3.8 Traffic and Transportation

3.8.1 Existing Conditions

Regional Transportation Network

The Raleigh and Heiden Properties project site is situated near the intersection of Heiden Road (CR 161) and Kiamesha Lake Road (CR 109) in the Town of Fallsburg, Sullivan County, New York. The primary regional transportation routes in the area are NYS Route 17, and NYS Route 42. Figure 3.8-1 shows the location of the project within the context of the Town of Fallsburg.

NYS Route 42 is classified by New York State Department of Transportation (NYSDOT) as a rural minor arterial with one 12-foot wide travel lane in each direction. The speed limit on NYS Route 42 is 45 to 55 miles per hour in the study area.

The major east-west roadway in the vicinity of the site is NYS Route 17 (future Interstate 86). Access to NYS Route 17 from the project site is via NYS Route 42 or Heiden Road (CR 161).

NYS Route 17 is a four-lane divided limited access highway that provides northwest to southeast access in New York State. The portion of New York State Route 17 known as the Quickway is to be upgraded to federal interstate standards and redesignated Interstate-86. It originates at the Interstate-87 Thruway interchange in Harriman, New York, and continues in a northwest direction to Corning, New York, where it connects with the existing Interstate 86 providing access to western New York State. The speed limit on NYS Route 17 is either 55 miles per hour or 65 miles per hour depending on the location. NYS Route 17 provides access to Interstate 84 in the Town of Wallkill.

Local Transportation Network

Figure 3.8-2 depicts the local road network in the vicinity of the project site. The proposed residential development would have three access points on Heiden Road (CR 161). In addition there is a full access and an emergency access to Park House Road (Wildwood Drive).

The streets nearest the project site include the following:

1) NYS Route 42
2) Heiden Road (County Road 161)
3) La Vista Drive
4) Kiamesha Lake Road (County Road 109)
5) Fraser Road
6) Thompson Road (also known as Thompsonville Road)
7) River Road
8) Downs Road
9) Park House Road (also known as Wildwood Drive)
10) Fred Road
11) Ranch Road
12) Ranch Hill Road

Road names utilized herein are based on Sullivan County official roadway maps[1,2]. Table 3.8-1 provides basic roadway information on these roads. Local roads are typically flexible pavement (asphalt) as opposed to 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).

NYS Route 42

In addition to providing regional access, NYS Route 42 is a major thoroughfare in the area. NYS Route 42 provides local north-south access through the town, however at the project area intersections it is treated as east-west. NYS Route 42 from Concord Road (CR 182) into the NYS Route 17 interchange was reconstructed in 2006 to 2007. The widening of NYS Route 42 has brought additional roadway capacity in this area. Parts of NYS Route 42 in the Village on Monticello are currently under reconstruction.

Heiden Road (County Road 161)

Heiden Road is used to bypass the traffic signals in the heavily commercial section of NYS Route 42 north of NYS Route 17 in the Town of Thompson. Heiden Road (CR 161) is a shorter route to or from parts east via NYS Route 17. There is a barely readable no parking sign on the southbound lane north of the Thompson Road intersection. Warning signs are provided in advance of the Thompson Road intersection.

La Vista Drive

La Vista Drive intersects NYS Route 42 less than 100 feet northeast of the Heiden Road (CR 161) and NYS Route 42 intersection. La Vista Drive moves away from NYS Route 42 before turning and paralleling NYS Route 42. The right out of La Vista Drive and left turn in represents traffic bypassing NYS Route 42 in South Fallsburg. La Vista Drive primarily serves local residences.

Kiamesha Lake Road (County Road 109)

Kiamesha Lake Road (CR 109) connects Heiden Road (CR 161) to NYS Route 42. Kiamesha Lake Road (CR 109) is relatively straight with vertical curves. Kiamesha Lake Road similar to Fraser Road has bicycle pavement markings (Appendix F Photo 1) on the NYS Route 42 approach, however there are no other bicycle related signs or markings in the immediate area.

[1] Sullivan County Department of Public Works, "Official Highway Map Town of Fallsburg, County of Sullivan, New York", Monticello, NY, December 9, 2010.
[2] Sullivan County Department of Public Works, "Official Highway Map Town of Thompson, County of Sullivan, New York", Monticello, NY, December 21, 2010.

Table 3.8-1
Road Conditions

				Status [1]		
Road (See Figure 3.8-2)[8]	**Jurisdiction**	**Lanes**	**Width***	**Posted Speed Limit**	**Condition Rating [6]**	**Weight Posted**
NYS Route 42	NYSDOT	2 [3]	40 feet (Excludes shoulders 15 feet)	45 or 55	2 [2]	No
Heiden Road (County Road 161)	County	2	22 to 24 feet**	45***	2	No
La Vista Drive	Fallsburg	2	28 feet Excludes shoulders 9 feet	35	2	No
Kiamesha Lake Road (County Road 109)	County	2	24 feet	30	2	No
Fraser Road	Thompson	2	27 feet	30	2	No
Thompson Road	Thompson	2	21 feet	---[5]	2	No
River Road	Thompson	2	16 feet	---	2	20 tons[4]
Park House Road (Wildwood Drive)	Fallsburg	2	20 to 22 feet	40	2	No
Fred Road	Thompson	2	20 feet	---	1****	No
Downs Road	Thompson	2	21 feet	35	2	7 tons
Ranch Road	Thompson	2	20 to 21 feet	---	2****	No

* Approximate widths. Widths vary along roadways. Where shoulders noted includes sum of both shoulders
** excludes shoulders up to 12 feet
***55 miles per hour north of Kiamesha Lake Road (CR 109)
**** See text description.
[1] Status as of April 2011.
[2] New York State Department of Transportation Region 9, *Pavement Data 2010* pavement condition 6 of 10 where 9 and 10 are excellent condition, 7 and 8 are good condition, 6 is fair condition and 1 to 5 are poor condition.
[3] Additional left turn lane southbound into Heiden Road (CR 161) with transitions width at La Vista Drive.
[4] https://www.nysdot.gov/gisapps/posted-bridges/r-posted-bridge-limitation, 2-7-2010. Bridges are analyzed for capacity to carry loads and if unable to safely carry legal limits are posted with weight limits or closed if deemed unsafe. See Table 3.8-2 for Bridge information.
[5] denied 2001
[6] Rating scale of 1 to 3 with 1 poor, 2 fair/good, and 3 as excellent condition. Ratings by Tim Miller Associates, Inc. as of April 22, 2011.

Fraser Road

Fraser Road is essentially an extension of Kiamesha Lake Road (CR 109) beyond NYS Route 42. Fraser Road turns abruptly just prior to the intersection with NYS Route 42.

Thompson Road

Thompson Road is also known as Thompsonville Road. The post office is a major traffic destination on Thompson Road. Thompson Road leads to the Village of Monticello. River Road begins where Thompson Road ends at Heiden Road (CR 161).

River Road

River Road is a hard packed dirt road. The 16 foot road width narrows to about 13 feet at the bridge. The road is narrow for two way traffic. This road is low volume road with summer peak hour volumes under five vehicles. Drainage on the south side with plastic piping under driveways and deep channels appears in excellent condition. There is slight water runoff channeling in the road on the down slope west of the bridge. Appendix F Photo 2 shows the DEAD END signing needs to be replaced.

Downs Road

As seen in Appendix F Photo 3 Downs Road has had a thin overlay over portions in addition to patching and edge rehabilitation. There remain areas in need of patching. The width is approximately 21 feet. The road has a posted seven ton limit. There is a curve warning sign and 15 mile per hour advisory speed plaque on the western end of Downs Road.

Park House Road (Wildwood Drive)

Street signs indicate Park House Road is Wildwood Drive. Drainage culverts appear to be new. Signage on this road is poor with numerous signs needing replacement. For example the SLOW sign (Appendix F Photo 4) is worn and not reflective. The SLOW sign does not denote the condition to be slow for and should not be utility pole mounted. Curve warning signs and advisory speed plaques are showing wear due to age (Appendix F Photo 5). The STOP sign at Lakes Street has poor reflectivity. The existing curve warning sign with 15 mile per hour advisory speed plaque (Appendix F Photo 6) seems to refer to the intersection at Park House Road (Wildwood Drive), Lakes Street, and Sam Rosenshein Drive. This intersection approach on the Park House Road (Wildwood Drive) approach is STOP controlled and thus in conflict with the curve warning sign with Advisory speed plaque.

Fred Road

Fred Road is in poor condition. The poor condition, lack of post speed limit, and low traffic volume result in some vehicles driving down the center of the road as if a one-lane road until meeting a vehicle driving in the opposite direction. Some spot and edge patching is evident. The road condition is distinctly worse than the condition on Park House Road (Wildwood Drive) as illustrated in (Appendix F Photo 7).

Ranch Road /Ranch Hill Road

There is a culvert on Ranch Road near Heiden Road (CR 161). The w-beam guardrail on the east side of the Sheldrake Stream is in poor condition as shown in Appendix F Photo 8. Some portions of Ranch Road have severe alligator cracking as shown in Appendix F Photo 9. Ranch Road in the Town of Thompson becomes Ranch Hill Road in the Town of Fallsburg. Advisory speed plaques on the road are without appropriate warning signs (Appendix F Photo 10).

General Maintenance

Sullivan County has instituted a sticker system (example shown in Appendix F Photo 11) on County signs to help identify posting dates as a method to improve maintenance. Signs tend to

lose reflectivity over time and should be replaced and upgraded as needed. As discussed above some local signs need to be brought into conformance with current standards[3].

Sight Distance at Intersections

Stopping sight distance is the distance a vehicle would require to be able to stop on wet pavement to avoid a collision with another vehicle. Intersection sight distance provides an additional margin of safety above stopping sight distance.

Intersection sight distance is defined as the sight distance that is necessary for a vehicle to safely enter the traffic stream requiring only minor speed adjustments by vehicles in the traffic stream.

Heiden Road (CR 161) travelling south toward Kiamesha Lake Road (CR 109) has a speed limit reduction from 55 miles per hour to 45 miles per hour and has an advanced intersection warning sign. This appears more in response to the northbound left turn from Heiden Road (CR 161) into Kiamesha Lake Road (CR 109) where the sight line is interfered with by the chain link fence on the Raleigh Hotel frontage depending on where the left turn is initiated (Appendix F Photo 12). Vehicles not slowing down have a more restricted sight line.

The sight line from NYS Route 42 headed toward Fallsburg approaching Fraser Road has a very restricted sight line to the left (Appendix F Photo 13). Normally this is not a problem because of the traffic light stopping Fraser Road traffic. The infrequent right turn-on-red vehicle on this NYS Route 42 approach would have difficulty as the house on the corner restricts the sight line. The Fraser Road approach already has a no right-on-red restriction.

The Heiden Road (CR 161) approach to NYS Route 42 has long sight lines to the left. Sight lines to the right for the less frequent left turning traffic views to the right can be restricted by left turning traffic in the turn lane and by the combination of upgrade approach to NYS Route 42 and a slight upgrade prior to the La Vista Drive intersection (Appendix F Photo 14). Sight lines can vary considerably here depending on the driver's location. The NYS Route 42 vehicles to be sighted are also accelerating as the posted speed increases from 45 miles per hour to 55 miles per hour. Sight lines from Thompson Road to the left are poor with a horizontal and vertical curve reducing sight lines (Appendix F Photo 15). The NO PARKING sign with back facing the camera in the center of Appendix F Photo 15 appears too low and as shown in Appendix F Photo 16 is unreadable. Warning signs for both the curve and intersection are placed in advance of the intersections.

Appendix F Table F-1 shows the sight distances recommended by the American Association of State Highway and Transportation Officials (AASHTO)[4] and available sight distances.

