November 10, 2022

Ms. Lelah Campo, Owner
Cozy Hill II Campground
1311 Bantam Road
Bantam, CT 06750

Re: RV Park Traffic Impact Assessment
232 Klug Hill Road
Torrington, Connecticut
SLR #141.20174.00002

Dear Ms. Campo,

SLR International Corporation (SLR) has taken on this evaluation to provide a traffic impact assessment of the proposed RV Park development at 232 Klug Hill Road in Torrington, Connecticut. Figure 1 Illustrates the site location.

The study is meant to assess the impacts of the proposed 92 lot RV Park accessed at the driveway intersection at Klug Hill Road and at a nearby intersection of Klug Hill Road at Route 4. The development is located on a large parcel of land, approximately 226 acres, that currently serves one single family residence and contains delineated wetlands.

This report includes: a review of existing roadway and traffic conditions, a review of existing traffic volumes and speeds, an evaluation of intersection sight distance, a review of the most recent five (5) year crash data and a capacity analysis that looks at the existing, no-build and build conditions.

Existing Roadway and Traffic Conditions

Klug Hill Road is a 25 mph, two-lane, 1-mile-long rural minor collector road that runs north/south in West Torrington, Connecticut and connects to Route 4 to the north and Allen Road and Westside Road to the south. The road serves only a few single-family houses and a farm which connects into more densely populated residential neighborhoods to the south. The site location includes an existing driveway near a sharp curve, surrounded by wetlands.

Route 4 is a 45 mph, two-lane, rural minor arterial that serves as the main artery for traffic heading in all directions to and from Klug Hill Road. This includes access to Route 63 (running north/south), Route 8 (running north/south) and Route 202 (running east/west). The latter two routes go directly through Torrington. Based on the location of the site, vehicles would only travel south on Klug Hill Road to reach

limited specific destinations in west downtown Torrington, otherwise it is faster to head north to Route 4 and Route 8 to go south.

The intersection of Klug Hill Road, Wright Road and Route 4 is a four-way, minor lane stopped-controlled intersection with all approaches intersecting at 90 degrees. Wright Road, which is the roadway to the north, is a dead-end street serving residential, single-family houses. There is adequate sight distance along Route 4 for vehicles looking in either direction.

Per discussions with Torrington Town staff and CTDOT, there are no proposed projects along Klug Hill Road and within the vicinity of the intersection with Route 4.

Existing Traffic Volumes

The annual average daily traffic (AADT) was obtained from the Connecticut Department of Transportation (CTDOT) Traffic Monitoring Station Viewer. Klug Hill Road's Average Annual Daily Traffic (AADT) was 600 vehicles in August 2021. Route 4 AADT was 6700 vehicles in August 2021.

Manual turning movement counts were collected during the morning and afternoon peak periods at the intersection of Klug Hill Road and Route 4 on March 15th, 2022. From those counts, the morning (7:30-8:30 AM) and the afternoon (4:00-5:00 PM) peak hour traffic volumes were extracted. The existing peak hour traffic volumes are shown in Figure 2.

Existing Traffic Speeds

A 24-hour Automatic Traffic Recorder (ATR) count was conducted near the site driveway on Klug Hill Road on Wednesday March 30th, 2022. Both traffic volume and vehicle speed data were assembled from that count. The 85th percentile speed is the speed at which 85% of the traffic at a location travel at or below. This speed, along with parking lot size, is used in Torrington to establish sight distance requirements as outlined in their parking regulations. It was determined that the 85th percentile speed was 40.1 mph northbound and 38.1 mph southbound. While higher than the posted speed limit, it is not unexpected due to Klug Hill Road being a rural, sparsely populated, lightly traveled roadway.

Intersection Sight Distance

At the proposed driveway location, available sight distances were evaluated. In particular, we determined the available intersection sight distance (ISD) and the available stopping sight distance (SSD). ISD is the distance that a driver exiting the site can see a car approaching from. Based on CTDOT guidelines, for a posted speed limit of 25 miles per hour, an ISD of 280 feet is recommended. Looking in both directions from the proposed driveway, the ISD easily exceeds 280 feet.

For vehicles on Klug Hill Toad, the critical sight distance in the SSD. This is the distance required for a vehicle approaching the driveway to stop should a car exit the driveway. There is a 0% grade for northbound vehicles and a -6% grade for southbound vehicles, which factors into the SSD calculations based CTDOT guidelines. For the 85th percentile speeds of 38.1 mph and 40.1 mph, an SSD of 280 feet for northbound vehicles and 335 feet for southbound vehicles, respectively, is required. Both criteria are met for this driveway location.

Crash History

Crash data obtained via the Connecticut Crash Data Repository for a 5-year period was evaluated from January 1, 2017, to August 4, 2022. The data is summarized in Table 1 by crash severity. Type of collision was not available for this data set.

A total of 7 crashes occurred along Klug Hill Road. One crash occurred at the sight driveway where a car was trying to negotiate the curve and crashed into the mailbox resulting in a possible injury. Two other crashes occurred 450' north and 275' south of the sites existing driveway and resulted in property damage only. The rest of the crashes did not occur near the site driveway. None of the reports indicated speed was a factor, but due to the high 85th percentile speed, it is reasonable to assume the vehicles were traveling over the 25-mph speed limit.

A total of 5 crashes occurred within the vicinity of the Klug Hill Road and Route 4 intersection. While one crash resulted in a serious injury and two resulted in minor injuries, no fatalities were recorded. This is most likely due to the high speeds and heavier traffic volumes compared to Klug Hill Road. However, based on the crash data available, there are no crash trends.

