TRAFFIC IMPACT ASSESSMENT
TACONIC TRACT SUBDIVISION

Town of Mount Pleasant
Westchester County, New York

Prepared for:

Taconic Tract Development, LLC
136 Todd Lane
Briarcliff Manor, NY 10510

Prepared by:

CHAS. H. SELLS, INC.
Consulting Engineers, Surveyors & Photogrammetrists

Susan K. Fasnacht, P.E., Project Manager
Chas. H. Sells, Inc.
555 Pleasantville Road
Briarcliff Manor, NY 10510
914-747-1120

August 2009

TABLE OF CONTENTS

Traffic Impact Assessment for the Taconic Tract Subdivision

A. INTRODUCTION

The applicant, Taconic Tract Development, LLC, proposes to develop the 30.0 acre property as a conventional 17 lot subdivision. Site improvements include new access roads, storm water management, landscaping, and off-site road improvements as approved by the Planning Board.

The subdivision will be comprised of 16 single family dwellings. The remaining lot contains an existing residence. A small portion of unused land will be acquired from this lot in order to construct the new access road, thus its current land usage will not be altered.

The primary access to the subdivision will be through a new access road, "Road A" from Washburn Road to the South and from Carleton Road to the North. The subdivision will also contain another proposed access road, "Road B". Road B is located to the east of Road A and will provide access to 7 of the single family dwellings.

This traffic report evaluates the potential impacts of the proposed project on traffic and transportation conditions surrounding the subdivision.

B. METHODOLOGY

The traffic analysis comprises three major components designed to identify and quantify the proposed action's effect on the existing transportation system. A discussion of the analysis methodology is provided below:

- "Existing Conditions" presents current conditions in the study area. Traffic conditions are discussed for the study area roadways and levels of service are computed for each of the intersection movements.
- "The No-Build Scenario" also referred to as "The Future Without The Proposed Project," assesses transportation conditions in the future (Design Year 2011) assuming that the current uses in the study area would remain unchanged. This analysis considers increases in traffic demand from background growth and other known projects planned in the area.
- "Probable Impacts of the Build Scenario" compares transportation conditions in 2011 with the trips generated by the development to those calculated for the No-Build Scenario.

The traffic analysis also provides an evaluation of the project's affect on existing pedestrian and recreational uses as well as a construction impact analysis.

STUDY AREA

To assess the traffic impacts associated with the Build Scenario, an overall study area was defined that considered the location of the project, primary access routes to and from the site, and key intersections likely to be affected by project-generated trips. The study area includes Carleton Road extended from Chappaqua Road to Todd Lane and from Todd Lane to Pleasantville Road. The study area also includes Washburn Road. Figure 1 illustrates the study area. The following intersections are included in the study area:

- Carleton Road and Chappaqua Road
- Carleton Road and Route 9A
- Todd Lane and Pleasantville Road
- Development Entrance & Washburn Road
- Development Entrance & Carleton Ave.

The roadways in the vicinity of the site are generally standard widths with standard lane markings for two lane roads. All roads within the project area are two-lane, two-way roadways.

Route 100 is an Urban Arterial Roadway located to the west of the project area. Route 100 continues north past Chappaqua Road and south past Carleton Road. Route 9A intersects Route 100 near Carleton Road.

Pleasantville Road is an Urban Collector Roadway that runs between the Village of Pleasantville and the Village of Briarcliff Manor. Pleasantville Road is a two-lane, two-way roadway that is consistently 24 feet wide throughout the study area.

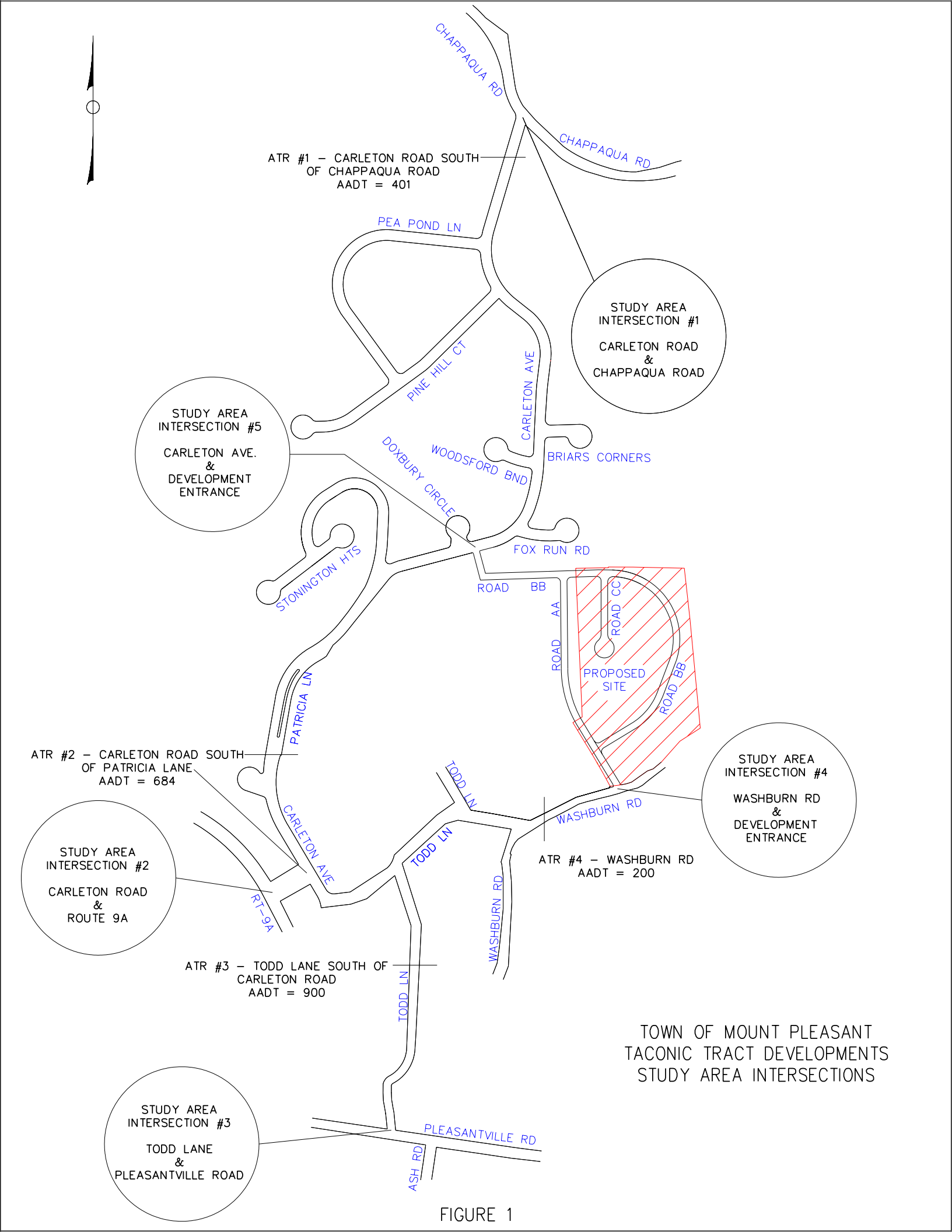
Chappaqua Road, Carleton Road, Todd Lane, and Washburn Road are Local Urban Roads. They provide access to numerous residential properties. Fox Run Road, Doxbury Circle, Woodsford Bend and Briars Corners are all Local Urban Roads as well.