Bridges

There are three key bridges in the area. Table 3.8-2 lists bridges in the area and provides basic information concerning those bridges.

[3] United States Department of Transportation Federal Highway Administration, Manual on Uniform Traffic Controls for Streets and Highways, Washington, D.C., 2009 edition.

[4] American Association of State Highway and Transportation Officials, A Policy on Geometric Design of Highways and Streets, Washington, D.C., 2004.

Bridges that do not meet current standards for managing traffic (i.e. narrow lanes, or shoulders) are considered functionally obsolete. These are not unsafe, rather they are less than the current design for traffic (as are about 25 percent of all New York State highway bridges). The River Road Bridge is narrow allowing only traffic at one direction at a time and as such would normally be considered functionally obsolete. The bridge serves residential homes and has very low volumes (average less than one vehicle per 12 minutes during seasonal peak hours).

When bridges become unsafe, their use is restricted either totally by closure or through weight restrictions. Weight restrictions are typically related to structural deficiencies rather than being functionally obsolete. The River Road Bridge has a 20 ton limit as shown in Appendix F Photo 18. This is functionally limited to traffic in one direction also. Guiderail appears to be missing with only posts visible in advance of the bridge.

Table 3.8-2
Bridges

			Status [3]		
Feature Carried and Crossed	**Year built or Replaced**	**Date of Last inspection**	**Structurally Deficient (SD) or Functionally Obsolete (FO)**	**NYS Condition Rating [5]**	**Posted [4]**
1. Grey Road crossing Neversink River [1]	2010	12/2010	neither	7.00	no
2. River Road crossing Sheldrake Stream	1973	4/2010	neither[2]	5.35	20 tons
3. County Road 161 crossing Kiamesha Creek	1937	4/2009	neither	4.53	no

[1] Replacement Bridge shown. Old bridge is closed to vehicular traffic and open to pedestrians and bicyclists. See Appendix F Photo 19.
[2] Bridge is about 13 feet wide and thus might be considered functionally obsolete except for the low traffic volumes on dirt road served.
[3] https://www.nysdot.gov/main/bridgedata/repository2/sullivanBridgeData.pdf, March 2011.
[4] https://www.nysdot.gov/gisapps/posted-bridges/r-posted-bridge-limitation, 2-7-2010. Bridges are analyzed for capacity to carry loads and if unable to safely carry legal limits are posted with weight limits or closed if deemed unsafe.
[5] Rating scale of 1 to 7 with 5 good, and 7 as best condition. Ratings as of March 31, 2011. https://www.nysdot.gov/main/bridgedata/key-nys-bridge-data-draft 2-7-2010.

3.8.2 Traffic Volumes

Existing Traffic Volumes

Traffic volume counts were conducted in summer of 2007 on Friday afternoon and Sunday afternoon as required in the adopted scope. See Appendix F Attachment 5 for discussion of recent count validation of 2007 data. These volumes represent typical peak hour conditions during the worse two months of the year. The Town of Fallsburg has a large seasonal population during July and August, which affects traffic volumes in the area. Counts may not be consistent at adjoining intersections if the peak hours do not align or if the counts occurred different days. Intervening opportunities will play a growing role in differences in volumes in the future.

The following intersections were evaluated:

1. NYS Route 42 and Heiden Road (CR 161)
2. NYS Route 42 and La Vista Drive
3. Kiamesha Lake Road/Fraser Road
4. Heiden Road (CR 161) and Thompson Road and River Road
5. Heiden Road (CR 161) and Kiamesha Lake Road (CR 109)

The peak hours of traffic for each intersection studied are shown in Table 3.8-3. Figures 3.8-3 and 3.8-4 show existing peak hour turning movement volumes at the intersections studied.

Table 3.8-3
Peak Hour Time of Day

Intersections	Friday P.M. Summer Peak Hour	Sunday Summer Peak Hour
NYS Route 42 and Heiden Road (CR 161)	4:30 p.m. to 5:30 p.m. *	4:15 p.m. to 5:15 p.m.**
NYS Route 42 and La Vista Drive	4:30 p.m. to 5:30 p.m.*	1:00 p.m. to 2:00 p.m.**
NYS Route 42, Fraser Road, and Kiamesha Lake Road (CR 109)	4:45 p.m. to 5:45 p.m.*	2:30 p.m. to 3:30 p.m.*
Heiden Road (CR 161), Thompson Road, and River Road	4:15 p.m. to 5:15 p.m.**	3:30 p.m. to 4:30 p.m.**
Heiden Road (CR 161) and Kiamesha Lake Road (CR 109)	4:45 p.m. to 5:45 p.m.*	4:00 p.m. to 5:00 p.m.*

* Source: Adler Consulting PLLC.
** Source: Tim Miller Associates, Inc.

No Build Traffic Volumes

The project is anticipated to be complete by 2015. The existing traffic volumes form the basis of the 2015 No-Build Condition (the future scenario without the proposed action) and the 2015 Build Condition (future scenario with the proposed action).

Typically a project's traffic impact is determined by comparing future traffic conditions without the project's traffic (2015 No Build Condition) to traffic conditions with project-generated traffic (2015 Build Condition). Although the project could be completed before 2015, development would be based upon market conditions. In order to provide a conservative analysis, traffic conditions have been assessed through 2015.

The No Build traffic condition is an interim scenario that establishes a future baseline condition upon which the project generated traffic can be compared. No Build traffic conditions are ascertained based on a number of 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.

The NYSDOT lists area projects in the Statewide Transportation Improvement Program (four years starting October 1, 2010). There are no major projects planned by the New York State Department of Transportation in the vicinity of the studied intersections.

The NYSDOT is finalizing improvements to the NYS Route 42 and Kiamesha Lake Road (CR 109) intersection. These improvements include accessible ramps, and pedestrian signals. The pedestrian signals allow the Fraser Road and Kiamesha Lake Road green times to be shorter than the pedestrian crossing time unless pedestrian actuated.

The Town of Fallsburg and Town of Thompson have development projects pending. Peak hour traffic volumes for the summer Friday and summer Sunday No-Build condition are provided in Figures 3.8-5 and 3.8-6. These figures reflect the existing traffic volumes plus a one percent per year background traffic growth to approximate traffic conditions through 2015 plus other area projects.

The following projects were included in No Build Condition traffic:

- Gemstar 69 residential units
- Miron Hills 50 residential units
- Westbourne 135 recreational homes and 152 year round apartments units
- Willow Woods 111 residential units
- Old Falls 48 residential units
- New Pines 350 residential units
- Point O' Woods 68 residential units
- Olympic Hotel 141 residential units

The Concord Hotel, casino, and associated development is not included as a No Build Project. Roadway improvements associated with that project were also not included unless otherwise already constructed.

Site Access

The proposed action would result in the potential construction of up to 236 residences in the Town of Fallsburg near the Raleigh Hotel. The site would have four access points. Three access points are located on Heiden Road (CR 161). One of those access points is right turn in and out only. In addition, 68 units would only have access to Park House Road (Wildwood Drive).

Project Trip Generation and Distribution

The proposed Raleigh and Heiden Properties project is anticipated to generate 234 trips during the Friday Seasonal p.m. peak hour and 226 trips during the Seasonal Sunday peak hour. Tables 3.8-4 and 3.8-5 show the projected trip generation rates and total trips generated by the proposed single family and townhouse development using Trip Generation[5] for single family housing and Trip Generation Study of Summer Recreational Homes: Town of Fallsburg Sullivan County, New York[6] for the duplexes. Since the single family trip rates are higher than the summer recreational rates this trip generation results in a higher or more conservative estimate of trip generation than if all units were treated as recreational homes.

Figures 3.8-7 and 3.8-8, show peak hour trips resulting from the residential development of Raleigh and Heiden Properties, distributed to the local roadway network. The trip distribution considers existing traffic flows, and access to NYS Route 17, NYS Route 42, and the road

[5] Institute of Transportation Engineers, Trip Generation, Washington, D.C.,8th edition , 2008.
[6] Tim Miller Associates, Inc., *Trip Generation Study of Summer Recreational Homes: Town of Fallsburg Sullivan County, New York*, Cold Spring, New York, October 17, 2007.

network for each cluster of residential units based on its position in the network. The overall anticipated trip distribution of Raleigh and Heiden Properties is shown in Figures 3.8-9 and 3.8-10.

Table 3.8-4
Project Site Trip Generation Rates

	Friday Seasonal P.M. Peak Hour			Sunday Seasonal Peak Hour		
Land Uses {ITE Code}	**IN (Trips/ Unit)**	**OUT (Trips/ Unit)**	**Total (Trips/ Unit)**	**IN (Trips/ Unit)**	**OUT (Trips/ Unit)**	**Total (Trips/ Unit)**
178 duplex (Townhouse) units	0.589	0.361	0.95*	0.485	0.466	0.95*
58 single family homes {210}**	0.699	0.411	1.11	0.522	0.463	0.985

*Rates from Tim Miller Associates, Inc., *Trip Generation Study of Summer Recreational Homes: Town of Fallsburg Sullivan County, New York*, Cold Spring, New York, October 17, 2007.
**Rates from Institute of Transportation Engineers, Trip Generation, 8th edition, Washington, D.C. , 2008.

Table 3.8-5
Project Site Trip Generation

	Friday Seasonal P.M. Peak Hour			Sunday Seasonal Peak Hour		
Land Uses {ITE Code}	**IN (Trips)**	**OUT (Trips)**	**Total (Trips)**	**IN (Trips)**	**OUT (Trips)**	**Total (Trips)**
178 duplex (Townhouse) units	105	64	169	86	83	169
58 single family homes	41	24	65	30	27	57
Total	**146**	**88**	**234**	**116**	**110**	**226**

See Table 3.8-4 for trip generation rates.

Build Traffic Volumes

The Summer Friday and Summer Sunday peak hour site generated trips are shown in Figures 3.8-7 and 3.8-8. These trips are added to the No Build Condition (Figures 3.8-5 and 3.8-6) traffic to obtain Build Condition traffic, as shown in Figures 3.6-11 and 3.6-12.

3.8.3 Traffic Level of Service

Existing Levels of Service

The study intersections were evaluated for level of service. Level of service criteria relates driver's perceptions of delay into grades ranging from level of service A to F with F being the worst condition. See Appendix F for level of service criteria.

The results of the level of service analyses for these intersections are summarized in Table 3.8-6. Capacity analysis calculations for Existing, No-Build, and Build conditions are provided in Appendix F.

The Town of Fallsburg has a significant seasonal population. The Friday and Sunday peak hour counts were specifically taken to represent a maximum impact scenario of traffic during the Friday p.m. and Sunday afternoon peak hour traffic during the busiest summer months. Thus the level of service represents peak summer traffic.

As seen in Table 3.8-6, all of the studied lane groups operate with additional available capacity and operate at efficient levels of service A to C during the seasonal peak hour periods with one exception. The intersection of NYS Route 42 with Heiden Road is projected at level of service F with delays during the Friday and Sunday seasonal peak hour periods.

Drivers can alter their decision according to conditions faced. Where modeling projects high delays (over 120 seconds) and high (1.2) volume to capacity ratios, the theoretical values may never be attained. Reductions in actual delays may be altered by acceptance of smaller gaps, smaller headways, and lane encroachment. In this case the gaps of the CR 109 signal at NYS Route 42 and the striped median use by left turning traffic from Heiden Road (CR 161) may also be reducing actual delays.

No Build Level of Service

As seen in Table 3.8-6, all of the studied lane groups operate with additional available capacity and operate at efficient levels of service A to C during the seasonal peak hour periods with two exceptions. The Friday peak hour of La Vista Drive drops to level of service E.

