

MEMORANDUM

Ref: 2001A

To: Michael Sievert, P.E.
MJS Engineering, P.C.

From: Stephen G. Pernaw, P.E., PTOE

Subject: Proposed Student Housing Parking
Durham, New Hampshire

Date: July 15, 2020 (Revised 11/23/20)

This “*Traffic/Parking Evaluation*” memorandum has been prepared at the request of MJS Engineering, P.C. on behalf of their client Toomerfs, LLC to assess the traffic implications associated with the proposed expansion of the student housing parking lot located at 19-21 Main Street in Durham, New Hampshire. The purpose of this memorandum is to summarize the results of our recent traffic counts, the parking accumulation survey, the intersection evaluation and our research of available traffic count data in the area. To summarize:

EXISTING CONDITIONS



The existing off-street parking area for the student housing buildings located at 19-21 Main Street contains one diagonal parking row (14 stalls) located between two closely spaced one-way driveways that leads to two disjointed parking areas with parking for approximately 29 additional vehicles. Some stalls are marked; others park in a haphazard fashion in parking area. The layout of the two one-way driveways is atypical in that entering drivers are to the left of those exiting from the parking lot. Both the inbound and outbound travel lanes are narrow.

PROPOSED DEVELOPMENT

According to the plan entitled “*Proposed Site Plan*” prepared by MJS Engineering, P.C. (see Attachments - Section A), the development proposal involves the reconfiguration and expansion of the off-street parking lot at 19-21 Main Street. The parking supply will increase from approximately 43 stalls to 183 stalls for student parking (+140 stalls). Access to the new parking stalls will be significantly improved by eliminating the row of angle parking closest to Main Street, and constructing a standard two-way driveway with a landscaped median island that separates the inbound and outbound vehicles in a conventional manner (entering vehicles are to the right of exiting vehicles). A portion of the new parking lot is intended to serve another off-campus student housing facility proposed by others at 5 Mill Road in Durham, New Hampshire.

Figure 1 shows the location of the subject site with respect to the area roadway system, as well as the location of the most recent traffic count conducted in the area by the NHDOT.



-  = AUTOMATIC TRAFFIC RECORDER LOCATION (NH DOT)
-  = INTERSECTION TURNING MOVEMENT COUNT LOCATION



2001A

Figure 1

Site Location

Traffic/Parking Evaluation, Proposed Student Housing Parking, Durham, New Hampshire

EXISTING TRAFFIC VOLUMES

Research at the New Hampshire Department of Transportation (NHDOT) revealed that there is a short-term Automatic Traffic Recorder count station on Main Street, located west of NH Route 108. This count station is located approximately 500-feet east of the subject site. According to the NHDOT reports that section of Main Street carried an Annual Average Daily Traffic (AADT) volume of 12,157 vehicles per day (vpd) in 2019, up slightly from 12,013 vpd in 2018.

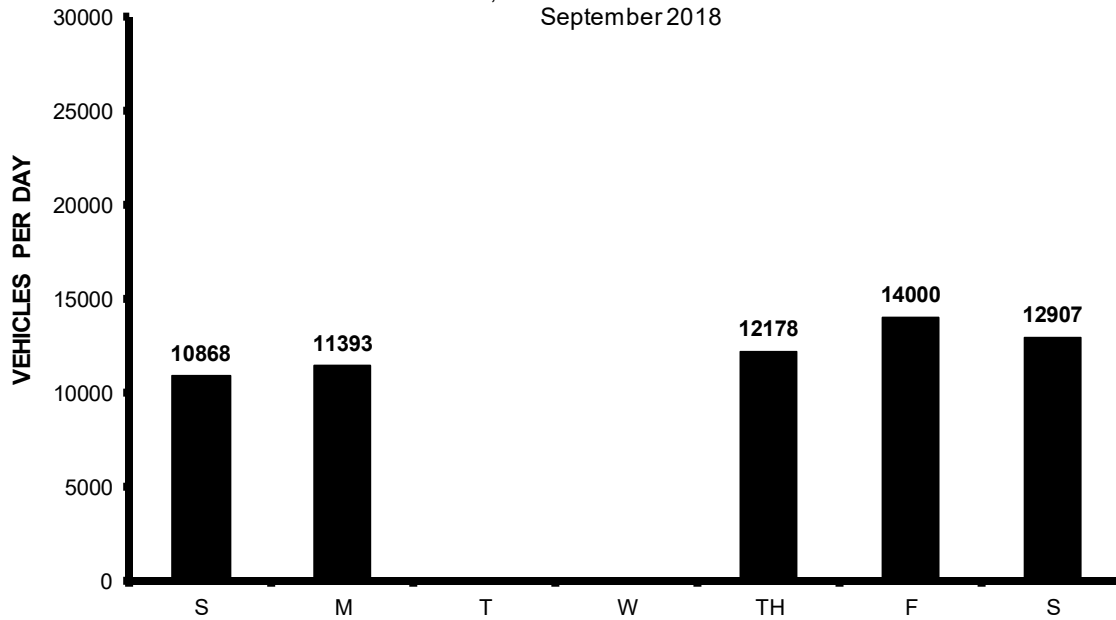
This data demonstrates that weekday traffic volumes in the area typically reach peak levels from 8:00 to 9:00 AM and from 5:00 to 6:00 PM, thus corresponding to the typical commuter periods. Also evident from this data is the influence of the UNH campus, where the hourly traffic flows on weekdays tend to rise steadily after the AM commuter period. The diagrams on the following page summarize the daily and hourly variations in traffic demand along the Main Street corridor. The detail sheets pertaining to these counts are attached (see Attachments - Section B).

To supplement this data, Pernaw & Company, Inc., conducted intersection turning movement and vehicle classification counts at the Main Street/Existing Site Driveway intersection on Wednesday, February 12, 2020 from 2:00 to 6:00 PM, Thursday, February 13, 2020 from 7:00 to 9:00 AM, and on Saturday, February 15, 2020 from 10:00 AM to 2:00 PM; prior to the COVID-19 shutdown. The peak hour traffic volumes for the study area intersection are summarized on Figure 2. Several facts and conclusions are evident from this data:

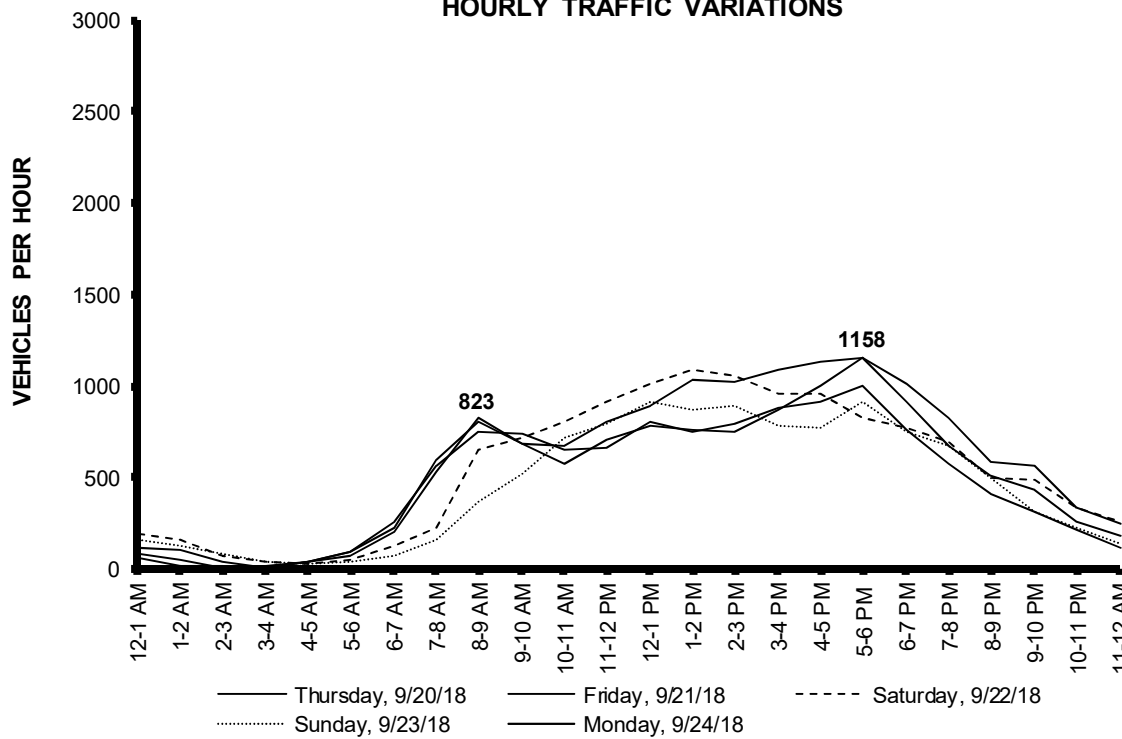
- During the weekday AM peak hour (8:00 to 9:00 AM) the two-way traffic volume on Main Street (west of existing site driveway) totaled 314 vehicles, and the higher directional traffic flow was in the westbound direction (52% WB).
- During the weekday PM peak hour period (4:30 to 5:30 PM) 1,101 vehicles passed the site and 65% traveled in the eastbound direction.
- During the Saturday mid-day peak hour (11:30 AM to 12:30 PM) 974 vehicles passed the site with 57% traveling in the eastbound direction.
- The existing site driveway accommodated only 4 (AM), 21 (PM) and 8 (SAT) vehicles during the peak hour periods. Overall, the majority traveled to/from points west on Main Street (toward campus).
- The observed driveway volumes indicate that the parking turnover rate is low; many cars remain parked throughout the day.

Attachments - Section C contains the detail sheets summarizing the raw turning movement count data.

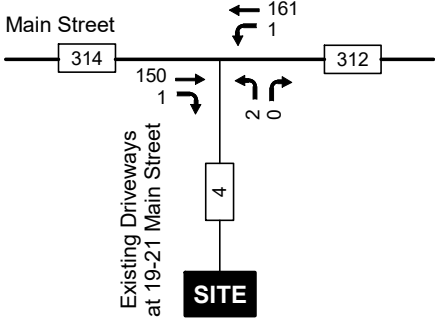
DAILY TRAFFIC VARIATIONS
 Durham, NH - Main Street - West of NH108
 September 2018



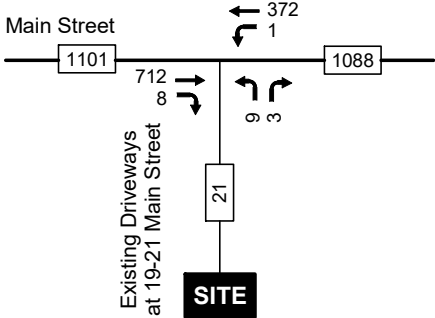
HOURLY TRAFFIC VARIATIONS



AM Peak Hour
Thursday, February 13, 2020
8:00 - 9:00 AM



PM Peak Hour
Wednesday, February 12, 2020
4:30 - 5:30 PM



Saturday Peak Hour
Saturday, February 15, 2020
11:30 AM - 12:30 PM

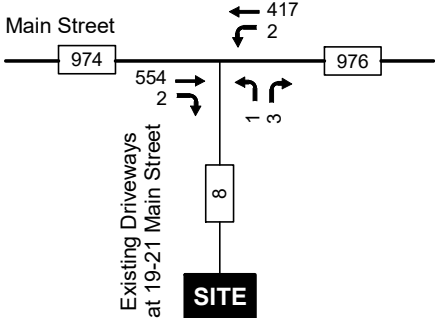


Figure 2

2020 Existing Traffic Volumes
Traffic/Parking Evaluation, Proposed Student Housing Parking, Durham, New Hampshire

EXISTING PARKING DEMAND

To determine when the parking demand reached its highest level, and how parking demand varies over the course of a typical weekday and Saturday, parking accumulation surveys were conducted at the existing parking lot for 19-21 Main Street in February 2020. Parking accumulation is directly related to the number of vehicle arrivals/departures over a fixed interval of time and the number of parked vehicles at the start of the survey.