The traffic study analyzes operational conditions at the intersections listed above. All intersections located within the project area are unsignalized with one lane in each direction and no turning lanes.

The Chappaqua Rd./Carleton Rd. intersection is a three-legged intersection. The intersection is controlled by a stop sign located on the Carleton Road approach. Both roadways appear to be in good condition.

The intersection of Carleton Rd. with a short access road connected to Route 9A is a three-legged intersection. The intersection is controlled by a stop sign located on the Carleton Rd access approach to Route 9A.

Todd Lane and Carleton Road form a three-way intersection with skewed geometry. It is unsignalized and is not controlled by stop signs. Traffic approaching the intersection in the northbound direction from Todd Lane must stop for the higher volume free-flow movements between Carleton Road and the portion of Todd Lane that leads to Washburn Road. Washburn Road provides access to a few residential properties. There is faded striping on Todd Lane, and no evidence of existing or previously existing stop bars on any of the approaches.



TOWN OF MOUNT PLEASANT
TACONIC TRACT DEVELOPMENTS
STUDY AREA INTERSECTIONS

FIGURE 1

TRAFFIC ANALYSIS METHODOLOGY

UNSIGNALIZED INTERSECTIONS

The unsignalized intersection capacity analysis method utilized in this report was performed in accordance with the procedures described in the 2000 Highway Capacity Manual. The procedure is based on total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line. The average total delay for any particular critical movement is a function of the service rate or capacity of the approach and the degree of saturation. In order to identify the Level of Service (LOS), the average amount of vehicle delay is computed for each critical movement to the intersection. The LOS for unsignalized intersections is described as follows:

LOS	Average Delay
A	<10.0 seconds
B	10.1-15.0 seconds
C	15.1-25.0 seconds
D	25.1-35.0 seconds
E	35.1-50.0 seconds
F	>50 seconds

C. EXISTING CONDITIONS

To assess current traffic conditions, an analysis was conducted at the intersections, which would most likely be affected by new vehicle trips traveling to and from the project site. The following sections describe current conditions including the methodologies employed for the analyses.

TRAFFIC VOLUMES

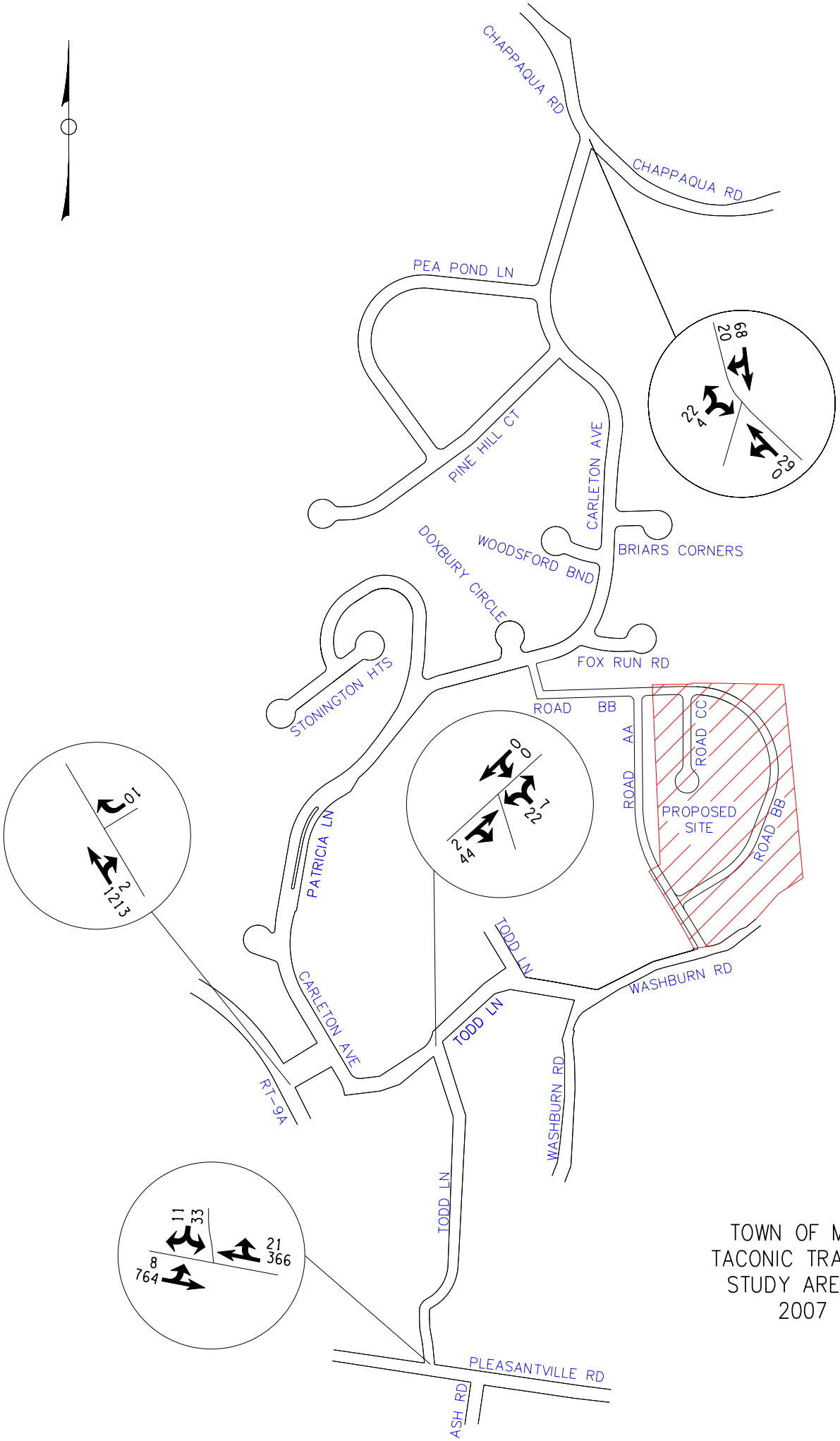
Existing traffic volumes were generated based on manual traffic counts conducted in May 2007 at the study area intersections and compared to data from automated traffic recorders (ATRs) that were placed at three key locations (two locations along Carleton Road and one location on Todd Lane) near the proposed development. Manual turning movement counts were conducted at three of the four study area intersections during the weekday morning and afternoon peak time periods. An inventory of the analyzed intersections was performed to determine pavement markings and lane dimensions to be used in the calculation of street capacities. Figure 1 shows the locations where traffic counts were performed.

Figures 2 and 3 show the existing traffic volumes for the weekday AM and PM peak hours. Based on the field counts and historical data, the weekday AM and PM peak hours of traffic in the study area occur between 7:30 AM and 8:30 AM, and 5:00 PM and 6:00 PM respectively. The existing peak hours of travel correspond with the times when the greatest amount of trips will be generated by the project and have therefore been selected as the peak analysis periods for this project.