Table 1
Crash Summary

LOCATION:	CRASH SEVERITY					
	FATALITY	SERIOUS INJURY	SUSPECTED MINOR INJURY	POSSIBLE INJURY	PROPERTY DAMAGE ONLY	TOTAL
Klug Hill Road	-	-	-	2	5	**7**
Klug Hill Road @ Route 4	-	1	2	-	2	**5**
TOTAL	**-**	**1**	**2**	**2**	**7**	**12**

Source: Connecticut Crash Data Repository – 1/1/2017 to 4/4/2022

Site Generated Traffic & Distribution

Based on the proposed development of 92 RV Spaces, ITE land use code (LUC) 416, Campground/ Recreational Vehicle Park, was used to estimate the site generated traffic. AM Peak Hour and PM Peak Hour trip generation was used, there was no available data for Saturday Peak Hour. Table 2 shows the generated trips for the proposed RV Park.

Table 2
Site Generated Volume

LAND USE	NUMBER OF VEHICLE TRIPS					
	WEEKDAY MORNING PEAK HOUR			WEEKDAY AFTERNOON PEAK HOUR		
	IN	OUT	TOTAL	IN	OUT	TOTAL
92 RV Spaces*	9	16	25	26	16	42

* ITE land use code (LUC) 416, Campground/Recreation Vehicle Park – based on 100 RV spaces

Trips were distributed based a review of travel patterns in the area and the adjacent roadway network, a distribution was estimated. As discussed earlier, most vehicles leaving and entering the site would come to and from the north since most destinations to the south can be reached faster by first heading north to Route 4 and south on Route 8 or Route 63. Based on this, a directional distribution of 90% to/from the north and 10% to/from the south was assumed. The distribution at route 4 followed existing patterns for the most part. Figure 3 illustrates the directional distribution and Figure 4 illustrates the site generated volume based on that distribution.

Capacity Analysis

Future traffic volumes were modelled using Synchro 11 and HCM 6 methodology for Two Way Stop Controlled Intersections (TWSC) assuming a growth rate of 1%, provided by CTDOT, between the current year (2022) and the future opening year (2024). The synchro output sheets are attached. The quality of traffic operations is expressed as a level of service (LOS), a qualitative indicator that uses the vehicle delay to produce a letter grade, A through F, that corelates to the performance of an intersection or movement. LOS A indicates an intersection or movement is operating efficiently, with no delay. LOS F indicates an intersection or movement is failing with significant delays or backups. Table 3 summarizes the LOS results for Existing, No-Build and Build conditions. Figures 5 and 6 illustrates the No-Build and Build conditions.

Table 3
Crash Summary

Lane Group	Level of Service (LOS)					
	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
	2022 Existing Conditions	2024 No-Build Condition	2024 Build Condition	2022 Existing Conditions	2024 No-Build Condition	2024 Build Condition
Site Entrance - 232 Klug Hill Road						
NE LR	A	A	A	A	A	A
NW LT	A	A	A	A	A	A
NW T	-	-	A	-	-	A
Klug Hill Road @ Route 4 Intersection						
NB LTR	B	B	B	C	C	C
EB L	A	A	A	A	A	A
WB L	A	A	A	A	A	A
WB T	A	A	A	A	A	A
SB LTR	A	A	A	B	B	B

NB = northbound, EB = Eastbound, WB = westbound, L = left, T = thru, R = right, LR = left right, LT = left thru, LTR = left thru right

Based on the results, the addition of 91 RV spaces will have no impact on the level of service for both the site driveway and the intersection at Route 4. The northbound Klug Hill Road approach to Route 4, shows LOS C, which is highly acceptable. All other LOSs are LOS A or B.

Conclusion & Recommendations

This traffic impact assessment was conducted to assess the impacts of the proposed 92 space RV park at 232 Klug Hill Road. The site is accessed via an existing driveway near a sharp curve. The intersection sight distance and stopping sight distance were found to meet State requirements. However, further tree trimming, and vegetation control may be required. Based on available crash data, there were no crash trends within the vicinity of the site on Klug Hill Road, nor on Route 4 near the intersection. Based on the results of the analysis, the proposed development will have little to no impact on LOS for the both the site driveway and intersection with Route 4.

We hope this evaluation is useful to you. If you have any questions or need any further information, please do not hesitate to contact either of the undersigned.

Sincerely,

SLR International Corporation

David G. Sullivan, PE
US Manager of Traffic & Transportation Planning

Matthew Pelletier, PE
Associate Transportation Engineer

Figures

- Figure 1 – Location Map
- Figure 2 – Existing Traffic Volumes
- Figure 3 – % Directional Distribution
- Figure 4 – Site Generated Trips
- Figure 5 – No-Build Condition
- Figure 6 – Build Condition