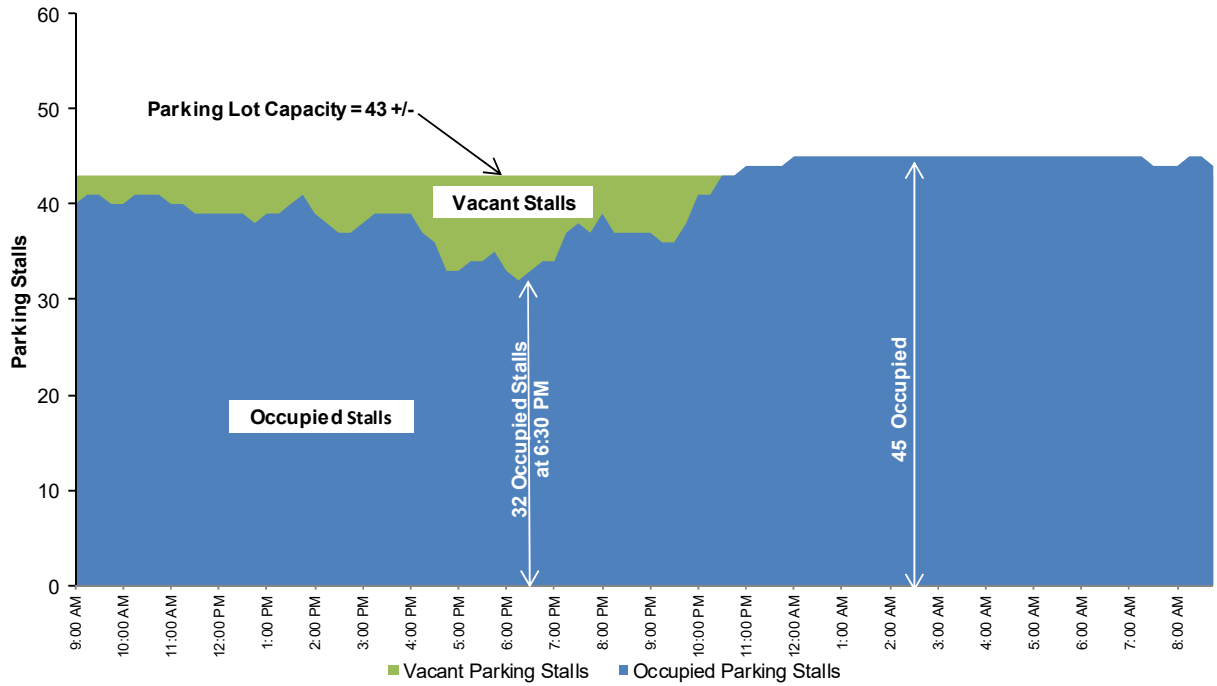
The diagrams on Page 7 summarize the results of the parking accumulation survey and shows that Weekday highest parking demand occurred from midnight to approximately 8:45 AM with 45 vehicles present in the parking lot (105% full). At this time the lot was over-parked (+2 vehicles); likely the result from areas with unmarked spaces. The lowest parking demand occurred at 6:30 PM with 32 occupied stalls (74% full) which correlates with only 11 vacant stalls. The fact that the parking lot generated only 4 (AM) and 21 (PM) vehicle trips during weekday the peak hour periods is an indicator that most vehicles parked throughout the day (long parking generation; low parking turnover).

The Saturday parking demand ranged from 20 occupied stalls at 3:15 PM (47% full) to 39 occupied stalls at 10:30 PM (91% full). A comparison between the weekday and Saturday graphs indicates that many students leave campus on the weekends. (see Attachments - Section D).

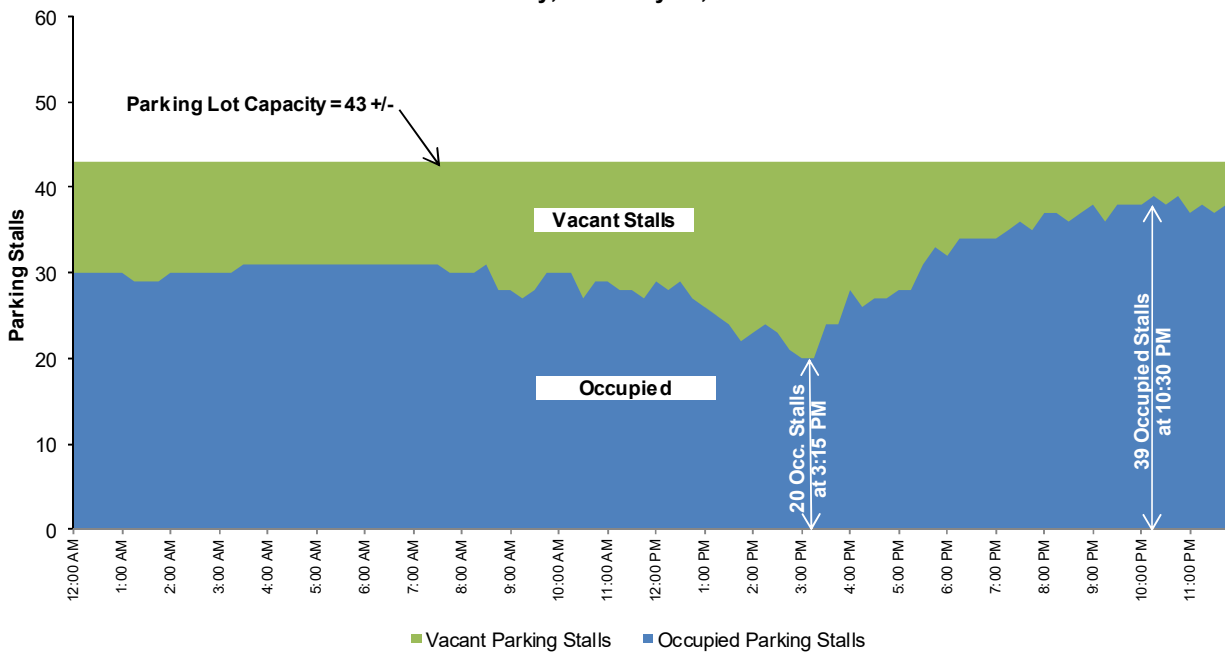
To substantiate these findings, a supplemental parking accumulation survey was conducted at the parking lot for 18 Main Street in Durham during the same 24-hour periods. This student parking lot also contains 43 marked parking stalls. The findings summarized on Page 8 were similar: this parking lot was also over-parked after midnight during the weekday survey, and only 88% full on Saturday. (see Attachments - Section E).

Parking Accumulation Survey – 19 & 21 Main Street, Durham, New Hampshire

Wednesday & Thursday 2/12-13/20

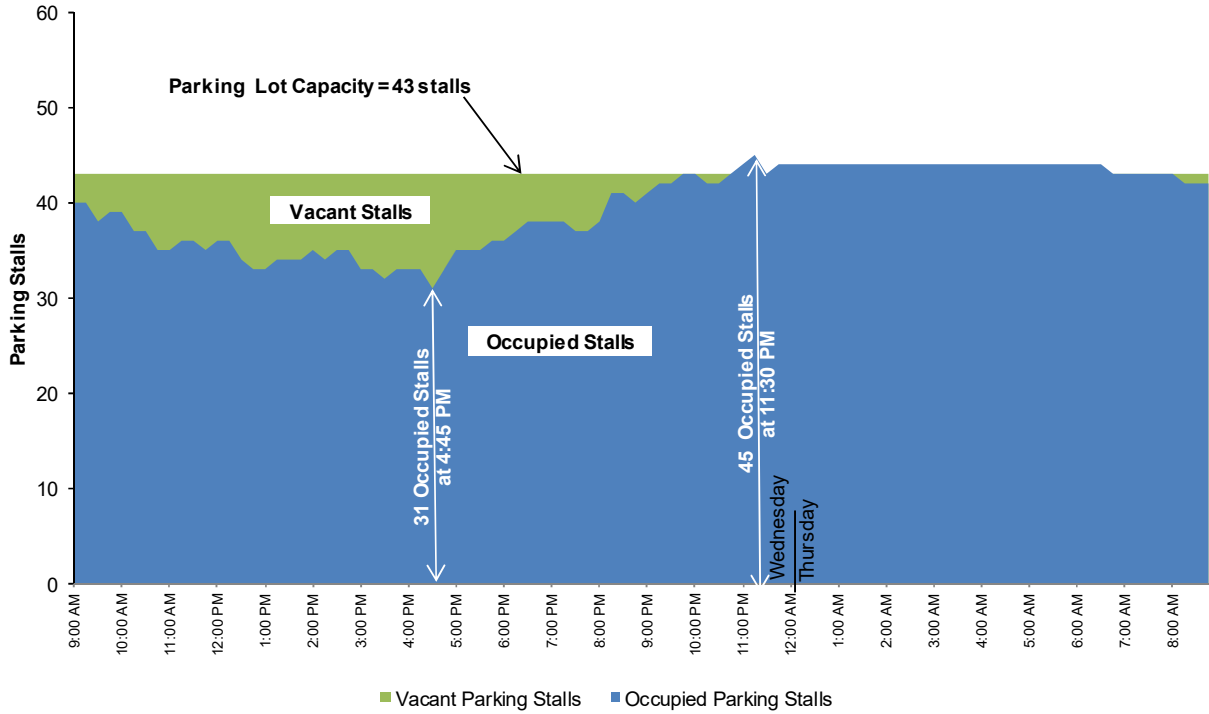


Saturday, February 15, 2020

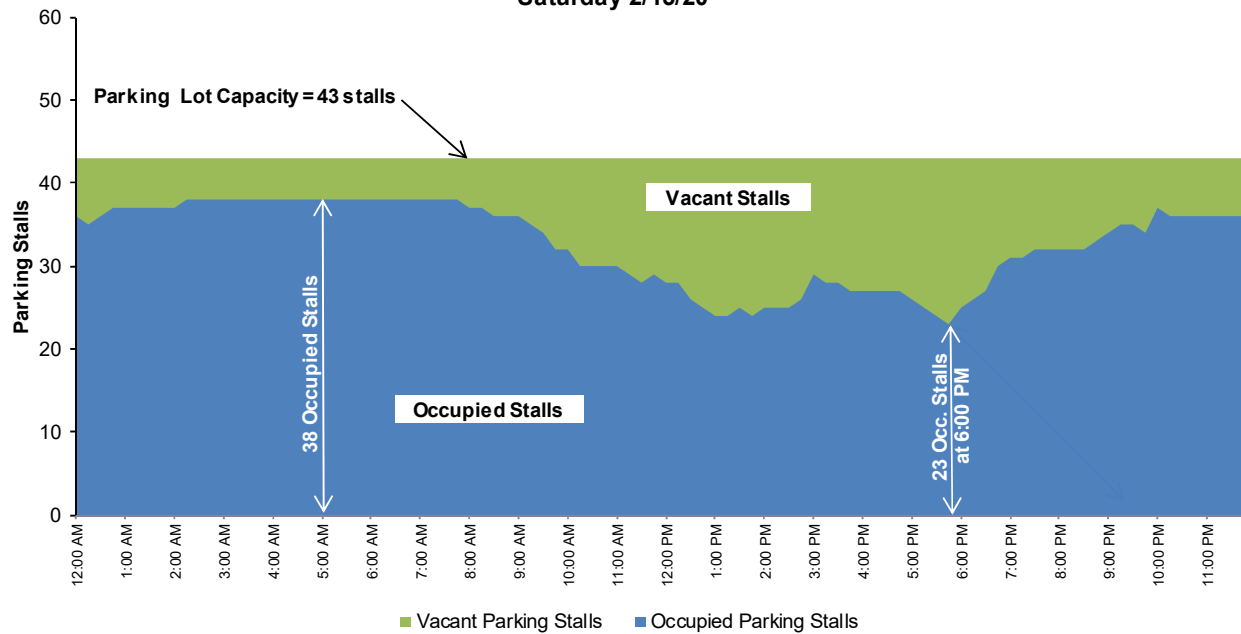


Parking Accumulation Survey – 18 Main Street, Durham, New Hampshire

Wednesday 2/12/20 & Thursday 2/13/20



Saturday 2/15/20



EXISTING / FUTURE TRAFFIC DEMAND

The intersection counts previously summarized on Figure 2 identify the trip generating characteristics of the existing parking lot at 19-21 Main Street. Table 1 summarizes the results of the trip generation analysis for the expanded parking lot. The results indicate that the site driveway on Main Street will accommodate an additional +10 (AM), +49 (PM) and +18 (Saturday) vehicle-trips during the peak hour periods.

Future year 2031 traffic projections for the Main Street/Site Driveway are summarized on Figure 3. These projections are based on the February 2020 traffic counts, a peak-month seasonal adjustment factor of 1.20, and a background traffic growth rate of 1.0% per year, compounded annually (see Attachments - Section F). The anticipated increases in peak hour traffic due to the proposed parking lot expansion project are summarized graphically in Attachments - Section G.

The 2031 future year traffic projections form the basis for evaluating traffic operations at the subject intersection from a capacity, delay, and Level of Service standpoint.