OPERATING CONDITIONS

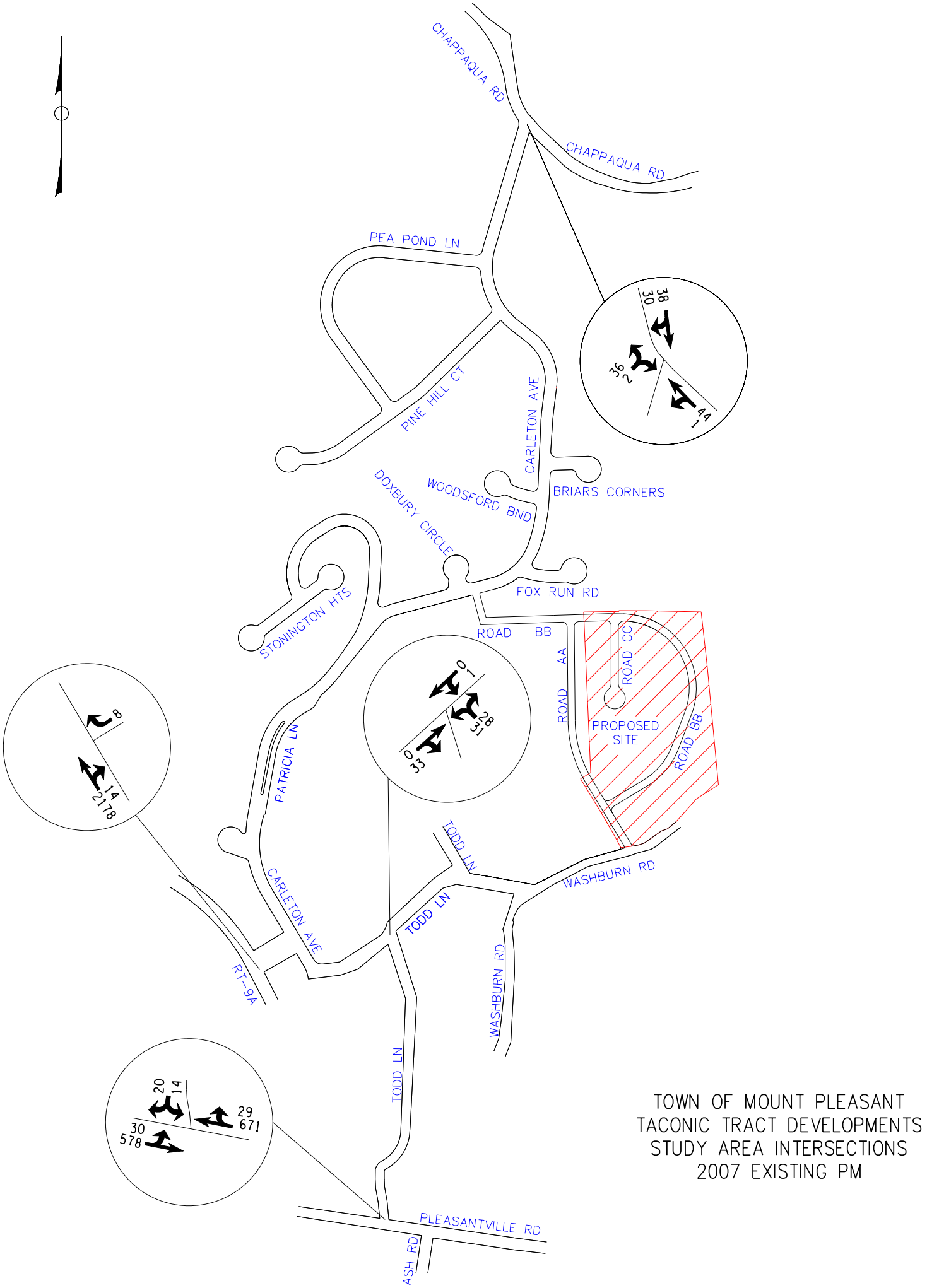
Table 1 presents the operating conditions for the study area intersections during the existing weekday AM and PM peak hours. The capacity analysis indicates that all four of the intersections operate at an overall LOS A for both peak hours. Although, the intersection of Todd Lane and Pleasantville Road experiences moderate delays, they are still acceptable. The moderate delays are caused by heavy thru movements along Pleasantville Road. The SB approach of Todd Lane operates at LOS C. Therefore, this indicates

that all of the existing intersections in the study area operate with acceptable delays and levels of service.



TOWN OF MOUNT PLEASANT
TACONIC TRACT DEVELOPMENTS
STUDY AREA INTERSECTIONS
2007 EXISTING AM

FIGURE 2



TOWN OF MOUNT PLEASANT
TACONIC TRACT DEVELOPMENTS
STUDY AREA INTERSECTIONS
2007 EXISTING PM

FIGURE 3

Table 1: Level of Service Analysis – Existing (2007)

				2007 Existing	
Intersection	Approach	Lane Group		AM	PM
Todd Lane @ Pleasantville Road	Todd Lane SB	Approach	Delay	25.0	23.6
			LOS	C	C
	Pleasantville Rd. EB	Approach	Delay	0.2	1.0
			LOS	A	A
	Pleasantville Rd. WB	Approach	Delay	0.0	0.0
			LOS	A	A
	Intersection		Delay	1.0	1.1
			LOS	**A**	**A**
Carleton Ave @ Route 9A	Carleton Ave. WB	Approach	Delay	14.1	26.0
			LOS	B	D
	Route 9A NB	Approach	Delay	0.0	0.0
			LOS	A	A
	Intersection		Delay	0.1	0.1
			LOS	**A**	**A**
Carleton Ave @ Chappaqua Road	Carleton Ave. EB	Approach	Delay	9.2	9.2
			LOS	A	A
	Chappaqua Rd. NB	Approach	Delay	0.0	0.2
			LOS	A	A
	Chappaqua Rd. SB	Approach	Delay	0.0	0.0
			LOS	A	A
	Intersection		Delay	1.7	2.4
			LOS	**A**	**A**

ACCIDENT ANALYSIS

Accident data for the study area intersections and surrounding roadways were requested and obtained from NYSDOT through a Freedom of Information Letter. In the three-year period between 1/1/2005-12/31/2007 there were a total of three accidents. All three of these accidents occurred at the intersection of Todd Lane with Pleasantville Road. No particular trend or cluster was observed for these accidents.

The overall accident rate at this intersection is 0.15 Accidents/Million Entering Vehicles (ACC/MEV) compared to the statewide average for similar intersections of 0.16 ACC/MEV. Therefore, the accident records show that the study area intersections and roadways currently operate at safe and lower than statewide average for similar intersections and will not have any adverse affects on vehicular safety.

D. THE FUTURE WITHOUT THE PROJECT

Traffic conditions in the future without the proposed action were assessed to establish a baseline from which to evaluate the impacts of the proposed project. This baseline is also known as the "No Build" condition. The analysis focuses on 2011, a conservative estimate of the year in which the proposed project is expected to have a complete build out. Within the immediate vicinity of the proposed site there are no known major developments expected to occur.