The intersection of NYS Route 42 with Heiden Road continues at level of service F with delays doubling during the Friday and Sunday seasonal peak hour periods. The delays shown are theoretical delays and in this case are unlikely to be seen. What is more likely to occur is the peak traffic will spread out rather than remain constant as typically presumed. In addition to smoothing out the peak traffic, shifting trip time outside the peak hour, and routing changes may occur. Specifically drivers would choose not to travel on the problem approach at that time choosing to arrive earlier or later. Others not being able to shift time would shift to alternative routes as CR 103, CR 58, or Park House Road (Wildwood Drive). Drivers would continue activities to reduce delays on the approach as discussed in the Existing Condition such as acceptance of smaller gaps.

Build Condition Level of Service

Table 3.8-6 summarizes the No Build and Build Condition levels of service, a comparison of which would indicate the "impact" of the project. Since individuals may define "impacts" differently, this industry accepted practice for comparing the before and after levels of service serves as a consistent scale upon which to review projects. The traffic capacity "impacts" are defined as the difference between future traffic conditions before and after the project (No Build and Build Conditions) based on criteria established in the 2000 Highway Capacity Manual[7].

Table 3.8-6 presents levels of service for the Build Condition for the studied intersections. Level of service at all intersection and times would remain C or better except locations noted in the No Build Condition. The La Vista approach delay in the a.m. peak hour would increase less than two seconds per vehicle. The Heiden Road (CR 161) approach to NYS Route 42 delays increase however the analysis becomes hypersensitive to even small (less than ten vehicles)

[7] Transportation Research Board, National Research Council, Highway Capacity Manual, Washington, D.C. 2000.

changes in volumes. In this regard the increase in site volumes at the intersection of fewer than 20 vehicles or less than one every three minutes may not be perceptible.

In this regard housing development north of the intersection using NYS Route 42 for access to commercial development in the Town of Thompson or Heiden Road (CR 161) for access to NYS Route 17 is positioned to generate more traffic through the key intersection.

Table 3.8-6
Level of Service Summary All Conditions

Intersection Road	Lane Group Approach Direction - Movement	Levels of Service, (Delay in seconds per vehicle), and Volume to Capacity Ratio					
		Summer Friday P.M. Peak Hour			Summer Sunday PM Peak Hour		
		Existing	No Build	Build	Existing	No Build	Build
Heiden Road (CR 161), River Road, and Thompsonville Road (unsignalized)							
Heiden Rd. CR 161	NB - L, T, R	A (7.6) 0.01	A (7.8) 0.01	A (7.8) 0.01	A (7.9) 0.00	A (8.2) 0.00	A (8.3) 0.00
	SB - L, T, R	A (8.2) 0.00	A (8.5) 0.00	A (8.7) 0.00	A (7.6) 0.00	A (7.9) 0.00	A (8.0) 0.00
River Road	WB - L, T, R	B (14.5) 0.01	C (17.7) 0.01	C (19.4) 0.02	A (9.4) 0.00	A (9.9) 0.01	B (10.3) 0.01
Thompsonville Rd	EB - L, T, R	C (15.2) 0.14	C (20.0) 0.22	C (23.4) 0.27	B (13.7) 0.08	C (17.2) 0.13	C (19.7) 0.17
Heiden Road (CR 161) and Kiamesha Lake Road (CR 109) (unsignalized)							
Heiden Rd. CR 161	NB - L, T	A (7.7) 0.03	A (7.9) 0.04	A (8.0) 0.07	A (8.1) 0.07	A (8.4) 0.09	A (8.7) 0.09
Kiamesha Lake Rd	EB - L, R	B (11.6) 0.12	B (14.2) 0.22	C (21.8) 0.49	B (12.4) 0.16	C (15.2) 0.25	C (24.5) 0.51
NYS Route 42, Fraser Road and Kiamesha Lake Road (CR 109) (signalized)							
NYS Route 42	EB - L, T, R	A (7.9) 0.56	A (9.5) 0.66	B (10.4) 0.70	B (11.9) 0.76	B (18.0) 0.87	C (21.5) 0.91
NYS Route 42	WB - L, T, R	A (8.0) 0.56	A (9.5) 0.66	A (9.5) 0.66	A (9.3) 0.65	B (12.2) 0.77	B (12.3) 0.77
Kiamesha Lake Rd	NB - L, T, R	B (19.8) 0.35	C (20.4) 0.42	C (22.6) 0.57	B (18.7) 0.19	B (19.0) 0.24	C (20.4) 0.41
Fraser Road	SB - L, T, R	C (20.5) 0.43	C (20.9) 0.48	C (21.2) 0.50	C (24.2) 0.62	C (26.6) 0.68	C (26.4) 0.68
	Overall	B (10.2) 0.53	B (11.5) 0.61	B (12.3) 0.67	B (12.6) 0.72	B (16.7) 0.82	B (18.4) 0.84
Heiden Road (CR 161) and NYS Route 42 (unsignalized)							
NYS Route 42	WB - L	A (9.6) 0.22	B (10.4) 0.29	B (10.5) 0.31	A (9.5) 0.26	B (10.4) 0.34	B (10.5) 0.35
Heiden Rd. CR 161	NB - L, R	F (360.8*) 1.70*	F (814.4*) 2.71*	F (879.7*) 2.85*	F (54.3) 0.85	F (257.8*) 1.44*	F (275.5*) 1.48*
NYS Route 42 and La Vista Drive (unsignalized)							
NYS Route 42	EB - L, T	B (10.2) 0.17	B (11.1) 0.20	B (11.2) 0.21	A (9.4) 0.12	B (10.2) 0.15	B (10.3) 0.15
La Vista Drive	SB - L, R	C (24.4) 0.42	E (39.3) 0.59	E (40.5) 0.60	C (17.5) 0.31	C (23.9) 0.42	C (24.4) 0.43

NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound.
L = left, R= right, T = through, (e.g. WB-L = Westbound left).
See Appendix F for level of service calculations.
* Where theoretical delays exceed 120 seconds per vehicles, or volume to capacity ratios exceed 1.2 , delays are not anticipated as shown rather other compensating changes would be expected from drivers to reduce delays. The theoretical delays would therefore not likely occur but would manifest in other mostly negative operational changes.

3.8.4 Consistency with Town Comprehensive Plan

There are 24 transportation recommendations in the Town of Fallsburg, New York, Comprehensive Plan[8]. The following is a synopsis of the direct and expanded applicability of the Plan element, how the proposed project meets the recommendations. In some cases the recommendations apply to one or more specific routes not applicable to the Raleigh site, in such cases the recommendations may be discussed in a more general context than applied in the Comprehensive Plan. The Comprehensive Plan recommendations are shown below in italics.

[8] Town of Fallsburg Comprehensive Plan Committee and Planit Main Street, Inc., Town of Fallsburg, New York, Comprehensive Plan, Town of Fallsburg, NY, October 2006.

1. Continue to coordinate with the NYSDOT to identify and address functional and safety deficiencies and subsequent solutions for State highway;

This facility is not located on a State Highway. This section does deal with capacity at NYS Route 42 intersections with Heiden Road (CR 161), La Vista Drive, and Kiamesha Lake Road (CR 109)/Fraser Road. Any mitigations dealing with these intersections would need to be coordinated with the NYSDOT and any work in the state right-of-way would require a state highway work permit. No mitigations for this project are proposed on the state routes. Existing issues and potential solutions are discussed.

2. Rezone the stretch of NYS Route 42 between South Fallsburg and Fallsburg to residential. Commercial retail uses are not recommended along the edge of the Neversink River due the amount of amount of impervious surface and the visual impact from the river. More importantly, allowing high traffic generators along this road segment is not recommended due to roadway geometry.

The site is not on NYS Route 42 nor along the Neversink River as shown in Figure 3.8-1. While the existing Hotel would remain, the new development is essentially residential.

3. Acquire additional right-of-way along County and State roads to provide wider shoulders, bikeways and sidewalks;

Site has frontage along CR 161 (Heiden Road). New residential development is set back from CR 161. The nearest internal loop is set back approximately 50 feet and houses are set back further. A portion of the buffer could be reserved to be dedicated to the County. Although this recommendation does not apply to Town roads the nearest internal loop road and houses are set back over 100 feet from Park House Road (Wildwood Drive), the only Town road the site has frontage on.

4. Identify opportunities for scenic overlooks along the Neversink River as is illustrated.

Internal site roadways in the proposed plan are blocked from viewing the Neversink River by a ridge line over elevation 1300 feet to the east. Tree lines and the ridge line effectively block the line of sight from the Neversink River.

5. As the galvanized steel "W" guardrail needs replacement, coordinate with NYSDOT to replace with Cor-ten Steel guardrail as is illustrated;

Guardrail replacement is generally a maintenance function and thus not recommended as a project mitigation. Any new guardrail that might be necessary as mitigation will be coordinated with the jurisdiction in question. Major guardrail issues are identified.

6. Coordinate with County with respect to improving County Roads and providing transportation services for seniors;

The Raleigh Hotel site offers a possible turn around location for shuttle service between the hotel guests and south Fallsburg shopping opportunities. The site has frontage on CR 161 (Heiden Road) and the new residential development is set back sufficiently to allow for future CR 161 (Heiden Road) improvement. Recommendations to review the sight lines on CR 161 (Heiden Road) at CR 109 (Kiamesha Lake Road) are suggested.

7. Increase setbacks for fences along County and State roads to 35 feet;

Any fencing along new residential areas can be set back 35 feet or more from CR 161 (Heiden Road). Existing Raleigh Hotel fences along Heiden Road (CR 161) are recommended to be reviewed to increase the setback as might be practicable.

8. Provide a summer NYS Route 42 Trolley Bus;

This site is not along NYS Route 42. The Trolley Bus might want to turn around at the hotel and pick up passengers bound for Route 42 commercial enterprises. Alternatively the loop consisting of NYS Route 42, Kiamesha Lake Road (CR 109), and Heiden Road (CR 161) with left turns at NYS Route 42 being at a signalized intersection offer a potential turn around for trolleys destined to commercial areas along NYS Route 42. This is not being proposed as mitigation by the applicant however the residents would likely use such a service.

9. Establish an amortization period to require that all fences be set back a minimum of 35 feet from the NYS Route 42 edge of pavement within 5 years;

This site is not on NYS Route 42. See item 7 above.

10. Ensure that buildings are set back from NYS Route 42 so as not to create sight distance concerns and to provide a building line;

Setting back buildings along all roads is desirable. No new buildings are proposed within 50 of existing roadways.

11. Off-street parking areas along NYS Route 42 must be sufficient to accommodate the needs of the intended commercial or industrial use. In no case shall vehicles back into the NYS Route 42 right-of-way;

The Raleigh site is not located on NYS Route 42 as shown in Figure 3.8-1 thus this is not applicable. The backing of vehicles onto any public road should be avoided. All homes on the Raleigh and Heiden Properties' site are designed to allow vehicles to access to the public roads using new private roads, without backing onto public roads.

12. It is recommended that the Town coordinate with NYSDOT to get a box guardrail for the new culvert leading into the South Fallsburg hamlet;

The site is not located in this area and thus this Comprehensive Plan recommendation is not applicable.

13. Plan for pedestrian and aesthetic improvements for the Sheldrake Stream culvert on NYS Route 42 - the major gateway to South Fallsburg. Improvements might include: pedestrian lighting, sidewalks, stone railing on the edge instead of guardrails and decorative plantings;

The site is not located in this area and thus this is not applicable. The River Road bridge and Ranch Road culvert over the Sheldrake Stream are discussed regarding guardrail issues.