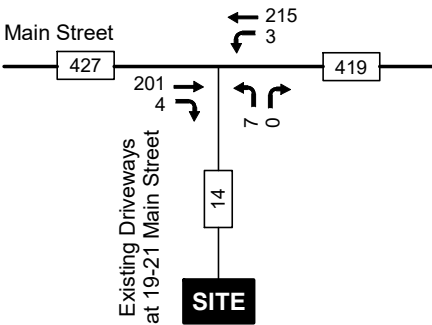
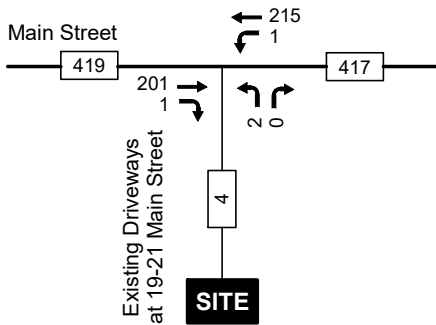
Table 1		Trip Generation Summary		
		Existing Parking Lot ¹	Expanded Parking Lot ²	Net Change
AM Peak Hour				
	Entering	2 veh	7 veh	+5 trips
	Exiting	<u>2 veh</u>	<u>7 veh</u>	+5 trips
	Total	4 trips	14 trips	+10 trips
PM Peak Hour				
	Entering	9 veh	30 veh	+21 trips
	Exiting	<u>12 veh</u>	<u>40 veh</u>	+28 trips
	Total	21 trips	70 trips	+49 trips
Weekday (24 Hour)				
	Entering	68 veh	224 veh	+156 trips
	Exiting	<u>63 veh</u>	<u>208 veh</u>	+145 trips
	Total	131 trips	432 trips	+301 trips
Saturday Peak Hour				
	Entering	4 veh	13 veh	+9 trips
	Exiting	<u>4 veh</u>	<u>13 veh</u>	+9 trips
	Total	8 trips	26 trips	+18 trips
Saturday (24 Hour)				
	Entering	83 veh	274 veh	+191 trips
	Exiting	<u>75 veh</u>	<u>247 veh</u>	+172 trips
	Total	158 trips	521 trips	+363 trips

¹ February 2020 Driveway Counts

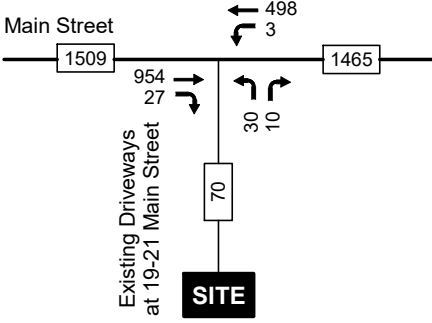
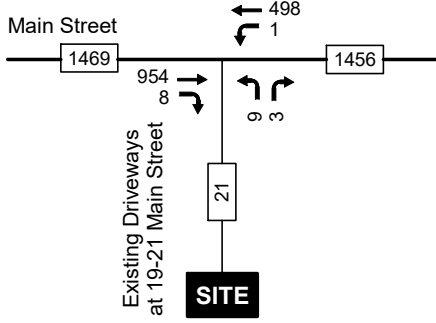
² Extrapolated from 2020 Driveway Counts

2031 No-Build

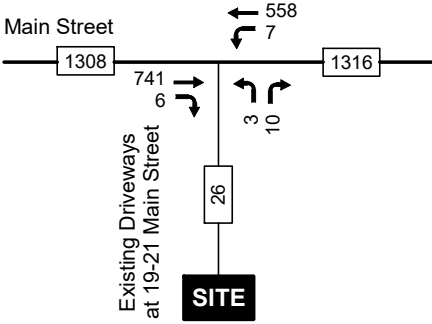
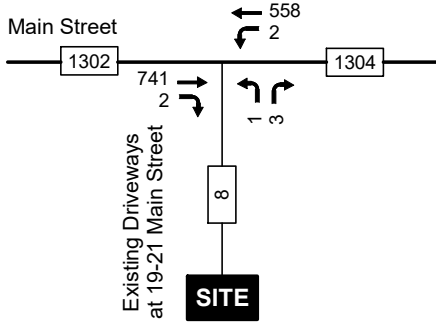
2031 Build



AM Peak Hour



PM Peak Hour



Saturday Peak Hour

2001A



Figure 3

2031 Traffic Volumes
Traffic/Parking Evaluation, Proposed Student Housing Parking, Durham, New Hampshire

TRAFFIC OPERATIONS AND SAFETY

INTERSECTION CAPACITY – UNSIGNALIZED INTERSECTIONS

The long-range (2031) traffic projections form the basis for assessing traffic operations at the Main Street/Site Driveway intersection from a capacity and delay standpoint. This intersection was analyzed according to the methodologies of the *Highway Capacity Manual*¹ as replicated by the latest edition of the *Synchro Traffic Signal Coordination Software (Version 10)*, which also performs unsignalized intersection capacity analyses.

Capacity and Level of Service (LOS) calculations pertaining to unsignalized intersections address the quality of service for those vehicles turning into and out of intersecting side streets. The availability of adequate gaps in the traffic stream on the major street (Main Street) actually controls the potential capacity for vehicle movements to and from the minor approaches (Site Driveway). Levels of Service are simply letter grades (A-F) that categorize the vehicle delays associated with specific turning maneuvers. Table 2 describes the criteria used in this analysis.

Level of Service	Control Delay seconds/vehicle
A	0 - 10
B	> 10 - 15
C	> 15 - 25
D	> 25 - 35
E	> 35 - 50
F	> 50

Source: Transportation Research Board, *Highway Capacity Manual* 2010.

The results of the analysis for the **Main Street/Existing Site Driveway** intersection are summarized on Table 3 and show that all applicable turning movements will operate well below capacity through 2031 with the expanded parking lot in full operation. However, the departure movement from the existing site driveway will experience long delays during the PM peak hour period and operate at LOS F during the horizon year, similar to other streets and driveways that intersect this corridor. Given relatively low number of exiting vehicles on an hourly basis, vehicle queuing will remain minimal (2 vehicles).

Left-turn arrivals from Main Street on to the Site Driveway will operate at LOS A or LOS B during all hours of the day through the horizon year and beyond. (see Attachments - Section H).

¹ Transportation Research Board, *Highway Capacity Manual* (Washington, D.C., 2000).

Table 3 **STOP-Controlled Intersection Capacity Analysis**
Main Street / Existing Site Driveway

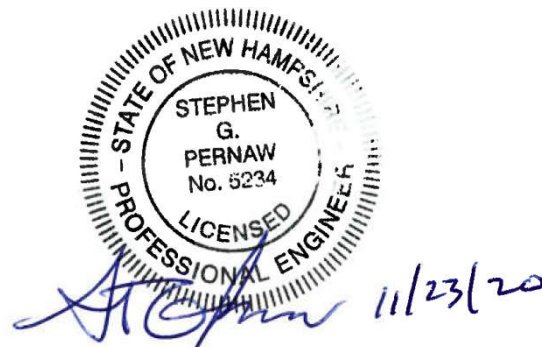
	Weekday AM Peak Hour			Weekday PM Peak Hour			Saturday PM Peak Hour					
	Delay ¹	V/C ²	LOS ³	Queue ⁴	Delay ¹	V/C ²	LOS ³	Queue ⁴	Delay ¹	V/C ²	LOS ³	Queue ⁴
Existing Site Driveway - Left & Right-Turn Departures												
2020 Existing	11.1	0.01	B	<1	23.5	0.08	C	<1	14.2	0.02	B	<1
2031 No-Build	12.3	0.01	B	<1	40.2	0.14	E	1	18.4	0.03	C	<1
2031 Build	12.6	0.03	B	<1	60.9	0.46	F	2	19.3	0.09	C	<1
Main Street - WB Left-Turn Arrivals												
2020 Existing	7.6	0.00	A	<1	9.4	0.00	A	<1	8.7	0.00	A	<1
2031 No-Build	7.7	0.00	A	<1	10.6	0.00	B	<1	9.4	0.00	A	<1
2031 Build	7.7	0.00	A	<1	10.7	0.01	B	<1	9.4	0.01	A	<1

¹ HCM Control Delay (seconds per vehicle), ² HCM Volume to Capacity Ratio, ³ HCM Level of Service, ⁴ HCM 95th Percentile Queue (vehicles)

FINDINGS AND CONCLUSIONS

1. According to NHDOT reports, Main Street (west of NH108) carried an Annual Average Daily Traffic (AADT) volume of 12,157 vehicles per day (vpd) in 2019, up slightly from 12,013 vpd in 2018.
2. The exiting parking lot at 19-21 Main Street generated only 4 (AM), 21 (PM) and 8 (SAT) vehicles trips during the peak hour periods. This confirms that most vehicles remain parked throughout the day, and that the parking turnover rate is low.
3. The exiting parking lot contains approximately 43 parking stalls and was found to be over-parked during the weekday from midnight to approximately 8:45 AM (45 parked vehicles). The Saturday survey found that peak parking accumulation occurred at 10:30 PM with 39 parked vehicles.
4. The proposed parking lot expansion project will increase the parking supply from 43 stalls to 183 stalls. This will significantly improve the parking supply for student housing at the subject site (19-21 Main Street) as well as at 5 Mill Road (proposed by others).
5. The trip generation analysis indicates that the increased parking supply will generate approximately +10 additional vehicle-trips during the AM peak hour (5 arrivals, 5 departures), +49 additional vehicle-trips (21 arrivals, 28 departures) during the PM peak hour, and +18 additional vehicle trips (9 arrivals, 9 departures) during the Saturday mid-day peak hour when fully occupied.
6. The intersection capacity and Level of Service analyses of the Main Street/Existing Site Driveway intersection revealed that all applicable turning movements will operate well below capacity through 2031 and beyond with the parking lot fully occupied. The analysis also shows that left-turn departures from the site driveway will continue to encounter long delays during the weekday PM peak hour period, similar to other streets and driveways on the Main Street corridor. Given the relatively low number of hourly site departures, vehicle queuing will remain relatively short.
7. Given that this parking lot expansion project involves a private site driveway intersection on Main Street, the installation of STOP sign control (MUTCD #R1-1) on the minor approach with an 18-inch white stop line is considered to be optional.

Attachments



ATTACHMENTS

Site Plan – 19 & 21 Main Street

Section A

NHDOT Automatic Traffic Reorder Counts

Section B

List View All DIRs

Record		of 5743	Goto Record	<input type="text" value="go"/>
Location ID	82133051	MPO ID		
Type	SPOT	HPMS ID		
On NHS	No	On HPMS	Yes	
LRS ID	N1330055__	LRS Loc Pt.		
SF Group	04	Route Type		
AF Group	04	Route		
GF Group	E	Active	Yes	
Class Dist Grp	Default	Category	3	
Seas Class Grp	Default			
WIM Group	Default			
QC Group	Default			
Funct'l Class	Minor Arterial	Milepost		
Located On	Main St			
Loc On Alias	MAIN ST WEST OF NH 108			
More Detail				
STATION DATA				

Directions: 2-WAY

AADT

Year	AADT	DHV-30	K %	D %	PA	BC	Src
2019	12,157 ³		10		11,136 (92%)	1,021 (8%)	Grown from 2018
2018	12,013	1,158	10		11,076 (92%)	937 (8%)	
2017	14,566 ³				13,516 (93%)	1,050 (7%)	Grown from 2016
2016	14,280 ³				13,024 (91%)	1,256 (9%)	Grown from 2015
2015	14,000						

1-5 of 16

Travel Demand Model										
Model Year	Model AADT	AM PHV	AM PPV	MD PHV	MD PPV	PM PHV	PM PPV	NT PHV	NT PPV	

VOLUME COUNT			
	Date	Int	Total
	Mon 9/24/2018	60	11,393
	Sun 9/23/2018	60	10,868
	Sat 9/22/2018	60	12,907
	Fri 9/21/2018	60	14,000
	Thu 9/20/2018	60	12,178
	Thu 10/1/2015	60	16,232
	Wed 9/30/2015	60	15,421
	Tue 9/29/2015	60	14,920
	Wed 10/17/2012	60	16,026
	Tue 10/16/2012	60	15,604

VOLUME TREND	
Year	Annual Growth
2019	1%
2018	-18%
2017	2%
2016	2%
2015	0%
2012	3%
2009	-2%
2006	0%
2004	-2%



Excel Version

Weekly Volume Report			
Location ID:	82133051	Type:	SPOT
Located On:	Main St	:	
Direction:	2-WAY		
Community:	DURHAM	Period:	Mon 9/17/2018 - Sun 9/23/2018
AADT:	12013		

Start Time	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Avg	Graph	
12:00 AM				88	112	188	156	136		1.1%
1:00 AM				54	101	154	130	110		0.9%
2:00 AM				7	44	74	80	51		0.4%
3:00 AM				13	11	39	42	26		0.2%
4:00 AM				35	43	27	33	35		0.3%
5:00 AM				90	74	49	40	63		0.5%
6:00 AM				224	205	121	74	156		1.2%
7:00 AM				598	527	229	158	378		3.0%
8:00 AM				804	823	656	372	664		5.3%
9:00 AM				688	679	715	525	652		5.2%
10:00 AM				575	670	803	716	691		5.5%
11:00 AM				704	807	911	791	803		6.4%
12:00 PM				786	896	1014	918	904		7.2%
1:00 PM				760	1032	1084	868	936		7.5%
2:00 PM				754	1027	1060	896	934		7.5%
3:00 PM				874	1085	953	782	924		7.4%
4:00 PM				1003	1127	958	769	964		7.7%
5:00 PM				1157	1158	829	917	1,015		8.1%
6:00 PM				912	1013	774	753	863		6.9%
7:00 PM				675	831	692	672	718		5.7%
8:00 PM				509	582	497	500	522		4.2%
9:00 PM				434	563	484	315	449		3.6%
10:00 PM				256	339	335	226	289		2.3%
11:00 PM				178	251	261	135	206		1.7%
Total	0	0	0	12,178	14,000	12,907	10,868			
24hr Total				12178	14000	12907	10868	12,488		
AM Pk Hr				8:00	8:00	11:00	11:00			
AM Peak				804	823	911	791	832		
PM Pk Hr				5:00	5:00	1:00	12:00			
PM Peak				1157	1158	1084	918	1,079		
% Pk Hr				9.50%	8.27%	8.40%	8.45%	8.66%		