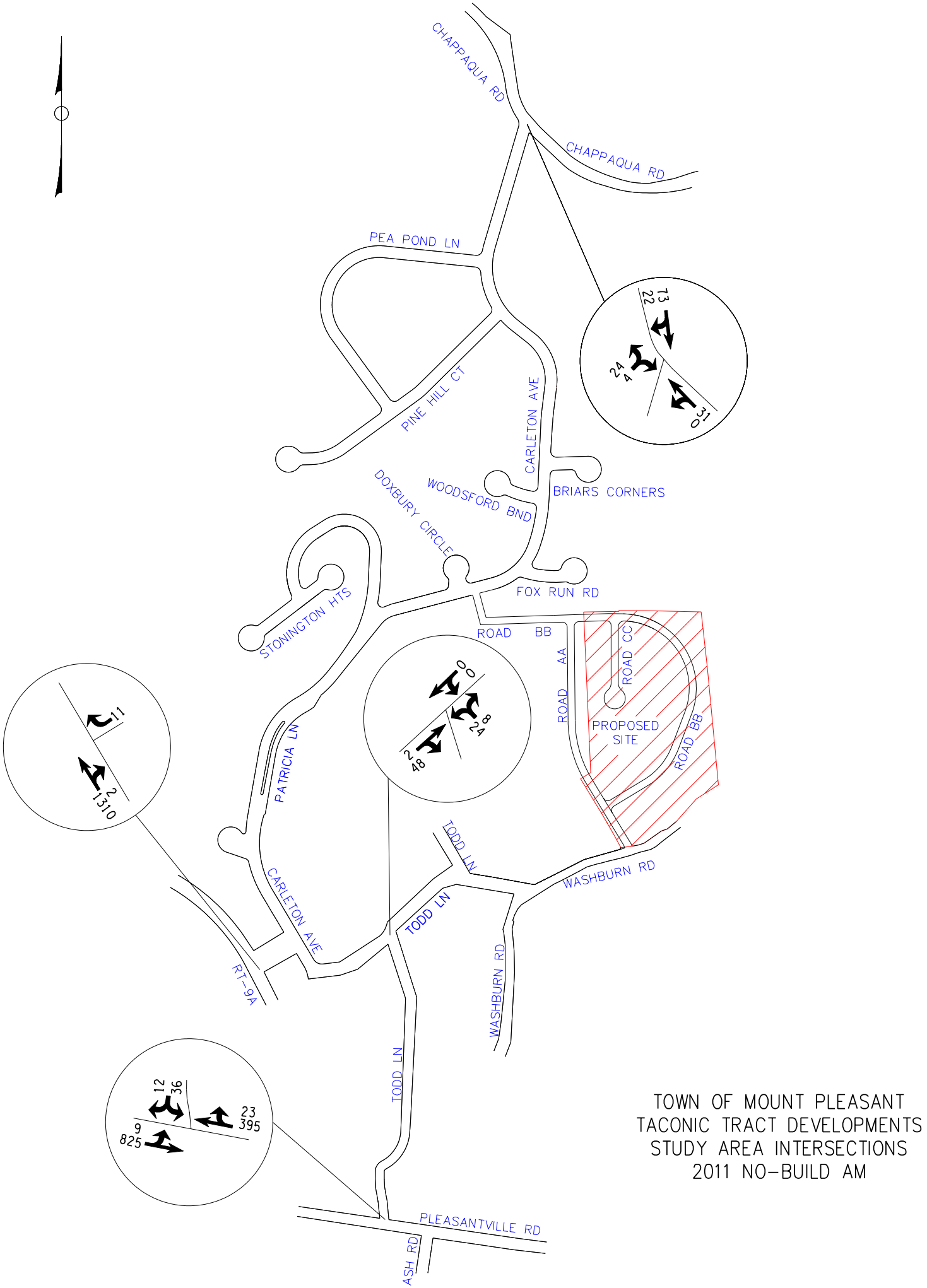
The following sections describe the forecasted conditions in 2011 without the proposed project.

TRAFFIC VOLUMES

No-Build traffic volumes were generated using the existing traffic volumes and projecting them into the future year, 2011, using a growth factor. Based on the 1990 and 2000 U.S. Census Data it was determined that the Town of Mount Pleasant has experienced a 10.7% growth rate over the last 10 years. Therefore, for this analysis a conservative growth factor of 2.0% per year was applied. Figures 4 and 5 show the no-build (2011) traffic volumes for the weekday AM and PM peak hours.

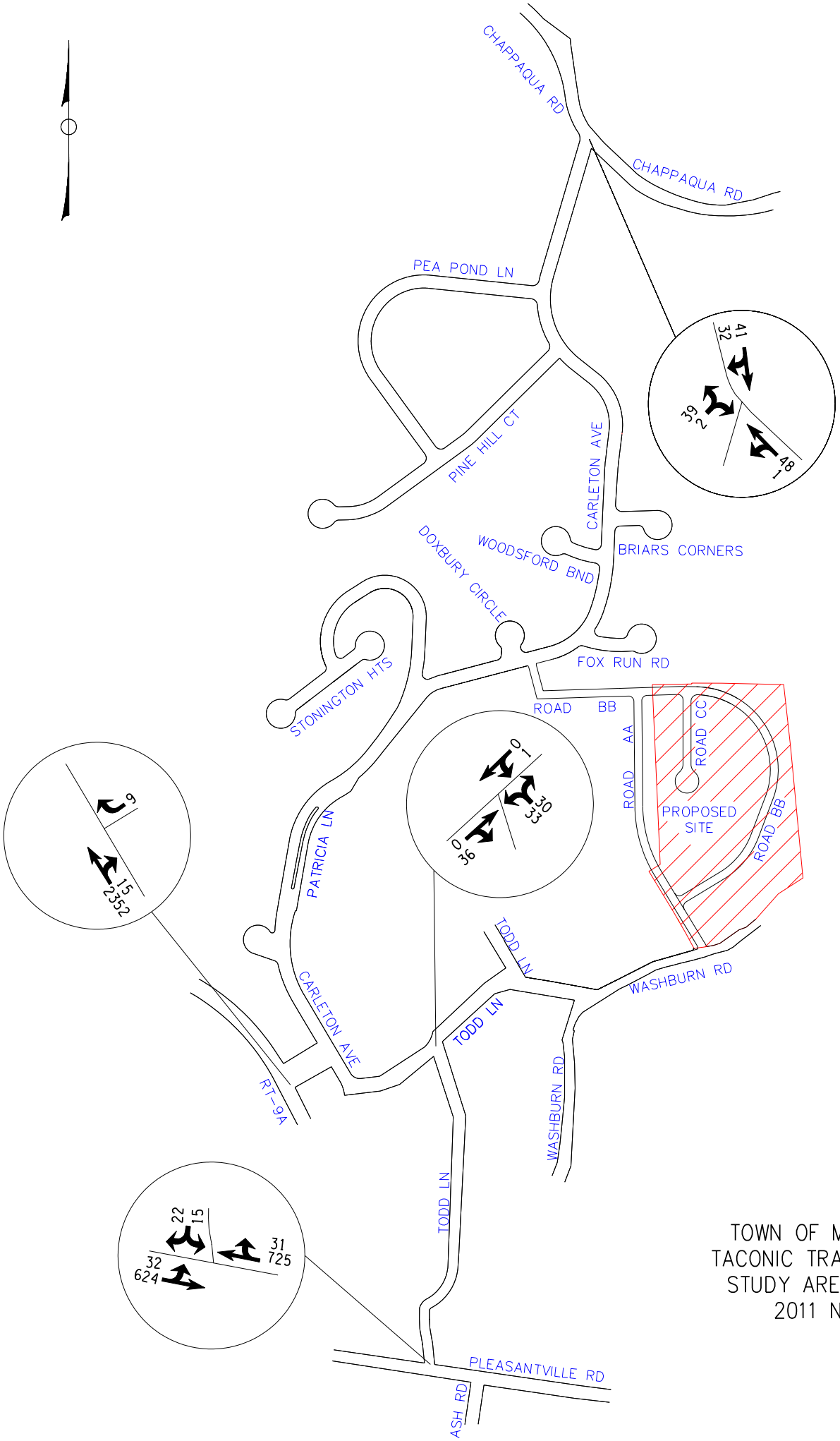
OPERATING CONDITIONS

Table 2 compares the operating conditions under the No-Build scenario with existing conditions. Even with the growth factor most of the approaches continue to operate at LOS A. Only the southbound approach at the intersection of Todd Lane and Pleasantville Road experiences LOS D operations during the AM and PM peak hours.