14. Work with NYSDOT to create an improved roadside maintenance program for State highways in the Town;

This project is not along a state highway as shown in Figure 3.8-1. Improvement of maintenance along all roads is a desirable outcome. Vegetation removal along the frontage is recommended as part of the construction mobilization phase to improve the visibility from access driveways. Additional roadside maintenance is discussed for Town roads.

15. Carefully assess all site plan applications to ensure that traffic generation and (sight) distance concerns are addressed and have appropriate mitigation measures;

This project contributed to the trip generation study of Fallsburg summer recreational homes. In addition this study applies the trip generation and discussed transportation improvements.

16. Sidewalks should be provided with higher density housing to ensure the safe movement of pedestrians;

This site does have two dwelling units per acre. The proposed plan would allow pedestrian movement on the internal road system to access accessory facilities. The road layout is not conducive to high speed travel. Travel on the private roads would also be by the site residents only as there are no connections to permit through traffic. The low traffic volumes and low speeds provide a reasonable accommodation for pedestrians.

The project site is not however near a hamlet area with existing sidewalks nor are there retail services nearby. The residential area has facilities duplicating facilities at the hotel including pools, tennis courts, and community facilities to maintain the hotel use as a separate entity. As such there is no expectation to provide services to residents that would necessitate sidewalks. These internal roads would be attractive to residents for bicycling and as such limited bicycle parking should be provided at local accessory facilities.

17. Create a wider shoulder along the edge of NYS Route 42 to accommodate pedestrian and bicycle traffic;

The project site is not along NYS Route 42 as shown in Figure 3.8-1.

18. Work with property owners to obtain easements along the entire NYS Route 42 Corridor for the purpose of establishing a pedestrian pathway;

This site is not along the NYS Route 42 Corridor as shown in Figure 3.8-1 and thus this Comprehensive Plan recommendation is not applicable.

19. Keep signage and other obstructions that impair sight distance away from driveways.

Location of new private roadway signs are not shown on the site plan. All signage and other obstructions should be addressed to minimize any obstructions from driveways. Internal road signs should conform to the *Manual on Uniform Traffic Control Devices: for Streets and Highways*, (Federal Highway Administration, December 2009 or latest edition and revisions) and any appended New York State regulations.

20. The Town should coordinate with County and NYSDOT to monitor the level-of-service on all County and State roads;

This transportation section provides detailed information of trip generation and level of service at five intersections on the County and/or State system.

21. Where the level-of-service is anticipated to be diminished by a proposed development due to significant vehicle trip generation, a traffic impact study should be prepared by the developer along with appropriate mitigation measures;

This transportation section provides detailed information of trip generation and level of service at five locations. The developer proposes four access points to disperse the site traffic. No other capacity mitigation is proposed for the site traffic. Recommendations are included in following subsections for existing capacity issues.

22. The Town should limit B-1 Business Zoning in areas that are residential and/or where local streets or collectors have insufficient capacity to maintain a level- of- service "C" or better;

The residential portion is zoned REC -1 and is being proposed as residential. No new B-1 zoning is proposed.

23. The Planning Board should assess the cumulative impact that developments may have on traffic and pedestrian circulation and require developers to provide appropriate mitigation measures;

This transportation section analyzes the cumulative impacts of other developments and the project site. This site plan is intended to promote internal pedestrian transportation. External pedestrian circulation is anticipated to be minimal in this area. Mitigation measures are discussed in a following separate subsection.

24. Plan for aesthetic improvements along Pleasant Valley Road.

The site is not near Pleasant Valley Road and therefore this Comprehensive Plan recommendation is not applicable.

3.8.5 Applicant Proposed Mitigation Measures

The Raleigh and Heiden Properties project is expected to generate 234 vehicular trips in the summer Friday peak hour and 226 trips in the summer Sunday peak hour. This traffic would be distributed to the local road network at four points.

Right-of-way lines along frontage roads will be adjusted as required to meet jurisdictional functional classification right-of-way requirements.

Sight lines for vehicles turning left from Heiden Road (CR 161) at Kiamesha Lake Road (CR 109) depend on the exact point of turning because of the fencing along the Raleigh Hotel. Detailed engineering drawings should be prepared to examine moving the fence further from the road to improve sight lines.

3.8.6 Network Issues

Network issues noted below are existing conditions that should be addressed regardless of whether or not new construction is planned. As maintenance improvements these are not identified as the Applicant’s mitigation responsibility.

- Local sign maintenance
- Hazard removal

- Guardrail maintenance
- Road pavement maintenance
- Resolving street name and street signage issues

Local sign maintenance involves replacing worn signs and bringing them into conformance with the new Manual on Traffic Control Devices. The Federal government has recently moved to relax the sign replacement schedule to permit signs to be replaced when worn. Additional warning signs would be added where advisory speed plagues are lacking them. Warning signs should be removed from utility poles and placed on standard sign posts. See Appendix F Attachment 6 Table 1 for sign action summary. Any functional changes in regulator signs (NO PARKING, and speed limit) and street signing require regulatory changes. Appendix F, Table 2, summarizes vicinity parking regulations in the Town of Thompson. New signs should be dated and inventoried to improve quality control.

Hazard removal of roadside obstacles is often hindered by lack of jurisdictional control. Sometimes hazard removal can be required when property owners come before the Town on other matters. Guardrail should be replaced where damaged and still necessary to protect drivers from roadside hazards. In general areas where guardrail needed replacement removal of the obstacle did not appear practicable.

Pavement areas noted in poor condition generally appear to need more than small patching. Larger patches, scrape and replace, or overlays are methods to improve existing pavement conditions depending on the extent of the surface deterioration. However, improving the road surface can result in increased vehicle speeds. For instance, resurfacing Fred Road could be expected to increase vehicle speeds entering Park House Road (Wildwood Drive) from the Town of Thompson.

NYS Route 42 has some specific signage issues relating to existing conditions and exacerbated by growing network traffic. Potential regulatory remedies include:

A) No NYS Route 42 right-turn-on-red onto Kiamesha Lake Road (CR 109), and

B) Moving the 55 mile per hour NYS Route 42 speed zone to the west side of Heiden Road (CR 161) intersection.

Capacity is an issue for Heiden Road (CR 161) traffic approaching NYS Route 42 during peak summer periods. The Raleigh and Heiden Properties project being south of NYS Route 42 and Heiden Road (CR 161) intersection would send fewer vehicles through the intersection than comparable development in the NYS Route 42 corridor in South Fallsburg. The increase in site traffic at this intersection is anticipated to be small. There are several improvements or combination of such improvements noted below that could reduce delays:

1) Flatten the Heiden Road (CR 161) approach grade
2) Improve the NYS Route 42 median to accept left turning traffic
3) Add a turn lane on Heiden Road (CR 161)
4) Signalize the intersection
5) A summer NYS Route 42 Trolley
6) Prohibiting left turns from Heiden Road (CR 161) to NYS Route 42

Flattening the approach of Heiden Road (CR 161) onto NYS Route 42 would reduce delays by allowing vehicles to accelerate into NYS Route 42 more quickly, thereby allowing drivers to use

smaller gaps. This is especially important to trucks, and buses. Lowering the grade slightly by raising Heiden Road (CR 161) would improve the sight lines for cars drivers looking to the right from Heiden Road (CR 161).

Improving the NYS Route 42 median to accept left turning vehicles would allow those turns to be made in two parts. Rather than looking for gaps in both directions at the same time left turning drivers from Heiden Road (CR 161) could use gaps from the left to enter the receiving lane and then wait for a southbound gap to enter the traffic stream southbound. This helps right turning traffic that gets queued behind left turning traffic from Heiden Road (CR 161).

Adding a turning lane on Heiden Road (CR 161) would also reduce delays to right turning vehicles that currently get queued behind left turning vehicles.

Signalizing the intersection would provide gaps to allow Heiden Road (CR 161) vehicles to enter NYS Route 42 and left turning vehicles from NYS Route 42 to enter Heiden Road (CR 161). Traffic signal benefits would negate the need for a NYS Route 42 center receiving lane. The signal would also change the benefits gained with flattening Heiden Road (CR 161) or adding an additional turn lane. In combination with a traffic signal those improvements allow reduce signal delay to NYS Route 42 traffic. The heavy left turn into Heiden Road (CR 161) and right turn onto NYS Route 42 would suggest the use of a third traffic signal phase to improve operation when coupled with a right turn lane on Heiden Road (CR 161).

The summer trolley could reduce area traffic from the Raleigh Hotel when it is seasonally in full use. The homes planned for the project would potentially add to that use.

The improvements listed above would primarily be needed to improve existing peak summer traffic and may provide little, no, or in the case of the signal, increased delay off peak. As the Raleigh and Heiden properties traffic is primarily directed away from the intersection of Heiden Road (CR 161) and NYS Route 42 and to/from the south and west, the Applicant has not proposed to undertake improvements north of the site.

Prohibiting left turns from Heiden Road (CR 161) would improve the intersection operation. However there is no easy turn-around location and this would potentially cause more efficiency losses during off-peak times. This improvement is not suggested.

Additional revenue to undertake improvements to local roadways would be available to the Town of Fallsburg, Town of Thompson, and the County from taxes as discussed in section 3.12 Fiscal Impacts.

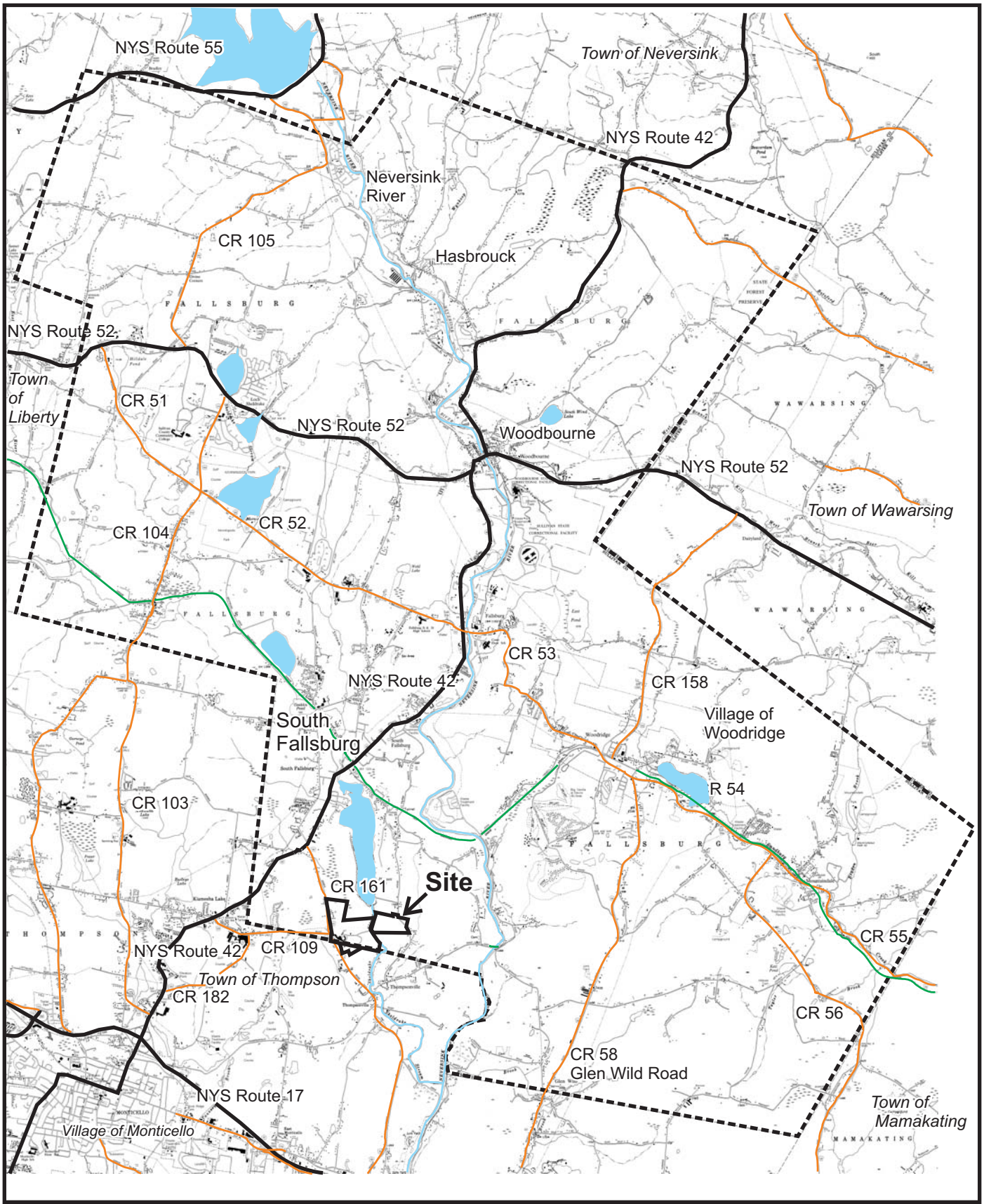

Figure 3.8-1: Regional Context
Raleigh and Heiden Properties
Town of Fallsburg
Sullivan County, New York
Base Map: NYS DOT Planimetric Map
Scale: As shown