Attachments

- Synchro Analysis Worksheets

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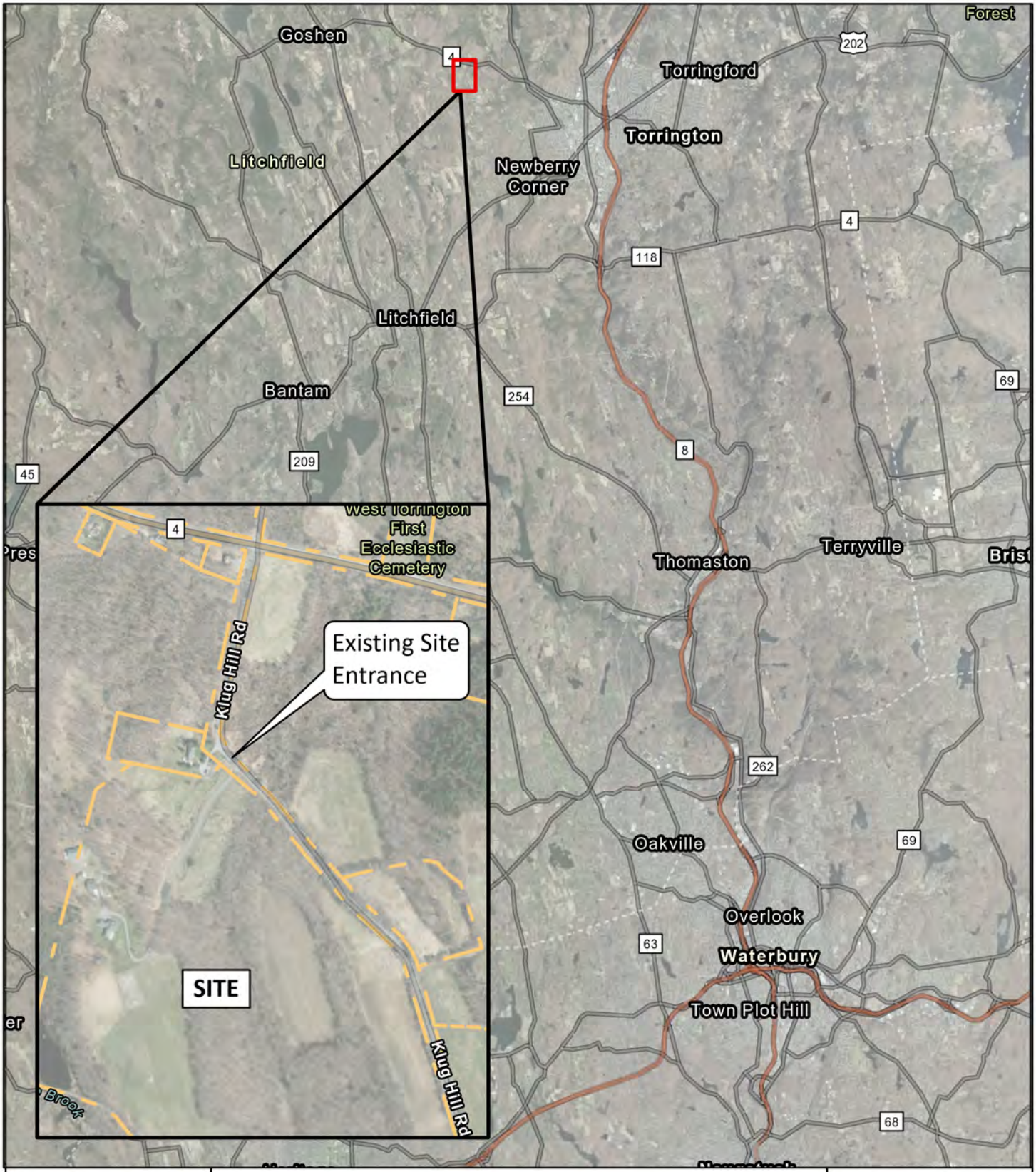

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195 CHURCH STREET
7TH FLOOR
NEW HAVEN, CT 06511
203.344.7887