TOWN OF MOUNT PLEASANT
TACONIC TRACT DEVELOPMENTS
STUDY AREA INTERSECTIONS
2011 NO-BUILD AM

FIGURE 4



TOWN OF MOUNT PLEASANT
TACONIC TRACT DEVELOPMENTS
STUDY AREA INTERSECTIONS
2011 NO-BUILD PM

FIGURE 5

Table 2: Level of Service Analysis –Existing and No-Build Conditions (2011)

				2007 Existing		2011 No-Build	
Intersection	Approach	Lane Group		AM	PM	AM	PM
Todd Lane @ Pleasantville Road	Todd Lane SB	Approach	Delay	25.0	23.6	29.2	27.4
			LOS	C	C	D	D
	Pleasantville Rd. EB	Approach	Delay	0.2	1.0	0.2	1.1
			LOS	A	A	A	A
	Pleasantville Rd. WB	Approach	Delay	0.0	0.0	0.0	0.0
			LOS	A	A	A	A
	Intersection		Delay	1.0	1.1	1.2	1.2
			LOS	**A**	**A**	**A**	**A**
Carleton Ave @ Route 9A	Carleton Ave. WB	Approach	Delay	14.1	26.0	14.9	29.7
			LOS	B	D	B	D
	Route 9A NB	Approach	Delay	0.0	0.0	0.0	0.0
			LOS	A	A	A	A
	Intersection		Delay	0.1	0.1	0.1	0.1
			LOS	**A**	**A**	**A**	**A**
Carleton Ave @ Chappaqua Road	Carleton Ave. EB	Approach	Delay	9.2	9.2	9.2	9.3
			LOS	A	A	A	A
	Chappaqua Rd. NB	Approach	Delay	0.0	0.2	0.0	0.2
			LOS	A	A	A	A
	Chappaqua Rd. SB	Approach	Delay	0.0	0.0	0.0	0.0
			LOS	A	A	A	A
	Intersection		Delay	1.7	2.4	1.7	2.4
			LOS	**A**	**A**	**A**	**A**

E. PROBABLE IMPACTS OF THE PROPOSED PROJECT

The analysis of the project generated transportation impacts begins with and builds upon the No Build condition described in the preceding section. Project-generated trips are added to the No Build volumes to develop a Build traffic network for 2011. An analysis is conducted to determine the service levels and delays at the study area intersections. The Build conditions are then compared to the No-Build analysis to determine if there are any significant operational impacts.

The project will construct a new access road between Carleton Road and Washburn Road.

TRAFFIC VOLUMES

Estimates of the expected Taconic Tract Development site generated traffic volumes were computed utilizing information published by the Institute of Transportation Engineers (ITE) as contained in their report entitled Trip Generation, 7th Edition, 2003. The projected traffic volumes were based on land use trip generation rates for 16 single family dwelling units. These volumes were added to the intersections utilizing the arrival and departure distributions to obtain the Build condition traffic volumes.

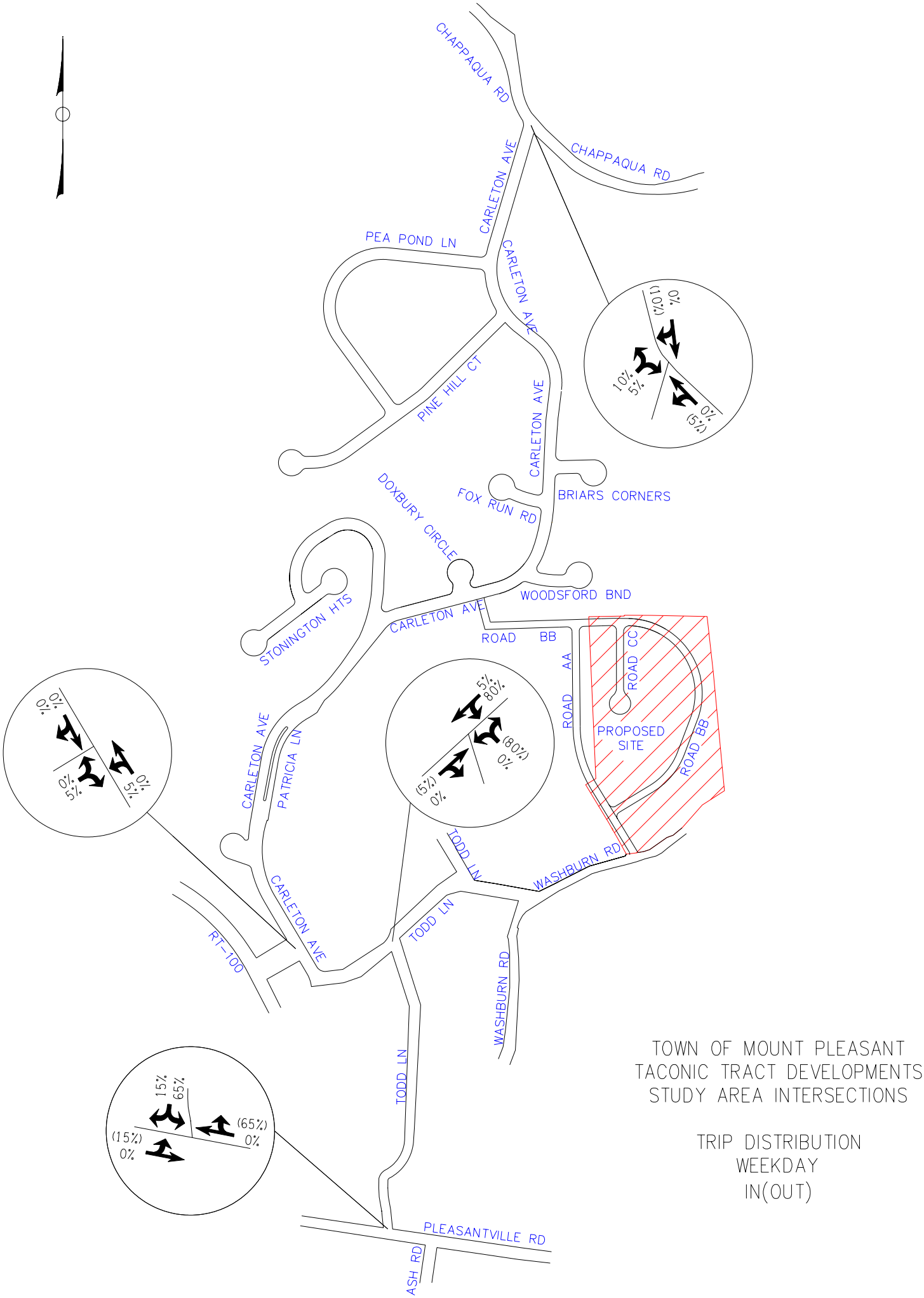
Table 3 provides a summary of the average amount of trips generated by the proposed development during the peak activity periods. The two analysis periods include the weekday AM & PM peak hours. The traffic generated by the project has been added to the roadway network in accordance with existing travel patterns. The trip distribution for the proposed projected traffic volumes was based on a worst case scenario in which most vehicles are traveling to and from Pleasantville Road. Most of the traffic from outside the study area is expected to utilize the Taconic State Parkway, Route 9A and Route 100 and travel on Chappaqua Road. Visitors more familiar with the area may also access these major routes through Pleasantville Road. Local based trips would also utilize Carleton Road, Todd Lane, and Washburn Road to travel within the Town of Mount Pleasant. The project generated trip percentages are shown on Figures 6. The project trip assignments are shown on Figures 7 and 8. The project generated traffic has been added to the No-build traffic to develop the Build traffic volumes shown in Figures 9 and 10 for the weekday AM and PM time periods, respectively.