Intersection Turning Movement Counts – 19 & 21 Main Street
Section C

Job Number: 2001A

Location: 19-21 Main Street, Durham, NH

TMC Count Data (Thursday, February 13, 2020)

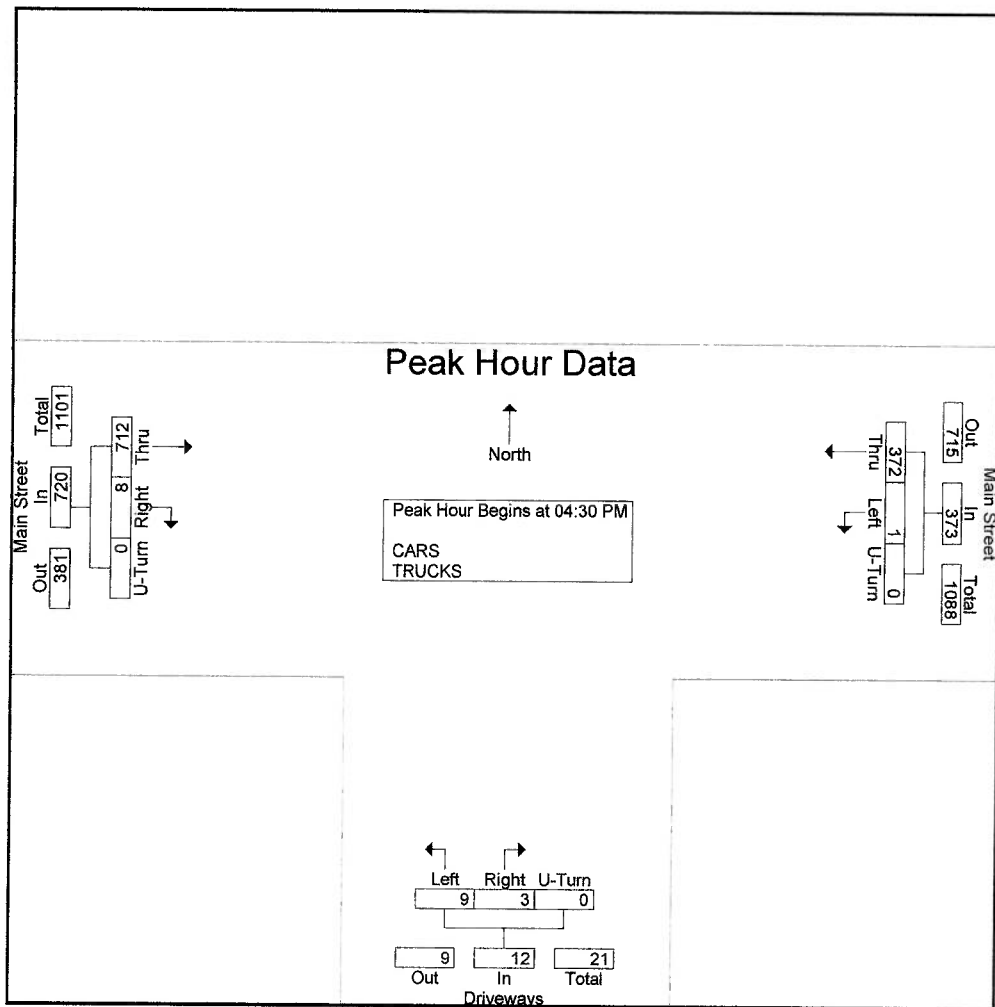
	<u>WBT</u>	<u>WBL</u>	<u>NBR</u>	<u>NBL</u>	<u>EBR</u>	<u>EBT</u>	
7:00-7:15	36	0	0	0	0	26	62
7:15-7:30	25	0	0	0	0	32	57
7:30-7:45	31	0	0	1	0	36	68
7:45-8:00	49	0	0	0	0	32	81
8:00-8:15	27	0	0	0	0	28	55
8:15-8:30	38	0	0	0	0	35	73
8:30-8:45	50	1	0	1	0	34	86
8:45-9:00	46	0	0	1	1	53	101
	302	1	0	3	1	276	583
Peak Hour	161	1	0	2	1	150	315
8:00-9:00 AM							

Stephen G. Pernaw & Company, Inc.
P.O. Box 1721
Concord, New Hampshire 03302

Weather: Clear
Collected By: MV
Job Number: 2001A
Town/State: Durham, NH

File Name : INT_A_Wed_PM_2-12-2020
Site Code : 2001A
Start Date : 2/12/2020
Page No : 3

Start Time	Main Street From East				Driveways From South				Main Street From West				Int. Total
	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	116	0	0	116	0	2	0	2	1	193	0	194	312
04:45 PM	102	0	0	102	0	4	0	4	1	141	0	142	248
05:00 PM	82	0	0	82	0	2	0	2	2	177	0	179	263
05:15 PM	72	1	0	73	3	1	0	4	4	201	0	205	282
Total Volume	372	1	0	373	3	9	0	12	8	712	0	720	1105
% App. Total	99.7	0.3	0		25	75	0		1.1	98.9	0		
PHF	.802	.250	.000	.804	.250	.563	.000	.750	.500	.886	.000	.878	.885



Stephen G. Pernaw & Company, Inc.
P.O. Box 1721
Concord, New Hampshire 03302

Weather: Clear
Collected By: MV
Job Number: 2001A
Town/State: Durham, NH

File Name : 2001A_INT_A_Sat 2-15-20
Site Code : 2001A
Start Date : 2/15/2020
Page No : 1

Groups Printed- CARS - TRUCKS

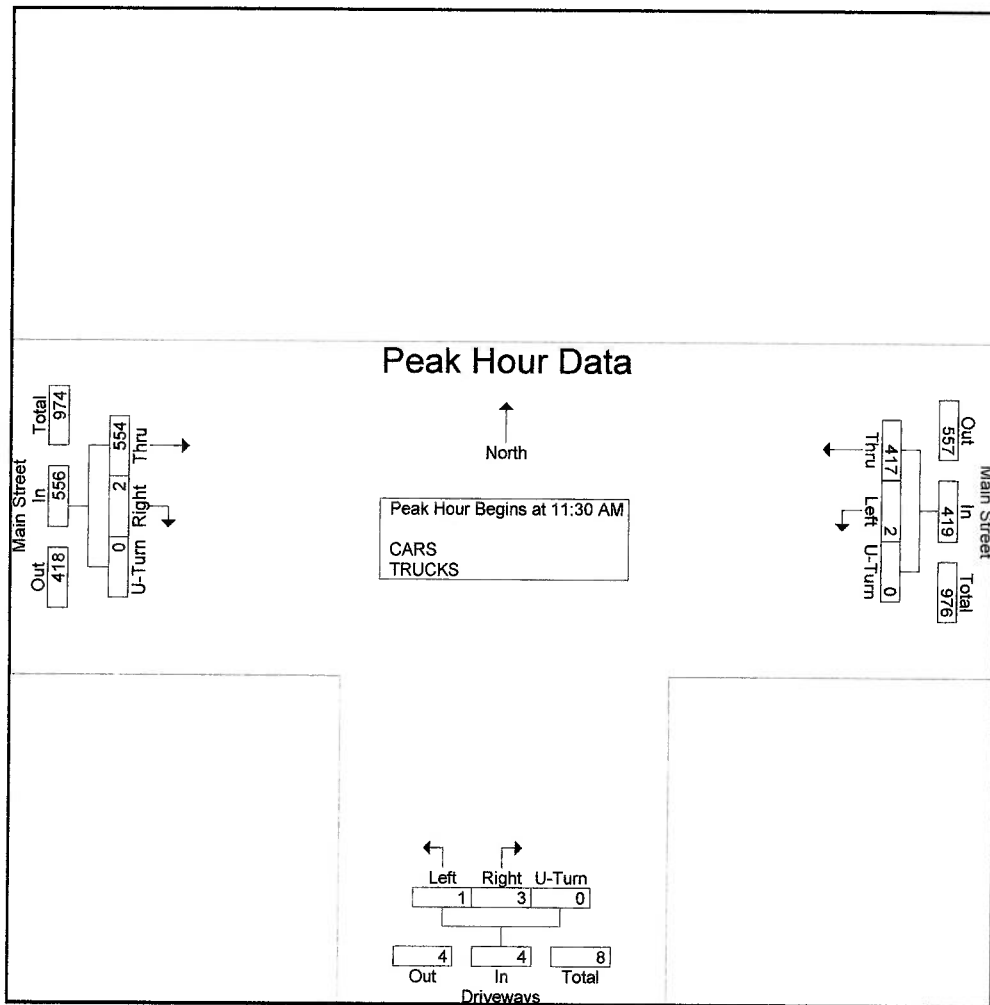
Start Time	Main Street From East				Driveways From South				Main Street From West				Int. Total
	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	
10:00 AM	79	1	0	80	0	0	0	0	0	82	0	82	162
10:15 AM	75	0	0	75	0	1	0	1	1	90	0	91	167
10:30 AM	80	0	0	80	3	0	0	3	0	107	0	107	190
10:45 AM	64	1	0	65	0	1	0	1	2	117	0	119	185
Total	298	2	0	300	3	2	0	5	3	396	0	399	704
11:00 AM	94	0	0	94	1	0	0	1	1	118	0	119	214
11:15 AM	107	0	0	107	1	0	0	1	0	126	0	126	234
11:30 AM	112	0	0	112	0	0	0	0	0	136	0	136	248
11:45 AM	102	0	0	102	1	0	0	1	0	152	0	152	255
Total	415	0	0	415	3	0	0	3	1	532	0	533	951
12:00 PM	91	1	0	92	0	1	0	1	2	134	0	136	229
12:15 PM	112	1	0	113	2	0	0	2	0	132	0	132	247
12:30 PM	95	0	0	95	0	0	0	0	1	134	0	135	230
12:45 PM	90	0	0	90	2	0	0	2	0	133	0	133	225
Total	388	2	0	390	4	1	0	5	3	533	0	536	931
01:00 PM	104	0	0	104	2	0	0	2	1	150	0	151	257
01:15 PM	109	2	0	111	0	3	0	3	0	118	0	118	232
01:30 PM	93	0	0	93	2	1	0	3	2	124	0	126	222
01:45 PM	81	0	0	81	2	0	0	2	0	121	0	121	204
Total	387	2	0	389	6	4	0	10	3	513	0	516	915
Grand Total	1488	6	0	1494	16	7	0	23	10	1974	0	1984	3501
Apprch %	99.6	0.4	0		69.6	30.4	0		0.5	99.5	0		
Total %	42.5	0.2	0	42.7	0.5	0.2	0	0.7	0.3	56.4	0	56.7	
CARS	1465	6	0	1471	16	7	0	23	9	1941	0	1950	3444
% CARS	98.5	100	0	98.5	100	100	0	100	90	98.3	0	98.3	98.4
TRUCKS	23	0	0	23	0	0	0	0	1	33	0	34	57
% TRUCKS	1.5	0	0	1.5	0	0	0	0	10	1.7	0	1.7	1.6

Stephen G. Pernaw & Company, Inc.
P.O. Box 1721
Concord, New Hampshire 03302

Weather: Clear
Collected By: MV
Job Number: 2001A
Town/State: Durham, NH

File Name : 2001A_INT_A_Sat 2-15-20
Site Code : 2001A
Start Date : 2/15/2020
Page No : 3

Start Time	Main Street From East				Driveways From South				Main Street From West				Int. Total
	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 11:30 AM													
11:30 AM	112	0	0	112	0	0	0	0	0	136	0	136	248
11:45 AM	102	0	0	102	1	0	0	1	0	152	0	152	255
12:00 PM	91	1	0	92	0	1	0	1	2	134	0	136	229
12:15 PM	112	1	0	113	2	0	0	2	0	132	0	132	247
Total Volume	417	2	0	419	3	1	0	4	2	554	0	556	979
% App. Total	99.5	0.5	0		75	25	0		0.4	99.6	0		
PHF	.931	.500	.000	.927	.375	.250	.000	.500	.250	.911	.000	.914	.960



Stephen G. Pernaw & Company, Inc.
P.O. Box 1721
Concord, New Hampshire 03302

Weather: Clear
Collected By: MV
Job Number: 2001A
Town/State: Durham, NH

File Name : INT_A_Wed_PM_2-12-2020
Site Code : 2001A
Start Date : 2/12/2020
Page No : 1