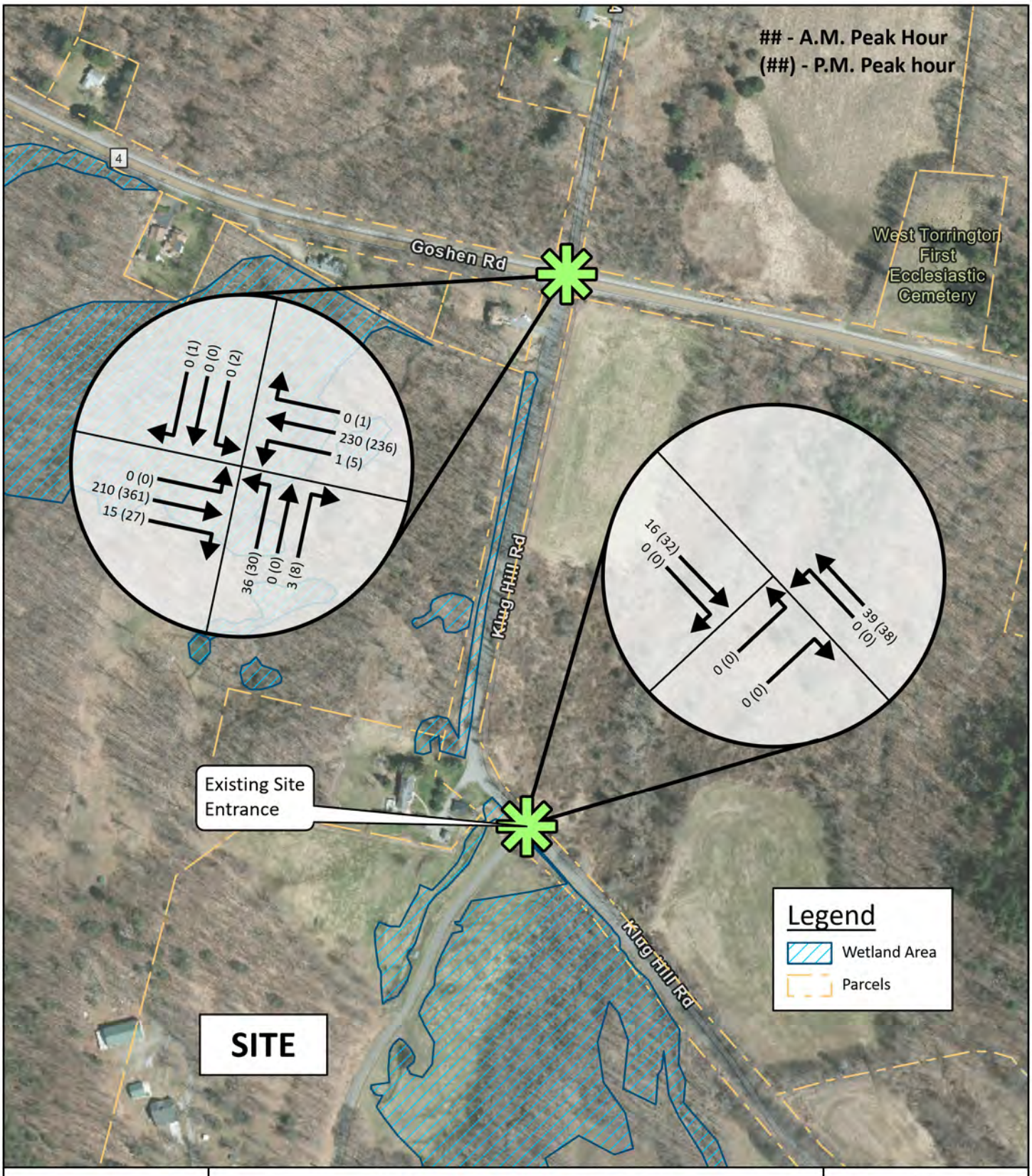
LOCATION MAP

232 Klug Hill Road, Storrington, CT
RV Parking Traffic Impact Study

N

1 IN = 15,000 FT

FIGURE 1



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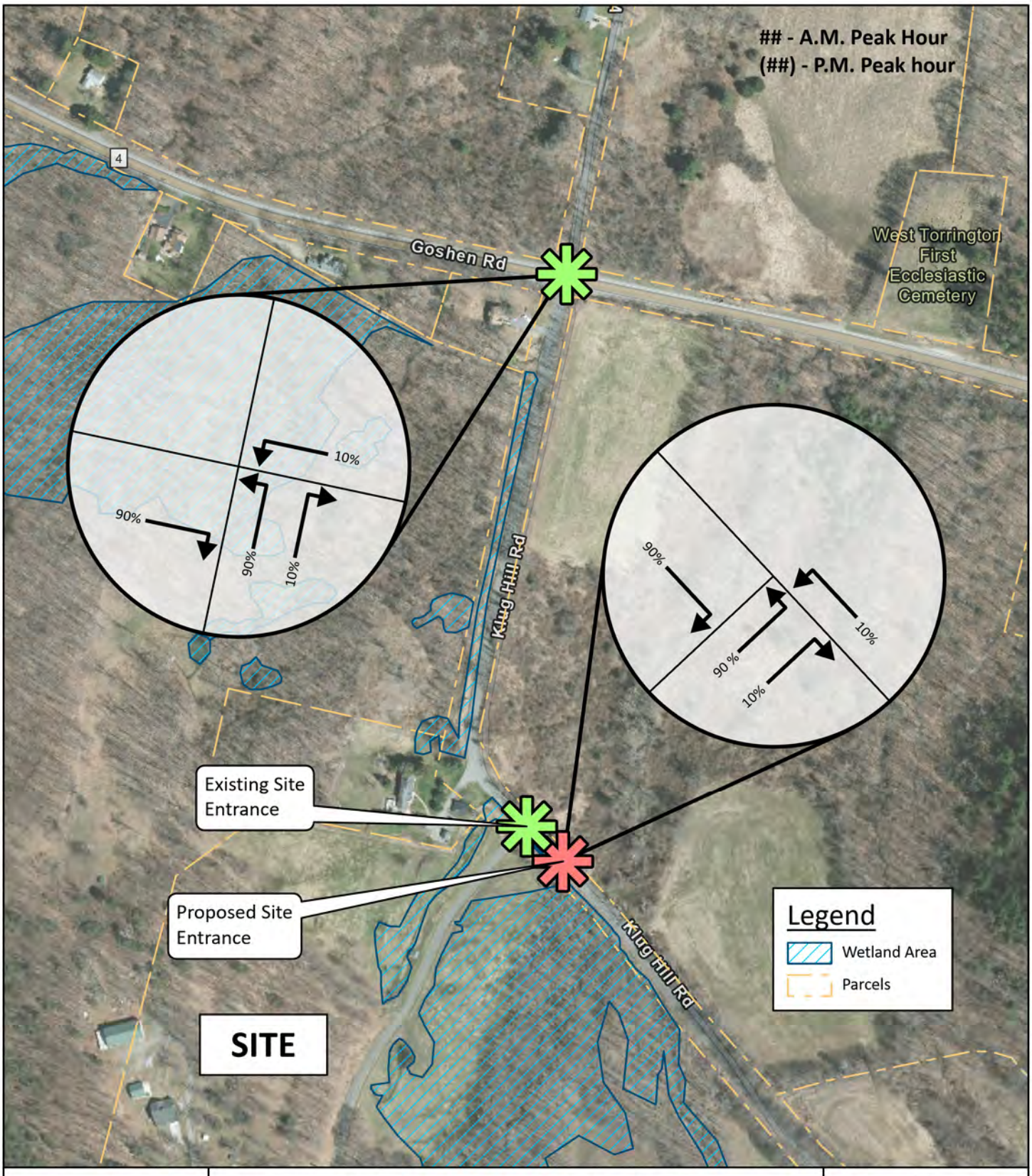
EXISTING CONDITION TRAFFIC VOLUMES