Table 3: Trip Generation Rates

	Trips Generated	
Time Period	In	Out
Weekday AM	6	17
Weekday PM	14	8

OPERATING CONDITIONS

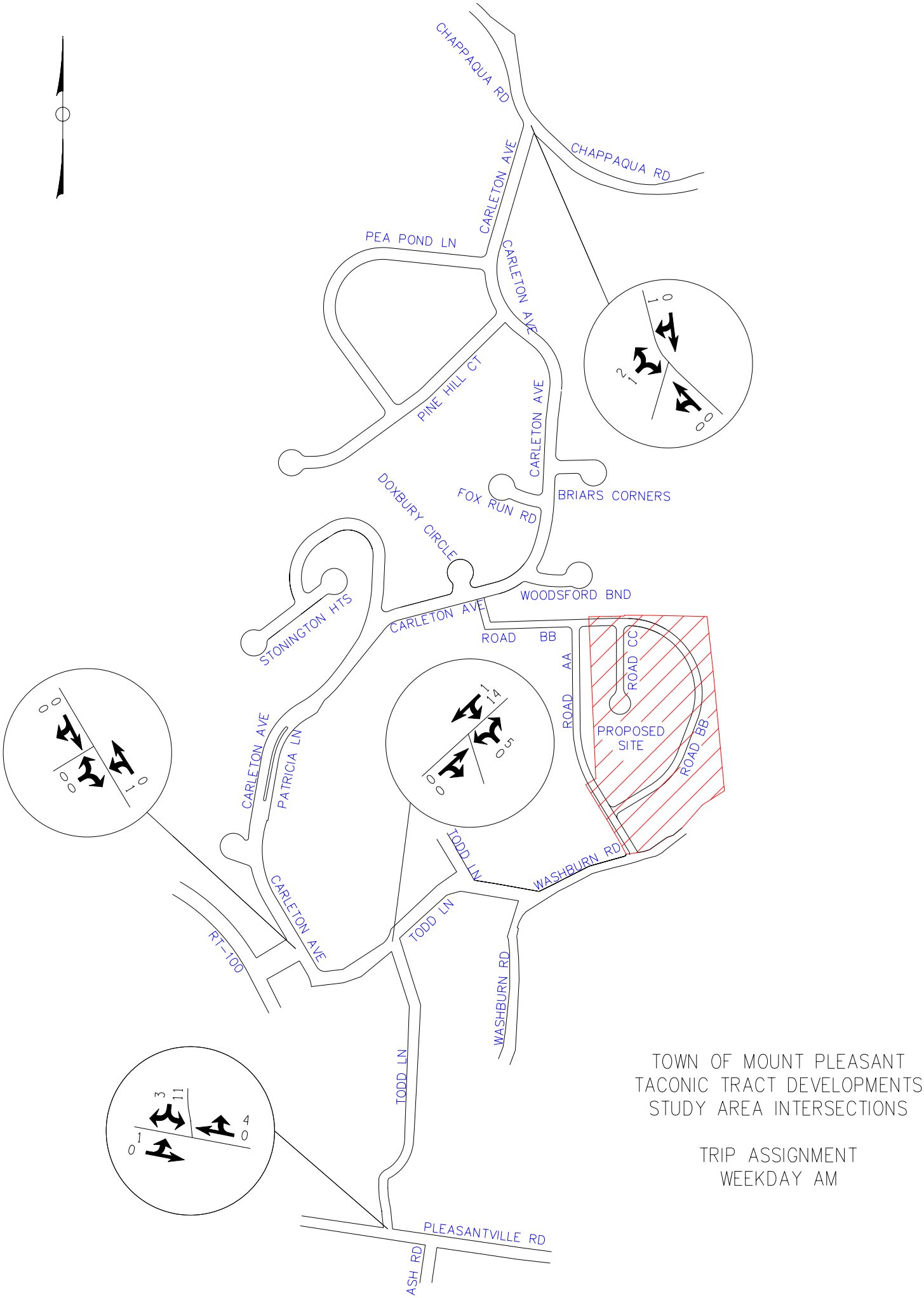
The study area intersections were again analyzed using the HCM procedures. As shown in Table 4, which compares traffic operating conditions under the no-build and build conditions, the project-generated trips have only a minimal effect on traffic conditions. Traffic movements on the southbound approach at the intersection of Todd Lane and Pleasantville Road will continue to operate at LOS D during the peak hour periods and the traffic generated by the project will have only nominal impacts on delays.



TOWN OF MOUNT PLEASANT
TACONIC TRACT DEVELOPMENTS
STUDY AREA INTERSECTIONS

TRIP DISTRIBUTION
WEEKDAY
IN(OUT)