Groups Printed- CARS - TRUCKS

Start Time	Main Street From East				Driveways From South				Main Street From West				Int. Total
	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	
02:00 PM	80	0	0	80	2	2	0	4	2	125	0	127	211
02:15 PM	87	0	0	87	1	1	0	2	1	108	0	109	198
02:30 PM	55	0	0	55	1	0	0	1	0	121	0	121	177
02:45 PM	112	0	0	112	1	0	0	1	1	87	0	88	201
Total	334	0	0	334	5	3	0	8	4	441	0	445	787
03:00 PM	119	0	0	119	0	0	0	0	1	123	0	124	243
03:15 PM	100	0	0	100	0	0	0	0	1	144	0	145	245
03:30 PM	79	1	0	80	0	1	0	1	0	164	0	164	245
03:45 PM	99	0	0	99	0	0	0	0	0	152	0	152	251
Total	397	1	0	398	0	1	0	1	2	583	0	585	984
04:00 PM	84	0	0	84	0	0	0	0	0	136	0	136	220
04:15 PM	90	0	0	90	0	3	0	3	1	154	0	155	248
04:30 PM	116	0	0	116	0	2	0	2	1	193	0	194	312
04:45 PM	102	0	0	102	0	4	0	4	1	141	0	142	248
Total	392	0	0	392	0	9	0	9	3	624	0	627	1028
05:00 PM	82	0	0	82	0	2	0	2	2	177	0	179	263
05:15 PM	72	1	0	73	3	1	0	4	4	201	0	205	282
05:30 PM	90	0	0	90	1	1	0	2	2	158	0	160	252
05:45 PM	87	0	0	87	0	1	0	1	2	138	0	140	228
Total	331	1	0	332	4	5	0	9	10	674	0	684	1025
Grand Total	1454	2	0	1456	9	18	0	27	19	2322	0	2341	3824
Apprch %	99.9	0.1	0		33.3	66.7	0		0.8	99.2	0		
Total %	38	0.1	0	38.1	0.2	0.5	0	0.7	0.5	60.7	0	61.2	
CARS	1424	2	0	1426	9	18	0	27	19	2292	0	2311	3764
% CARS	97.9	100	0	97.9	100	100	0	100	100	98.7	0	98.7	98.4
TRUCKS	30	0	0	30	0	0	0	0	0	30	0	30	60
% TRUCKS	2.1	0	0	2.1	0	0	0	0	0	1.3	0	1.3	1.6

Parking Accumulation – 19 & 21 Main Street

Section D

WEEKDAY PARKING ACCUMULATION SURVEY - 19/21 Main Street, Durham, NH

Wednesday, February 12 & Thursday, February 13, 2020
19-21 Main Street, Durham, New Hampshire

	Trip Generation		Total	Parking Accumulation	Approx. Capacity
	Arrivals	Departures			
Wednesday February 12, 2020				39	50
9:00 AM - 9:15 AM	1	0	1	40	50
9:15 AM - 9:30 AM	1	0	1	41	50
9:30 AM - 9:45 AM	0	0	0	41	50
9:45 AM - 10:00 AM	0	1	1	40	50
10:00 AM - 10:15 AM	0	0	0	40	50
10:15 AM - 10:30 AM	1	0	1	41	50
10:30 AM - 10:45 AM	0	0	0	41	50
10:45 AM - 11:00 AM	1	1	2	41	50
11:00 AM - 11:15 AM	0	1	1	40	50
11:15 AM - 11:30 AM	1	1	2	5	50
11:30 AM - 11:45 AM	0	1	1	6	50
11:45 AM - 12:00 PM	1	1	2	6	50
12:00 PM - 12:15 PM	0	0	0	5	50
12:15 PM - 12:30 PM	0	0	0	3	50
12:30 PM - 12:45 PM	0	0	0	2	50
12:45 PM - 1:00 PM	0	1	1	1	50
1:00 PM - 1:15 PM	2	1	3	4	50
1:15 PM - 1:30 PM	2	2	4	8	50
1:30 PM - 1:45 PM	1	0	1	9	50
1:45 PM - 2:00 PM	3	2	5	13	50
2:00 PM - 2:15 PM	2	4	6	16	50
2:15 PM - 2:30 PM	1	2	3	15	50
2:30 PM - 2:45 PM	0	1	1	15	50
2:45 PM - 3:00 PM	1	1	2	12	50
3:00 PM - 3:15 PM	1	0	1	7	50
3:15 PM - 3:30 PM	1	0	1	5	50
3:30 PM - 3:45 PM	1	1	2	6	50
3:45 PM - 4:00 PM	0	0	0	4	50
4:00 PM - 4:15 PM	0	0	0	3	50
4:15 PM - 4:30 PM	1	3	4	6	50
4:30 PM - 4:45 PM	1	2	3	7	50
4:45 PM - 5:00 PM	1	4	5	12	50
5:00 PM - 5:15 PM	2	2	4	16	50
5:15 PM - 5:30 PM	5	4	9	21	50
5:30 PM - 5:45 PM	2	2	4	22	50
5:45 PM - 6:00 PM	2	1	3	20	50
6:00 PM - 6:15 PM	1	3	4	20	50
6:15 PM - 6:30 PM	2	3	5	16	50
6:30 PM - 6:45 PM	3	2	5	17	50
6:45 PM - 7:00 PM	3	2	5	19	50
7:00 PM - 7:15 PM	0	0	0	15	50
7:15 PM - 7:30 PM	3	0	3	13	50
7:30 PM - 7:45 PM	1	0	1	9	50
7:45 PM - 8:00 PM	0	1	1	5	50
8:00 PM - 8:15 PM	2	0	2	7	50
8:15 PM - 8:30 PM	0	2	2	6	50
8:30 PM - 8:45 PM	1	1	2	7	50
8:45 PM - 9:00 PM	0	0	0	6	50
9:00 PM - 9:15 PM	2	2	4	8	50
9:15 PM - 9:30 PM	0	1	1	7	50
9:30 PM - 9:45 PM	1	1	2	7	50
9:45 PM - 10:00 PM	2	0	2	9	50

SATURDAY PARKING ACCUMULATION SURVEY - 19/21 Main Street, Durham, NH

Saturday, February 15, 2020
 19-21 Main Street, Durham, New Hampshire

	Trip Generation		Total	Parking Accumulation	Approx. Capacity
	Arrivals	Departures			
Saturday February 15, 2020					
12:00 AM - 12:15 AM	0	0	0	30	50
12:15 AM - 12:30 AM	0	0	0	30	50
12:30 AM - 12:45 AM	0	0	0	30	50
12:45 AM - 1:00 AM	0	0	0	30	50
1:00 AM - 1:15 AM	1	1	2	30	50
1:15 AM - 1:30 AM	1	2	3	29	50
1:30 AM - 1:45 AM	0	0	0	29	50
1:45 AM - 2:00 AM	0	0	0	29	50
2:00 AM - 2:15 AM	1	0	1	30	50
2:15 AM - 2:30 AM	1	1	2	30	50
2:30 AM - 2:45 AM	0	0	0	30	50
2:45 AM - 3:00 AM	0	0	0	30	50
3:00 AM - 3:15 AM	0	0	0	30	50
3:15 AM - 3:30 AM	0	0	0	30	50
3:30 AM - 3:45 AM	1	0	1	31	50
3:45 AM - 4:00 AM	0	0	0	31	50
4:00 AM - 4:15 AM	0	0	0	31	50
4:15 AM - 4:30 AM	0	0	0	31	50
4:30 AM - 4:45 AM	0	0	0	31	50
4:45 AM - 5:00 AM	0	0	0	31	50
5:00 AM - 5:15 AM	0	0	0	31	50
5:15 AM - 5:30 AM	0	0	0	31	50
5:30 AM - 5:45 AM	0	0	0	31	50
5:45 AM - 6:00 AM	0	0	0	31	50
6:00 AM - 6:15 AM	0	0	0	31	50
6:15 AM - 6:30 AM	0	0	0	31	50
6:30 AM - 6:45 AM	0	0	0	31	50
6:45 AM - 7:00 AM	0	0	0	31	50
7:00 AM - 7:15 AM	0	0	0	31	50
7:15 AM - 7:30 AM	0	0	0	31	50
7:30 AM - 7:45 AM	0	0	0	31	50
7:45 AM - 8:00 AM	1	2	3	30	50
8:00 AM - 8:15 AM	0	0	0	30	50
8:15 AM - 8:30 AM	0	0	0	30	50
8:30 AM - 8:45 AM	1	0	1	31	50
8:45 AM - 9:00 AM	0	3	3	28	50
9:00 AM - 9:15 AM	0	0	0	28	50
9:15 AM - 9:30 AM	0	1	1	27	50
9:30 AM - 9:45 AM	2	1	3	28	50
9:45 AM - 10:00 AM	4	2	6	30	50
10:00 AM - 10:15 AM	0	0	0	30	50
10:15 AM - 10:30 AM	1	1	2	30	50
10:30 AM - 10:45 AM	0	3	3	27	50
10:45 AM - 11:00 AM	3	1	4	29	50
11:00 AM - 11:15 AM	1	1	2	29	50
11:15 AM - 11:30 AM	0	1	1	28	50
11:30 AM - 11:45 AM	0	0	0	28	50
11:45 AM - 12:00 PM	0	1	1	27	50
12:00 PM - 12:15 PM	3	1	4	29	50
12:15 PM - 12:30 PM	1	2	3	28	50
12:30 PM - 12:45 PM	1	0	1	29	50
12:45 PM - 1:00 PM	0	2	2	27	50
1:00 PM - 1:15 PM	1	2	3	26	50
1:15 PM - 1:30 PM	2	3	5	25	50

SATURDAY PARKING ACCUMULATION SURVEY - 19/21 Main Street, Durham, NH

Saturday, February 15, 2020
19-21 Main Street, Durham, New Hampshire

	Trip Generation				Parking Accumulation	Approx. Capacity
	Arrivals	Departures				
1:30 PM - 1:45 PM	2	3	5	15	24	50
1:45 PM - 2:00 PM	0	2	2	15	22	50
2:00 PM - 2:15 PM	1	0	1	13	23	50
2:15 PM - 2:30 PM	2	1	3	11	24	50
2:30 PM - 2:45 PM	0	1	1	7	23	50
2:45 PM - 3:00 PM	0	2	2	7	21	50
3:00 PM - 3:15 PM	2	3	5	11	20	50
3:15 PM - 3:30 PM	1	1	2	10	20	50
3:30 PM - 3:45 PM	7	3	10	19	24	50
3:45 PM - 4:00 PM	0	0	0	17	24	50
4:00 PM - 4:15 PM	4	0	4	16	28	50
4:15 PM - 4:30 PM	2	4	6	20	26	50
4:30 PM - 4:45 PM	3	2	5	15	27	50
4:45 PM - 5:00 PM	0	0	0	15	27	50
5:00 PM - 5:15 PM	1	0	1	12	28	50
5:15 PM - 5:30 PM	1	1	2	8	28	50
5:30 PM - 5:45 PM	4	1	5	8	31	50
5:45 PM - 6:00 PM	2	0	2	10	33	50
6:00 PM - 6:15 PM	0	1	1	10	32	50
6:15 PM - 6:30 PM	2	0	2	10	34	50
6:30 PM - 6:45 PM	0	0	0	5	34	50
6:45 PM - 7:00 PM	0	0	0	3	34	50
7:00 PM - 7:15 PM	0	0	0	2	34	50
7:15 PM - 7:30 PM	2	1	3	3	35	50
7:30 PM - 7:45 PM	1	0	1	4	36	50
7:45 PM - 8:00 PM	1	2	3	7	35	50
8:00 PM - 8:15 PM	2	0	2	9	37	50
8:15 PM - 8:30 PM	1	1	2	8	37	50
8:30 PM - 8:45 PM	1	2	3	10	36	50
8:45 PM - 9:00 PM	1	0	1	8	37	50
9:00 PM - 9:15 PM	2	1	3	9	38	50
9:15 PM - 9:30 PM	1	3	4	11	36	50
9:30 PM - 9:45 PM	2	0	2	10	38	50
9:45 PM - 10:00 PM	1	1	2	11	38	50
10:00 PM - 10:15 PM	1	1	2	10	38	50
10:15 PM - 10:30 PM	4	3	7	13	39	50
10:30 PM - 10:45 PM	0	1	1	12	38	50
10:45 PM - 11:00 PM	1	0	1	11	39	50
11:00 PM - 11:15 PM	0	2	2	11	37	50
11:15 PM - 11:30 PM	1	0	1	5	38	50
11:30 PM - 11:45 PM	0	1	1	5	37	50
11:45 PM - 12:00 AM	1	0	1	5	38	50

83	75	MAX	39
		MIN	20

Peak Hour
3:30-4:30 PM 13 7 = 20

Peak Parking Accumulation = 39 vehicles
(10:15 PM - 10:30 PM & 10:45 PM - 11:00 PM)