232 Klug Hill Road, Storrington, CT
RV Parking Traffic Impact Study

N

1 IN = 300 FT

FIGURE 2



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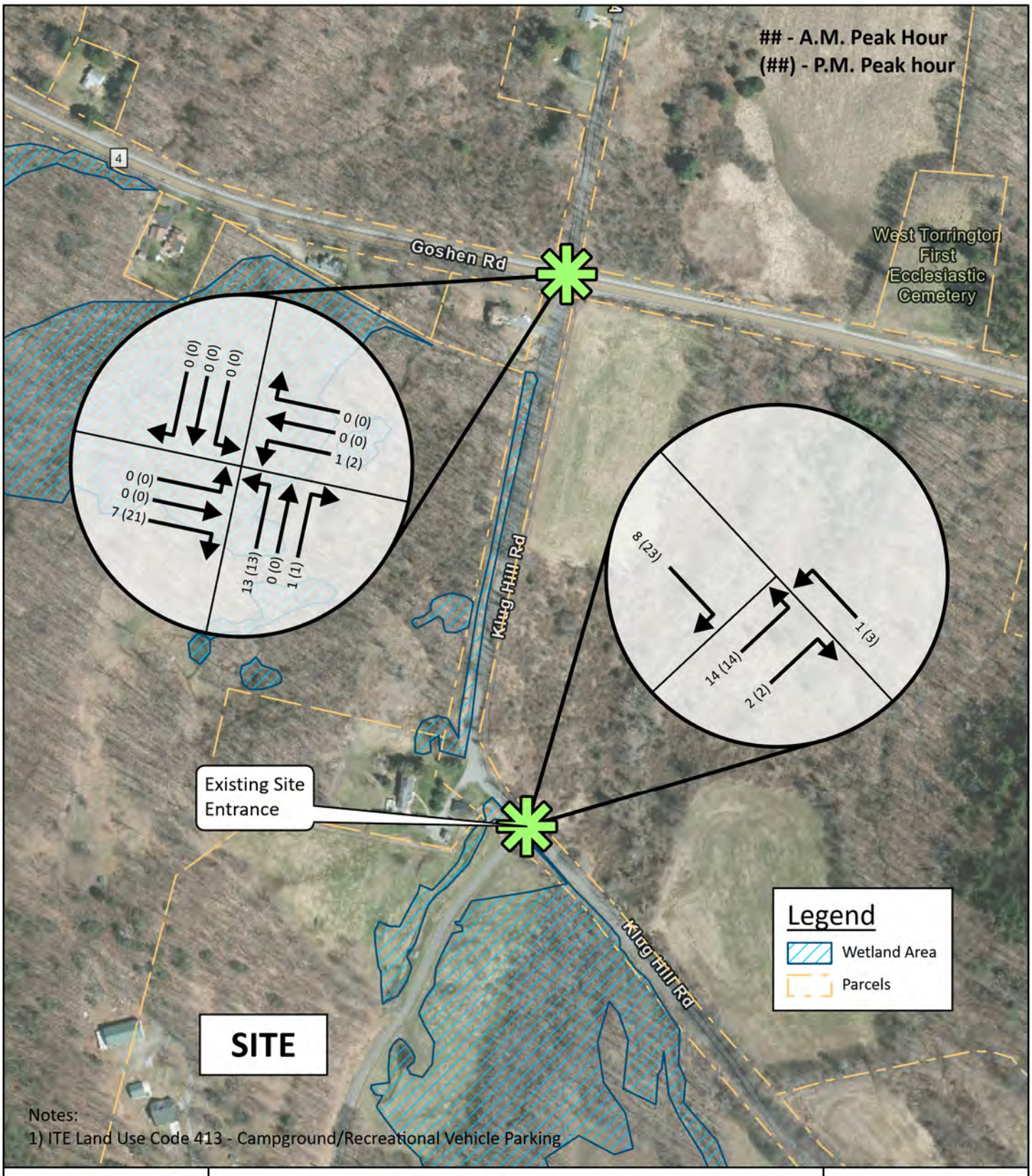
% DIRECTIONAL DISTRIBUTION TRAFFIC VOLUMES

232 Klug Hill Road, Storrington, CT
RV Parking Traffic Impact Study

N

1 IN = 300 FT

FIGURE 3



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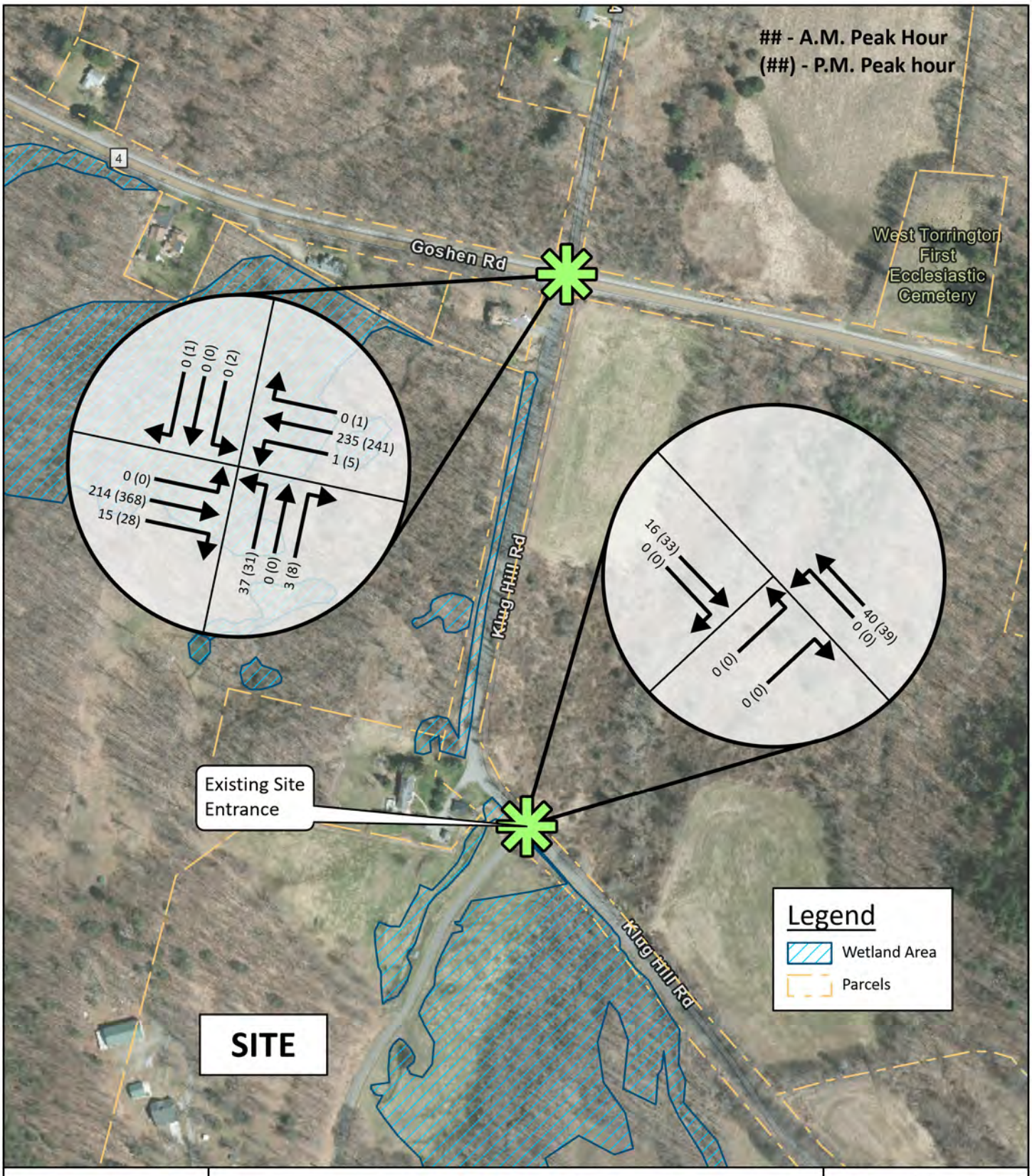
SITE GENERATED TRAFFIC VOLUMES