File 09038 5/05/11
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Tim Miller Associates, Inc.,10 North Street, Cold Spring, New York 10516 (845) 265-4400 Fax (845) 265-4418

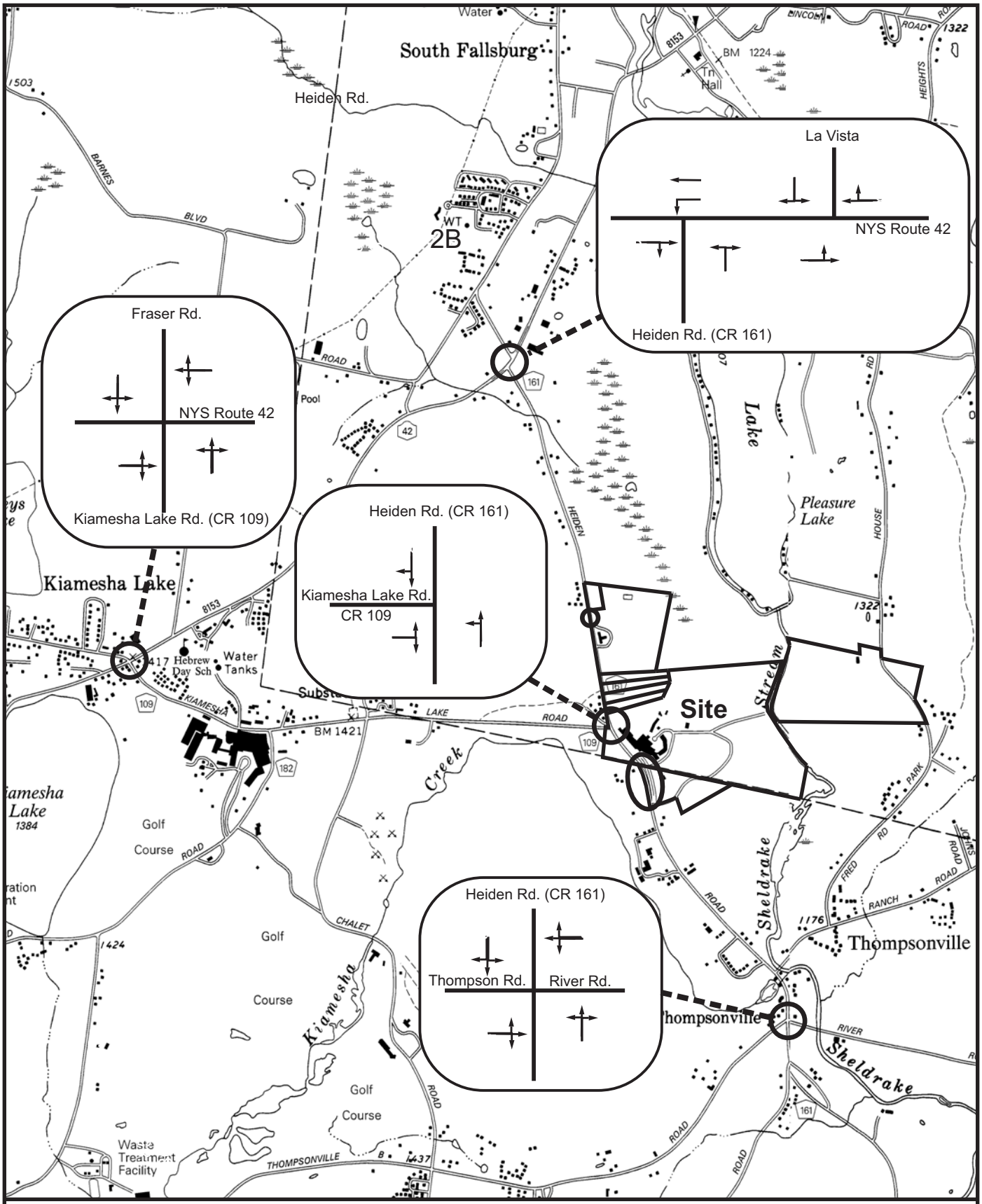

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Figure: 3.8-2: Local Area
Raleigh and Heiden Properties
Town of Fallsburg, Sullivan County, New York
Base Map: US DOT 7.5-minute Planimetric Map, Monticello Quad
Scale: 1" = 2,000'

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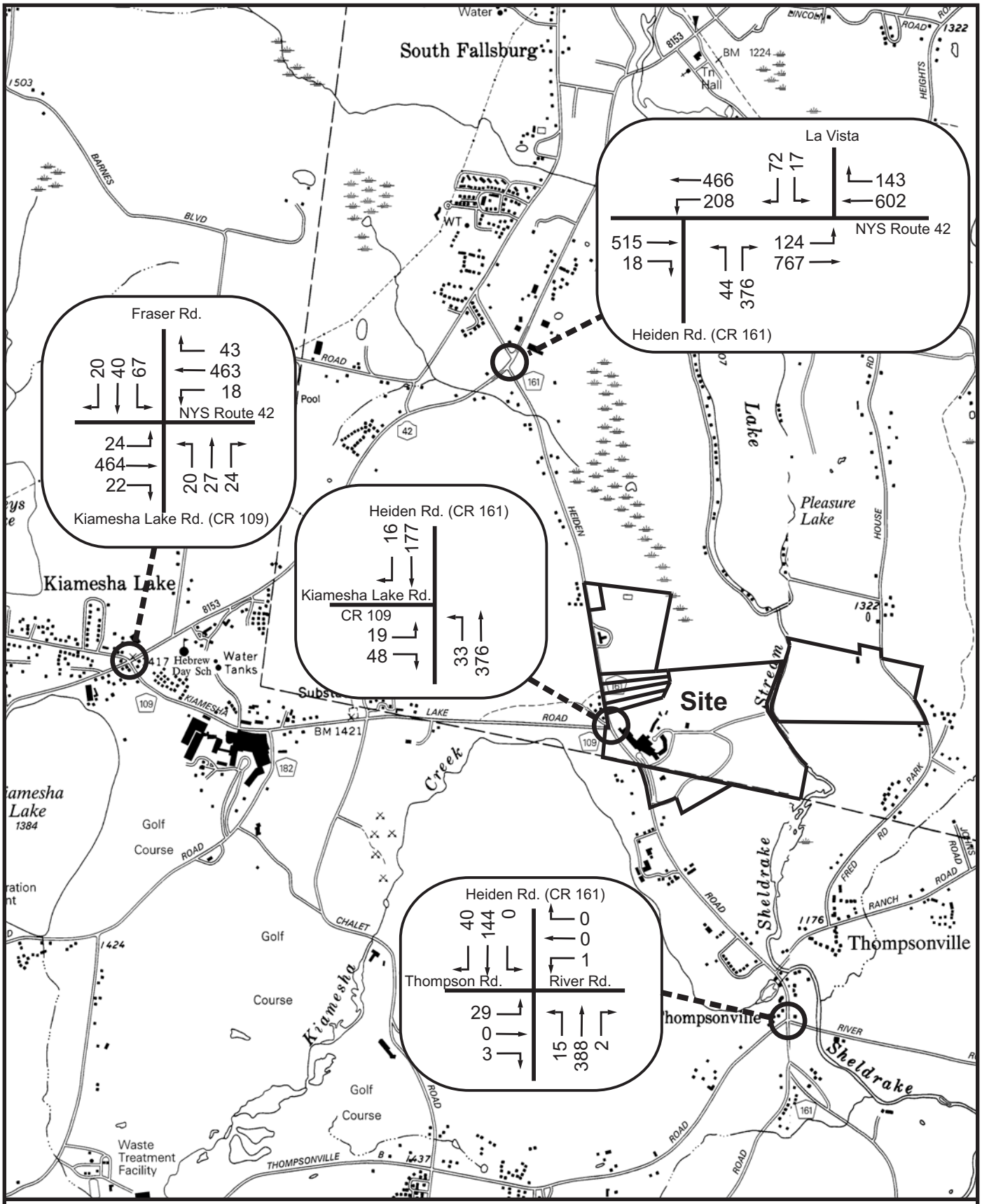

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Figure: 3.8-3: Existing Summer Friday PM Peak Hour Traffic
Raleigh and Heiden Properties
Town of Fallsburg, Sulivan County, New York
Base Map: US DOT 7.5-minute Planimetric Map, Monticello Quad
Scale: 1" = 2,000'

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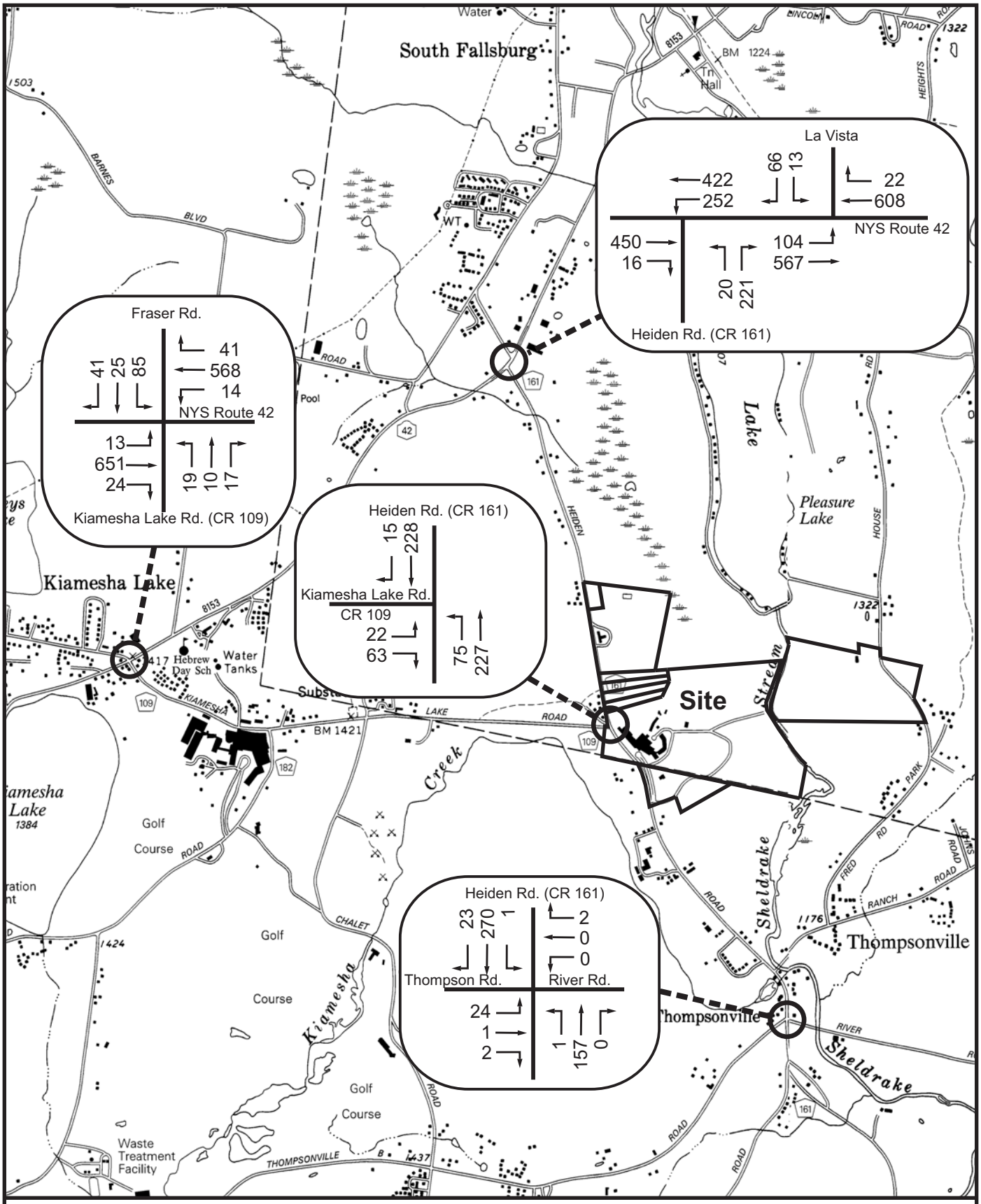

