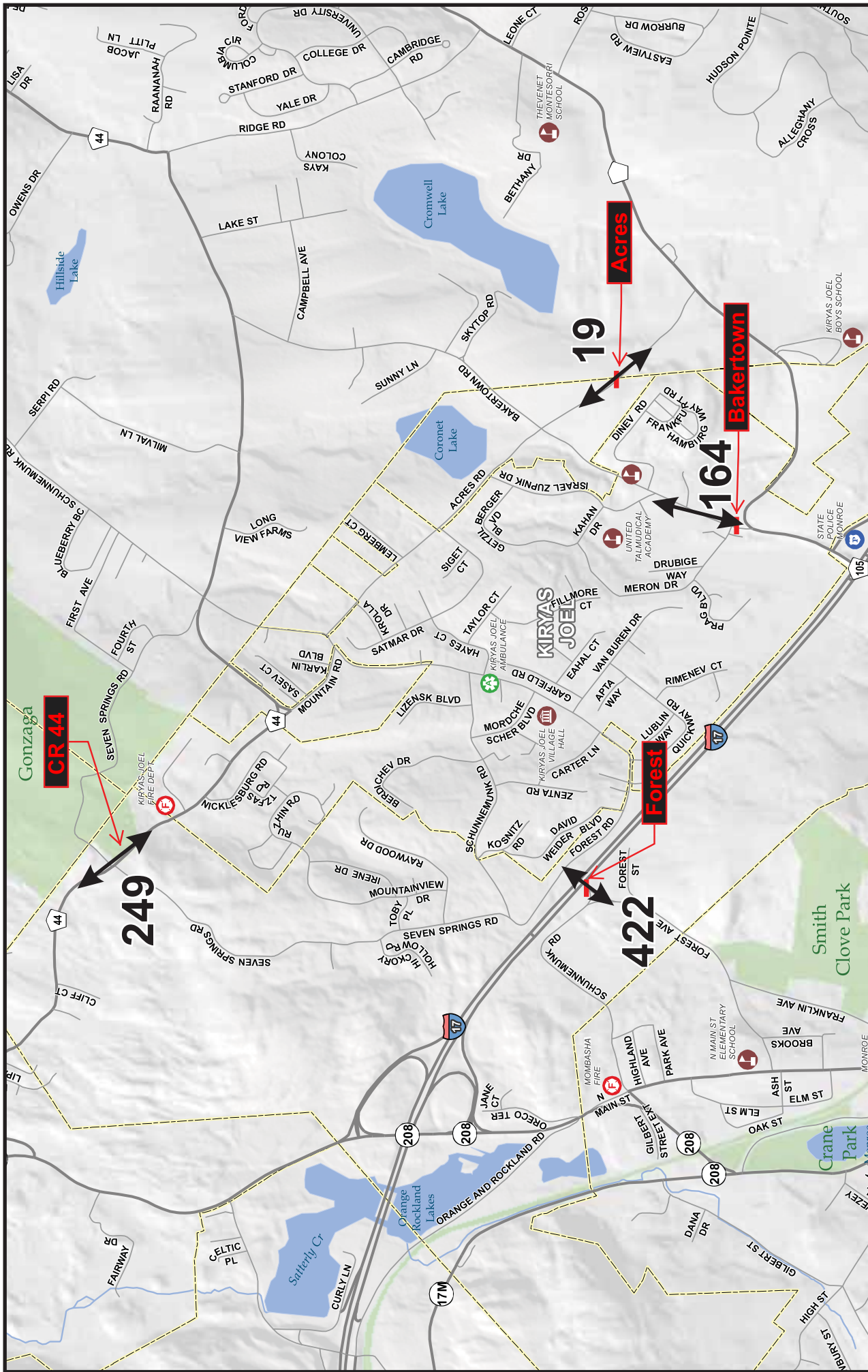


**Figure 3.4-10: 507 Acre No Annexation PM Peak Hour Trips Generated**  
 Kiryas Joel Annexation  
 Town of Monroe and Village of Kiryas Joel  
 Orange County, NY  
 Base Map: Google Maps  
 Scale: NTS



**Figure 3.4-11 507 Acre Annexation AM Peak Hour Trips Generated**  
 Kiryas Joel Annexation  
 Town of Monroe and Village of Kiryas Joel  
 Orange County, NY  
 Base Map: Google Maps  
 Scale: NTS





**Figure 3.4-12: 507 Acre Annexation PM Peak Hour Trips Generated**  
 Kiryas Joel Annexation  
 Town of Monroe and Village of Kiryas Joel  
 Orange County, NY  
 Base Map: Google Maps  
 Scale: NTS