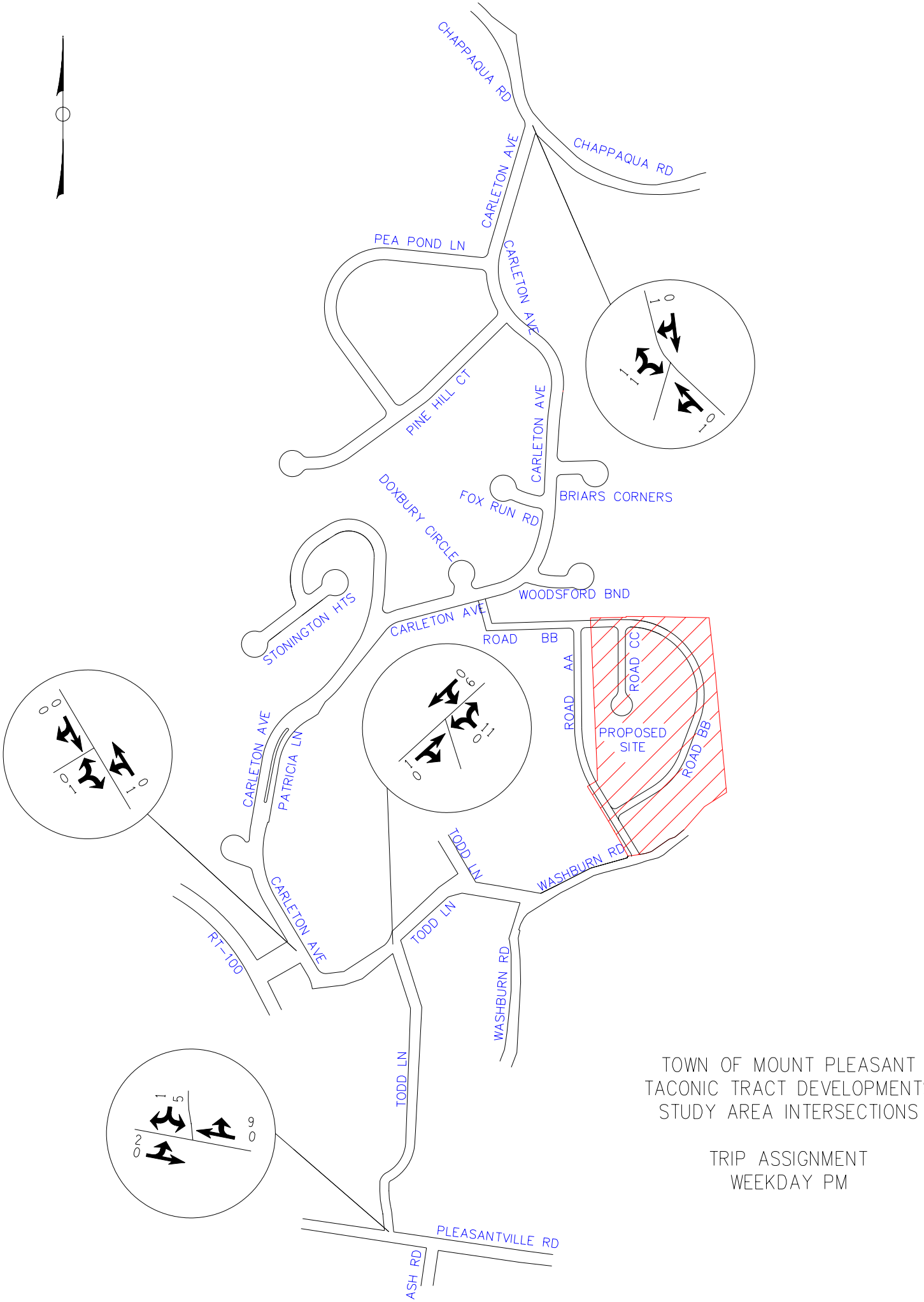
FIGURE 6



TOWN OF MOUNT PLEASANT
TACONIC TRACT DEVELOPMENTS
STUDY AREA INTERSECTIONS

TRIP ASSIGNMENT
WEEKDAY AM

FIGURE 7



TOWN OF MOUNT PLEASANT
TACONIC TRACT DEVELOPMENTS
STUDY AREA INTERSECTIONS

TRIP ASSIGNMENT
WEEKDAY PM

FIGURE 8

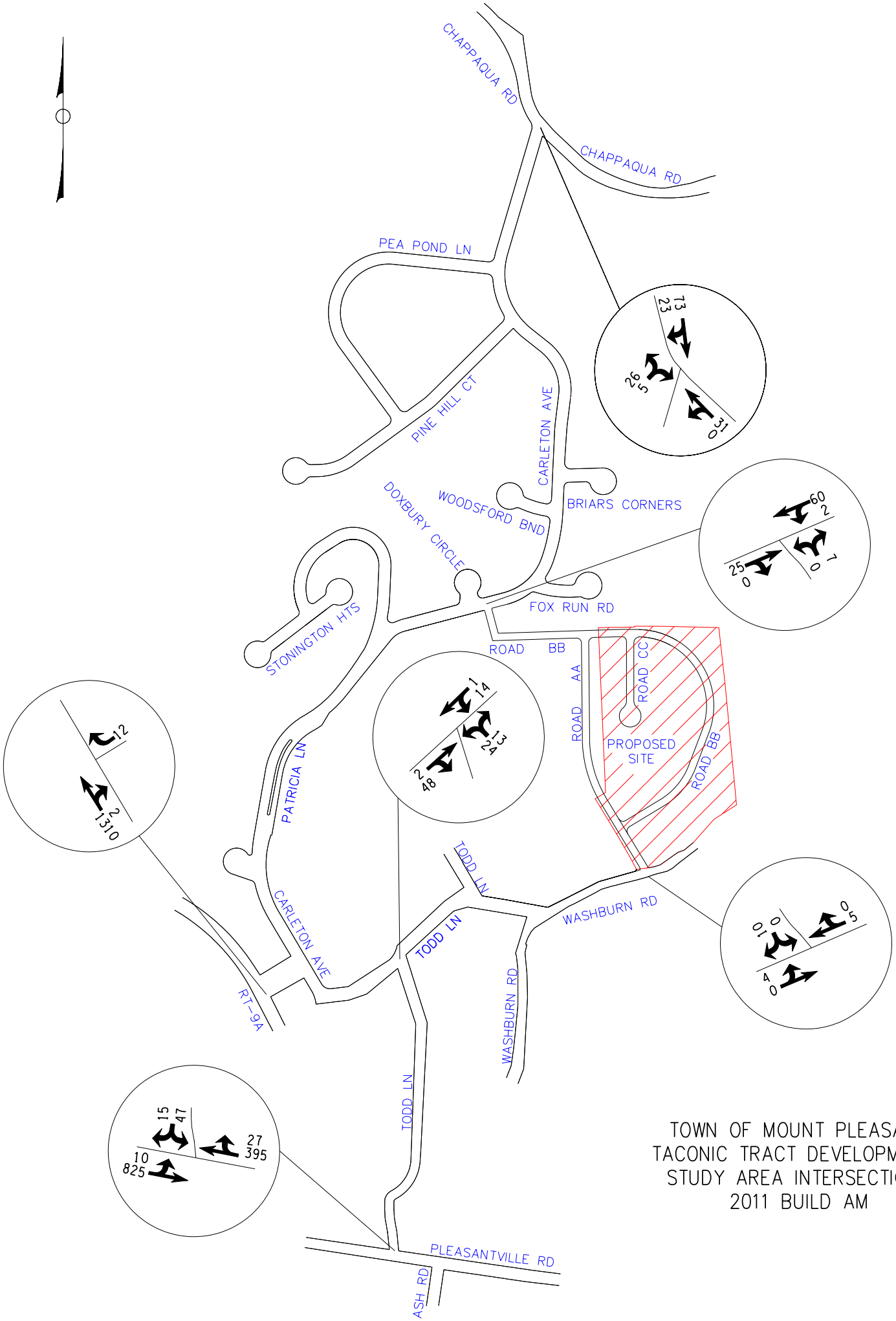
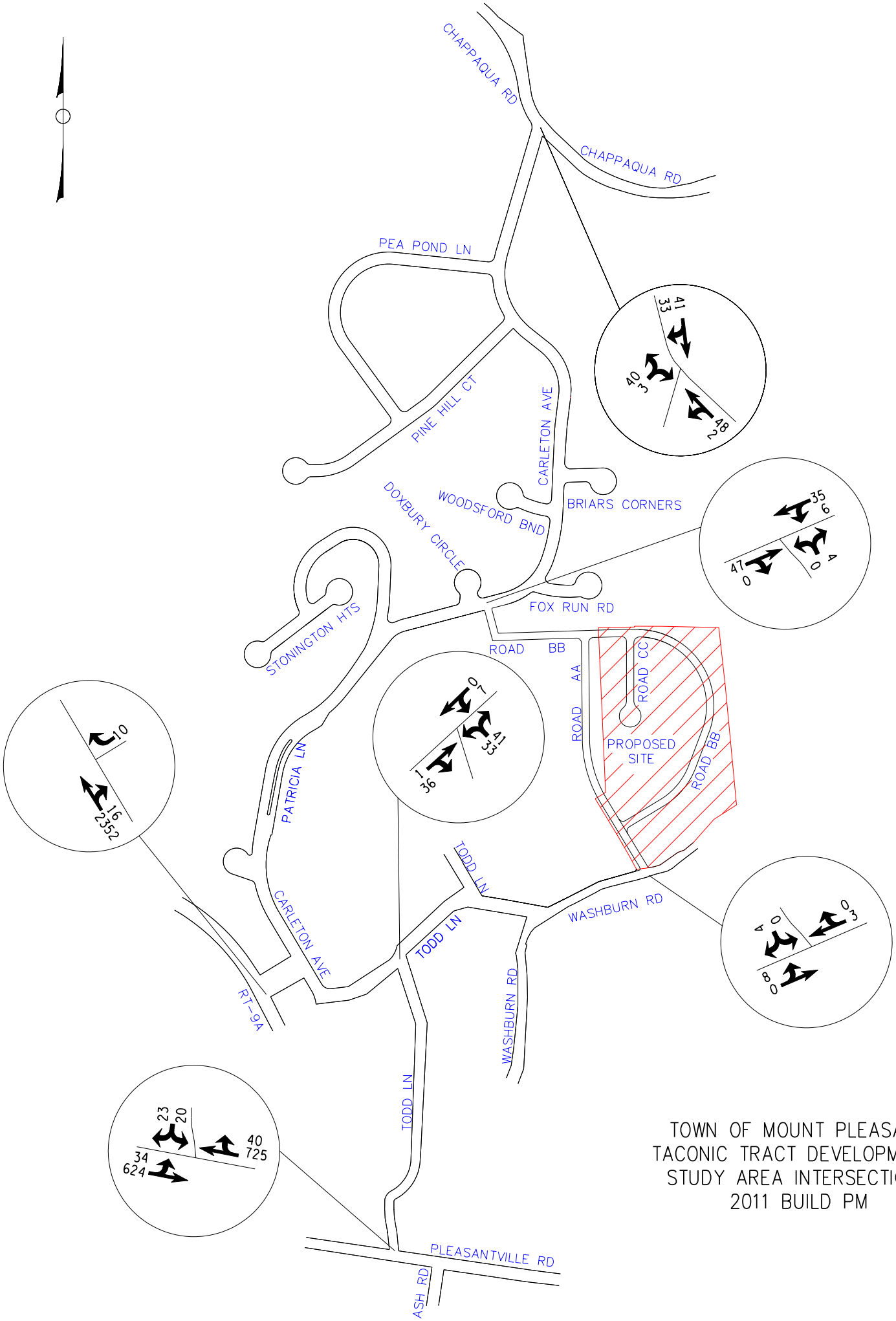