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Figure: 3.8-4: Existing Summer Sunday Peak Hour Traffic
Raleigh and Heiden Properties
Town of Fallsburg, Sulivan County, New York
Base Map: US DOT 7.5-minute Planimetric Map, Monticello Quad
Scale: 1" = 2,000'

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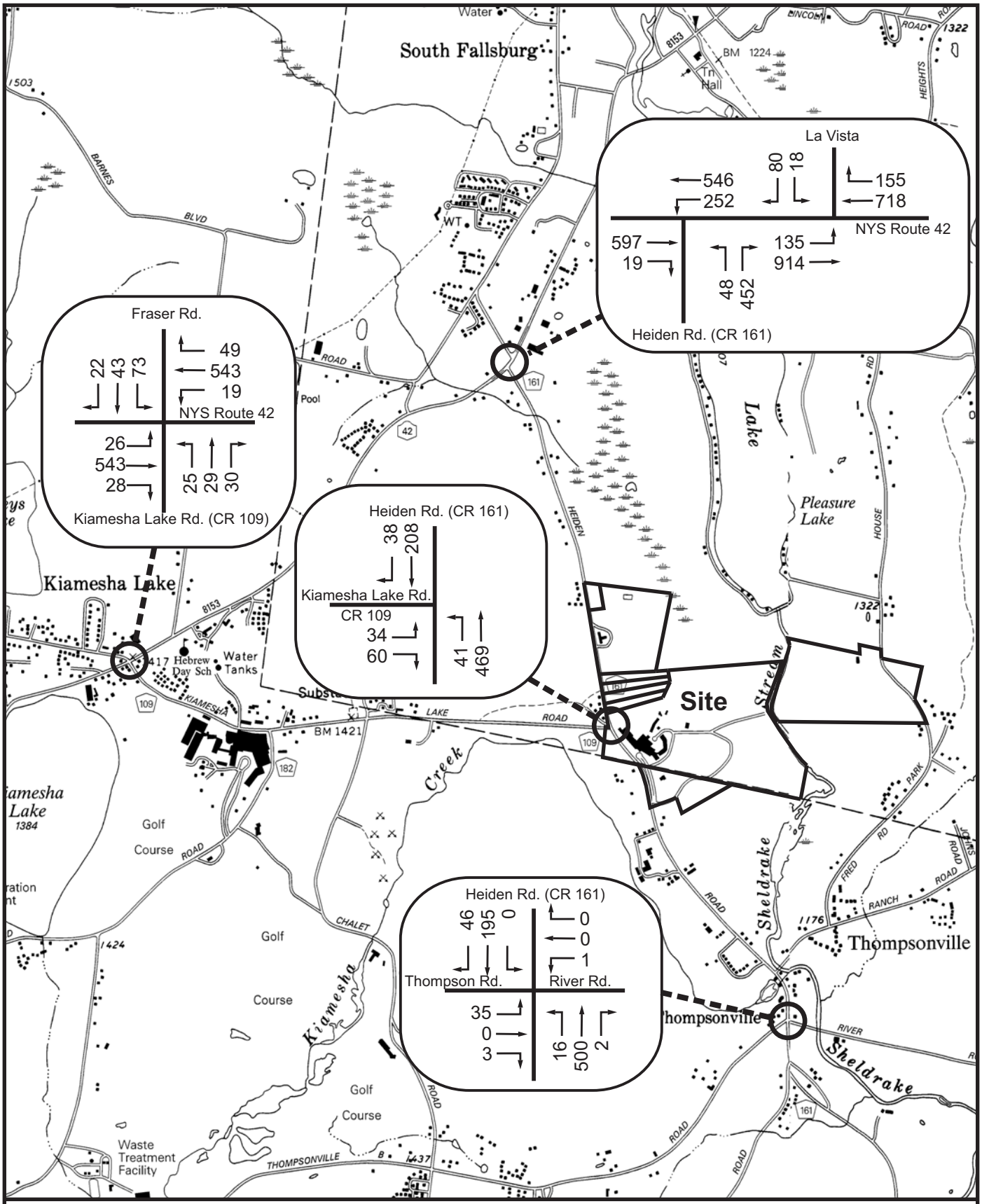

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Figure: 3.8-5: No Build Summer Friday Peak Hour Traffic
Raleigh and Heiden Properties

Town of Fallsburg, Sulivan County, New York

Base Map: US DOT 7.5-minute Planimetric Map, Monticello Quad

Scale: 1" = 2,000'

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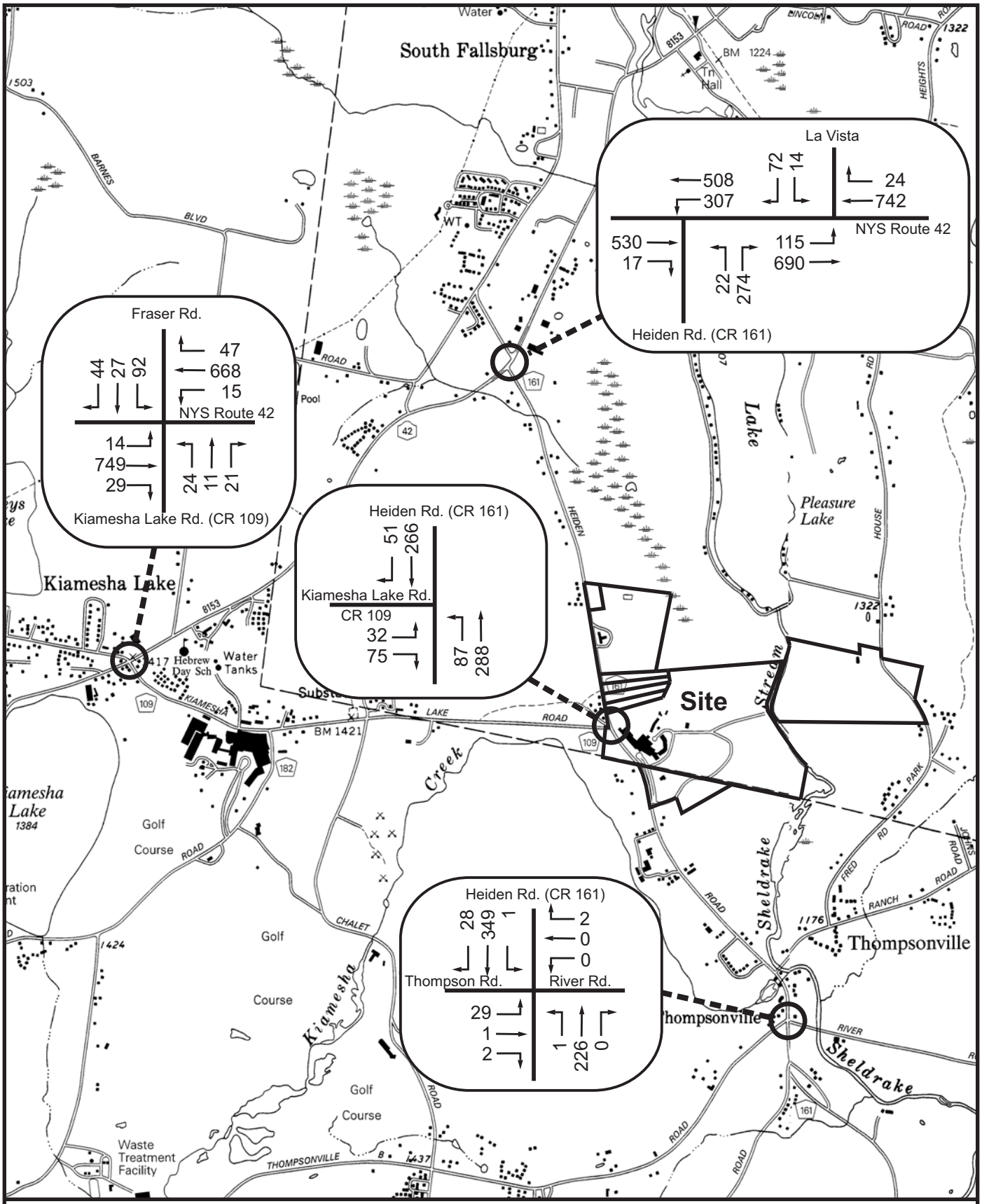

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Figure: 3.8-6: No Build Summer Sunday Peak Hour Traffic
Raleigh and Heiden Properties
Town of Fallsburg, Sulivan County, New York

Base Map: US DOT 7.5-minute Planimetric Map, Monticello Quad

Scale: 1" = 2,000'