Parking Accumulation – 18 Main Street

Section E

WEEKDAY PARKING ACCUMULATION SURVEY - 18 Main Street, Durham, NH

Wednesday, February 12 & Thursday, February 13, 2020
18 Main Street, Durham, New Hampshire

		Trip Generation		Total	Parking Accumulation	Approx. Capacity
		Arrivals	Departures			
Wednesday					42	43
February 12, 2020	9:00 AM - 9:15 AM	0	2	2	40	43
	9:15 AM - 9:30 AM	0	0	0	40	43
	9:30 AM - 9:45 AM	0	2	2	38	43
	9:45 AM - 10:00 AM	1	0	1 5	39	43
	10:00 AM - 10:15 AM	0	0	0 3	39	43
	10:15 AM - 10:30 AM	0	2	2 5	37	43
	10:30 AM - 10:45 AM	1	1	2 5	37	43
	10:45 AM - 11:00 AM	1	3	4 8	35	43
	11:00 AM - 11:15 AM	0	0	0 8	35	43
	11:15 AM - 11:30 AM	1	0	1 7	36	43
	11:30 AM - 11:45 AM	1	1	2 7	36	43
	11:45 AM - 12:00 PM	1	2	3 6	35	43
	12:00 PM - 12:15 PM	1	0	1 7	36	43
	12:15 PM - 12:30 PM	1	1	2 8	36	43
	12:30 PM - 12:45 PM	0	2	2 8	34	43
	12:45 PM - 1:00 PM	0	1	1 6	33	43
	1:00 PM - 1:15 PM	0	0	0 5	33	43
	1:15 PM - 1:30 PM	1	0	1 4	34	43
	1:30 PM - 1:45 PM	1	1	2 4	34	43
	1:45 PM - 2:00 PM	1	1	2 5	34	43
	2:00 PM - 2:15 PM	2	1	3 8	35	43
	2:15 PM - 2:30 PM	0	1	1 8	34	43
	2:30 PM - 2:45 PM	1	0	1 7	35	43
	2:45 PM - 3:00 PM	1	1	2 7	35	43
	3:00 PM - 3:15 PM	0	2	2 6	33	43
	3:15 PM - 3:30 PM	2	2	4 9	33	43
	3:30 PM - 3:45 PM	0	1	1 9	32	43
	3:45 PM - 4:00 PM	1	0	1 8	33	43
	4:00 PM - 4:15 PM	1	1	2 8	33	43
	4:15 PM - 4:30 PM	0	0	0 4	33	43
	4:30 PM - 4:45 PM	1	3	4 7	31	43
	4:45 PM - 5:00 PM	2	0	2 8	33	43
	5:00 PM - 5:15 PM	2	0	2 8	35	43
	5:15 PM - 5:30 PM	1	1	2 10	35	43
	5:30 PM - 5:45 PM	0	0	0 6	35	43
	5:45 PM - 6:00 PM	3	2	5 9	36	43
	6:00 PM - 6:15 PM	0	0	0 7	36	43
	6:15 PM - 6:30 PM	2	1	3 8	37	43
	6:30 PM - 6:45 PM	1	0	1 9	38	43
	6:45 PM - 7:00 PM	1	1	2 6	38	43
	7:00 PM - 7:15 PM	0	0	0 6	38	43
	7:15 PM - 7:30 PM	1	1	2 5	38	43
	7:30 PM - 7:45 PM	0	1	1 5	37	43
	7:45 PM - 8:00 PM	1	1	2 5	37	43
	8:00 PM - 8:15 PM	1	0	1 6	38	43
	8:15 PM - 8:30 PM	3	0	3 7	41	43
	8:30 PM - 8:45 PM	0	0	0 6	41	43
	8:45 PM - 9:00 PM	0	1	1 5	40	43
	9:00 PM - 9:15 PM	2	1	3 7	41	43
	9:15 PM - 9:30 PM	1	0	1 5	42	43
	9:30 PM - 9:45 PM	0	0	0 5	42	43
	9:45 PM - 10:00 PM	1	0	1 5	43	43



WEEKDAY PARKING ACCUMULATION SURVEY - 18 Main Street, Durham, NH

Wednesday, February 12 & Thursday, February 13, 2020
18 Main Street, Durham, New Hampshire

	Trip Generation				Parking Accumulation	Approx. Capacity
	Arrivals	Departures				
10:00 PM - 10:15 PM	0	0	0	2	43	43
10:15 PM - 10:30 PM	0	1	1	2	42	43
10:30 PM - 10:45 PM	0	0	0	2	42	43
10:45 PM - 11:00 PM	1	0	1	2	43	43
11:00 PM - 11:15 PM	1	0	1	3	44	43
11:15 PM - 11:30 PM	2	1	3	5	45	43
11:30 PM - 11:45 PM	0	2	2	7	43	43
Thursday February 13, 2020	1	0	1	7	44	43
12:00 AM - 12:15 AM	0	0	0	6	44	43
12:15 AM - 12:30 AM	0	0	0	3	44	43
12:30 AM - 12:45 AM	0	0	0	1	44	43
12:45 AM - 1:00 AM	0	0	0	0	44	43
1:00 AM - 1:15 AM	0	0	0	0	44	43
1:15 AM - 1:30 AM	0	0	0	0	44	43
1:30 AM - 1:45 AM	0	0	0	0	44	43
1:45 AM - 2:00 AM	0	0	0	0	44	43
2:00 AM - 2:15 AM	0	0	0	0	44	43
2:15 AM - 2:30 AM	0	0	0	0	44	43
2:30 AM - 2:45 AM	0	0	0	0	44	43
2:45 AM - 3:00 AM	0	0	0	0	44	43
3:00 AM - 3:15 AM	0	0	0	0	44	43
3:15 AM - 3:30 AM	0	0	0	0	44	43
3:30 AM - 3:45 AM	0	0	0	0	44	43
3:45 AM - 4:00 AM	0	0	0	0	44	43
4:00 AM - 4:15 AM	0	0	0	0	44	43
4:15 AM - 4:30 AM	0	0	0	0	44	43
4:30 AM - 4:45 AM	0	0	0	0	44	43
4:45 AM - 5:00 AM	0	0	0	0	44	43
5:00 AM - 5:15 AM	0	0	0	0	44	43
5:15 AM - 5:30 AM	0	0	0	0	44	43
5:30 AM - 5:45 AM	0	0	0	0	44	43
5:45 AM - 6:00 AM	0	0	0	0	44	43
6:00 AM - 6:15 AM	0	0	0	0	44	43
6:15 AM - 6:30 AM	0	0	0	0	44	43
6:30 AM - 6:45 AM	0	0	0	0	44	43
6:45 AM - 7:00 AM	0	1	1	1	43	43
7:00 AM - 7:15 AM	0	0	0	1	43	43
7:15 AM - 7:30 AM	0	0	0	1	43	43
7:30 AM - 7:45 AM	0	0	0	1	43	43
7:45 AM - 8:00 AM	0	0	0	0	43	43
8:00 AM - 8:15 AM	0	0	0	0	43	43
8:15 AM - 8:30 AM	0	1	1	1	42	43
8:30 AM - 8:45 AM	0	0	0	1	42	43
8:45 AM - 9:00 AM	0	0	0	1	42	43

47 47 MAX 45
MIN 31

Peak Hour
4:30-5:30 PM 6 4 = 10

Peak Parking Accumulation = 45 vehicle:
(11:15 PM - 11:30 PM)



SATURDAY PARKING ACCUMULATION SURVEY - 18 Main Street, Durham, NH

Saturday, February 15, 2020
18 Main Street, Durham, New Hampshire

Saturday February 15, 2020	Trip Generation		Total	Parking Accumulation	Approx. Capacity
	Arrivals	Departures			
12:00 AM - 12:15 AM	0	0	0	36	43
12:15 AM - 12:30 AM	0	1	1	35	43
12:30 AM - 12:45 AM	1	0	1	36	43
12:45 AM - 1:00 AM	1	0	1 3	37	43
1:00 AM - 1:15 AM	0	0	0 3	37	43
1:15 AM - 1:30 AM	0	0	0 2	37	43
1:30 AM - 1:45 AM	0	0	0 1	37	43
1:45 AM - 2:00 AM	0	0	0 0	37	43
2:00 AM - 2:15 AM	0	0	0 0	37	43
2:15 AM - 2:30 AM	1	0	1 1	38	43
2:30 AM - 2:45 AM	0	0	0 1	38	43
2:45 AM - 3:00 AM	0	0	0 1	38	43
3:00 AM - 3:15 AM	0	0	0 1	38	43
3:15 AM - 3:30 AM	0	0	0 0	38	43
3:30 AM - 3:45 AM	0	0	0 0	38	43
3:45 AM - 4:00 AM	0	0	0 0	38	43
4:00 AM - 4:15 AM	0	0	0 0	38	43
4:15 AM - 4:30 AM	0	0	0 0	38	43
4:30 AM - 4:45 AM	0	0	0 0	38	43
4:45 AM - 5:00 AM	0	0	0 0	38	43
5:00 AM - 5:15 AM	0	0	0 0	38	43
5:15 AM - 5:30 AM	0	0	0 0	38	43
5:30 AM - 5:45 AM	0	0	0 0	38	43
5:45 AM - 6:00 AM	0	0	0 0	38	43
6:00 AM - 6:15 AM	0	0	0 0	38	43
6:15 AM - 6:30 AM	0	0	0 0	38	43
6:30 AM - 6:45 AM	0	0	0 0	38	43
6:45 AM - 7:00 AM	0	0	0 0	38	43
7:00 AM - 7:15 AM	0	0	0 0	38	43
7:15 AM - 7:30 AM	0	0	0 0	38	43
7:30 AM - 7:45 AM	0	0	0 0	38	43
7:45 AM - 8:00 AM	0	0	0 0	38	43
8:00 AM - 8:15 AM	0	1	1 1	37	43
8:15 AM - 8:30 AM	0	0	0 1	37	43
8:30 AM - 8:45 AM	0	1	1 2	36	43
8:45 AM - 9:00 AM	0	0	0 2	36	43
9:00 AM - 9:15 AM	0	0	0 1	36	43
9:15 AM - 9:30 AM	0	1	1 2	35	43
9:30 AM - 9:45 AM	1	2	3 4	34	43
9:45 AM - 10:00 AM	0	2	2 6	32	43
10:00 AM - 10:15 AM	2	2	4 10	32	43
10:15 AM - 10:30 AM	0	2	2 11	30	43
10:30 AM - 10:45 AM	1	1	2 10	30	43
10:45 AM - 11:00 AM	0	0	0 8	30	43
11:00 AM - 11:15 AM	1	1	2 6	30	43
11:15 AM - 11:30 AM	0	1	1 5	29	43
11:30 AM - 11:45 AM	0	1	1 4	28	43
11:45 AM - 12:00 PM	1	0	1 5	29	43
12:00 PM - 12:15 PM	2	3	5 8	28	43
12:15 PM - 12:30 PM	0	0	0 7	28	43
12:30 PM - 12:45 PM	0	2	2 8	26	43
12:45 PM - 1:00 PM	1	2	3 10	25	43
1:00 PM - 1:15 PM	0	1	1 6	24	43
1:15 PM - 1:30 PM	2	2	4 10	24	43



SATURDAY PARKING ACCUMULATION SURVEY - 18 Main Street, Durham, NH

Saturday, February 15, 2020
18 Main Street, Durham, New Hampshire

	Trip Generation				Parking Accumulation	Approx. Capacity
	Arrivals	Departures				
	1:30 PM - 1:45 PM	1				
1:45 PM - 2:00 PM	0	1	1	7	24	43
2:00 PM - 2:15 PM	1	0	1	7	25	43
2:15 PM - 2:30 PM	0	0	0	3	25	43
2:30 PM - 2:45 PM	0	0	0	2	25	43
2:45 PM - 3:00 PM	1	0	1	2	26	43
3:00 PM - 3:15 PM	3	0	3	4	29	43
3:15 PM - 3:30 PM	0	1	1	5	28	43
3:30 PM - 3:45 PM	1	1	2	7	28	43
3:45 PM - 4:00 PM	0	1	1	7	27	43
4:00 PM - 4:15 PM	0	0	0	4	27	43
4:15 PM - 4:30 PM	1	1	2	5	27	43
4:30 PM - 4:45 PM	1	1	2	5	27	43
4:45 PM - 5:00 PM	1	1	2	6	27	43
5:00 PM - 5:15 PM	1	2	3	9	26	43
5:15 PM - 5:30 PM	1	2	3	10	25	43
5:30 PM - 5:45 PM	0	1	1	9	24	43
5:45 PM - 6:00 PM	0	1	1	8	23	43
6:00 PM - 6:15 PM	2	0	2	7	25	43
6:15 PM - 6:30 PM	1	0	1	5	26	43
6:30 PM - 6:45 PM	1	0	1	5	27	43
6:45 PM - 7:00 PM	3	0	3	7	30	43
7:00 PM - 7:15 PM	2	1	3	8	31	43
7:15 PM - 7:30 PM	0	0	0	7	31	43
7:30 PM - 7:45 PM	2	1	3	9	32	43
7:45 PM - 8:00 PM	0	0	0	6	32	43
8:00 PM - 8:15 PM	0	0	0	3	32	43
8:15 PM - 8:30 PM	0	0	0	3	32	43
8:30 PM - 8:45 PM	0	0	0	0	32	43
8:45 PM - 9:00 PM	1	0	1	1	33	43
9:00 PM - 9:15 PM	1	0	1	2	34	43
9:15 PM - 9:30 PM	1	0	1	3	35	43
9:30 PM - 9:45 PM	0	0	0	3	35	43
9:45 PM - 10:00 PM	0	1	1	3	34	43
10:00 PM - 10:15 PM	3	0	3	5	37	43
10:15 PM - 10:30 PM	0	1	1	5	36	43
10:30 PM - 10:45 PM	0	0	0	5	36	43
10:45 PM - 11:00 PM	0	0	0	4	36	43
11:00 PM - 11:15 PM	0	0	0	1	36	43
11:15 PM - 11:30 PM	0	0	0	0	36	43
11:30 PM - 11:45 PM	0	0	0	0	36	43
11:45 PM - 12:00 AM	0	0	0	0	36	43