CHAPPAQUA RD
CHAPPAQUA RD
PEA POND LN
PINE HILL CT
CARLETON AVE
WOODSFORD BND
BRIARS CORNERS
DOXBURY CIRCLE
FOX RUN RD
STONINGTON HTS
ROAD BB
ROAD AA
ROAD CC
PROPOSED SITE
ROAD BB
PATRICIA LN
CARLETON AVE
TODD LN
TODD LN
WASHBURN RD
WASHBURN RD
RT-9A
TODD LN
PLEASANTVILLE RD
ASH RD
TOWN OF MOUNT PLEASANT
TACONIC TRACT DEVELOPMENTS
STUDY AREA INTERSECTIONS
2011 BUILD AM

FIGURE 9



TOWN OF MOUNT PLEASANT
TACONIC TRACT DEVELOPMENTS
STUDY AREA INTERSECTIONS
2011 BUILD PM

FIGURE 10

Table 4: Level of Service Analysis – No-Build and Build Conditions (2011)

				2011 No-Build		2011 Build	
Intersection	Approach	Lane Group		AM	PM	AM	PM
Todd Lane @ Pleasantville Road	Todd Lane SB	Approach	Delay	29.2	27.4	32.6	30.7
			LOS	D	D	D	D
	Pleasantville Rd. EB	Approach	Delay	0.2	1.1	0.3	1.2
			LOS	A	A	A	A
	Pleasantville Rd. WB	Approach	Delay	0.0	0.0	0.0	0.0
			LOS	A	A	A	A
	Intersection		Delay	1.2	1.2	1.7	1.4
			LOS	**A**	**A**	**A**	**A**
Carleton Ave @ Route 9A	Carleton Ave. WB	Approach	Delay	14.9	29.7	13.0	30.0
			LOS	B	D	B	D
	Route 9A NB	Approach	Delay	0.0	0.0	0.0	0.0
			LOS	A	A	A	A
	Intersection		Delay	0.1	0.1	0.1	0.1
			LOS	**A**	**A**	**A**	**A**
Carleton Ave @ Chappaqua Road	Carleton Ave. EB	Approach	Delay	9.2	9.3	9.2	9.3
			LOS	A	A	A	A
	Chappaqua Rd. NB	Approach	Delay	0.0	0.2	0.0	0.3
			LOS	A	A	A	A
	Chappaqua Rd. SB	Approach	Delay	0.0	0.0	0.0	0.0
			LOS	A	A	A	A
	Intersection		Delay	1.7	2.4	1.8	2.5
			LOS	**A**	**A**	**A**	**A**
Washburn Rd @ Development Entrance	Washburn Rd. EB	Approach	Delay	-	-	7.2	7.2
			LOS	-	-	A	A
	Washburn Rd. WB	Approach	Delay	-	-	0.0	0.0
			LOS	-	-	A	A
	Development Entrance	Approach	Delay	-	-	8.4	8.3
			LOS	-	-	A	A
	Intersection		Delay	-	-	5.9	6.1
			LOS	**-**	**-**	**A**	**A**
Carleton Ave @ Development Entrance	Carleton Ave. NB	Approach	Delay	-	-	0.0	0.0
			LOS	-	-	A	A
	Carleton Ave. SB	Approach	Delay	-	-	0.2	1.1
			LOS	-	-	A	A
	Development Entrance	Approach	Delay	-	-	8.5	8.6
			LOS	-	-	A	A
	Intersection		Delay	-	-	0.8	0.9
			LOS	**-**	**-**	**A**	**A**

F. PROPOSED MITIGATION

With the proposed project in place there would be increases in traffic volumes. While the increased volume will not significantly impact traffic conditions at the study area intersections, certain movements at the Todd Lane and Pleasantville Road intersection will continue to operate at poor levels of service as were predicted in the "Future without the Project" scenario.

G. PEDESTRIAN TRAFFIC AND RECREATIONAL USERS

Existing counts and observations show that there is minimal pedestrian traffic throughout the study area and that the increase in vehicular traffic generated by the project will not significantly affect pedestrian operations and safety.

H. CONSTRUCTION TRAFFIC

During the development of the project, construction related traffic would access the site from Carleton Road. Daily construction activities will not affect local traffic in the project area. The majority of the contractors would be expected to arrive at the site between 7:00 and 8:00 AM and will generally depart between 6:00 and 6:30 PM. Deliveries will generally occur between 8:00 AM and 3:00 PM at various times throughout the time period. Since the offsite weekday peak traffic hours are between 7:30 to 8:30 AM and between 5:00 to 6:00 PM, the majority of contractors will be arriving during the off site road network's peak traffic time and therefore will not have an impact on operating conditions. The majority of the contractors departing from the site will be during off-peak hours. The same can be said of deliveries of materials to the construction site, which would generally happen between 8:00 AM and 3:00 PM, after the morning peak and prior to the afternoon peak hours.

During the demolition, clearing and heavy construction phases of the proposed project, surplus material (if any) will be hauled from the site and construction equipment will be delivered to the site using adjacent roads. Typically, site grading is adjusted to achieve a balanced site, thereby minimizing the need for exporting or importing earth material. Construction workers will drive to and from the site using passenger vehicles and small trucks. After the heavy construction phase is complete, small trade contractors will make up the primary traffic to and from the site.