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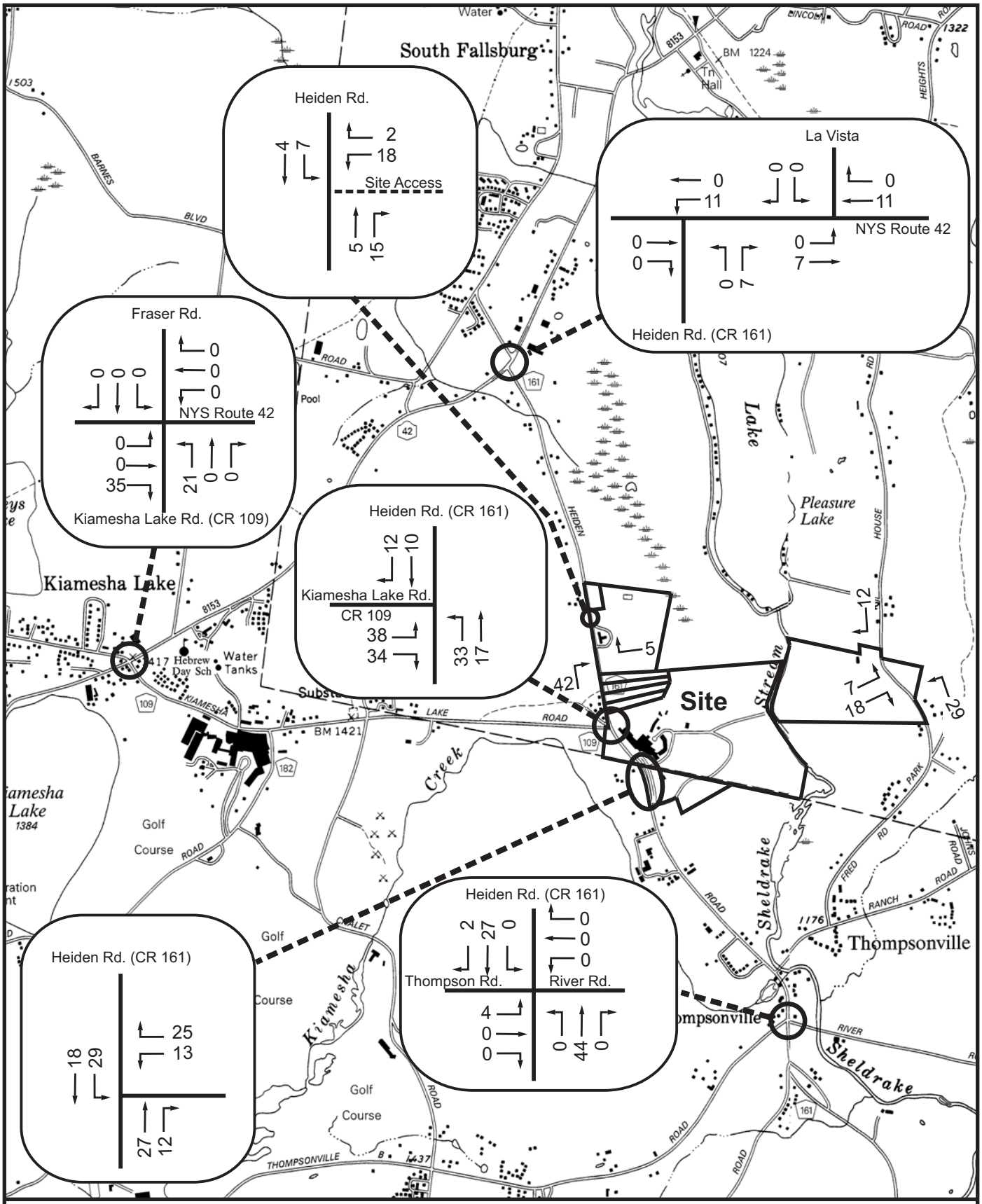

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Figure: 3.8-7: Site Generated Friday Peak Hour Traffic
Raleigh and Heiden Properties
Town of Fallsburg, Sulivan County, New York
Base Map: US DOT 7.5-minute Planimetric Map, Monticello Quad
Scale: 1" = 2,000'

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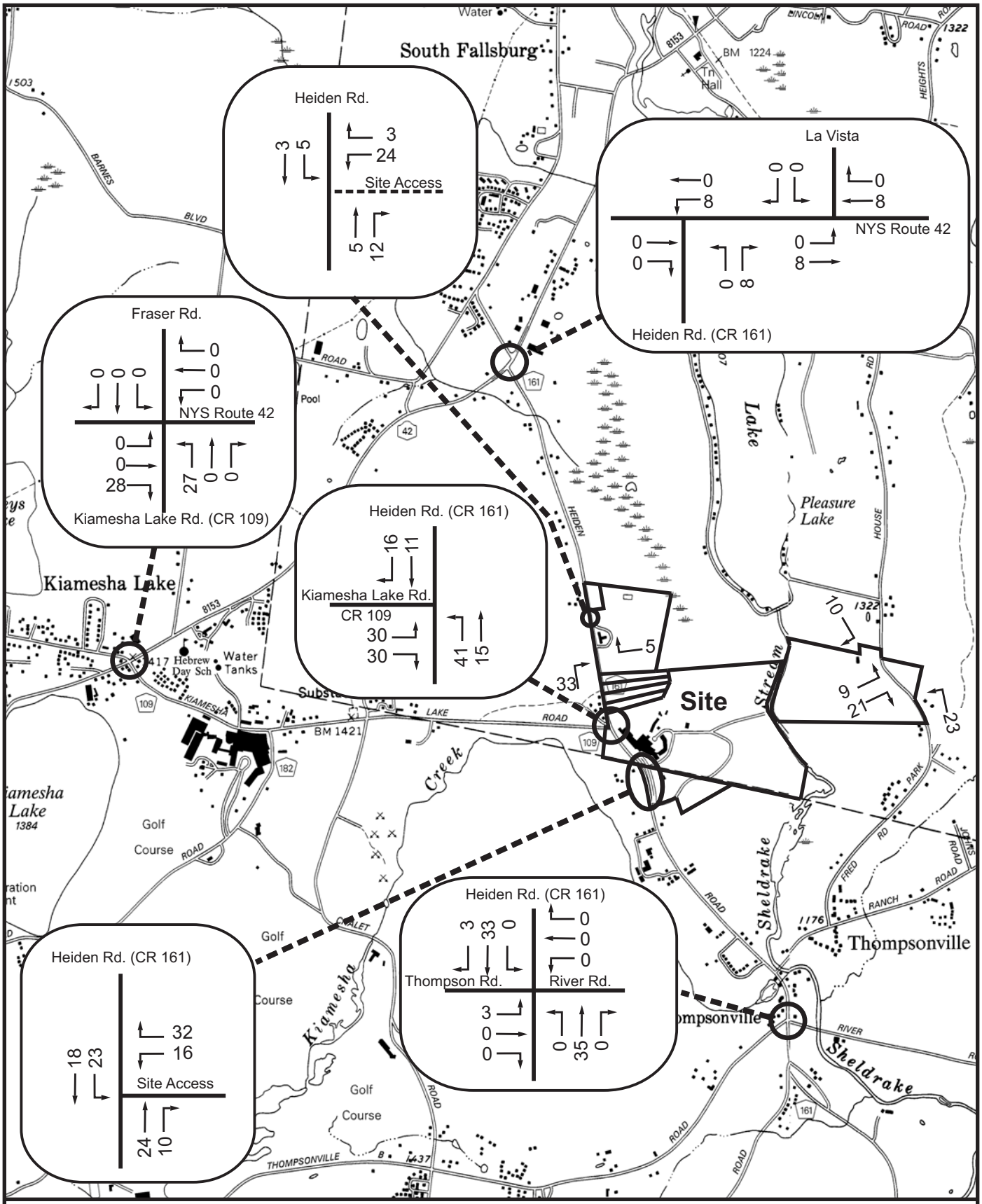

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Figure: 3.8-8: Site Generated Sunday Peak Hour Traffic
Raleigh and Heiden Properties
Town of Fallsburg, Sulivan County, New York
Base Map: US DOT 7.5-minute Planimetric Map, Monticello Quad
Scale: 1" = 2,000'

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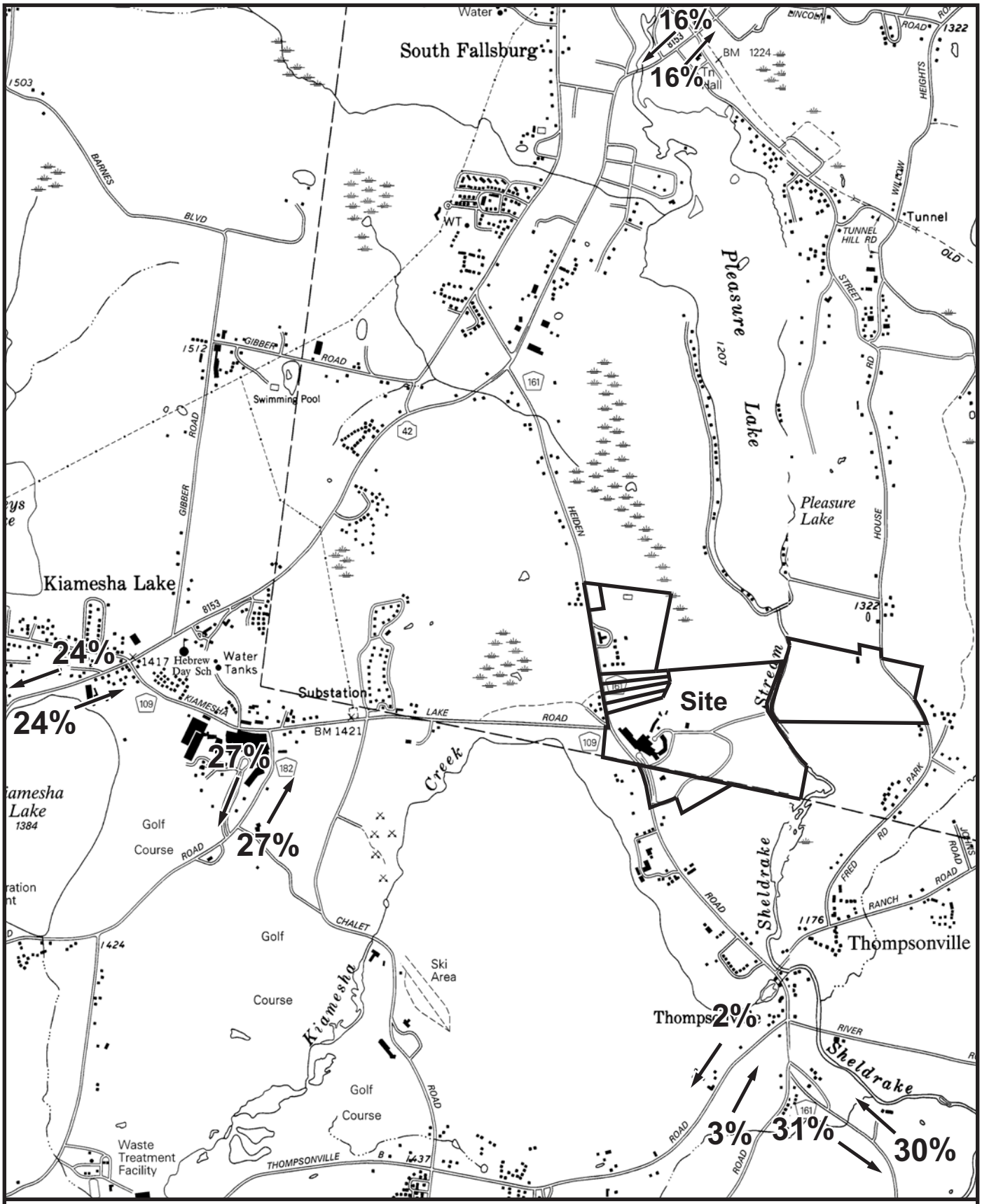

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Approx. Overall Distribution

Figure: 3.8-9: Site Distribution Friday Peak Hour Traffic
Raleigh and Heiden Properties
Town of Fallsburg, Sulivan County, New York
Base Map: US DOT 7.5-minute Planimetric Map, Monticello Quad
Scale: 1" = 2,000'