43	43	MAX	38
		MIN	23

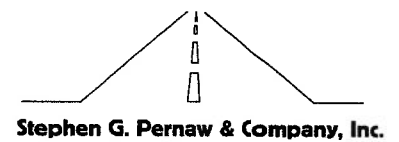
Peak Hour
9:30-10:30 AM 3 8 = 11

Peak Parking Accumulation = 38 vehicles
(2:15 AM - 8:00 AM)

Seasonal Adjustment Factor / Historical Growth Rate

Section F

**Seasonal Adjustment Factors
NHDOT Group 4 (Urban Highways)**



Year 2018 Monthly Data - Urban

<u>Month</u>	ADT	Adjustment to	
		Average	Peak
Jan	11,282	1.13	1.24
Feb	11,848	1.08	1.18
Mar	11,828	1.08	1.18
Apr	12,491	1.02	1.12
May	13,587	0.94	1.03
Jun	13,911	0.92	1.00
Jul	13,765	0.93	1.01
Aug	13,945	0.92	1.00
Sep	13,168	0.97	1.06
Oct	13,367	0.96	1.04
Nov	12,215	1.05	1.14
Dec	11,963	1.07	1.17

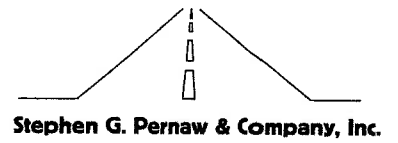
Year 2017 Monthly Data - Urban

<u>Month</u>	ADT	Adjustment to	
		Average	Peak
Jan	12254	1.21	1.33
Feb	13494	1.10	1.21
Mar	14335	1.03	1.14
Apr	15004	0.99	1.09
May	15547	0.95	1.05
Jun	16310	0.91	1.00
Jul	15523	0.95	1.05
Aug	15974	0.93	1.02
Sep	15546	0.95	1.05
Oct	15104	0.98	1.08
Nov	14544	1.02	1.12
Dec	14151	1.05	1.15

Year 2016 Monthly Data - Urban

<u>Month</u>	ADT	Adjustment to	
		Average	Peak
Jan	13573	1.16	1.25
Feb	14038	1.12	1.21
Mar	15731	1.00	1.08
Apr	16139	0.97	1.05
May	15705	1.00	1.08
Jun	16766	0.94	1.01
Jul	15752	1.00	1.08
Aug	16529	0.95	1.03
Sep	17007	0.92	1.00
Oct	16598	0.94	1.02
Nov	15649	1.00	1.09
Dec	14638	1.07	1.16

Average Peak-Month Factor	1.20
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STEPHEN G. PERNAW & COMPANY

PROJECT: Proposed Student Housing Parking, Durham, New Hampshire

NUMBER: 2001A

HISTORICAL GROWTH CALCULATIONS SUMMARY

CASE : AADT

LOCATION :

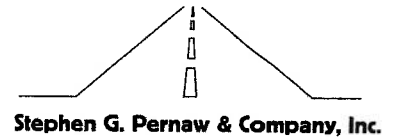
Main St (West of NH108) - Durham, New Hampshire = -4.4 % per year

Madbury Rd (North of Main St) - Durham, New Hampshire = 0.0 % per year

Main St (East of Pettee Brook Ln) - Durham, New Hampshire = 0.5 % per year

Average = 0.3 % per year

Use = 1.0 % per year



STEPHEN G. PERNAW & COMPANY, INC.
 PROJECT: Proposed Student Housing Parking , Durham, New Hampshire
 NUMBER: 2001A
 COUNT STATION: 82133051

HISTORICAL GROWTH CALCULATIONS

LOCATION : Main St (West of NH108) - Durham, New Hampshire
 CASE : AADT

ARITHMETIC PROJECTIONS

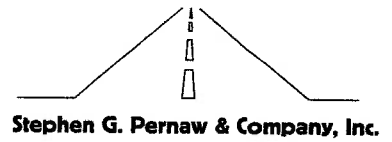
YEAR	AADT	Regression Output:		PROJECTIONS
2015	14000	Constant	1214123.3	2019 12213
2016	14280	Std Err of Y Est	897.94244	2020 11617
2017	14566	R Squared	0.5943293	2021 11022
2018	12013	No. of Observations	5	2022 10427
2019	12157	Degrees of Freedom	3	2023 9831
		X Coefficient	-595.3	2024 9236
		Std Err of Coef.	283.95433	2025 8641
				2026 8046
				2027 7450
				2028 6855
				2029 6260

RATE = -595 VPD/YEAR

GEOMETRIC PROJECTIONS

YEAR	AADT	Ln AADT	Regression Output:		PROJECTIONS
2015	14000	9.54681	Constant	101.30864	2019 12195
2016	14280	9.56662	Std Err of Y Est	0.0672642	2020 11653
2017	14566	9.58645	R Squared	0.6041792	2021 11134
2018	12013	9.39374	No. of Observations	5	2022 10639
2019	12157	9.40566	Degrees of Freedom	3	2023 10165
			X Coefficient	-0.0455175	2024 9713
			Std Err of Coef.	0.0212708	2025 9281
					2026 8868
					2027 8473
					2028 8096
					2029 7736

RATE = -4.4 % / YEAR



STEPHEN G. PERNAW & COMPANY, INC.
 PROJECT: Proposed Student Housing Parking , Durham, New Hampshire
 NUMBER: 2001A
 COUNT STATION: 81133085

HISTORICAL GROWTH CALCULATIONS

LOCATION : Madbury Rd (North of Main St) - Durham, New Hampshire
 CASE : AADT

ARITHMETIC PROJECTIONS

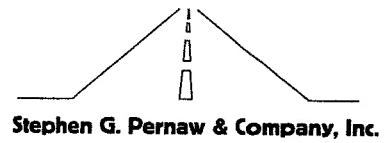
YEAR	AADT	Regression Output:		PROJECTIONS
10000	14000	Constant	15257.123	2019 2020 14881
10200	14280	Std Err of Y Est	1409.2386	2020 14881
9689	14566	R Squared	0.0008155	2021 14881
9883	12013	No. of Observations	5	2022 14881
10002	12157	Degrees of Freedom	3	2023 14880
		X Coefficient	-0.1862341	2024 14880
		Std Err of Coef.	3.7636773	2025 14880
				2026 14880
				2027 14880
				2028 14879
				2029 14879

RATE = 0 VPD/YEAR

GEOMETRIC PROJECTIONS

YEAR	AADT	Ln AADT	Regression Output:		PROJECTIONS
10000	14000	9.54681	Constant	9.59577	2019 2020 14419
10200	14280	9.56662	Std Err of Y Est	0.1068938	2020 14419
9689	14566	9.58645	R Squared	0.0003796	2021 14419
9883	12013	9.39374	No. of Observations	5	2022 14419
10002	12157	9.40566	Degrees of Freedom	3	2023 14419
			X Coefficient	-9.635E-06	2024 14419
			Std Err of Coef.	0.0002855	2025 14418
					2026 14418
					2027 14418
					2028 14418
					2029 14418

RATE = 0.0 % / YEAR



STEPHEN G. PERNAW & COMPANY, INC.

PROJECT: Proposed Residential Subdivision, Hudson, New Hampshire

NUMBER: 1527A

COUNT STATION: 82133087

HISTORICAL GROWTH CALCULATIONS

LOCATION : Main St (East of Pettee Brook Ln) - Durham, New Hampshire
CASE : AADT

ARITHMETIC PROJECTIONS

YEAR	AADT
2015	8446
2016	8615
2017	8402
2018	8570
2019	8673

Regression Output:

Constant	-73954.1
Std Err of Y Est	108.56442
R Squared	0.3211581
No. of Observations	5
Degrees of Freedom	3
X Coefficient	40.9
Std Err of Coef.	34.331084

PROJECTIONS

2004 2020	8009
2005	8050
2006	8091
2007	8132
2008	8173
2009	8214
2010	8255
2011	8296
2012	8337
2013	8378
2014	8418

RATE = 41 VPD/YEAR

GEOMETRIC PROJECTIONS

YEAR	AADT	Ln AADT
2015	8446	9.04145
2016	8615	9.06126
2017	8402	9.03623
2018	8570	9.05602
2019	8673	9.06797

Regression Output:

Constant	-0.58998
Std Err of Y Est	0.0127398
R Squared	0.3194421
No. of Observations	5
Degrees of Freedom	3
X Coefficient	0.0047806
Std Err of Coef.	0.0040287

PROJECTIONS

2004 2020	8026
2005	8064
2006	8103
2007	8142
2008	8181
2009	8220
2010	8260
2011	8299
2012	8339
2013	8379
2014	8419

RATE = 0.5 % / YEAR



Transportation Data Management System

List View All DIRs

Record	691 of 5743 Goto Record <input type="text" value="go"/>		
Location ID	81133085	MPO ID	
Type	SPOT	HPMS ID	
On NHS	No	On HPMS	No
LRS ID	N1330051__	LRS Loc Pt.	
SF Group	04	Route Type	
AF Group	04	Route	
GF Group	E	Active	Yes
Class Dist Grp	Default	Category	3
Seas Class Grp	Default		
WIM Group	Default		
QC Group	Default		
Funct'l Class	Minor Arterial	Milepost	
Located On	Madbury Rd		
Loc On Alias	MADBURY RD NORTH OF MAIN ST		
More Detail			
STATION DATA			

Directions: 1-WAY

AADT

Year	AADT	DHV-30	K %	D %	PA	BC	Src
2019	10,002 ³		9		9,162 (92%)	840 (8%)	Grown from 2018
2018	9,883 ³		9		9,113 (92%)	770 (8%)	Grown from 2017
2017	9,689	920	9		8,991 (93%)	698 (7%)	
2016	10,200 ³				9,303 (91%)	897 (9%)	Grown from 2015
2015	10,000 ²						

1-5 of 10

Travel Demand Model										
Model Year	Model AADT	AM PHV	AM PPV	MD PHV	MD PPV	PM PHV	PM PPV	NT PHV	NT PPV	

VOLUME COUNT			
	Date	Int	Total
	Thu 10/26/2017	60	11,171
	Wed 10/25/2017	60	10,603
	Tue 10/24/2017	60	10,212
	Thu 4/23/2015	60	11,884
	Wed 4/22/2015	60	11,352
	Tue 4/21/2015	60	10,696
	Thu 9/29/2011	60	12,340
	Wed 9/28/2011	60	11,513

VOLUME TREND	
Year	Annual Growth
2019	1%
2018	2%
2017	-5%
2016	2%
2015	-2%
2011	0%
2008	-3%



Transportation Data Management System

List View All DIRs

Record	2467 of 5743 Goto Record <input type="text" value="go"/>		
Location ID	82133087	MPO ID	
Type	SPOT	HPMS ID	
On NHS	No	On HPMS	No
LRS ID	N1330055_	LRS Loc Pt.	
SF Group	04	Route Type	
AF Group	04	Route	
GF Group	E	Active	Yes
Class Dist Grp	Default	Category	3
Seas Clss Grp	Default		
WIM Group	Default		
QC Group	Default		
Funct'l Class	Minor Arterial	Milepost	
Located On	Main St		
Loc On Alias	MAIN ST EAST OF PETTEE BROOK LN		
More Detail			
STATION DATA			

Directions: 2-WAY

AADT

Year	AADT	DHV-30	K %	D %	PA	BC	Src
2019	8,673 ³		10		7,945 (92%)	728 (8%)	Grown from 2018
2018	8,570 ³		10		7,902 (92%)	668 (8%)	Grown from 2017
2017	8,402	859	10		7,798 (93%)	604 (7%)	
2016	8,615 ³				7,858 (91%)	757 (9%)	Grown from 2015
2015	8,446 ³						Grown from 2014