232 Klug Hill Road, Storrington, CT
RV Parking Traffic Impact Study

N

1 IN = 300 FT

FIGURE 5



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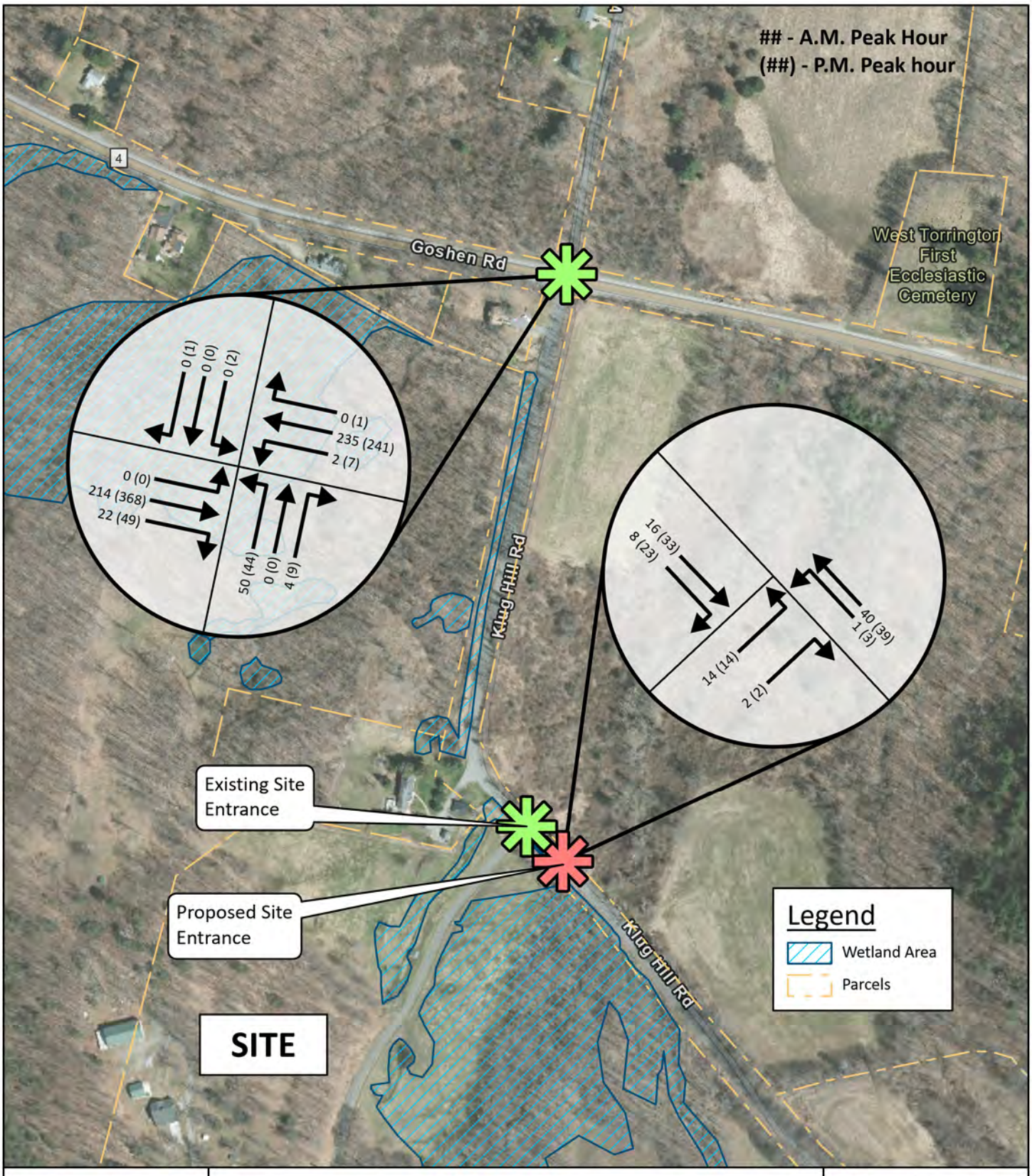
2024 NO-BUILD TRAFFIC VOLUMES