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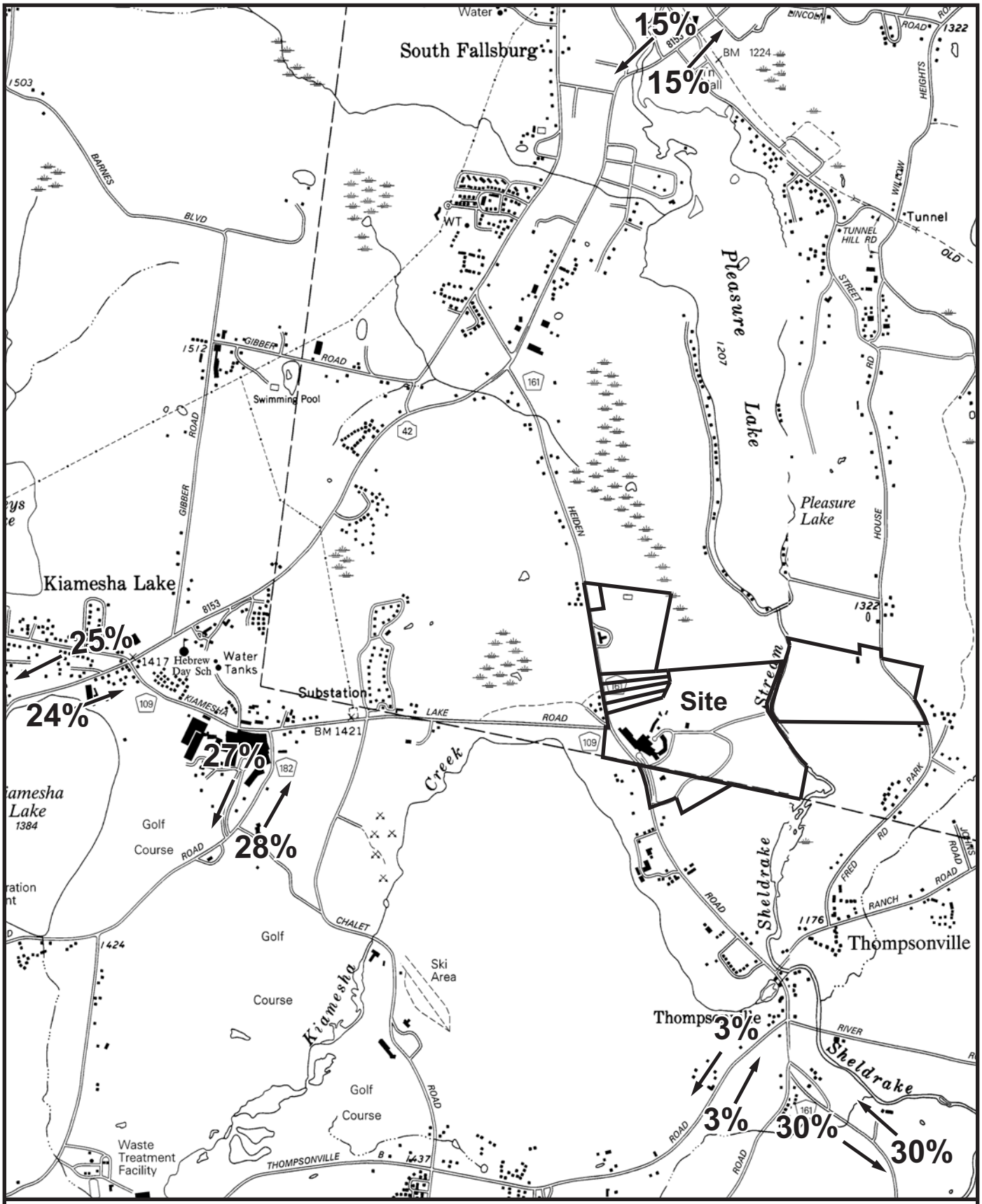

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Approx. Overall Distribution

Figure: 3.8-10: Site Distribution Sunday Peak Hour Traffic
Raleigh and Heiden Properties
Town of Fallsburg, Sulivan County, New York
Base Map: US DOT 7.5-minute Planimetric Map, Monticello Quad
Scale: 1" = 2,000'

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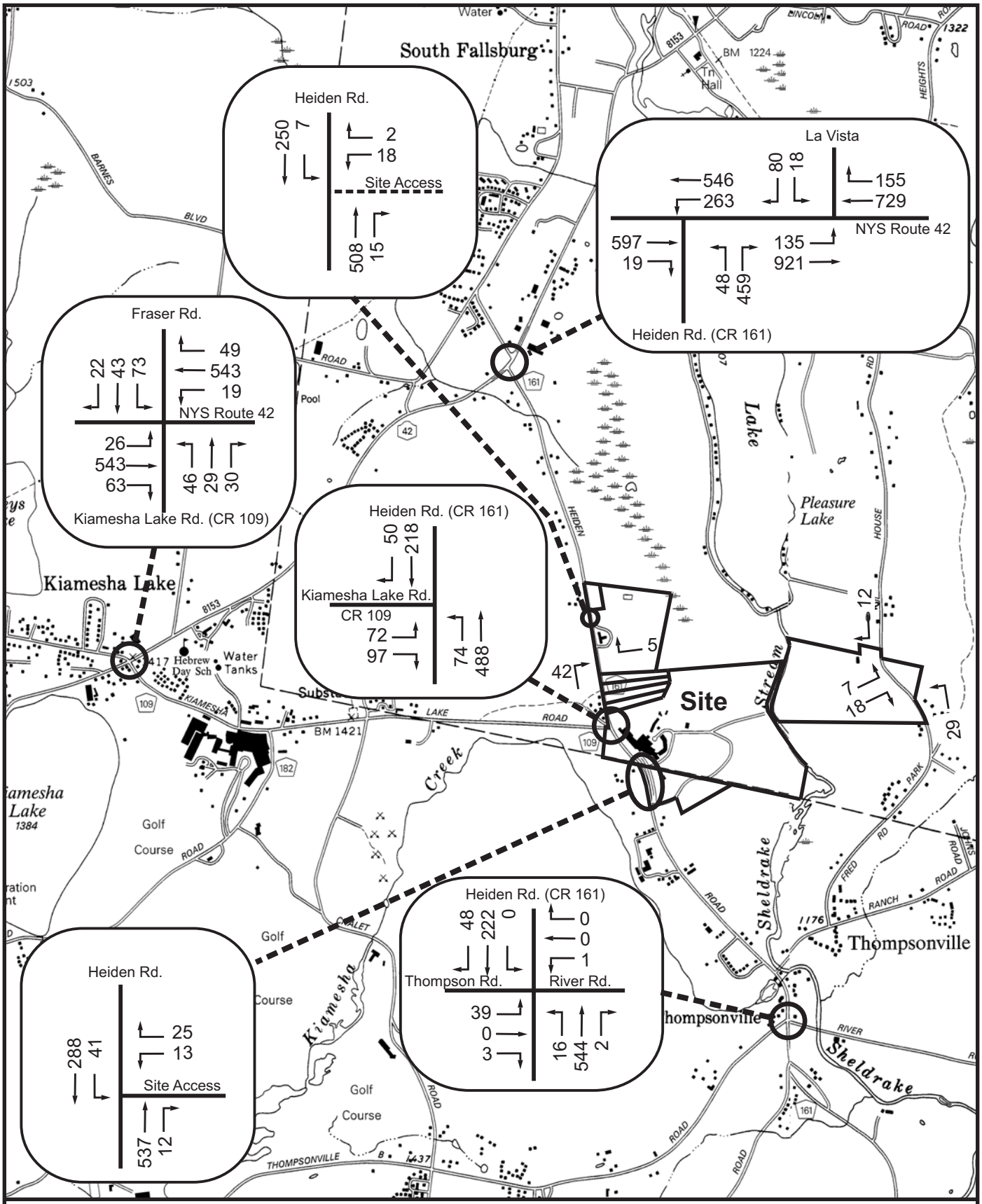

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Figure: 3.8-11: Build Summer Friday Peak Hour Traffic
Raleigh and Heiden Properties
Town of Fallsburg, Sulivan County, New York
Base Map: US DOT 7.5-minute Planimetric Map, Monticello Quad
Scale: 1" = 2,000'

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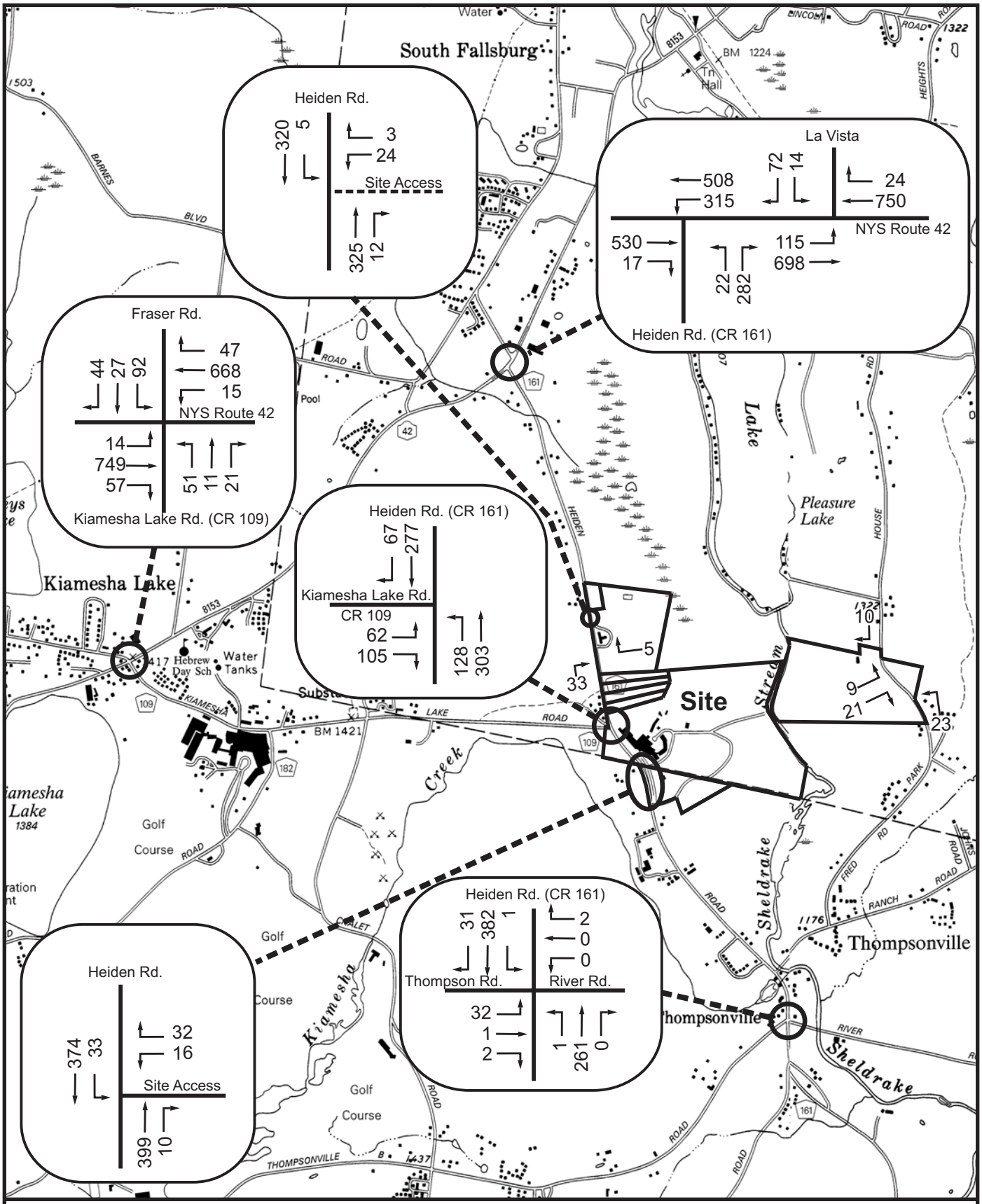

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Figure: 3.8-12: Build Summer Sunday Peak Hour Traffic
Raleigh and Heiden Properties
Town of Fallsburg, Sulivan County, New York

Base Map: US DOT 7.5-minute Planimetric Map, Monticello Quad

Scale: 1" = 2,000'

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