1-5 of 7

Travel Demand Model										
Model Year	Model AADT	AM PHV	AM PPV	MD PHV	MD PPV	PM PHV	PM PPV	NT PHV	NT PPV	

VOLUME COUNT			
	Date	Int	Total
	Thu 9/14/2017	60	9,961
	Wed 9/13/2017	60	9,714
	Tue 9/12/2017	60	8,575
	Thu 10/23/2014	60	9,295
	Wed 10/22/2014	60	9,090
	Tue 10/21/2014	60	8,948
	Sat 9/11/1999	60	9,519

VOLUME TREND	
Year	Annual Growth
2019	1%
2018	2%
2017	-2%
2016	2%
2015	3%
2014	-2%



Transportation Data Management System

List View All DIRs

Record	2442 of 5743 Goto Record <input type="text" value="go"/>		
Location ID	82133051	MPO ID	
Type	SPOT	HPMS ID	
On NHS	No	On HPMS	Yes
LRS ID	N1330055	LRS Loc Pt.	
SF Group	04	Route Type	
AF Group	04	Route	
GF Group	E	Active	Yes
Class Dist Grp	Default	Category	3
Seas Class Grp	Default		
WIM Group	Default		
QC Group	Default		
Funct'l Class	Minor Arterial	Milepost	
Located On	Main St		
Loc On Alias	MAIN ST WEST OF NH 108		
More Detail			
STATION DATA			

Directions:

AADT

Year	AADT	DHV-30	K %	D %	PA	BC	Src
2019	12,157 ³		10		11,136 (92%)	1,021 (8%)	Grown from 2018
2018	12,013	1,158	10		11,076 (92%)	937 (8%)	
2017	14,566 ³				13,516 (93%)	1,050 (7%)	Grown from 2016
2016	14,280 ³				13,024 (91%)	1,256 (9%)	Grown from 2015
2015	14,000						

1-5 of 16

Travel Demand Model										
Model Year	Model AADT	AM PHV	AM PPV	MD PHV	MD PPV	PM PHV	PM PPV	NT PHV	NT PPV	

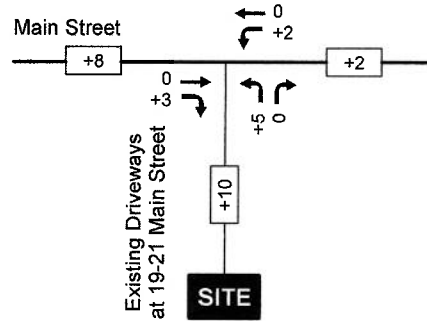
VOLUME COUNT			
	Date	Int	Total
	Mon 9/24/2018	60	11,393
	Sun 9/23/2018	60	10,868
	Sat 9/22/2018	60	12,907
	Fri 9/21/2018	60	14,000
	Thu 9/20/2018	60	12,178
	Thu 10/1/2015	60	16,232
	Wed 9/30/2015	60	15,421
	Tue 9/29/2015	60	14,920

VOLUME TREND	
Year	Annual Growth
2019	1%
2018	-18%
2017	2%
2016	2%
2015	0%
2012	3%
2009	-2%
2008	0%

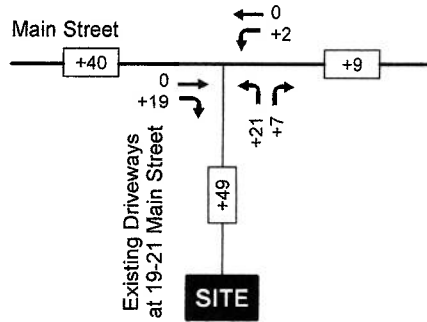
Site Generated Traffic Volumes

Section G

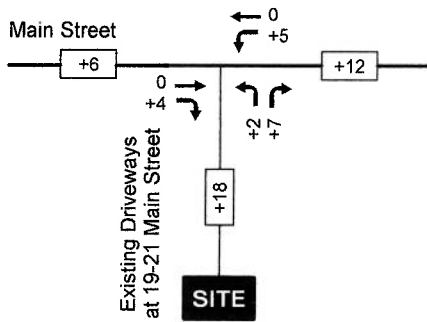
AM Peak Hour



PM Peak Hour



Saturday Peak Hour



Capacity and Level of Service Calculations – Unsignalized

Section H

HCM 2010 TWSC
 1: Site Driveway & Main Street

Intersection

Int Delay, s/veh 0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	150	1	1	161	2	0
Future Vol, veh/h	150	1	1	161	2	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	81	81	71	71	50	50
Heavy Vehicles, %	13	0	0	6	0	0
Mvmt Flow	185	1	1	227	4	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	186	0	415
Stage 1	-	-	-	-	186
Stage 2	-	-	-	-	229
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1401	-	598
Stage 1	-	-	-	-	851
Stage 2	-	-	-	-	814
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1401	-	597
Mov Cap-2 Maneuver	-	-	-	-	597
Stage 1	-	-	-	-	851
Stage 2	-	-	-	-	813

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	597	-	-	1401	-
HCM Lane V/C Ratio	0.007	-	-	0.001	-
HCM Control Delay (s)	11.1	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

HCM 2010 TWSC
 1: Site Driveway & Main Street

Intersection

Int Delay, s/veh 0.1

Movement EBT EBR WBL WBT NBL NBR

Lane Configurations	1			1	2	
Traffic Vol, veh/h	201	1	1	215	2	0
Future Vol, veh/h	201	1	1	215	2	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	81	81	71	71	50	50
Heavy Vehicles, %	13	0	0	6	0	0
Mvmt Flow	248	1	1	303	4	0

Major/Minor Major1 Major2 Minor1

Conflicting Flow All	0	0	249	0	554	249
Stage 1	-	-	-	-	249	-
Stage 2	-	-	-	-	305	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1328	-	497	795
Stage 1	-	-	-	-	797	-
Stage 2	-	-	-	-	752	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1328	-	497	795
Mov Cap-2 Maneuver	-	-	-	-	497	-
Stage 1	-	-	-	-	797	-
Stage 2	-	-	-	-	751	-

Approach EB WB NB

HCM Control Delay, s	0	0	12.3
HCM LOS			B

Minor Lane/Major Mvmt NBLn1 EBT EBR WBL WBT




Capacity (veh/h)	497	-	-	1328	-
HCM Lane V/C Ratio	0.008	-	-	0.001	-
HCM Control Delay (s)	12.3	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

HCM 2010 TWSC

1: Site Driveway & Main Street

Intersection

Int Delay, s/veh 0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	201	4	3	215	7	0
Future Vol, veh/h	201	4	3	215	7	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	81	81	71	71	50	50
Heavy Vehicles, %	13	0	0	6	0	0
Mvmt Flow	248	5	4	303	14	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	253	0	562
Stage 1	-	-	-	-	251
Stage 2	-	-	-	-	311
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1324	-	492
Stage 1	-	-	-	-	795
Stage 2	-	-	-	-	748
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1324	-	490
Mov Cap-2 Maneuver	-	-	-	-	490
Stage 1	-	-	-	-	795
Stage 2	-	-	-	-	745

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	12.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	490	-	-	1324	-
HCM Lane V/C Ratio	0.029	-	-	0.003	-
HCM Control Delay (s)	12.6	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

HCM 2010 TWSC
 1: Site Driveway & Main Street

Intersection

Int Delay, s/veh 0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↘	↙
Traffic Vol, veh/h	712	8	1	372	9	3
Future Vol, veh/h	712	8	1	372	9	3
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	88	88	80	80	75	75
Heavy Vehicles, %	1	0	0	2	0	0
Mvmt Flow	809	9	1	465	12	4

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	0	0	818	0
Stage 1	-	-	-	814
Stage 2	-	-	-	467
Critical Hdwy	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-
Pot Cap-1 Maneuver	-	-	819	-
Stage 1	-	-	-	439
Stage 2	-	-	-	635
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	819	-
Mov Cap-2 Maneuver	-	-	-	184
Stage 1	-	-	-	439
Stage 2	-	-	-	634

Approach	EB	WB	NB
HCM Control Delay, s	0	0	23.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	211	-	-	819	-
HCM Lane V/C Ratio	0.076	-	-	0.002	-
HCM Control Delay (s)	23.5	-	-	9.4	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

HCM 2010 TWSC
 1: Site Driveway & Main Street

Intersection

Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔		↔	
Traffic Vol, veh/h	954	8	1	498	9	3
Future Vol, veh/h	954	8	1	498	9	3
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	88	88	80	80	75	75
Heavy Vehicles, %	1	0	0	2	0	0
Mvmt Flow	1084	9	1	623	12	4

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	0	0	1093	0
Stage 1	-	-	-	1089
Stage 2	-	-	-	625
Critical Hdwy	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-
Pot Cap-1 Maneuver	-	-	646	-
Stage 1	-	-	-	326
Stage 2	-	-	-	537
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	646	-
Mov Cap-2 Maneuver	-	-	-	100
Stage 1	-	-	-	326
Stage 2	-	-	-	536

Approach	EB	WB	NB
HCM Control Delay, s	0	0	40.2
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	118	-	-	646	-
HCM Lane V/C Ratio	0.136	-	-	0.002	-
HCM Control Delay (s)	40.2	-	-	10.6	0
HCM Lane LOS	E	-	-	B	A
HCM 95th %tile Q(veh)	0.5	-	-	0	-

HCM 2010 TWSC
 1: Site Driveway & Main Street

Intersection

Int Delay, s/veh 1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↶			↷	↶	↷
Traffic Vol, veh/h	954	27	3	498	30	10
Future Vol, veh/h	954	27	3	498	30	10
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	88	88	80	80	75	75
Heavy Vehicles, %	1	0	0	2	0	0
Mvmt Flow	1084	31	4	623	40	13

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1115	0	1731
Stage 1	-	-	-	-	1100
Stage 2	-	-	-	-	631
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	634	-	98
Stage 1	-	-	-	-	322
Stage 2	-	-	-	-	534
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	634	-	97
Mov Cap-2 Maneuver	-	-	-	-	97
Stage 1	-	-	-	-	322
Stage 2	-	-	-	-	529

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	60.9
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	115	-	-	634	-
HCM Lane V/C Ratio	0.464	-	-	0.006	-
HCM Control Delay (s)	60.9	-	-	10.7	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	2	-	-	0	-

HCM 2010 TWSC
 1: Site Driveway & Main Street

Intersection

Int Delay, s/veh 0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↖			↗	↘	
Traffic Vol, veh/h	554	2	2	417	1	3
Future Vol, veh/h	554	2	2	417	1	3
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	91	91	93	93	50	50
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	609	2	2	448	2	6

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	611	0	1062
Stage 1	-	-	-	-	610
Stage 2	-	-	-	-	452
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	978	-	250
Stage 1	-	-	-	-	546
Stage 2	-	-	-	-	645
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	978	-	249
Mov Cap-2 Maneuver	-	-	-	-	249
Stage 1	-	-	-	-	546
Stage 2	-	-	-	-	643

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	398	-	-	978	-
HCM Lane V/C Ratio	0.02	-	-	0.002	-
HCM Control Delay (s)	14.2	-	-	8.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

HCM 2010 TWSC

1: Site Driveway & Main Street

Intersection

Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔		↔	
Traffic Vol, veh/h	741	2	2	558	1	3
Future Vol, veh/h	741	2	2	558	1	3
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	91	91	93	93	50	50
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	814	2	2	600	2	6

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	816	0	1419
Stage 1	-	-	-	-	815
Stage 2	-	-	-	-	604
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	820	-	152
Stage 1	-	-	-	-	439
Stage 2	-	-	-	-	550
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	820	-	151
Mov Cap-2 Maneuver	-	-	-	-	151
Stage 1	-	-	-	-	439
Stage 2	-	-	-	-	548

Approach	EB	WB	NB
HCM Control Delay, s	0	0	18.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	276	-	-	820	-
HCM Lane V/C Ratio	0.029	-	-	0.003	-
HCM Control Delay (s)	18.4	-	-	9.4	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

HCM 2010 TWSC
 1: Site Driveway & Main Street

Intersection

Int Delay, s/veh 0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↕	↕	
Traffic Vol, veh/h	741	6	7	558	3	10
Future Vol, veh/h	741	6	7	558	3	10
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	91	91	93	93	50	50
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	814	7	8	600	6	20

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	821	0	1434
Stage 1	-	-	-	-	818
Stage 2	-	-	-	-	616
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	817	-	149
Stage 1	-	-	-	-	437
Stage 2	-	-	-	-	543
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	817	-	147
Mov Cap-2 Maneuver	-	-	-	-	147
Stage 1	-	-	-	-	437
Stage 2	-	-	-	-	535

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	19.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	278	-	-	817	-
HCM Lane V/C Ratio	0.094	-	-	0.009	-
HCM Control Delay (s)	19.3	-	-	9.4	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-