232 Klug Hill Road, Storrington, CT
RV Parking Traffic Impact Study

N

1 IN = 300 FT

FIGURE 5



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2024 BUILD TRAFFIC VOLUMES

232 Klug Hill Road, Storrington, CT
RV Parking Traffic Impact Study

N

1 IN = 300 FT

FIGURE 6

Intersection	
Int Delay, s/veh	0

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	16	0	0	39	0	0
Future Vol, veh/h	16	0	0	39	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	0	0	42	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	17	0	59	17
Stage 1	-	-	-	-	17	-
Stage 2	-	-	-	-	42	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1600	-	948	1062
Stage 1	-	-	-	-	1006	-
Stage 2	-	-	-	-	980	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1600	-	948	1062
Mov Cap-2 Maneuver	-	-	-	-	948	-
Stage 1	-	-	-	-	1006	-
Stage 2	-	-	-	-	980	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	-	1600	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	-
HCM Lane LOS	A	A	-	-	-
HCM 95th %tile Q(veh)	-	0	-	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	210	15	1	230	0	36	0	3	0	0	0
Future Vol, veh/h	0	210	15	1	230	0	36	0	3	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	228	16	1	250	0	39	0	3	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	250	0	0	244	0	0	488	488	236	490	496	250
Stage 1	-	-	-	-	-	-	236	236	-	252	252	-
Stage 2	-	-	-	-	-	-	252	252	-	238	244	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1316	-	-	1322	-	-	490	480	803	489	475	789
Stage 1	-	-	-	-	-	-	767	710	-	752	698	-
Stage 2	-	-	-	-	-	-	752	698	-	765	704	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1316	-	-	1322	-	-	490	480	803	487	475	789
Mov Cap-2 Maneuver	-	-	-	-	-	-	490	480	-	487	475	-
Stage 1	-	-	-	-	-	-	767	710	-	752	697	-
Stage 2	-	-	-	-	-	-	751	697	-	762	704	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	12.8	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	505	1316	-	-	1322	-	-	-
HCM Lane V/C Ratio	0.084	-	-	-	0.001	-	-	-
HCM Control Delay (s)	12.8	0	-	-	7.7	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	32	0	0	38	0	0
Future Vol, veh/h	32	0	0	38	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	35	0	0	41	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	35	0	76	35
Stage 1	-	-	-	-	35	-
Stage 2	-	-	-	-	41	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1576	-	927	1038
Stage 1	-	-	-	-	987	-
Stage 2	-	-	-	-	981	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1576	-	927	1038
Mov Cap-2 Maneuver	-	-	-	-	927	-
Stage 1	-	-	-	-	987	-
Stage 2	-	-	-	-	981	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	-	1576	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	-
HCM Lane LOS	A	A	-	-	-
HCM 95th %tile Q(veh)	-	0	-	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	361	27	5	236	1	30	0	8	2	0	1
Future Vol, veh/h	0	361	27	5	236	1	30	0	8	2	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	392	29	5	257	1	33	0	9	2	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	258	0	0	421	0	0	675	675	407	679	689	258
Stage 1	-	-	-	-	-	-	407	407	-	268	268	-
Stage 2	-	-	-	-	-	-	268	268	-	411	421	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1307	-	-	1138	-	-	368	376	644	366	369	781
Stage 1	-	-	-	-	-	-	621	597	-	738	687	-
Stage 2	-	-	-	-	-	-	738	687	-	618	589	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1307	-	-	1138	-	-	366	374	644	360	367	781
Mov Cap-2 Maneuver	-	-	-	-	-	-	366	374	-	360	367	-
Stage 1	-	-	-	-	-	-	621	597	-	738	684	-
Stage 2	-	-	-	-	-	-	733	684	-	610	589	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	15	13.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	403	1307	-	-	1138	-	-	439
HCM Lane V/C Ratio	0.102	-	-	-	0.005	-	-	0.007
HCM Control Delay (s)	15	0	-	-	8.2	0	-	13.3
HCM Lane LOS	C	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	0

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	16	0	0	40	0	0
Future Vol, veh/h	16	0	0	40	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	0	0	43	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	17	0	60	17
Stage 1	-	-	-	-	17	-
Stage 2	-	-	-	-	43	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1600	-	947	1062
Stage 1	-	-	-	-	1006	-
Stage 2	-	-	-	-	979	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1600	-	947	1062
Mov Cap-2 Maneuver	-	-	-	-	947	-
Stage 1	-	-	-	-	1006	-
Stage 2	-	-	-	-	979	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	-	1600	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	-
HCM Lane LOS	A	A	-	-	-
HCM 95th %tile Q(veh)	-	0	-	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	214	15	1	235	0	37	0	3	0	0	0
Future Vol, veh/h	0	214	15	1	235	0	37	0	3	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	233	16	1	255	0	40	0	3	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	255	0	0	249	0	0	498	498	241	500	506	255
Stage 1	-	-	-	-	-	-	241	241	-	257	257	-
Stage 2	-	-	-	-	-	-	257	257	-	243	249	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1310	-	-	1317	-	-	483	474	798	481	469	784
Stage 1	-	-	-	-	-	-	762	706	-	748	695	-
Stage 2	-	-	-	-	-	-	748	695	-	761	701	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1310	-	-	1317	-	-	483	474	798	479	469	784
Mov Cap-2 Maneuver	-	-	-	-	-	-	483	474	-	479	469	-
Stage 1	-	-	-	-	-	-	762	706	-	748	694	-
Stage 2	-	-	-	-	-	-	747	694	-	758	701	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	12.9	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	498	1310	-	-	1317	-	-	-
HCM Lane V/C Ratio	0.087	-	-	-	0.001	-	-	-
HCM Control Delay (s)	12.9	0	-	-	7.7	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	32	0	0	38	0	0
Future Vol, veh/h	32	0	0	38	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	35	0	0	41	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	35	0	76	35
Stage 1	-	-	-	-	35	-
Stage 2	-	-	-	-	41	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1576	-	927	1038
Stage 1	-	-	-	-	987	-
Stage 2	-	-	-	-	981	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1576	-	927	1038
Mov Cap-2 Maneuver	-	-	-	-	927	-
Stage 1	-	-	-	-	987	-
Stage 2	-	-	-	-	981	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	-	1576	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	-
HCM Lane LOS	A	A	-	-	-
HCM 95th %tile Q(veh)	-	0	-	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	368	28	5	241	1	31	0	8	2	0	1
Future Vol, veh/h	0	368	28	5	241	1	31	0	8	2	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	400	30	5	262	1	34	0	9	2	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	263	0	0	430	0	0	688	688	415	693	703	263
Stage 1	-	-	-	-	-	-	415	415	-	273	273	-
Stage 2	-	-	-	-	-	-	273	273	-	420	430	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1301	-	-	1129	-	-	360	369	637	358	362	776
Stage 1	-	-	-	-	-	-	615	592	-	733	684	-
Stage 2	-	-	-	-	-	-	733	684	-	611	583	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1301	-	-	1129	-	-	358	367	637	352	360	776
Mov Cap-2 Maneuver	-	-	-	-	-	-	358	367	-	352	360	-
Stage 1	-	-	-	-	-	-	615	592	-	733	681	-
Stage 2	-	-	-	-	-	-	728	681	-	603	583	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	15.3	13.4
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	393	1301	-	-	1129	-	-	430
HCM Lane V/C Ratio	0.108	-	-	-	0.005	-	-	0.008
HCM Control Delay (s)	15.3	0	-	-	8.2	0	-	13.4
HCM Lane LOS	C	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	1.9

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	16	8	1	40	14	2
Future Vol, veh/h	16	8	1	40	14	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	9	1	43	15	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	26	0	67	22
Stage 1	-	-	-	-	22	-
Stage 2	-	-	-	-	45	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1588	-	938	1055
Stage 1	-	-	-	-	1001	-
Stage 2	-	-	-	-	977	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1588	-	937	1055
Mov Cap-2 Maneuver	-	-	-	-	937	-
Stage 1	-	-	-	-	1001	-
Stage 2	-	-	-	-	976	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0.2	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	950	1588	-	-	-
HCM Lane V/C Ratio	0.018	0.001	-	-	-
HCM Control Delay (s)	8.9	7.3	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	0	-	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	214	22	2	235	0	50	0	4	0	0	0
Future Vol, veh/h	0	214	22	2	235	0	50	0	4	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	233	24	2	255	0	54	0	4	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	255	0	0	257	0	0	504	504	245	506	516	255
Stage 1	-	-	-	-	-	-	245	245	-	259	259	-
Stage 2	-	-	-	-	-	-	259	259	-	247	257	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1310	-	-	1308	-	-	478	470	794	477	463	784
Stage 1	-	-	-	-	-	-	759	703	-	746	694	-
Stage 2	-	-	-	-	-	-	746	694	-	757	695	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1310	-	-	1308	-	-	477	469	794	474	462	784
Mov Cap-2 Maneuver	-	-	-	-	-	-	477	469	-	474	462	-
Stage 1	-	-	-	-	-	-	759	703	-	746	693	-
Stage 2	-	-	-	-	-	-	745	693	-	753	695	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	13.3	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	492	1310	-	-	1308	-	-	-
HCM Lane V/C Ratio	0.119	-	-	-	0.002	-	-	-
HCM Control Delay (s)	13.3	0	-	-	7.8	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	33	23	3	39	14	2
Future Vol, veh/h	33	23	3	39	14	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	25	3	42	15	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	61	0	97	49
Stage 1	-	-	-	-	49	-
Stage 2	-	-	-	-	48	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1542	-	902	1020
Stage 1	-	-	-	-	973	-
Stage 2	-	-	-	-	974	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1542	-	900	1020
Mov Cap-2 Maneuver	-	-	-	-	900	-
Stage 1	-	-	-	-	973	-
Stage 2	-	-	-	-	972	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0.5	9
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	913	1542	-	-	-
HCM Lane V/C Ratio	0.019	0.002	-	-	-
HCM Control Delay (s)	9	7.3	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	0	-	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	368	49	7	241	1	44	0	9	2	0	1
Future Vol, veh/h	0	368	49	7	241	1	44	0	9	2	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	400	53	8	262	1	48	0	10	2	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	263	0	0	453	0	0	706	706	427	711	732	263
Stage 1	-	-	-	-	-	-	427	427	-	279	279	-
Stage 2	-	-	-	-	-	-	279	279	-	432	453	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1301	-	-	1108	-	-	351	361	628	348	348	776
Stage 1	-	-	-	-	-	-	606	585	-	728	680	-
Stage 2	-	-	-	-	-	-	728	680	-	602	570	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1301	-	-	1108	-	-	349	358	628	340	345	776
Mov Cap-2 Maneuver	-	-	-	-	-	-	349	358	-	340	345	-
Stage 1	-	-	-	-	-	-	606	585	-	728	675	-
Stage 2	-	-	-	-	-	-	721	675	-	593	570	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	16.3	13.7
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	377	1301	-	-	1108	-	-	418
HCM Lane V/C Ratio	0.153	-	-	-	0.007	-	-	0.008
HCM Control Delay (s)	16.3	0	-	-	8.3	0	-	13.7
HCM Lane LOS	C	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0